



OIL ANALYSIS REPORT

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

Area
Store 9 - Marietta
Machine Id
KENWORTH 1024

Component
Diesel Engine
Fluid
SHELL ROTELLA T 15W40 (10 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | LEC0045798 | LEC0045462 | LEC0041006 |
| Sample Date | | Client Info | | 03 Jan 2024 | 08 Nov 2023 | 25 Sep 2023 |
| Machine Age | hrs | Client Info | | 42280 | 41622 | 41221 |
| Oil Age | hrs | Client Info | | 400 | 400 | 400 |
| Filter Age | hrs | Client Info | | 400 | 400 | 400 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Filter Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >100 | 36 | 23 | 27 |
| Chromium | ppm | ASTM D5185m | >20 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >4 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | 0 | <1 | 0 |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 8 | 4 | 1 |
| Lead | ppm | ASTM D5185m | >40 | 9 | 2 | 13 |
| Copper | ppm | ASTM D5185m | >330 | <1 | 2 | 2 |
| Tin | ppm | ASTM D5185m | >15 | <1 | 0 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | <1 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

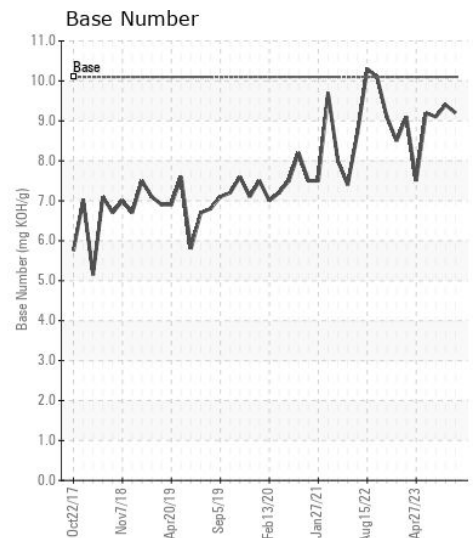
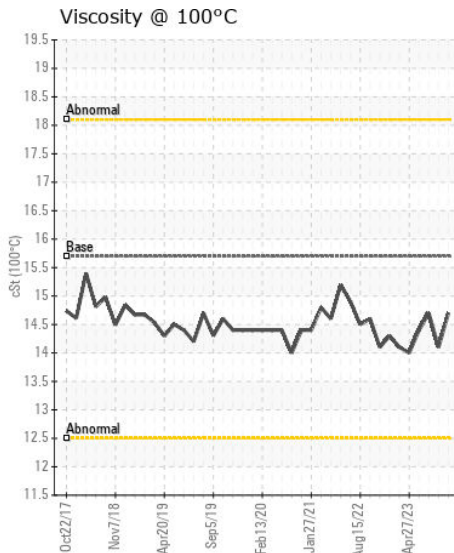
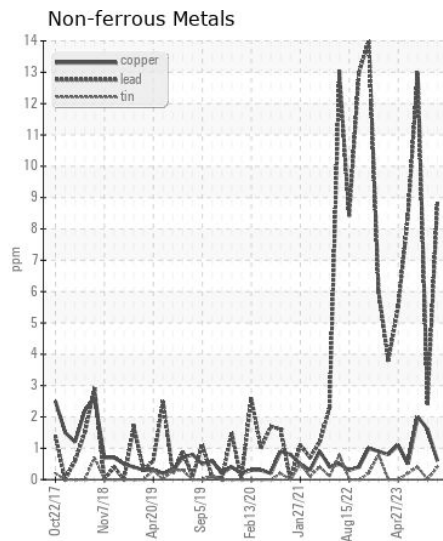
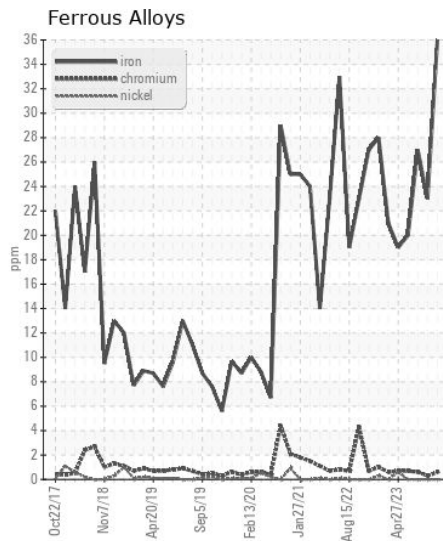
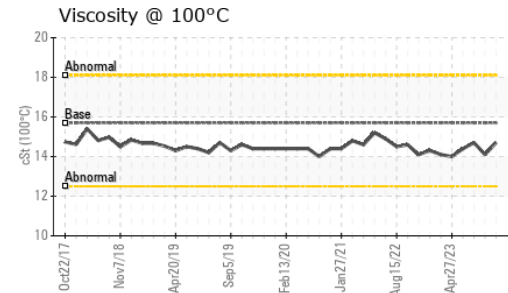
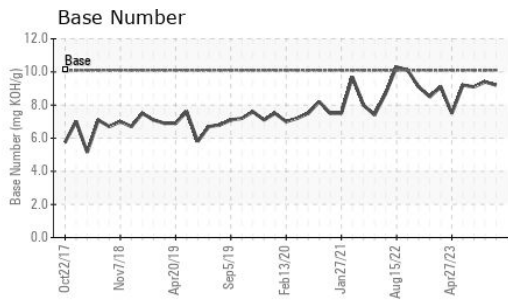
There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >120 | 9 | 6 | 6 |
| Potassium | ppm | ASTM D5185m | >20 | 2 | 2 | 0 |
| Fuel | | WC Method | >5 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | 2.8 | 2 | 2.5 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 12.2 | 9.4 | 12.4 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 29.7 | 26.6 | 28.6 |
| Silt | scalar | *Visual | NONE | NONE | NONE | NONE |
| Debris | scalar | *Visual | NONE | NONE | NONE | NONE |
| Sand/Dirt | scalar | *Visual | NONE | NONE | NONE | NONE |
| Appearance | scalar | *Visual | NORML | NORML | NORML | NORML |
| Odor | scalar | *Visual | NORML | NORML | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.2 | NEG | NEG | NEG |

