



PROBLEM SUMMARY

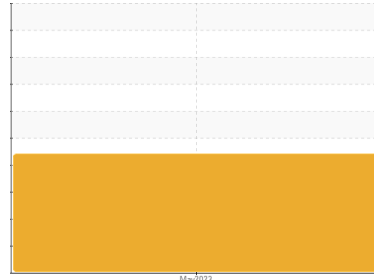
Sample Rating Trend

ISO



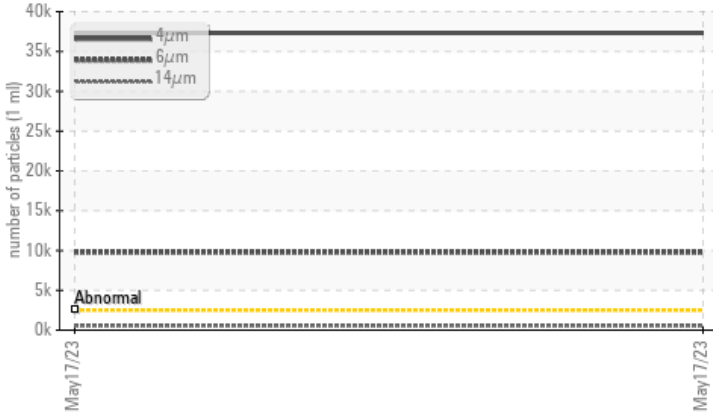
Area
CAMPBELLFORD PLANT
Machine Id
G3 BULKHEAD

Component
Turbine
Fluid
PETRO CANADA PURITY FG EP GEAR OIL 100 (40 LTR)



COMPONENT CONDITION SUMMARY

Particle Trend



RECOMMENDATION

We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Resample in 30-45 days to monitor this situation.

PROBLEMATIC TEST RESULTS

| Sample Status | | | SEVERE | --- | --- |
|-----------------|--------------|-----------|------------|-----|-----|
| Particles >4µm | ASTM D7647 | >2500 | 🔴 37330 | --- | --- |
| Particles >6µm | ASTM D7647 | >640 | 🔴 9784 | --- | --- |
| Particles >14µm | ASTM D7647 | >80 | 🟡 546 | --- | --- |
| Particles >21µm | ASTM D7647 | >20 | 🟡 126 | --- | --- |
| Oil Cleanliness | ISO 4406 (c) | >18/16/13 | 🔴 22/20/16 | --- | --- |

Customer Id: PET412PET
Sample No.: WC0774043
Lab Number: 02560147
Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
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Kevin.Marson@wearcheck.com

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gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

| Action | Status | Date | Done By | Description |
|-------------------|--------|------|---------|--|
| Change Filter | --- | --- | ? | We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. |
| Resample | --- | --- | ? | Resample in 30-45 days to monitor this situation. |
| Check Breathers | --- | --- | ? | The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. |
| Check Dirt Access | --- | --- | ? | We advise that you check all areas where contaminants can enter the system. |
| Filter Fluid | --- | --- | ? | We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. |

HISTORICAL DIAGNOSIS



OIL ANALYSIS REPORT

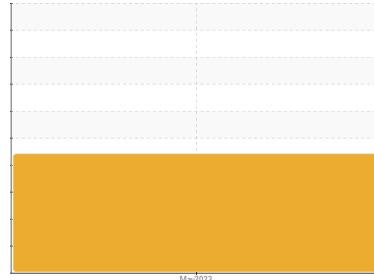
Sample Rating Trend

ISO



Area
CAMPBELLFORD PLANT
Machine Id
G3 BULKHEAD

Component
Turbine
Fluid
PETRO CANADA PURITY FG EP GEAR OIL 100 (40 LTR)



DIAGNOSIS

Recommendation

We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Resample in 30-45 days to monitor this situation.

Wear

All component wear rates are normal.

Contamination

There is a high amount of particulates (2 to 100 microns in size) present in the oil. The water content is negligible.

Fluid Condition

The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

SAMPLE INFORMATION

| | method | limit/base | current | history 1 | history 2 |
|---------------|-------------|-------------|--------------------|-----------|-----------|
| Sample Number | Client Info | | WC0774043 | --- | --- |
| Sample Date | Client Info | | 17 May 2023 | --- | --- |
| Machine Age | yrs | Client Info | 60 | --- | --- |
| Oil Age | yrs | Client Info | 2 | --- | --- |
| Oil Changed | Client Info | | Not Chngd | --- | --- |
| Sample Status | | | SEVERE | --- | --- |

