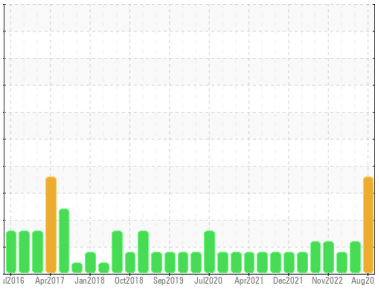
# PROBLEM SUMMARY

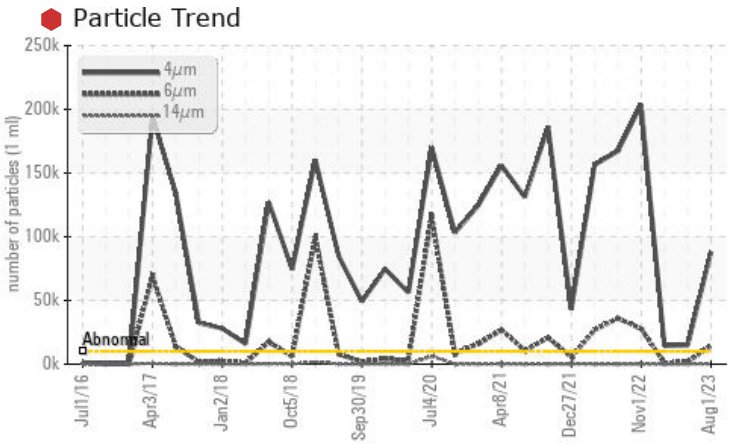
Area
**PROCESSING**
Machine Id
**FB08431 - N JARVIS NECK BREAKER (S/N 97652/96910)**
Component
**Hydraulic System**
Fluid
**PETRO CANADA PURITY FG AW HYDRAULIC 46 (--- GAL)**

Sample Rating Trend



ISO

## COMPONENT CONDITION SUMMARY




## RECOMMENDATION

Check seals and/or filters for points of contaminant entry. 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. We recommend you service the filters on this component. Resample in 30-45 days to monitor this situation. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

## PROBLEMATIC TEST RESULTS

| Sample Status | | | | SEVERE | ATTENTION | ATTENTION |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >10000 | **87897** | 14865 | 14336 |
| Particles >6µm | | ASTM D7647 | >1300 | **14905** | 1842 | 854 |
| Oil Cleanliness | | ISO 4406 (c) | >20/17/14 | **24/21/13** | 21/18/13 | 21/17/11 |

**Customer Id:** HORFREWC
**Sample No.:** WC0808498
**Lab Number:** 05936108
**Test Package:** IND 2

*To manage this report scan the QR code*

*To discuss the diagnosis or test data:*
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wesd@wearcheck.ca

*To change component or sample information:*
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

## RECOMMENDED ACTIONS

| Action | Status | Date | Done By | Description |
|---|---|---|---|---|
| Change Filter | --- | --- | ? | We recommend you service the filters on this component. |
| Resample | --- | --- | ? | Resample in 30-45 days to monitor this situation. |
| Information Required | --- | --- | ? | NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. |
| 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 Seals | --- | --- | ? | Check seals and/or filters for points of contaminant entry. |

## HISTORICAL DIAGNOSIS

**12 May 2023 Diag: Angela Borella**

ISO

No corrective action is recommended at this time. Resample at the next service interval to monitor.All component wear rates are normal. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

**01 Feb 2023 Diag: Don Baldridge**

ISO

No corrective action is recommended at this time. Resample at the next service interval to monitor.All component wear rates are normal. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

**01 Nov 2022 Diag: Don Baldridge**

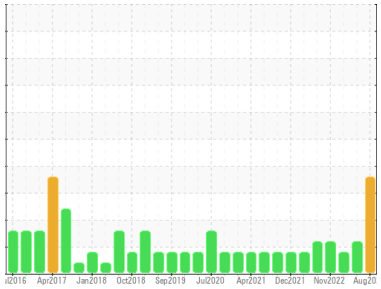
ISO

We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor.All component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

# OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Area
**PROCESSING**
Machine Id
**FB08431 - N JARVIS NECK BREAKER (S/N 97652/96910)**
Component
**Hydraulic System**
Fluid
**PETRO CANADA PURITY FG AW HYDRAULIC 46 (--- GAL)**

## DIAGNOSIS

**Recommendation**

Check seals and/or filters for points of contaminant entry. 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. We recommend you service the filters on this component. Resample in 30-45 days to monitor this situation. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

**Wear**

All component wear rates are normal.

