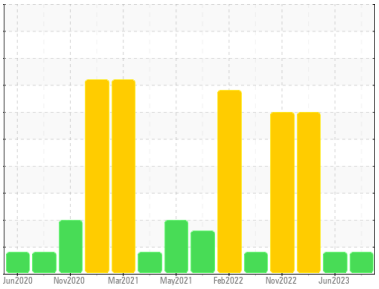
# PROBLEM SUMMARY

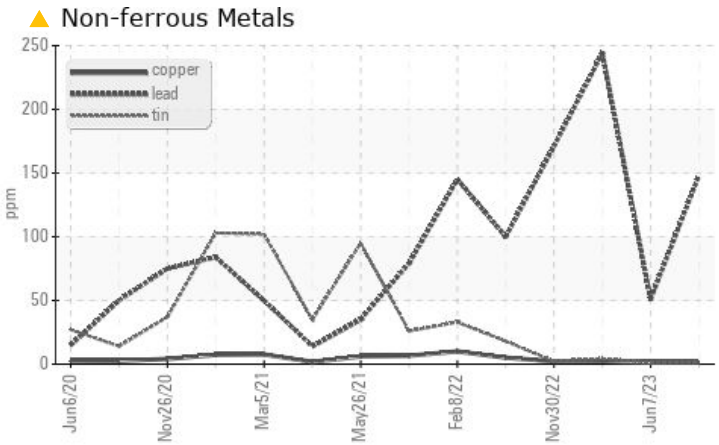
Sample Rating Trend




**WEAR**

Machine Id
## GS1-G1-BRG1
Component
**Bearing**
Fluid
**AMERICAN CHEMICAL TECH. ECOSAFE FR-68 (23 LTR)**

## COMPONENT CONDITION SUMMARY




## RECOMMENDATION

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

## PROBLEMATIC TEST RESULTS

| Sample Status | | | | ABNORMAL | ATTENTION | SEVERE |
|---|---|---|---|---|---|---|
| Lead | ppm | ASTM D5185(m) | >20 | ▲ **148** | ▲ 51 | ⬢ 244 |

**Customer Id:** ENE271OTT
**Sample No.:** WC0815901
**Lab Number:** 02591036
**Test Package:** IND 3

*To manage this report scan the QR code*

*To discuss the diagnosis or test data:*
Kevin Marson +1 (289)291-4644 x4644
Kevin.Marson@wearcheck.com

*To change component or sample information:*
Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

## RECOMMENDED ACTIONS

| Action | Status | Date | Done By | Description |
|---|---|---|---|---|
| Change Fluid | --- | --- | ? | We recommend that you drain the oil from the component if this has not already been done. |
| Resample | --- | --- | ? | We recommend an early resample to monitor this condition. |

## HISTORICAL DIAGNOSIS

**07 Jun 2023 Diag: Kevin Marson**

WEAR

We recommend an early resample to monitor this condition.Lead ppm levels are noted. All other component wear rates are normal. The direct-reading & analytical ferrographic results are normal indicating no abnormal wear in the system. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

**03 Apr 2023 Diag: Kevin Marson**

WEAR

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.Lead ppm levels are severe. Bearing wear is indicated. The direct-reading & analytical ferrographic results are normal indicating no abnormal wear in the system. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

view report

**30 Nov 2022 Diag: Kevin Marson**

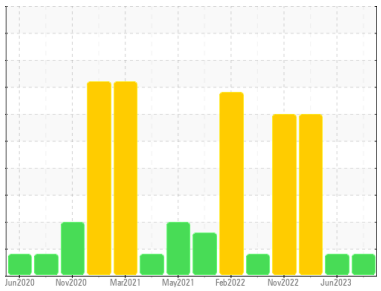
WEAR

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.Lead ppm levels are severe. Bearing wear is indicated. The direct-reading & analytical ferrographic results are normal indicating no abnormal wear in the system. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

view report

# OIL ANALYSIS REPORT

Sample Rating Trend




**WEAR**

Machine Id
## GS1-G1-BRG1
Component
**Bearing**
Fluid
**AMERICAN CHEMICAL TECH. ECOSAFE FR-68 (23 LTR)**

