



OIL ANALYSIS REPORT

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

Machine Id
RBI 1310
 Component
Diesel Engine
 Fluid
DIESEL ENGINE OIL SAE 15W40 (--- QTS)

RECOMMENDATION

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

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|-------------|----------|----------|
| Sample Number | | Client Info | | WC0882724 | --- | --- |
| Sample Date | | Client Info | | 01 Feb 2024 | --- | --- |
| Machine Age | hrs | Client Info | | 1800 | --- | --- |
| Oil Age | hrs | Client Info | | 0 | --- | --- |
| Filter Age | hrs | Client Info | | 0 | --- | --- |
| Oil Changed | | Client Info | | Changed | --- | --- |
| Filter Changed | | Client Info | | Changed | --- | --- |
| Sample Status | | | | ATTENTION | --- | --- |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|------|-----|-----|
| Iron | ppm | ASTM D5185m | >100 | 31 | --- | --- |
| Chromium | ppm | ASTM D5185m | >20 | 1 | --- | --- |
| Nickel | ppm | ASTM D5185m | >4 | 0 | --- | --- |
| Titanium | ppm | ASTM D5185m | | 0 | --- | --- |
| Silver | ppm | ASTM D5185m | >3 | 0 | --- | --- |
| Aluminum | ppm | ASTM D5185m | >20 | 17 | --- | --- |
| Lead | ppm | ASTM D5185m | >40 | 0 | --- | --- |
| Copper | ppm | ASTM D5185m | >330 | 3 | --- | --- |
| Tin | ppm | ASTM D5185m | >15 | 0 | --- | --- |
| Vanadium | ppm | ASTM D5185m | | 0 | --- | --- |
| White Metal | scalar | *Visual | NONE | NONE | --- | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | --- | --- |

CONTAMINATION

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

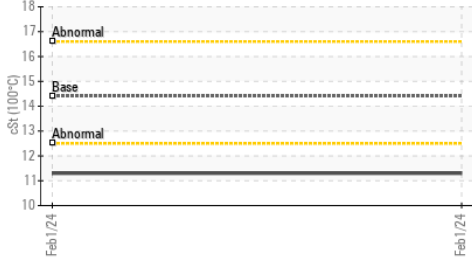
| | | | | | | |
|------------------|----------|-------------|-------|-------|-----|-----|
| Silicon | ppm | ASTM D5185m | >25 | 8 | --- | --- |
| Potassium | ppm | ASTM D5185m | >20 | 34 | --- | --- |
| Fuel | % | ASTM D3524 | >5 | 1.6 | --- | --- |
| Water | | WC Method | >0.2 | NEG | --- | --- |
| Glycol | | WC Method | | NEG | --- | --- |
| Soot % | % | *ASTM D7844 | >3 | 0.4 | --- | --- |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 7.7 | --- | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 16.8 | --- | --- |
| 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 | --- | --- |

FLUID CONDITION

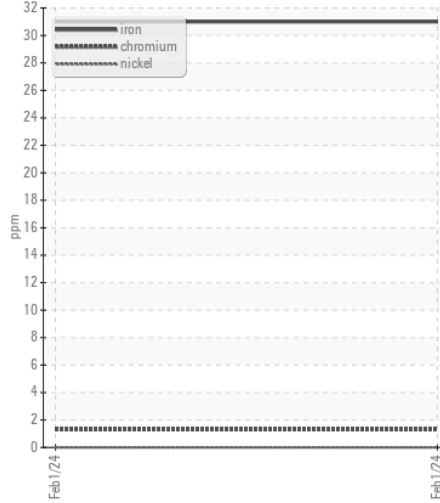
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

| | | | | | | |
|------------------|----------|-------------|------|--------|-----|-----|
| Sodium | ppm | ASTM D5185m | >158 | 2 | --- | --- |
| Boron | ppm | ASTM D5185m | 250 | 50 | --- | --- |
| Barium | ppm | ASTM D5185m | 10 | 0 | --- | --- |
| Molybdenum | ppm | ASTM D5185m | 100 | 69 | --- | --- |
| Manganese | ppm | ASTM D5185m | | <1 | --- | --- |
| Magnesium | ppm | ASTM D5185m | 450 | 281 | --- | --- |
| Calcium | ppm | ASTM D5185m | 3000 | 1853 | --- | --- |
| Phosphorus | ppm | ASTM D5185m | 1150 | 831 | --- | --- |
| Zinc | ppm | ASTM D5185m | 1350 | 1051 | --- | --- |
| Sulfur | ppm | ASTM D5185m | 4250 | 3057 | --- | --- |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 10.6 | --- | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 8.5 | 6.9 | --- | --- |
| Visc @ 100°C | cSt | ASTM D445 | 14.4 | ▲ 11.3 | --- | --- |

