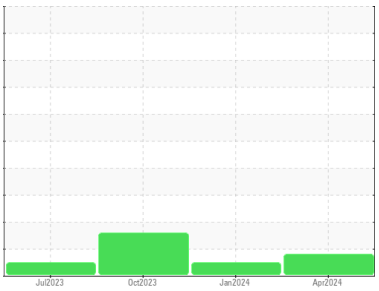
# OIL ANALYSIS REPORT

Sample Rating Trend




ISO

Machine Id
## L-20 STUFFING (S/N B72190)
Component
**Hydraulic System**
Fluid
**PETRO CANADA HYDREX AW 46 (60 GAL)**

## DIAGNOSIS

**Recommendation**
We recommend you service the filters on this component. Resample at the next service interval to monitor.

**Wear**
All component wear rates are normal.

**Contamination**
There is a light amount of silt (particulates < 14 microns in size) present in the oil. The water content is negligible.

**Fluid Condition**
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC0914012** | WC0887313 | WC0857742 |
| Sample Date | | Client Info | | **02 Apr 2024** | 02 Jan 2024 | 05 Oct 2023 |
| Machine Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **ATTENTION** | NORMAL | ABNORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >20 | **22** | 25 | 3 |
| Chromium | ppm | ASTM D5185m | >20 | **0** | <1 | 0 |
| Nickel | ppm | ASTM D5185m | >20 | **0** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Silver | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | **0** | 2 | 0 |
| Lead | ppm | ASTM D5185m | >20 | **<1** | 0 | 0 |
| Copper | ppm | ASTM D5185m | >20 | **<1** | <1 | <1 |
| Tin | ppm | ASTM D5185m | >20 | **<1** | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 0 | **0** | 0 | 0 |
| Barium | ppm | ASTM D5185m | 0 | **0** | 0 | <1 |
| Molybdenum | ppm | ASTM D5185m | 0 | **0** | <1 | 0 |
| Manganese | ppm | ASTM D5185m | 0 | **<1** | 0 | <1 |
| Magnesium | ppm | ASTM D5185m | 0 | **0** | 0 | 1 |
| Calcium | ppm | ASTM D5185m | 50 | **0** | <1 | 2 |
| Phosphorus | ppm | ASTM D5185m | 330 | **471** | 446 | 448 |
| Zinc | ppm | ASTM D5185m | 430 | **2** | 0 | 13 |
| Sulfur | ppm | ASTM D5185m | 760 | **586** | 470 | 503 |

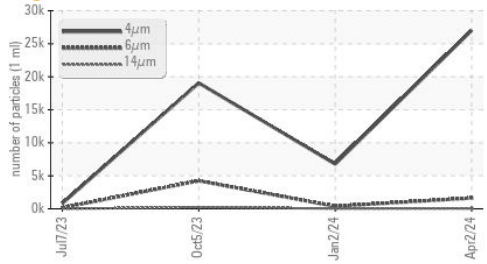
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >15 | **4** | 7 | 4 |
| Sodium | ppm | ASTM D5185m | | **3** | 0 | 2 |
| Potassium | ppm | ASTM D5185m | >20 | **2** | 1 | 0 |
| Water | % | ASTM D6304 | >0.05 | **0.003** | 0.022 | 0.009 |
| ppm Water | ppm | ASTM D6304 | >500 | **26** | 220 | 94.6 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | | **27004** | 6773 | 19051 |
| Particles >6µm | | ASTM D7647 | >1300 | **1629** | 383 | ▲ 4239 |
| Particles >14µm | | ASTM D7647 | >160 | **45** | 35 | ▲ 210 |
| Particles >21µm | | ASTM D7647 | >40 | **11** | 12 | ▲ 47 |
| Particles >38µm | | ASTM D7647 | >10 | **2** | 1 | 2 |
| Particles >71µm | | ASTM D7647 | >3 | **1** | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >--/17/14 | **22/18/13** | 20/16/12 | ▲ 21/19/15 |

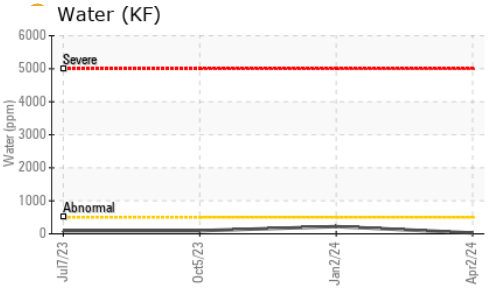
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.70 | **0.18** | 0.19 | 0.24 |