## DIAGNOSIS

**Recommendation**
We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

**Wear**
Lead ppm levels are abnormal. A sharp increase in the lead level is noted. Bearing wear is indicated.

**Contaminants**
There is no indication of any contamination in the oil.

**Oil Condition**
The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC0815901** | WC0815837 | WC0736129 |
| Sample Date | | Client Info | | **17 Oct 2023** | 07 Jun 2023 | 03 Apr 2023 |
| Machine Age | mths | Client Info | | **43** | 39 | 37 |
| Oil Age | mths | Client Info | | **6** | 2 | 9 |
| Oil Changed | | Client Info | | **Not Changd** | Not Changd | Not Changd |
| Sample Status | | | | **ABNORMAL** | ATTENTION | SEVERE |

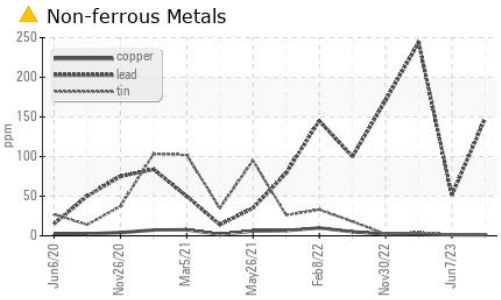
| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| PQ | | ASTM D8184* | | **0** | 0 | 0 |
| Iron | ppm | ASTM D5185(m) | >20 | **<1** | <1 | 2 |
| Chromium | ppm | ASTM D5185(m) | >20 | **0** | 0 | 0 |
| Nickel | ppm | ASTM D5185(m) | >20 | **0** | <1 | 0 |
| Titanium | ppm | ASTM D5185(m) | | **0** | <1 | 1 |
| Silver | ppm | ASTM D5185(m) | | **<1** | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >20 | **<1** | 0 | 0 |
| Lead | ppm | ASTM D5185(m) | >20 | ▲ **148** | ▲ 51 | ⬢ 244 |
| Copper | ppm | ASTM D5185(m) | >20 | **1** | 1 | 2 |
| Tin | ppm | ASTM D5185(m) | >20 | **2** | 1 | 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 |

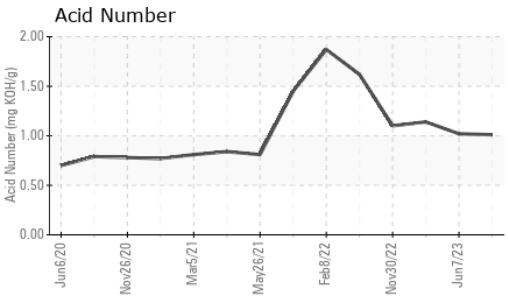
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185(m) | | **<1** | 0 | <1 |
| Barium | ppm | ASTM D5185(m) | | **<1** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Manganese | ppm | ASTM D5185(m) | | **0** | 0 | <1 |
| Magnesium | ppm | ASTM D5185(m) | | **0** | <1 | <1 |
| Calcium | ppm | ASTM D5185(m) | | **<1** | <1 | 0 |
| Phosphorus | ppm | ASTM D5185(m) | | **347** | 369 | 353 |
| Zinc | ppm | ASTM D5185(m) | | **2** | 3 | 3 |
| Sulfur | ppm | ASTM D5185(m) | | **722** | 759 | 833 |
| Lithium | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |

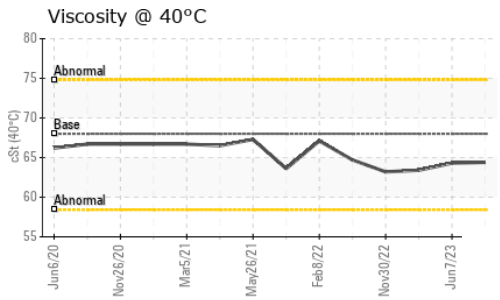
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >15 | **<1** | <1 | <1 |
| Sodium | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |
| Potassium | ppm | ASTM D5185(m) | >20 | **<1** | 0 | <1 |

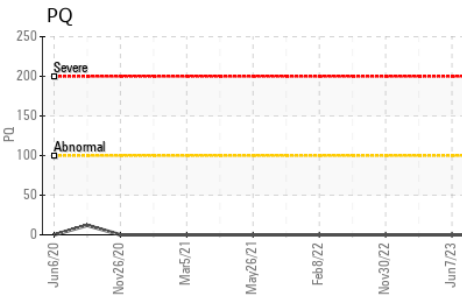
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D974* | | **1.01** | 1.02 | 1.14 |

