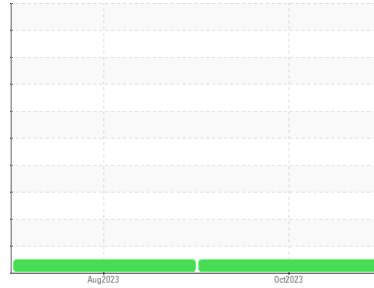


OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id
ST4704

Component
Diesel Engine

Fluid
PETRO CANADA DURON UHP 5W40 (--- LTR)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

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 | | | PC0080937 | PC0077043 | --- |
| Sample Date | Client Info | | | 25 Oct 2023 | 04 Aug 2023 | --- |
| Machine Age | hrs | Client Info | | 0 | 3580 | --- |
| Oil Age | hrs | Client Info | | 0 | 500 | --- |
| Oil Changed | Client Info | | | N/A | Changed | --- |
| Sample Status | | | | NORMAL | NORMAL | --- |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---------------|-----------|--------|------------|----------------|----------|----------|
| Fuel | WC Method | >5 | | <1.0 | <1.0 | --- |
| Glycol | WC Method | | | NEG | NEG | --- |

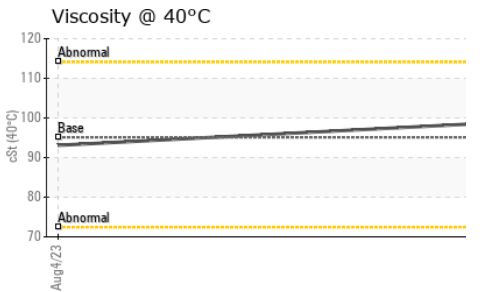
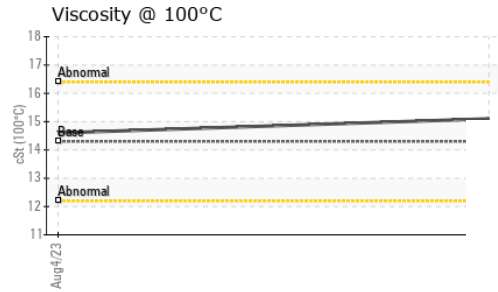
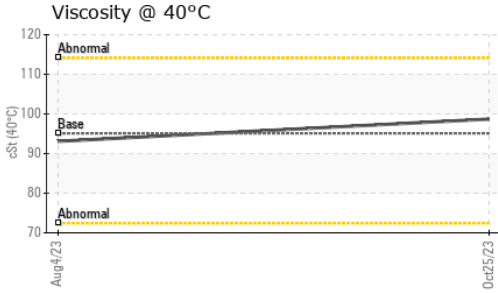
| WEAR METALS | | method | limit/base | current | history1 | history2 |
|-------------|-----|---------------|------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185(m) | >100 | 17 | 14 | --- |
| Chromium | ppm | ASTM D5185(m) | >20 | 6 | 5 | --- |
| Nickel | ppm | ASTM D5185(m) | >4 | 0 | 0 | --- |
| Titanium | ppm | ASTM D5185(m) | | 0 | <1 | --- |
| Silver | ppm | ASTM D5185(m) | >3 | <1 | 0 | --- |
| Aluminum | ppm | ASTM D5185(m) | >20 | 2 | 3 | --- |
| Lead | ppm | ASTM D5185(m) | >40 | 0 | 0 | --- |
| Copper | ppm | ASTM D5185(m) | >330 | <1 | <1 | --- |
| Tin | ppm | ASTM D5185(m) | >15 | 0 | 0 | --- |
| Antimony | ppm | ASTM D5185(m) | | 0 | 0 | --- |
| Vanadium | ppm | ASTM D5185(m) | | 0 | 0 | --- |
| Beryllium | ppm | ASTM D5185(m) | | 0 | 0 | --- |
| Cadmium | ppm | ASTM D5185(m) | | 0 | 0 | --- |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|------------|-----|---------------|------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185(m) | 65 | 32 | 29 | --- |
| Barium | ppm | ASTM D5185(m) | 0 | <1 | <1 | --- |
| Molybdenum | ppm | ASTM D5185(m) | 65 | 60 | 58 | --- |
| Manganese | ppm | ASTM D5185(m) | 0 | 0 | <1 | --- |
| Magnesium | ppm | ASTM D5185(m) | 1160 | 1099 | 1112 | --- |
| Calcium | ppm | ASTM D5185(m) | 820 | 858 | 852 | --- |
| Phosphorus | ppm | ASTM D5185(m) | 1160 | 970 | 1018 | --- |
| Zinc | ppm | ASTM D5185(m) | 1260 | 1201 | 1189 | --- |
| Sulfur | ppm | ASTM D5185(m) | 3000 | 2648 | 2676 | --- |
| Lithium | ppm | ASTM D5185(m) | | <1 | <1 | --- |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|--------------|-----|---------------|------------|-----------|----------|----------|
| Silicon | ppm | ASTM D5185(m) | >25 | 10 | 11 | --- |
| Sodium | ppm | ASTM D5185(m) | | 5 | 5 | --- |
| Potassium | ppm | ASTM D5185(m) | >20 | 0 | <1 | --- |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|-----------|----------|-------------|------------|-------------|----------|----------|
| Soot % | % | ASTM D7844* | >3 | 0 | 0 | --- |
| Nitration | Abs/cm | ASTM D7624* | >20 | 12.7 | 11.5 | --- |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | 22.9 | 22.4 | --- |