WEAR METALS

| | method | limit/base | current | history 1 | history 2 |
|-----------|--------|-------------------|--------------|-----------|-----------|
| Iron | ppm | ASTM D5185(m) >15 | 7 | --- | --- |
| Chromium | ppm | ASTM D5185(m) >4 | 0 | --- | --- |
| Nickel | ppm | ASTM D5185(m) >2 | 0 | --- | --- |
| Titanium | ppm | ASTM D5185(m) | 0 | --- | --- |
| Silver | ppm | ASTM D5185(m) | 0 | --- | --- |
| Aluminum | ppm | ASTM D5185(m) >10 | <1 | --- | --- |
| Lead | ppm | ASTM D5185(m) | 6 | --- | --- |
| Copper | ppm | ASTM D5185(m) >5 | 2 | --- | --- |
| Tin | ppm | ASTM D5185(m) >5 | 1 | --- | --- |
| Antimony | ppm | ASTM D5185(m) | <1 | --- | --- |
| Vanadium | ppm | ASTM D5185(m) | 0 | --- | --- |
| Beryllium | ppm | ASTM D5185(m) | 0 | --- | --- |
| Cadmium | ppm | ASTM D5185(m) | 0 | --- | --- |

ADDITIVES

| | method | limit/base | current | history 1 | history 2 |
|------------|--------|-------------------|--------------|-----------|-----------|
| Boron | ppm | ASTM D5185(m) | 0 | --- | --- |
| Barium | ppm | ASTM D5185(m) | 0 | --- | --- |
| Molybdenum | ppm | ASTM D5185(m) | 0 | --- | --- |
| Manganese | ppm | ASTM D5185(m) | <1 | --- | --- |
| Magnesium | ppm | ASTM D5185(m) | 0 | --- | --- |
| Calcium | ppm | ASTM D5185(m) | 0 | --- | --- |
| Phosphorus | ppm | ASTM D5185(m) 135 | 135 | --- | --- |
| Zinc | ppm | ASTM D5185(m) | 11 | --- | --- |
| Sulfur | ppm | ASTM D5185(m) 660 | 643 | --- | --- |
| Lithium | ppm | ASTM D5185(m) | <1 | --- | --- |

CONTAMINANTS

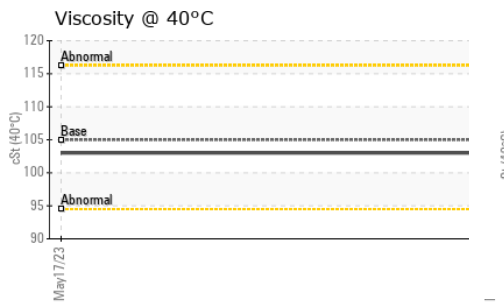
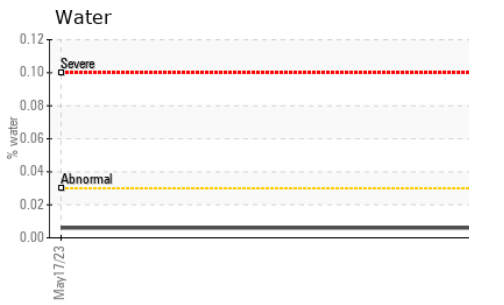
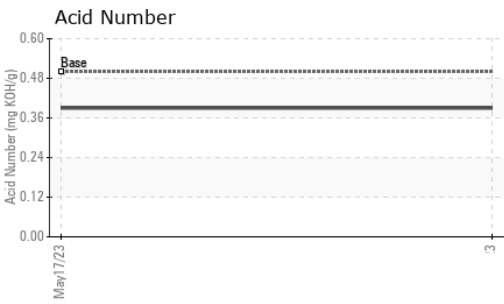
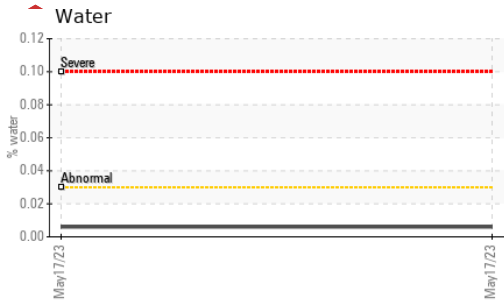
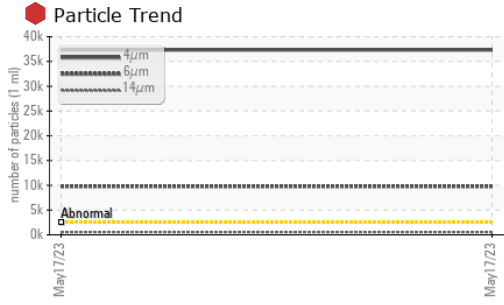
| | method | limit/base | current | history 1 | history 2 |
|-----------|--------|-------------------|--------------|-----------|-----------|
| Silicon | ppm | ASTM D5185(m) >15 | 0 | --- | --- |
| Sodium | ppm | ASTM D5185(m) | 0 | --- | --- |
| Potassium | ppm | ASTM D5185(m) >20 | 0 | --- | --- |
| Water | % | ASTM D6304* >0.03 | 0.006 | --- | --- |
| ppm Water | ppm | ASTM D6304* >300 | 60.9 | --- | --- |

