

Area

Fwd Machinery Space

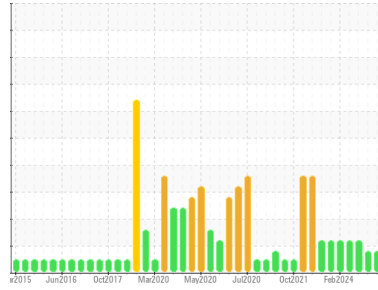
Machine Id
Pump Fire Water (Port) - Gearbox (S/N Sample Tag PA-71001A-S2)

Component

Gearbox

Fluid

PETRO CANADA PREMIUM R&O 220 (98 LTR)



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.

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 | | | PC | PC | PC0076357 |
| Sample Date | Client Info | | | 10 Apr 2024 | 26 Mar 2024 | 20 Mar 2024 |
| 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 | ABNORMAL | ATTENTION |

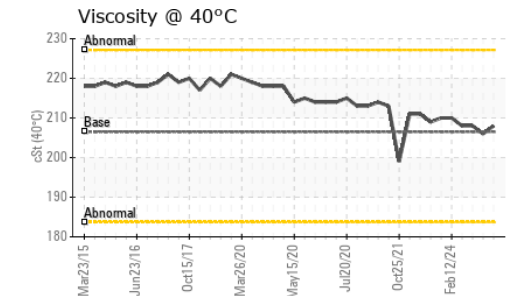
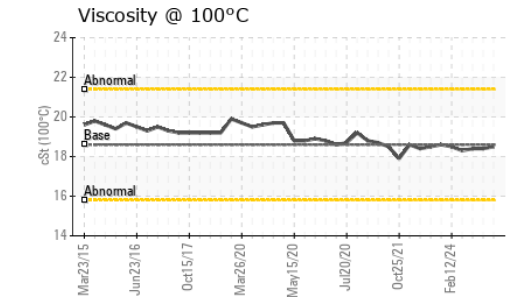
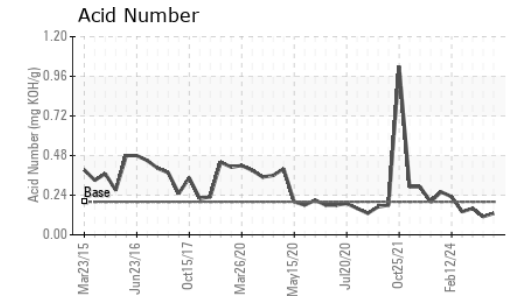
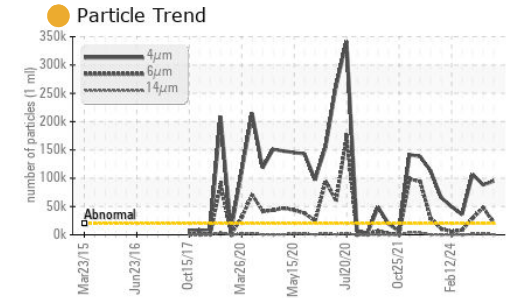
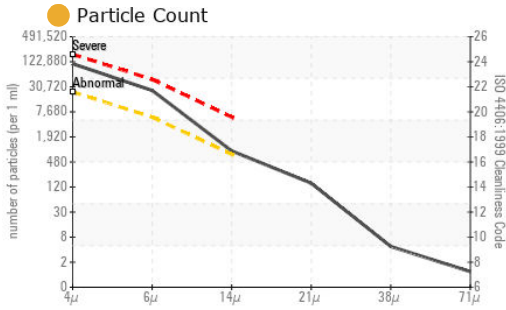
| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---------------|-----------|--------|------------|------------|----------|----------|
| Water | WC Method | | >0.2 | NEG | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|-------------|-----|---------------|------------|--------------|----------|----------|
| PQ | | ASTM D8184* | | 0 | 0 | 0 |
| Iron | ppm | ASTM D5185(m) | >150 | 3 | 2 | 1 |
| Chromium | ppm | ASTM D5185(m) | >10 | 0 | 0 | 0 |
| Nickel | ppm | ASTM D5185(m) | >10 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >5 | 0 | 0 | 0 |
| Lead | ppm | ASTM D5185(m) | >65 | 0 | 0 | 0 |
| Copper | ppm | ASTM D5185(m) | >80 | <1 | <1 | <1 |
| Tin | ppm | ASTM D5185(m) | >8 | 0 | 0 | 0 |
| Antimony | ppm | ASTM D5185(m) | >5 | 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) | | <1 | <1 | <1 |
| Barium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Manganese | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Magnesium | ppm | ASTM D5185(m) | 0 | <1 | 0 | <1 |
| Calcium | ppm | ASTM D5185(m) | | 3 | 3 | 3 |
| Phosphorus | ppm | ASTM D5185(m) | 0 | 15 | 14 | 14 |
| Zinc | ppm | ASTM D5185(m) | | 2 | 2 | 2 |
| Sulfur | ppm | ASTM D5185(m) | 500 | 1667 | 1605 | 1827 |
| Lithium | ppm | ASTM D5185(m) | | <1 | <1 | <1 |

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

OIL ANALYSIS REPORT



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC
Lab Number : 02631768
Unique Number : 5772921
Test Package : MAR 2 (Additional Tests: KV100, PQ, PrtCount, TAN Man, VI)

Received : 26 Apr 2024
Tested : 29 Apr 2024
Diagnosed : 29 Apr 2024 - Kevin Marson

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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.

| FLUID CLEANLINESS | method | limit/base | current | history1 | history2 |
|-------------------|--------------|------------|-----------------|------------|------------|
| Particles >4µm | ASTM D7647 | >20000 | 94886 | 88266 | 107053 |
| Particles >6µm | ASTM D7647 | >5000 | 21842 | 48060 | 28979 |
| Particles >14µm | ASTM D7647 | >640 | 776 | ▲ 1544 | ● 1211 |
| Particles >21µm | ASTM D7647 | >160 | 131 | 115 | ● 264 |
| Particles >38µm | ASTM D7647 | >40 | 4 | 5 | 20 |
| Particles >71µm | ASTM D7647 | >10 | 1 | 0 | 1 |
| Oil Cleanliness | ISO 4406 (c) | >21/19/16 | 24/22/17 | ▲ 24/23/18 | ● 24/22/17 |

| FLUID DEGRADATION | method | limit/base | current | history1 | history2 |
|-------------------|---------------------|------------|-------------|----------|----------|
| Acid Number (AN) | mg KOH/g ASTM D974* | 0.20 | 0.13 | 0.11 | 0.16 |

| 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 | VLITE | NONE |
| Sand/Dirt | scalar Visual* | NONE | NONE | NONE | VLITE |
| Appearance | scalar Visual* | NORML | NORML | NORML | NORML |
| Odor | scalar Visual* | NORML | NORML | NORML | NORML |
| Emulsified Water | scalar Visual* | >0.2 | 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) | 206.5 | 208 | 206 | 208 |
| Visc @ 100°C | cSt ASTM D7279(m) | 18.6 | 18.5 | 18.4 | 18.4 |
| Viscosity Index (VI) | Scale ASTM D2270* | 96 | 98 | 98 | 97 |

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