OIL ANALYSIS REPORT

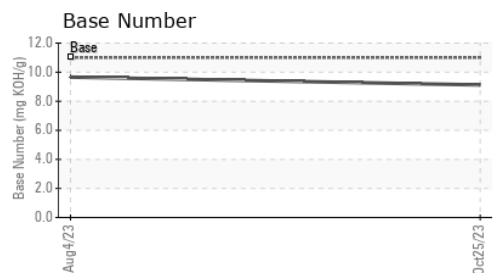
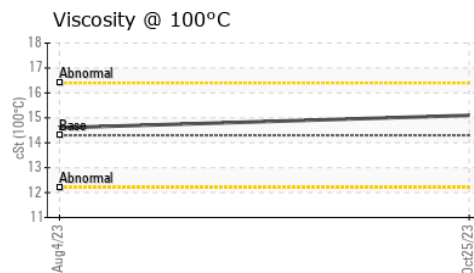
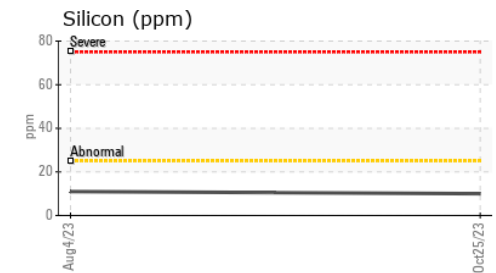
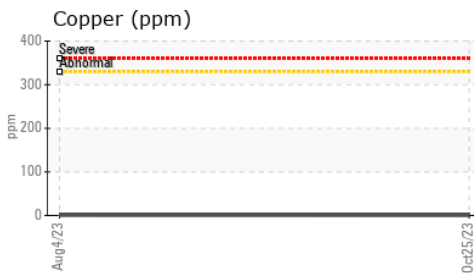
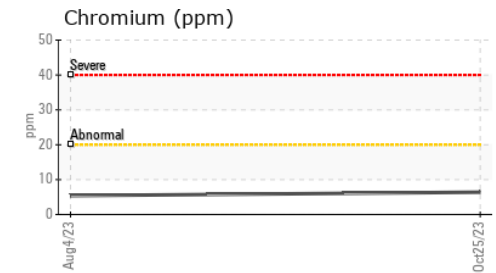
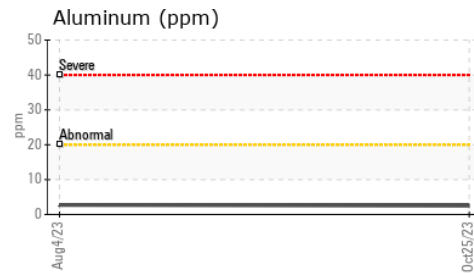
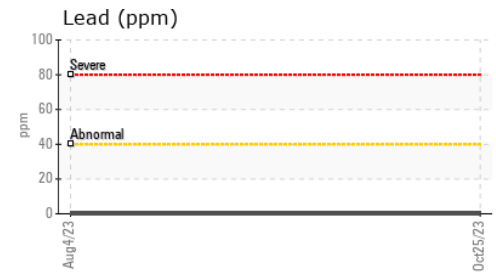
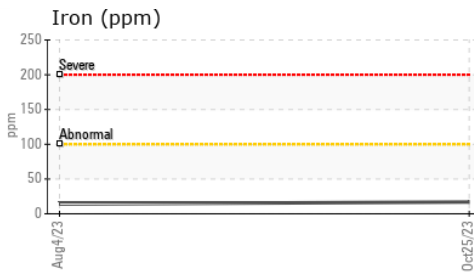


| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|-------------------|----------|-------------|------------|-------------|----------|----------|
| Oxidation | Abs./1mm | ASTM D7414* | >25 | 27.0 | 23.0 | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896* | 11.0 | 9.12 | 9.66 | --- |

| VISUAL | | method | limit/base | current | history1 | history2 |
|------------------|--------|---------|------------|------------|----------|----------|
| Emulsified Water | scalar | Visual* | >0.2 | NEG | NEG | --- |
| Free Water | scalar | Visual* | | NEG | NEG | --- |

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|----------------------|-------|---------------|------------|-------------|----------|----------|
| Visc @ 40°C | cSt | ASTM D7279(m) | 95.1 | 98.7 | 93.1 | --- |
| Visc @ 100°C | cSt | ASTM D7279(m) | 14.3 | 15.1 | 14.6 | --- |
| Viscosity Index (VI) | Scale | ASTM D2270* | 169 | 160 | 163 | --- |

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 Green Infrastructure and Partners Inc (GIPI) - 286 - Shoring & Foundations
Sample No. : PC0080937 **Received** : 26 Oct 2023 151 Ram Forest Rd, Stouffville, ON CA L4A 2G8
Lab Number : **02592013** **Diagnosed** : 30 Oct 2023 Contact: Shannon Abbott sabbott@gipi.com
Unique Number : 5669092 **Diagnostician** : Kevin Marson T: (905)750-5900
Test Package : MOB 2 (Additional Tests: KV40, VI)

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.