# OIL ANALYSIS REPORT

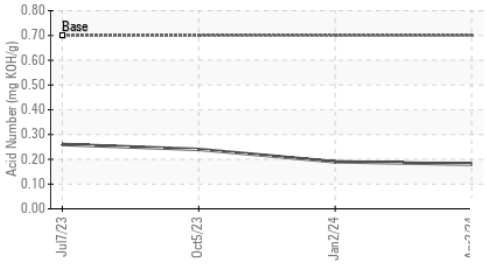
Particle Trend



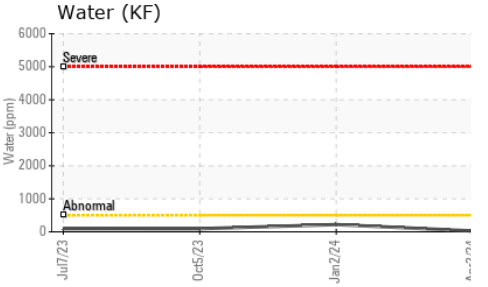

Water (KF)



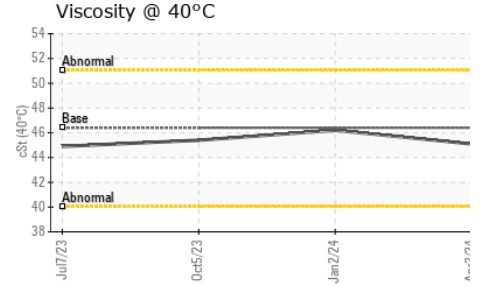

Acid Number




Water (KF)

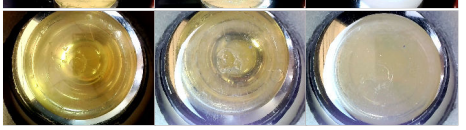



Viscosity @ 40°C



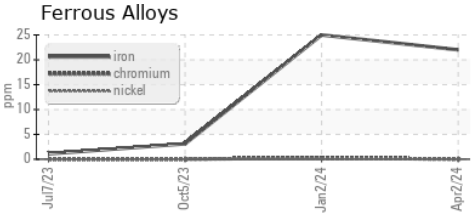

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| 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 | >0.05 | **NEG** | 0.2% | NEG |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 46.4 | **45.1** | 46.2 | 45.4 |

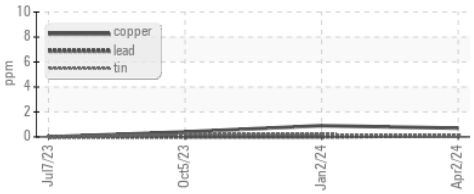
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  | | |
| Bottom | | |  | | |

## GRAPHS

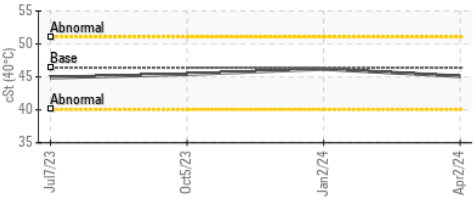
Ferrous Alloys



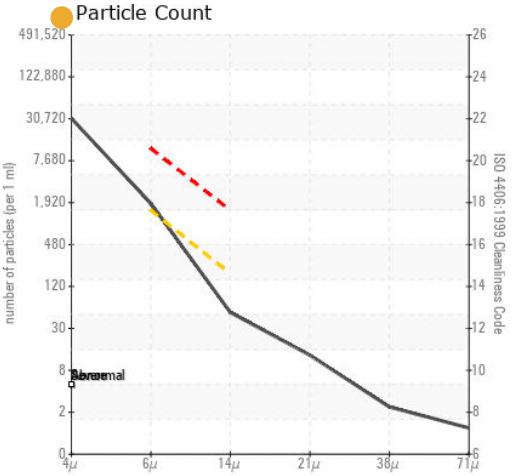

Non-ferrous Metals



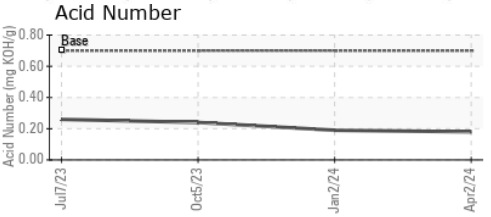

Viscosity @ 40°C




Particle Count




Acid Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0914012 **Received** : 19 Apr 2024
**Lab Number** : 06154341 **Tested** : 22 Apr 2024
**Unique Number** : 10989764 **Diagnosed** : 23 Apr 2024 - Wes Davis
**Test Package** : IND 2 ( Additional Tests: KF )

*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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