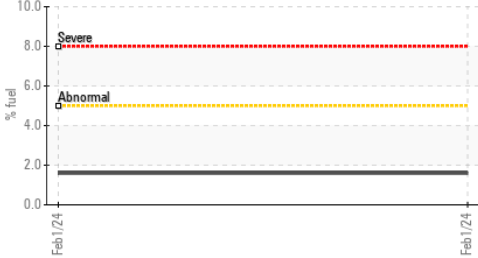
▲ Viscosity @ 100°C



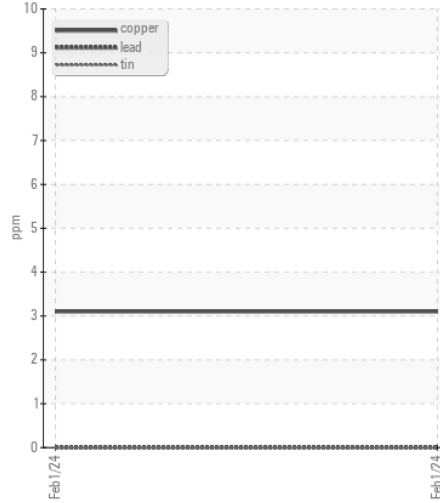
Ferrous Alloys



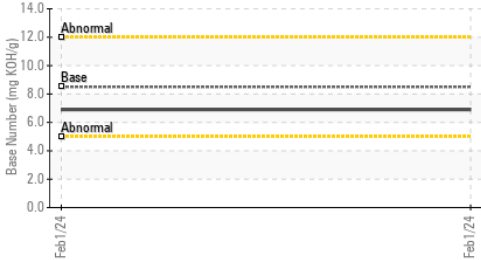
Fuel Dilution



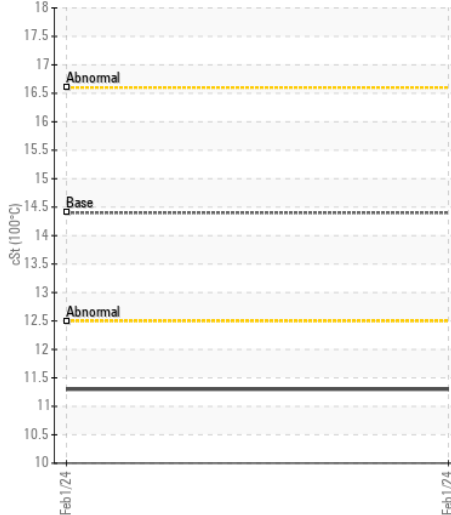
Non-ferrous Metals



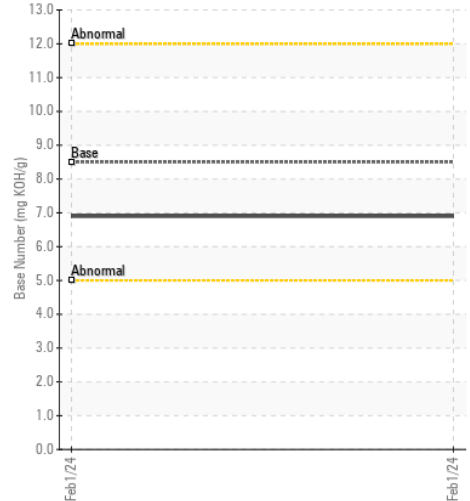
Base Number



▲ Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0882724 **Received** : 12 Feb 2024
Lab Number : 06085591 **Tested** : 14 Feb 2024
Unique Number : 10873036 **Diagnosed** : 14 Feb 2024 - Jonathan Hester
Test Package : CONST (Additional Tests: FuelDilution, PercentFuel, TBN)

SULLIVAN EASTERN INC
 2860 C SLATER RD
 MORRISVILLE, NC
 US 27560

Contact: SCOTT SULLIVAN
 ssullivan@sullivaneastern.com

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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