



WEAR CHECK

OIL ANALYSIS REPORT

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

Area

RTS
Machine Id
[RTS] 896

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 15W40 (24 QTS)

RECOMMENDATION

Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | WC0901471 | WC0901477 | WC0843742 |
| Sample Date | | Client Info | | 15 Apr 2024 | 07 Feb 2024 | 04 Dec 2023 |
| Machine Age | mls | Client Info | | 342304 | 331873 | 321480 |
| Oil Age | mls | Client Info | | 10431 | 12000 | 10831 |
| Filter Age | mls | Client Info | | 10431 | 12000 | 10831 |
| 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 | >75 | 15 | 15 | 19 |
| Chromium | ppm | ASTM D5185m | >5 | <1 | 1 | 1 |
| Nickel | ppm | ASTM D5185m | >4 | 0 | <1 | <1 |
| Titanium | ppm | ASTM D5185m | >2 | 0 | <1 | <1 |
| Silver | ppm | ASTM D5185m | >2 | 0 | <1 | 0 |
| Aluminum | ppm | ASTM D5185m | >15 | 2 | 1 | 2 |
| Lead | ppm | ASTM D5185m | >25 | 0 | 1 | <1 |
| Copper | ppm | ASTM D5185m | >100 | <1 | <1 | <1 |
| Tin | ppm | ASTM D5185m | >4 | 0 | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | <1 | <1 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

