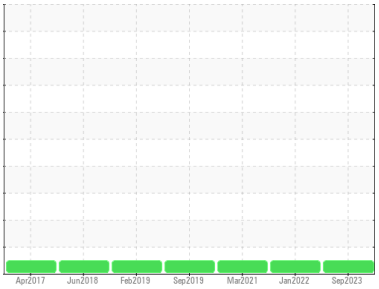
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Area
**G.LOPES CONSTRUCTION INC./Off-Road**
Machine Id
**E28**
Component
**Hydraulic System**
Fluid
**PETRO CANADA DURATRAN (--- GAL)**

## 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. The amount and size of particulates present in the system are 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 | | **PCA0104746** | PCA0059485 | PCA0041330 |
| Sample Date | | Client Info | | **20 Sep 2023** | 04 Jan 2022 | 02 Mar 2021 |
| Machine Age | hrs | Client Info | | **6809** | 5996 | 5318 |
| Oil Age | hrs | Client Info | | **5561** | 678 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | Changed |
| Sample Status | | | | **NORMAL** | NORMAL | NORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >20 | **13** | 17 | 17 |
| Chromium | ppm | ASTM D5185m | >10 | **0** | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >10 | **0** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | **0** | <1 | <1 |
| Silver | ppm | ASTM D5185m | | **0** | <1 | <1 |
| Aluminum | ppm | ASTM D5185m | >10 | **1** | 1 | 0 |
| Lead | ppm | ASTM D5185m | >10 | **<1** | 2 | 2 |
| Copper | ppm | ASTM D5185m | >75 | **3** | 6 | 6 |
| Tin | ppm | ASTM D5185m | >10 | **0** | 0 | 0 |
| Antimony | ppm | ASTM D5185m | | **---** | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | <1 | <1 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 110 | **38** | 14 | 19 |
| Barium | ppm | ASTM D5185m | 0.0 | **0** | 0 | <1 |
| Molybdenum | ppm | ASTM D5185m | 0.0 | **3** | 2 | 2 |
| Manganese | ppm | ASTM D5185m | 1 | **0** | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 13 | **51** | 19 | 20 |
| Calcium | ppm | ASTM D5185m | 3610 | **1925** | 790 | 755 |
| Phosphorus | ppm | ASTM D5185m | 1192 | **894** | 682 | 754 |
| Zinc | ppm | ASTM D5185m | 1455 | **1187** | 950 | 971 |
| Sulfur | ppm | ASTM D5185m | 2641 | **3887** | 2765 | 2485 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >20 | **4** | 3 | 3 |
| Sodium | ppm | ASTM D5185m | | **4** | 4 | 1 |
| Potassium | ppm | ASTM D5185m | >20 | **2** | 0 | <1 |

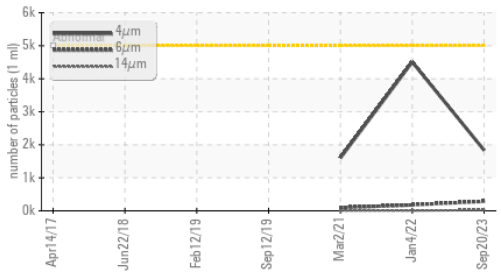
| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >5000 | **1837** | 4505 | 1601 |
| Particles >6µm | | ASTM D7647 | >1300 | **287** | 178 | 96 |
| Particles >14µm | | ASTM D7647 | >160 | **23** | 9 | 4 |
| Particles >21µm | | ASTM D7647 | >40 | **6** | 1 | 1 |
| Particles >38µm | | ASTM D7647 | >10 | **0** | 0 | 0 |
| Particles >71µm | | ASTM D7647 | >3 | **0** | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | **18/15/12** | 19/15/10 | 18/14/9 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 1.6 | **0.95** | 0.652 | 0.264 |