**Contamination**

There is a high amount of silt (particulates < 14 microns in size) present in the oil. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code.

**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 | | **WC0808498** | WC0691492 | WC0775017 |
| Sample Date | | Client Info | | **01 Aug 2023** | 12 May 2023 | 01 Feb 2023 |
| Machine Age | mths | Client Info | | **0** | 0 | 0 |
| Oil Age | mths | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **SEVERE** | ATTENTION | ATTENTION |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >20 | **8** | 6 | 2 |
| Chromium | ppm | ASTM D5185m | >20 | **<1** | 0 | 0 |
| Nickel | ppm | ASTM D5185m | >20 | **<1** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Silver | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | **<1** | <1 | 0 |
| Lead | ppm | ASTM D5185m | >20 | **<1** | 0 | 0 |
| Copper | ppm | ASTM D5185m | >20 | **1** | <1 | <1 |
| Tin | ppm | ASTM D5185m | >20 | **0** | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Barium | ppm | ASTM D5185m | | **1** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Manganese | ppm | ASTM D5185m | | **<1** | <1 | 0 |
| Magnesium | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Calcium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Phosphorus | ppm | ASTM D5185m | | **446** | 474 | 393 |
| Zinc | ppm | ASTM D5185m | | **4** | 0 | 0 |
| Sulfur | ppm | ASTM D5185m | | **567** | 653 | 314 |

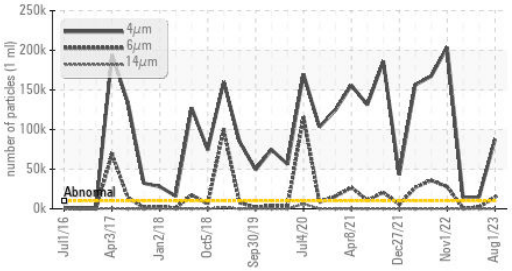
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >15 | **2** | 2 | 3 |
| Sodium | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Potassium | ppm | ASTM D5185m | >20 | **<1** | 0 | 0 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >10000 | **87897** | ▲ 14865 | ▲ 14336 |
| Particles >6µm | | ASTM D7647 | >1300 | **14905** | ▲ 1842 | 854 |
| Particles >14µm | | ASTM D7647 | >160 | **68** | 66 | 19 |
| Particles >21µm | | ASTM D7647 | >40 | **16** | 17 | 4 |
| Particles >38µm | | ASTM D7647 | >10 | **1** | 0 | 1 |
| Particles >71µm | | ASTM D7647 | >3 | **0** | 0 | 1 |
| Oil Cleanliness | | ISO 4406 (c) | >20/17/14 | **24/21/13** | ▲ 21/18/13 | ▲ 21/17/11 |

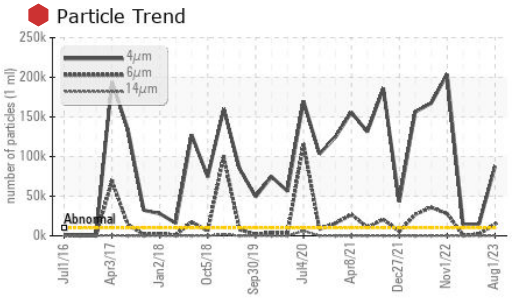
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.26 | **0.24** | 0.27 | 0.28 |

