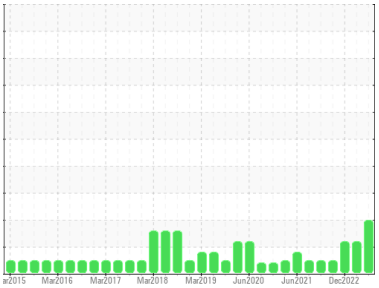
# PROBLEM SUMMARY

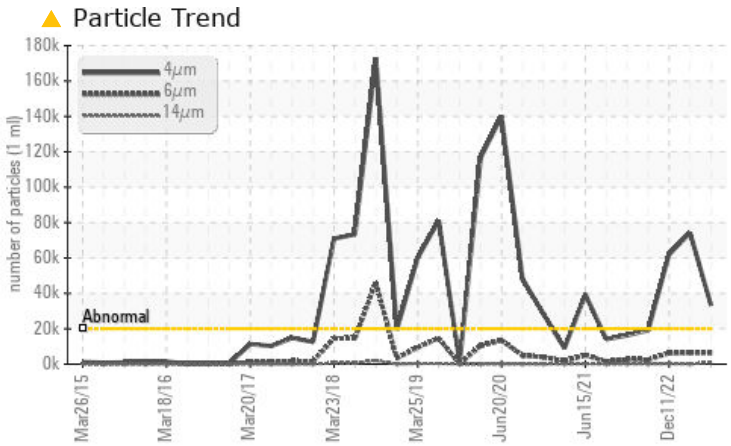
Area
**RP-107**
Machine Id
**B57589 - CRAX BIN DISCHARGE**
Component
**Auger**
Fluid
**PETRO CANADA ENDURATEX EP 320 (--- GAL)**

**Sample Rating Trend**




**ISO**

## COMPONENT CONDITION SUMMARY




## RECOMMENDATION

We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

## PROBLEMATIC TEST RESULTS

| Sample Status | | | | **ABNORMAL** | ABNORMAL | ABNORMAL |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >20000 | ▲ **33281** | ▲ 74206 | ▲ 62107 |
| Particles >6µm | | ASTM D7647 | >5000 | ▲ **6294** | ▲ 6490 | ▲ 6189 |
| Particles >14µm | | ASTM D7647 | >640 | ▲ **908** | 160 | 264 |
| Particles >21µm | | ASTM D7647 | >160 | ▲ **372** | 43 | 63 |
| Oil Cleanliness | | ISO 4406 (c) | >21/19/16 | ▲ **22/20/17** | ▲ 23/20/14 | ▲ 23/20/15 |

**Customer Id:** HORAUS
**Sample No.:** WC0808472
**Lab Number:** 06029353
**Test Package:** IND 2

*To manage this report scan the QR code*

*To discuss the diagnosis or test data:*
Wes Davis +1 905-569-8600 x223
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 advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. |
| Resample | --- | --- | ? | We recommend an early resample to monitor this condition. |
| Information Required | --- | --- | ? | NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. |
| 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

**02 Mar 2023 Diag: Wes Davis**

ISO

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.All component wear rates are normal. Oil Cleanliness are abnormally high. Particles >4µm are abnormally high. Particles >6µm are notably high. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code. 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 Dec 2022 Diag: Wes Davis**

ISO

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.All component wear rates are normal. Oil Cleanliness are abnormally high. Particles >4µm are abnormally high. Particles >6µm are notably high. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code. 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

**24 Mar 2022 Diag: Wes Davis**

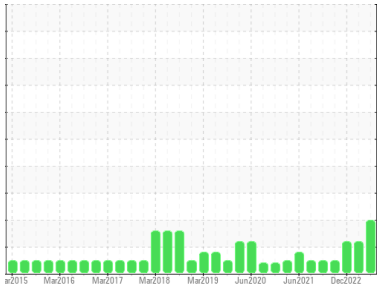
NORMAL

Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. 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
**RP-107**
Machine Id
**B57589 - CRAX BIN DISCHARGE**
Component
**Auger**
Fluid
**PETRO CANADA ENDURATEX EP 320 (--- GAL)**

## DIAGNOSIS

**Recommendation**

We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. We recommend an early resample to monitor this condition. 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 moderate amount of particulates (2 to 100 microns in size) present in the oil. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code.

