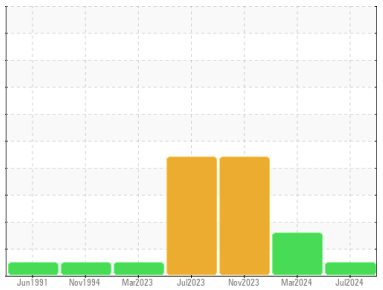
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Area
## OLD P3 Line
Machine Id
## P3 Runnout Table
Component
**Hydraulic System**
Fluid
**PETRO CANADA HARMONY AW 46 (30 GAL)**

## DIAGNOSIS

**Recommendation**
Resample at the next service interval to monitor.

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

**Contamination**
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

**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 | | **WC0943192** | WC0921566 | WC |
| Sample Date | | Client Info | | **03 Jul 2024** | 27 Mar 2024 | 06 Nov 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 | | | | **NORMAL** | ABNORMAL | SEVERE |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Water | | WC Method | >0.05 | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185(m) | >20 | **<1** | 0 | <1 |
| Chromium | ppm | ASTM D5185(m) | >20 | **0** | 0 | 0 |
| Nickel | ppm | ASTM D5185(m) | >20 | **<1** | 0 | <1 |
| Titanium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >20 | **<1** | 0 | <1 |
| Lead | ppm | ASTM D5185(m) | >20 | **0** | 0 | <1 |
| Copper | ppm | ASTM D5185(m) | >20 | **2** | 2 | 6 |
| Tin | ppm | ASTM D5185(m) | >20 | **0** | 0 | 0 |
| Antimony | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Vanadium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Beryllium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |

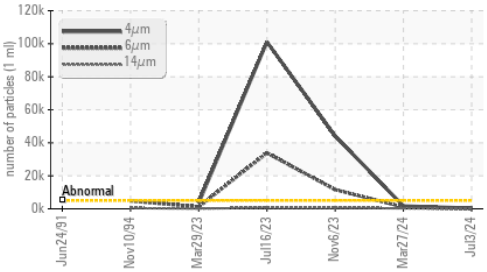
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185(m) | | **3** | 3 | <1 |
| Barium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | | **<1** | 0 | 0 |
| Manganese | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Magnesium | ppm | ASTM D5185(m) | 110 | **8** | 8 | 2 |
| Calcium | ppm | ASTM D5185(m) | 60 | **71** | 74 | 45 |
| Phosphorus | ppm | ASTM D5185(m) | 330 | **344** | 349 | 313 |
| Zinc | ppm | ASTM D5185(m) | 390 | **440** | 442 | 370 |
| Sulfur | ppm | ASTM D5185(m) | 660 | **813** | 812 | 832 |
| Lithium | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >15 | **0** | 0 | 0 |
| Sodium | ppm | ASTM D5185(m) | | **0** | 0 | <1 |
| Potassium | ppm | ASTM D5185(m) | >20 | **0** | <1 | <1 |

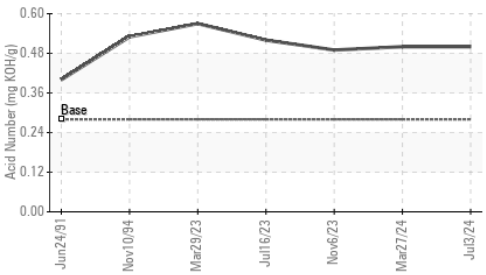
| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >5000 | **399** | 1740 | ▲ 44112 |
| Particles >6µm | | ASTM D7647 | >1300 | **55** | 1023 | ▲ 11602 |
| Particles >14µm | | ASTM D7647 | >160 | **5** | ● 279 | ▲ 524 |
| Particles >21µm | | ASTM D7647 | >40 | **2** | ▲ 121 | ▲ 115 |
| Particles >38µm | | ASTM D7647 | >10 | **1** | ● 16 | 12 |
| Particles >71µm | | ASTM D7647 | >3 | **0** | 1 | 2 |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | **16/13/10** | ● 18/17/15 | ▲ 23/21/16 |