# OIL ANALYSIS REPORT

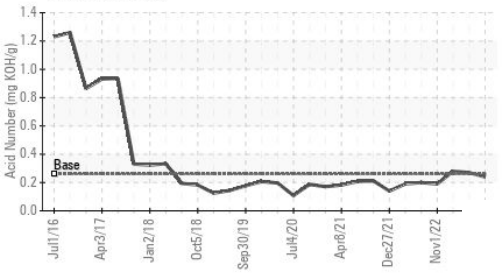
Particle Trend



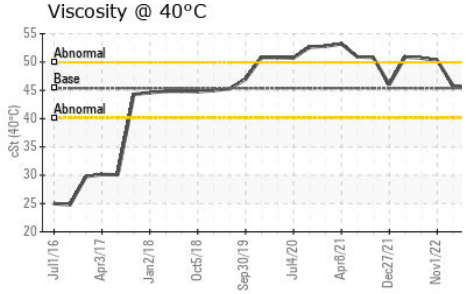

Particle Trend




Acid Number

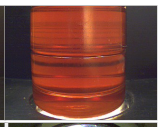
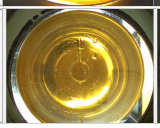
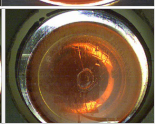



Viscosity @ 40°C



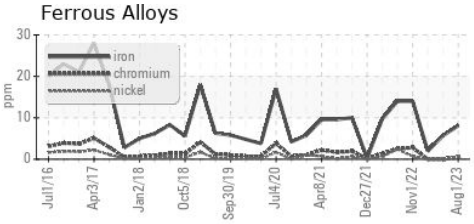

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| 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 | >0.05 | **NEG** | NEG | NEG |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 45.36 | **45.6** | 45.5 | 45.8 |

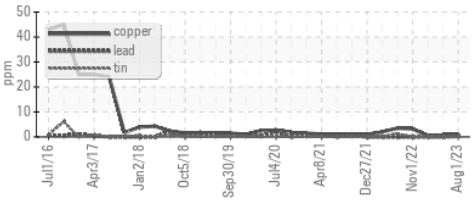
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | | no image |  |  |
| Bottom | | | no image |  |  |

## GRAPHS

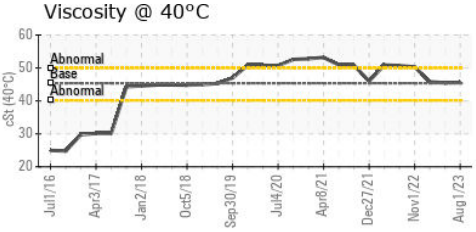
Ferrous Alloys



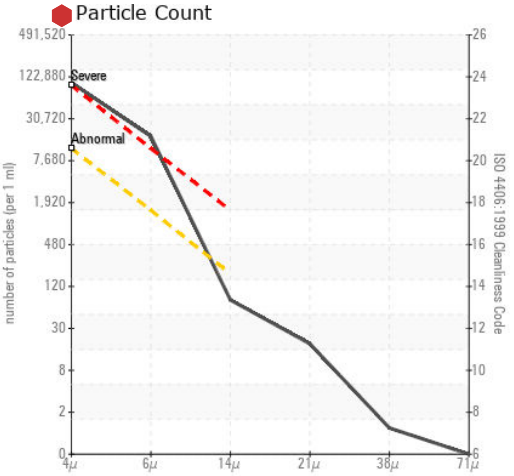

Non-ferrous Metals



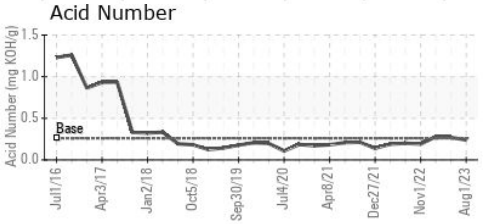

Viscosity @ 40°C




Particle Count




Acid Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0808498
**Lab Number** : 05936108
**Unique Number** : 10621379
**Test Package** : IND 2

**Received** : 28 Aug 2023
**Diagnosed** : 29 Aug 2023
**Diagnostician** : Wes Davis

*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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