**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 | | **WC0808472** | WC0736033 | WC0743788 |
| Sample Date | | Client Info | | **02 Dec 2023** | 02 Mar 2023 | 11 Dec 2022 |
| 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 | | | | **ABNORMAL** | ABNORMAL | ABNORMAL |

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

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >200 | **11** | 37 | 29 |
| Chromium | ppm | ASTM D5185m | >15 | **<1** | <1 | 0 |
| Nickel | ppm | ASTM D5185m | >15 | **0** | <1 | 0 |
| Titanium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >25 | **1** | 1 | 0 |
| Lead | ppm | ASTM D5185m | >100 | **0** | 0 | 0 |
| Copper | ppm | ASTM D5185m | >200 | **0** | <1 | 0 |
| Tin | ppm | ASTM D5185m | >25 | **0** | 0 | <1 |
| Vanadium | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 55 | **50** | 28 | 32 |
| Barium | ppm | ASTM D5185m | 0 | **3** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 0 | **0** | 0 | 0 |
| Manganese | ppm | ASTM D5185m | 0 | **0** | <1 | 0 |
| Magnesium | ppm | ASTM D5185m | 0 | **<1** | 0 | 0 |
| Calcium | ppm | ASTM D5185m | 0 | **1** | 6 | 0 |
| Phosphorus | ppm | ASTM D5185m | 240 | **618** | 375 | 435 |
| Zinc | ppm | ASTM D5185m | 1 | **0** | 9 | 4 |
| Sulfur | ppm | ASTM D5185m | 13700 | **8784** | 4938 | 6371 |

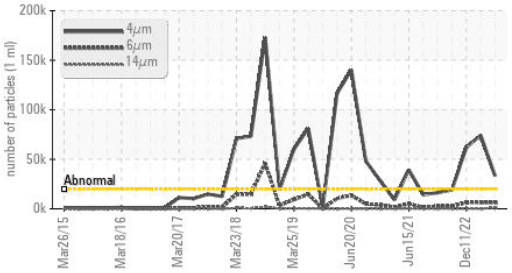
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >50 | **0** | <1 | <1 |
| Sodium | ppm | ASTM D5185m | | **1** | <1 | <1 |
| Potassium | ppm | ASTM D5185m | >20 | **1** | 1 | 0 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >20000 | ▲ **33281** | ▲ 74206 | ▲ 62107 |
| Particles >6µm | | ASTM D7647 | >5000 | ▲ **6294** | ▲ 6490 | ▲ 6189 |
| Particles >14µm | | ASTM D7647 | >640 | ▲ **908** | 160 | 264 |
| Particles >21µm | | ASTM D7647 | >160 | ▲ **372** | 43 | 63 |
| Particles >38µm | | ASTM D7647 | >40 | **27** | 2 | 3 |
| Particles >71µm | | ASTM D7647 | >10 | **1** | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >21/19/16 | ▲ **22/20/17** | ▲ 23/20/14 | ▲ 23/20/15 |

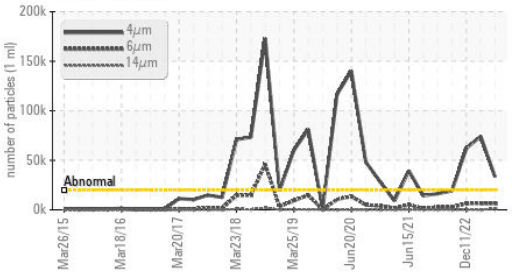
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.4 | **0.91** | 1.15 | 0.94 |