# OIL ANALYSIS REPORT

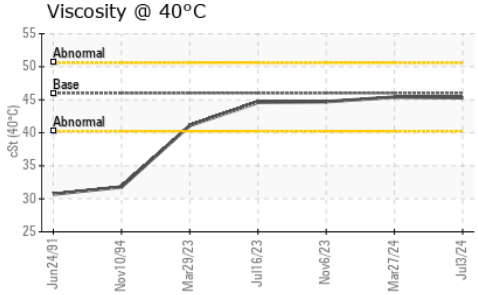
Particle Trend



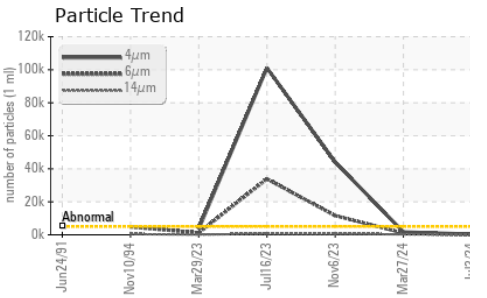

Acid Number




Viscosity @ 40°C




Particle Trend

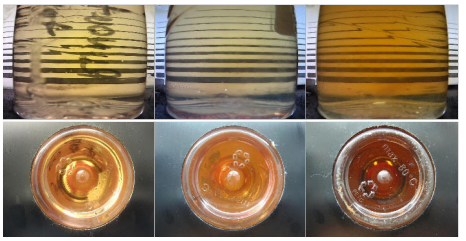



| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D974* | 0.28 | **0.50** | 0.50 | 0.49 |

| 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 | VLITE |
| Sand/Dirt | scalar | Visual* | NONE | **NONE** | VLITE | NONE |
| Appearance | scalar | Visual* | NORML | **NORML** | NORML | NORML |
| Odor | scalar | Visual* | NORML | **NORML** | NORML | NORML |
| Emulsified Water | scalar | Visual* | >0.05 | **NEG** | NEG | NEG |
| Free Water | scalar | Visual* | | **NEG** | NEG | NEG |

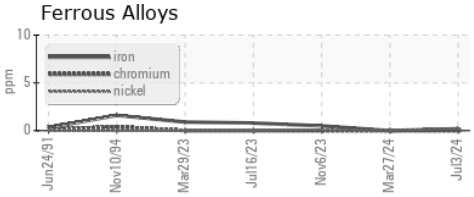
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D7279(m) | 46.0 | **45.3** | 45.4 | 44.7 |

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

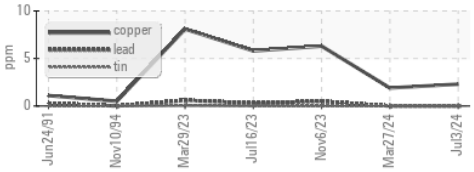


## GRAPHS

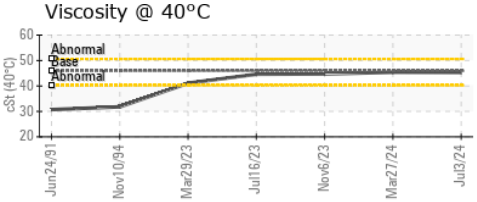
Ferrous Alloys



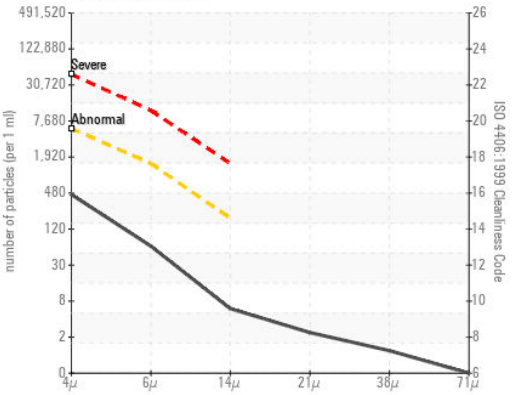

Non-ferrous Metals



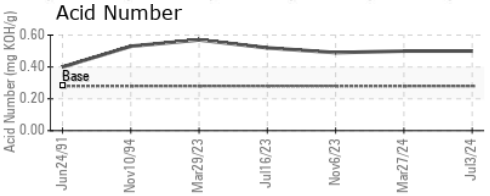

Viscosity @ 40°C




Particle Count




Acid Number




ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
**Sample No.** : WC0943192
**Lab Number** : 02646249
**Unique Number** : 5811801
**Test Package** : IND 2

**Received** : 08 Jul 2024
**Tested** : 09 Jul 2024
**Diagnosed** : 09 Jul 2024 - Wes Davis

*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.*


**Hydro Extrusion North**
5675 Kennedy Road
Mississauga, ON
CA L4Z 2H9
Contact: Harsh Murria
Harsh.murria@hydro.com
T: (819)462-0479
F: (866)462-6478