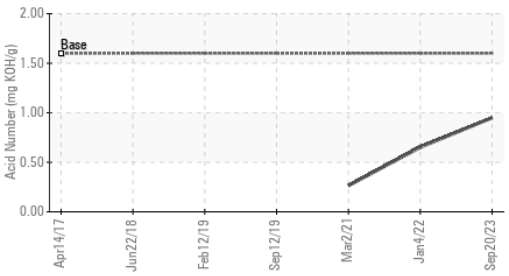
# OIL ANALYSIS REPORT

OIL DIAGNOSTICS

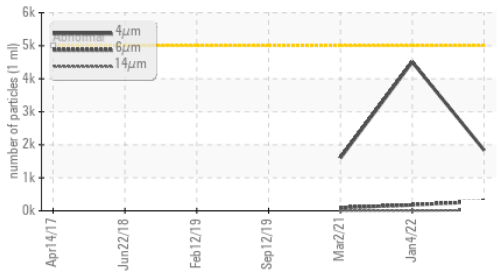
Particle Trend



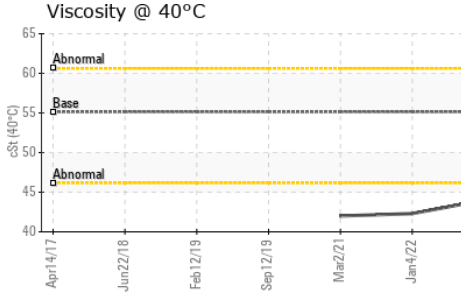

Acid Number




Particle Trend

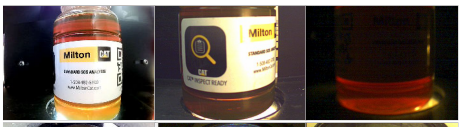
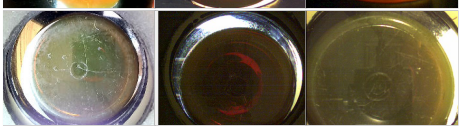



Viscosity @ 40°C



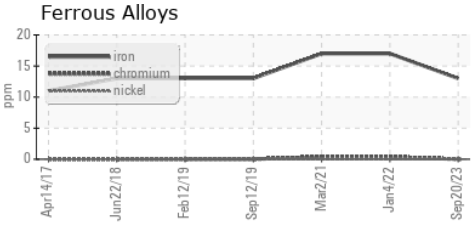

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| 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 | >0.1 | **NEG** | NEG | NEG |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 55.14 | **44.0** | 42.3 | 42.0 |

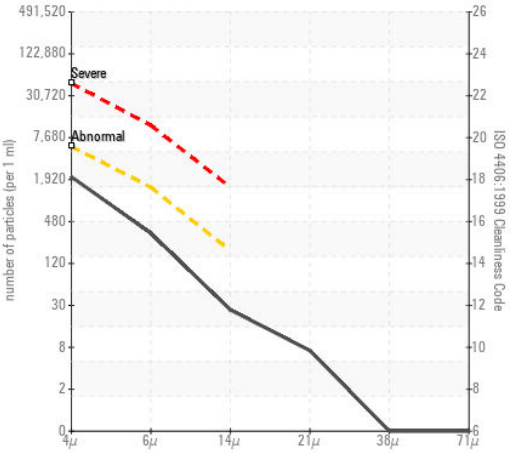
| SAMPLE IMAGES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Color | | | |  | | |
| Bottom | | | |  | | |

## GRAPHS

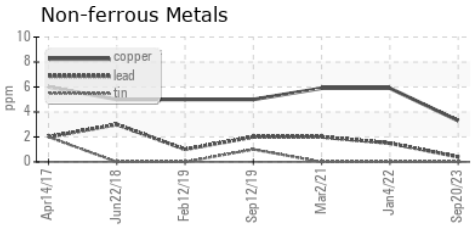
Ferrous Alloys



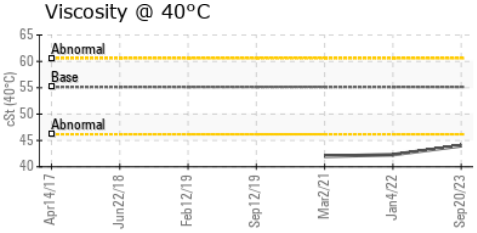

Particle Count



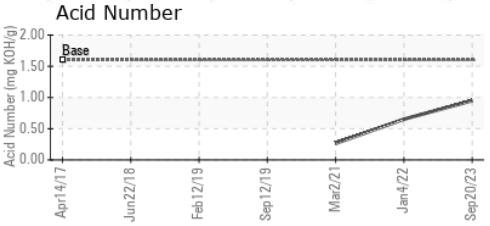

Non-ferrous Metals




Viscosity @ 40°C




Acid Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : PCA0104746
**Lab Number** : 05958603
**Unique Number** : 10659816
**Test Package** : MOB 2

**Received** : 22 Sep 2023
**Diagnosed** : 24 Sep 2023
**Diagnostician** : Doug Bogart

*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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Report Id: GLOTAU [WUSCAR] 05958603 (Generated: 09/30/2023 08:22:31) Rev: 1

Submitted By: MATT MANOLI