# OIL ANALYSIS REPORT

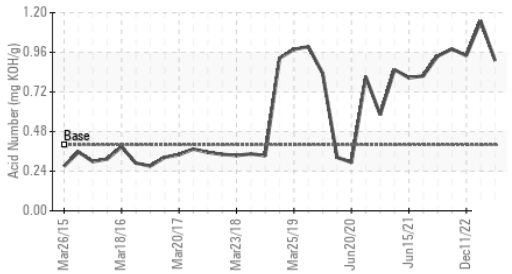
Particle Trend



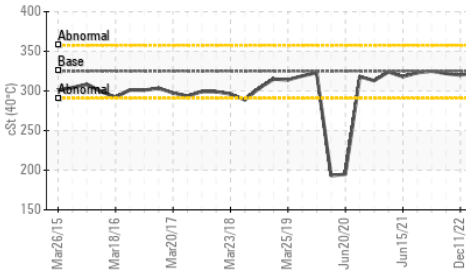

Particle Trend




Acid Number

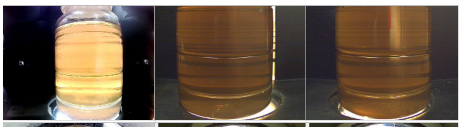
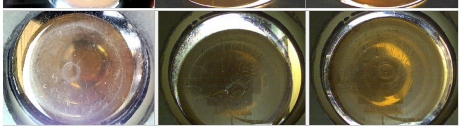



Viscosity @ 40°C



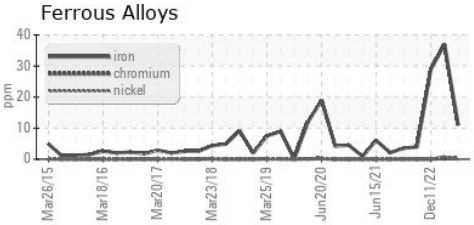

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| 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 | >0.2 | **NEG** | NEG | NEG |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 325 | **325** | 323 | 320 |

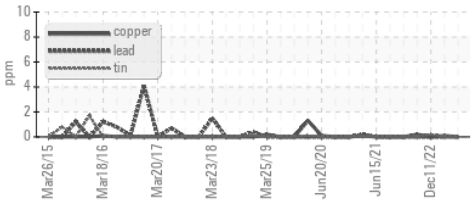
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  | | |
| Bottom | | |  | | |

## GRAPHS

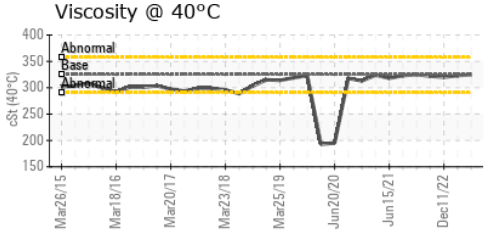
Ferrous Alloys



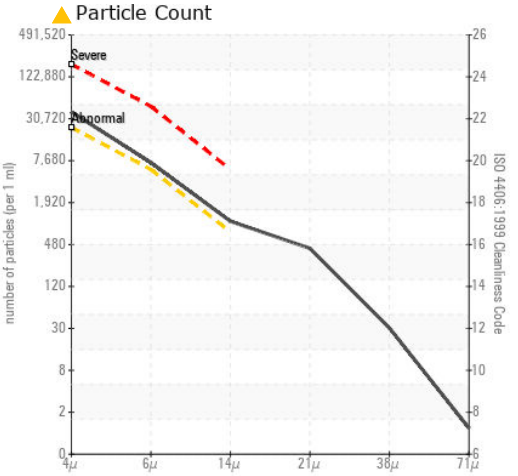

Non-ferrous Metals



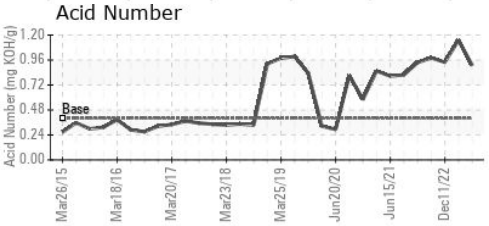

Viscosity @ 40°C




Particle Count




Acid Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0808472 **Received** : 08 Dec 2023
**Lab Number** : 06029353 **Diagnosed** : 11 Dec 2023
**Unique Number** : 10779144 **Diagnostician** : Wes Davis
**Test Package** : IND 2 ( Additional Tests: PrtCount )

*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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