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.

| | | | | | | |
|------------------|----------|-------------|------|--------------|------|------|
| Sodium | ppm | ASTM D5185m | | <1 | 0 | <1 |
| Boron | ppm | ASTM D5185m | 316 | 202 | 325 | 202 |
| Barium | ppm | ASTM D5185m | 0.0 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 1.2 | 126 | 130 | 130 |
| Manganese | ppm | ASTM D5185m | | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 24 | 679 | 631 | 676 |
| Calcium | ppm | ASTM D5185m | 2292 | 1525 | 1507 | 1570 |
| Phosphorus | ppm | ASTM D5185m | 1064 | 775 | 714 | 715 |
| Zinc | ppm | ASTM D5185m | 1160 | 901 | 842 | 881 |
| Sulfur | ppm | ASTM D5185m | 4996 | 2503 | 2607 | 2496 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 19.9 | 17.1 | 19.8 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10.1 | 9.2 | 9.4 | 9.1 |
| Visc @ 100°C | cSt | ASTM D445 | 15.7 | 14.7 | 14.1 | 14.7 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LEC0045798 **Received** : 16 Jan 2024
Lab Number : 06060812 **Diagnosed** : 17 Jan 2024
Unique Number : 10832194 **Diagnostician** : Jonathan Hester
Test Package : CONST (Additional Tests: 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)

HALL DRILLING LLC
 PO BOX 249
 ELLENBORO, WV
 US 26346

Contact: CHRIS PETROVICH
 chrispetrovich@halldrilling.com

T: (304)869-3404
 F: (304)869-3408