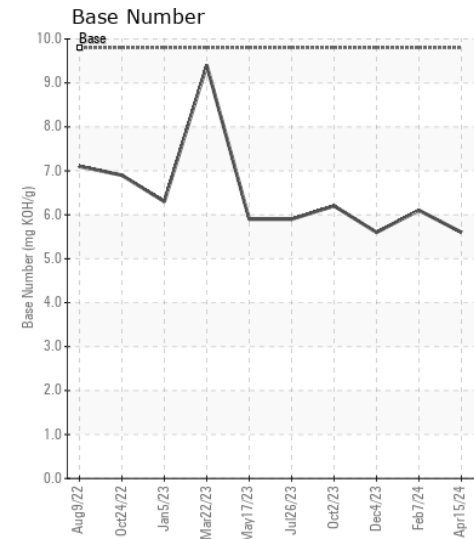
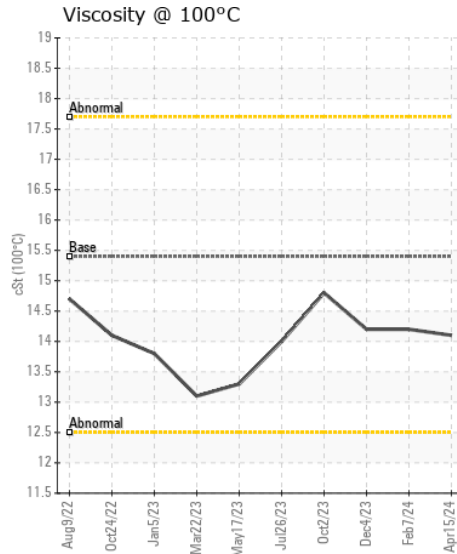
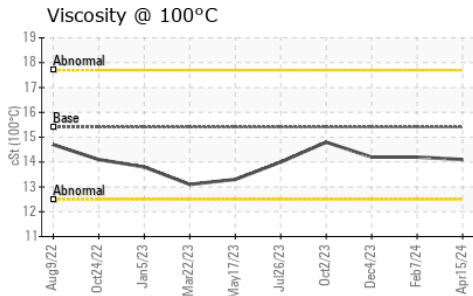
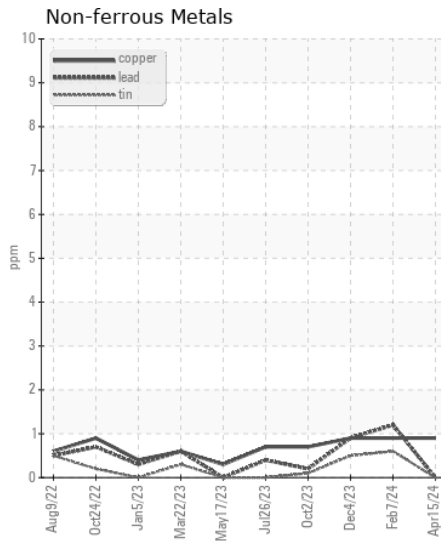
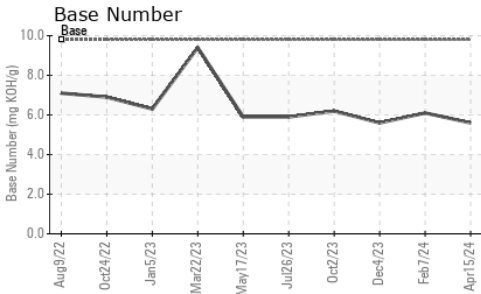
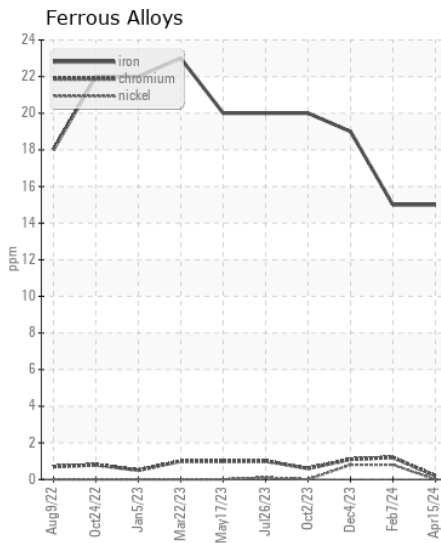
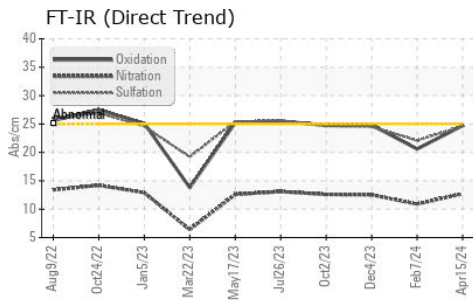
There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >25 | 3 | 4 | 5 |
| Potassium | ppm | ASTM D5185m | >20 | 2 | 3 | 5 |
| Fuel | | WC Method | >3.0 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >6 | 0.3 | 0.4 | 0.3 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 12.7 | 10.9 | 12.5 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 24.6 | 22.1 | 24.5 |
| 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 | | 6 | 4 | 7 |
| Boron | ppm | ASTM D5185m | 0 | 3 | 3 | 3 |
| Barium | ppm | ASTM D5185m | 0 | 0 | 0 | 12 |
| Molybdenum | ppm | ASTM D5185m | 60 | 64 | 63 | 65 |
| Manganese | ppm | ASTM D5185m | 0 | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 1010 | 1037 | 1001 | 1003 |
| Calcium | ppm | ASTM D5185m | 1070 | 1116 | 1115 | 1091 |
| Phosphorus | ppm | ASTM D5185m | 1150 | 1055 | 1022 | 1022 |
| Zinc | ppm | ASTM D5185m | 1270 | 1331 | 1253 | 1300 |
| Sulfur | ppm | ASTM D5185m | 2060 | 3313 | 3443 | 2948 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 24.7 | 20.6 | 24.8 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | 5.6 | 6.1 | 5.6 |
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 14.1 | 14.2 | 14.2 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0901471
Lab Number : 06158384
Unique Number : 10993807
Test Package : FLEET

HUMBOLDT TRANSIT AUTHORITY
 133 V ST
 EUREKA, CA
 US 95501
 Contact: KELLY MASTERSON
 kelly@hta.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)