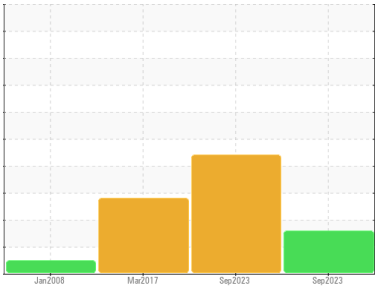
# PROBLEM SUMMARY

Sample Rating Trend

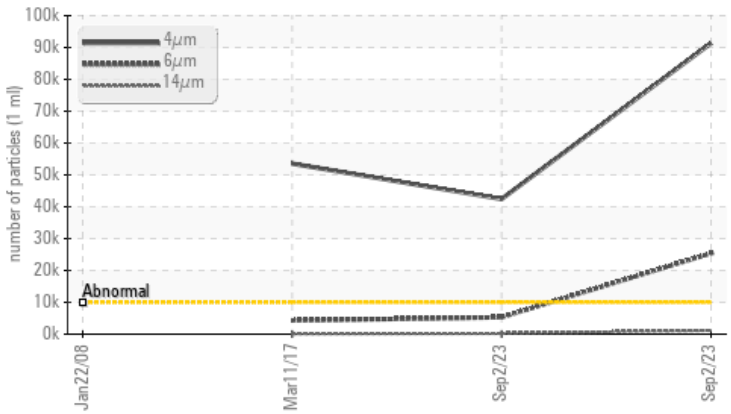



ISO

Area
**1420**
Machine Id
**1420-7311-4201 - MOTOR Sag mill1420-5512-4001 NDE**
Component
**Non-Drive End Journal Bearing**
Fluid
**PETRO CANADA TURBOFLO R&O 100 (10 LTR)**

## COMPONENT CONDITION SUMMARY

Particle Trend




## RECOMMENDATION

We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

## PROBLEMATIC TEST RESULTS

| Sample Status | | | | ABNORMAL | SEVERE | ABNORMAL |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >10000 | **42423** | 91355 | 53547 |
| Particles >6µm | | ASTM D7647 | >2500 | **5289** | 25367 | 4280 |
| Particles >14µm | | ASTM D7647 | >160 | **214** | 1156 | 123 |
| Oil Cleanliness | | ISO 4406 (c) | >20/18/14 | **23/20/15** | 24/22/17 | 23/19/14 |

**Customer Id:** INCVOS
**Sample No.:** PC0070124
**Lab Number:** 02582830
**Test Package:** IND 2

*To manage this report scan the QR code*

*To discuss the diagnosis or test data:*
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Bill.Quesnel@wearcheck.com

*To change component or sample information:*
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gloria.gonzalez@wearcheck.com

## RECOMMENDED ACTIONS

| Action | Status | Date | Done By | Description |
|---|---|---|---|---|
| Change Filter | --- | --- | ? | We recommend you service the filters on this component. |
| Resample | --- | --- | ? | We recommend an early resample to monitor this condition. |

## HISTORICAL DIAGNOSIS

**02 Sep 2023 Diag: Bill Quesnel**

ISO

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.All component wear rates are normal. There is a high amount of particulates (2 to 100 microns in size) present in the oil. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report

**11 Mar 2017 Diag: Bill Quesnel**

OFF SPEC

We recommend you service the filters on this component. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition. The fluid was specified as PETRO CANADA TURBOFLO R&O 100, however, a fluid match indicates that this fluid is ISO 68 R&O Hydraulic Oil. Please confirm the oil type and grade on your next sample.All component wear rates are normal. Particles >4µm are abnormally high. Oil Cleanliness is abnormal. Particles >6µm are notably high. Viscosity of sample indicates oil is within ISO 68 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report

**22 Jan 2008 Diag:**

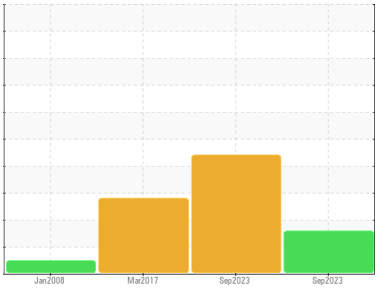
NORMAL

We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. Equipment filter micron rating specified is not adequate to achieve target cleanliness code. We recommend contacting the equipment manufacturer to verify filter rating and cleanliness specifications.All component wear rates are normal. The direct-reading & analytical ferrographic results are normal indicating no abnormal wear in the system. There is a high amount of particulates (5 to 100 microns in size) present in the oil. The condition of oil is suitable for further service.

view report

# OIL ANALYSIS REPORT

Sample Rating Trend




ISO

Area
**1420**
Machine Id
**1420-7311-4201 - MOTOR Sag mill1420-5512-4001 NDE**
Component
**Non-Drive End Journal Bearing**
Fluid
**PETRO CANADA TURBOFLO R&O 100 (10 LTR)**

## DIAGNOSIS

**Recommendation**
We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

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

**Contamination**
There is a moderate amount of silt (particulates < 14 microns in size) present in the oil.

**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 | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **PC0070124** | PC0070129 | PC383236 |
| Sample Date | | Client Info | | **02 Sep 2023** | 02 Sep 2023 | 11 Mar 2017 |
| Machine Age | yrs | Client Info | | **0** | 0 | 0 |
| Oil Age | yrs | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **ABNORMAL** | SEVERE | ABNORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| PQ | | ASTM D8184* | | **0** | 0 | 8 |
| Iron | ppm | ASTM D5185(m) | >60 | **<1** | 4 | 1 |
| Chromium | ppm | ASTM D5185(m) | >20 | **0** | 0 | 0 |
| Nickel | ppm | ASTM D5185(m) | >20 | **<1** | <1 | <1 |
| Titanium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >4 | **<1** | <1 | 0 |
| Lead | ppm | ASTM D5185(m) | >250 | **<1** | 0 | <1 |
| Copper | ppm | ASTM D5185(m) | >125 | **<1** | <1 | 1 |
| Tin | ppm | ASTM D5185(m) | >80 | **1** | 3 | 4 |
| 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 |