FLUID CLEANLINESS

| | method | limit/base | current | history 1 | history 2 |
|-----------------|--------------|------------|-----------------|-----------|-----------|
| Particles >4µm | ASTM D7647 | >2500 | 37330 | --- | --- |
| Particles >6µm | ASTM D7647 | >640 | 9784 | --- | --- |
| Particles >14µm | ASTM D7647 | >80 | 546 | --- | --- |
| Particles >21µm | ASTM D7647 | >20 | 126 | --- | --- |
| Particles >38µm | ASTM D7647 | >4 | 3 | --- | --- |
| Particles >71µm | ASTM D7647 | >3 | 0 | --- | --- |
| Oil Cleanliness | ISO 4406 (c) | >18/16/13 | 22/20/16 | --- | --- |



OIL ANALYSIS REPORT



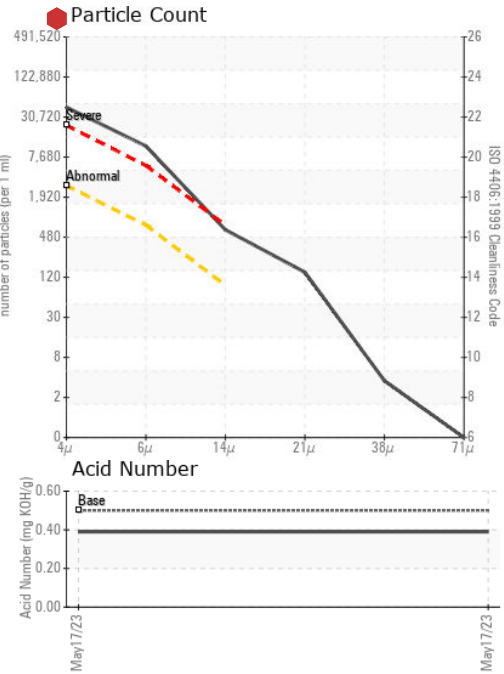
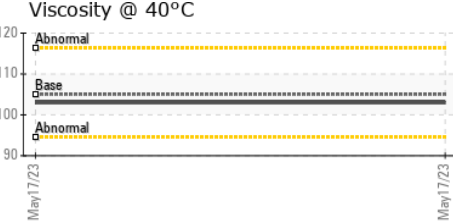
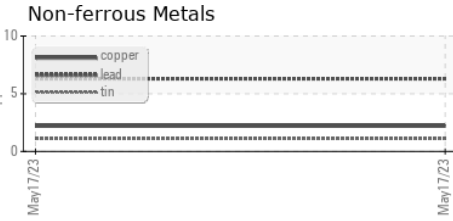
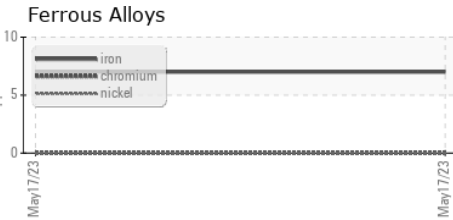
| FLUID DEGRADATION | | method | limit/base | current | history 1 | history 2 |
|-------------------|----------|------------|------------|-------------|-----------|-----------|
| Acid Number (AN) | mg KOH/g | ASTM D974* | 0.50 | 0.39 | --- | --- |

| VISUAL | | method | limit/base | current | history 1 | history 2 |
|------------------|--------|---------|------------|--------------|-----------|-----------|
| White Metal | scalar | Visual* | NONE | NONE | --- | --- |
| Yellow Metal | scalar | Visual* | NONE | NONE | --- | --- |
| Precipitate | scalar | Visual* | NONE | NONE | --- | --- |
| Silt | scalar | Visual* | NONE | NONE | --- | --- |
| Debris | scalar | Visual* | NONE | NONE | --- | --- |
| Sand/Dirt | scalar | Visual* | NONE | NONE | --- | --- |
| Appearance | scalar | Visual* | NORML | NORML | --- | --- |
| Odor | scalar | Visual* | NORML | NORML | --- | --- |
| Emulsified Water | scalar | Visual* | >0.03 | .2% | --- | --- |
| Free Water | scalar | Visual* | | NEG | --- | --- |

| FLUID PROPERTIES | | method | limit/base | current | history 1 | history 2 |
|------------------|-----|---------------|------------|------------|-----------|-----------|
| Visc @ 40°C | cSt | ASTM D7279(m) | 105.0 | 103 | --- | --- |

| SAMPLE IMAGES | | method | limit/base | current | history 1 | history 2 |
|---------------|--|--------|------------|---------|-----------|-----------|
| Color | | | | | no image | no image |
| Bottom | | | | | no image | no image |

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0774043
Lab Number : **02560147**
Unique Number : 5581187
Test Package : IND 2

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 F: (705)748-3138

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.