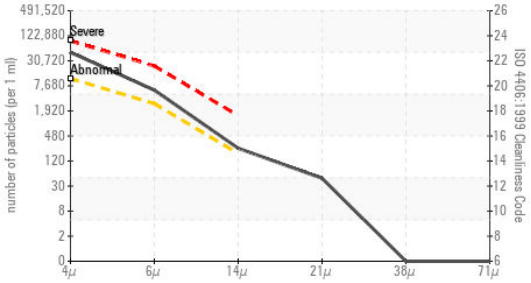
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Barium | ppm | ASTM D5185(m) | | **0** | 0 | <1 |
| Molybdenum | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Manganese | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Magnesium | ppm | ASTM D5185(m) | | **0** | <1 | 0 |
| Calcium | ppm | ASTM D5185(m) | 0 | **<1** | <1 | 0 |
| Phosphorus | ppm | ASTM D5185(m) | 4 | **4** | 4 | ▲ 38 |
| Zinc | ppm | ASTM D5185(m) | 0 | **2** | 2 | 3 |
| Sulfur | ppm | ASTM D5185(m) | | **38** | 40 | ▲ 798 |
| Lithium | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >50 | **0** | <1 | <1 |
| Sodium | ppm | ASTM D5185(m) | | **0** | 0 | <1 |
| Potassium | ppm | ASTM D5185(m) | >20 | **<1** | 0 | 0 |

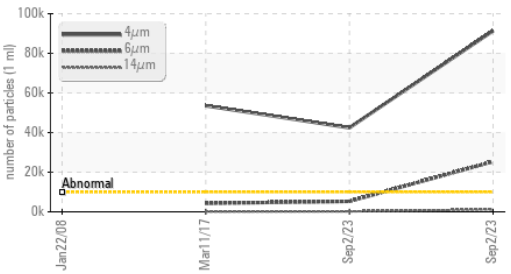
| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >10000 | ▲ **42423** | ⬢ 91355 | ▲ 53547 |
| Particles >6µm | | ASTM D7647 | >2500 | ▲ **5289** | ⬢ 25367 | ▲ 4280 |
| Particles >14µm | | ASTM D7647 | >160 | ▲ **214** | ▲ 1156 | 123 |
| Particles >21µm | | ASTM D7647 | >40 | **41** | ▲ 215 | 21 |
| Particles >38µm | | ASTM D7647 | >10 | **0** | 3 | 1 |
| Particles >71µm | | ASTM D7647 | >3 | **0** | 1 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >20/18/14 | ▲ **23/20/15** | ⬢ 24/22/17 | ▲ 23/19/14 |

# OIL ANALYSIS REPORT

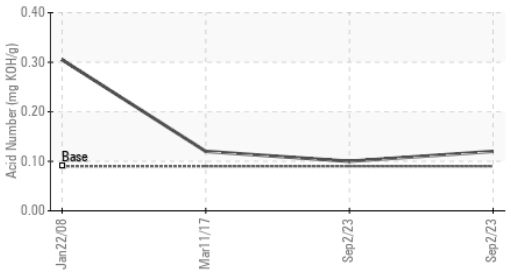
Particle Count



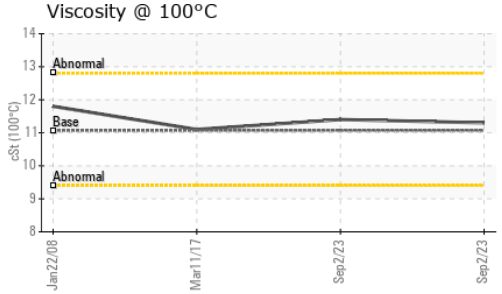

Particle Trend



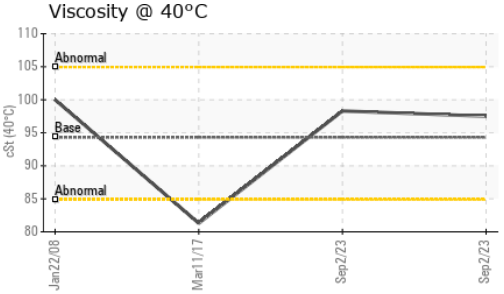

Acid Number




Viscosity @ 100°C



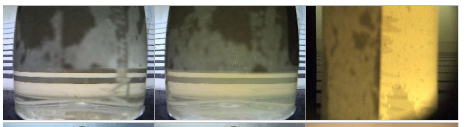

Viscosity @ 40°C




| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D974* | 0.09 | **0.12** | 0.10 | 0.12 |

| 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** | VLITE | NONE |
| Debris | scalar | Visual* | NONE | **VLITE** | 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* | >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) | 94.3 | **97.5** | 98.3 | ▲ 81.3 |
| Visc @ 100°C | cSt | ASTM D7279(m) | 11.07 | **11.3** | 11.4 | 11.1 |
| Viscosity Index (VI) | Scale | ASTM D2270* | 103 | **101** | 102 | ▲ 124 |

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

ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
**Sample No.** : PC0070124 **Received** : 15 Sep 2023
**Lab Number** : 02582830 **Diagnosed** : 18 Sep 2023
**Unique Number** : 5643895 **Diagnostician** : Bill Quesnel
**Test Package** : IND 2 ( Additional Tests: KV100, PQ, PrtCount, TAN Man, VI )

*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.*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