# OIL ANALYSIS REPORT



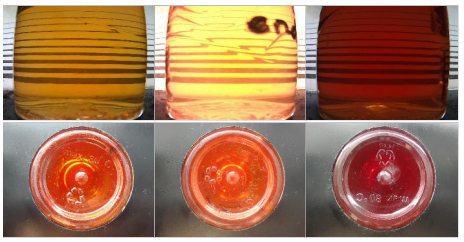



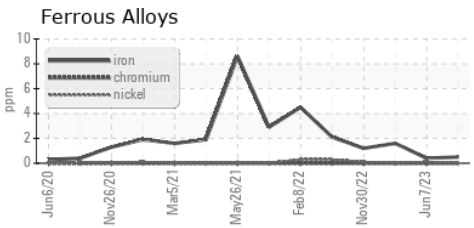

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | Visual* | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | Visual* | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | Visual* | NONE | **NONE** | NONE | NONE |
| Silt | scalar | Visual* | NONE | **NONE** | NONE | NONE |
| Debris | scalar | Visual* | NONE | **NONE** | VLITE | NONE |
| Sand/Dirt | scalar | Visual* | NONE | **NONE** | NONE | 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 |

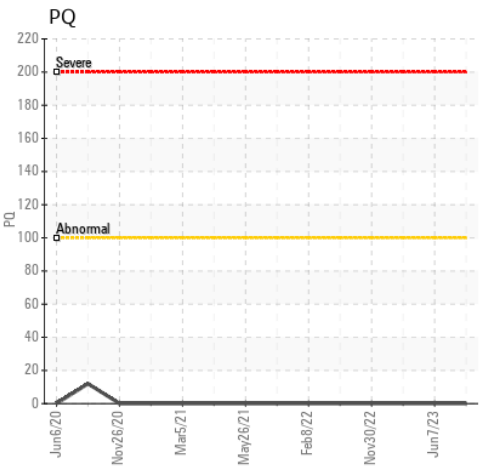
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D7279(m) | 68.0 | **64.4** | 64.3 | 63.4 |

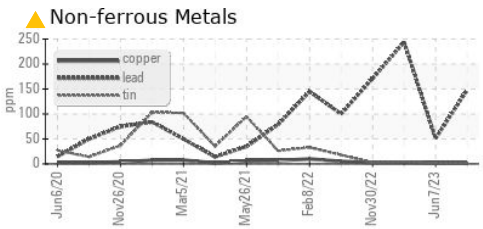
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | | | | |
| Bottom | | | | | |

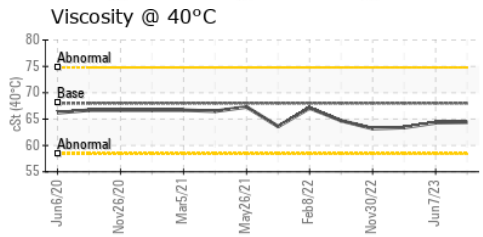


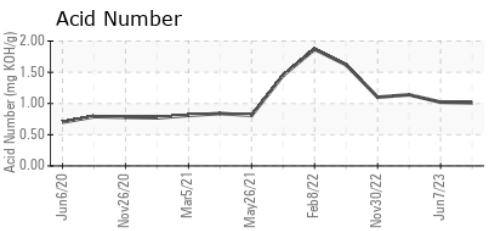
## GRAPHS




ISO 17025:2017 Accredited Laboratory

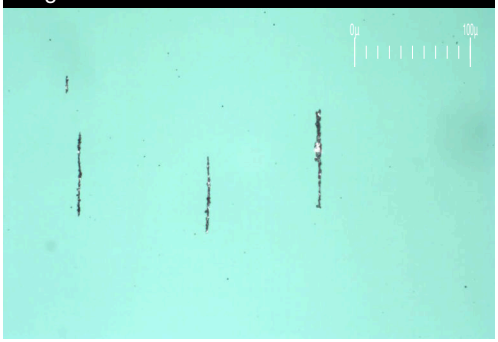
**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **Chaudiere Hydro LP - Energy Ottawa**
**Sample No.** : WC0815901 **Received** : 23 Oct 2023 4 Booth Street
**Lab Number** : 02591036 **Diagnosed** : 27 Oct 2023 Ottawa, ON
**Unique Number** : 5668115 **Diagnostician** : Kevin Marson CA K1R 6K8
**Test Package** : IND 3 Contact: Cheryl Gharib

*To discuss this sample report, contact Customer Service at 1-800-268-2131.* info@portagepower.com
*Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.* T:
*Validity of results and interpretation are based on the sample and information as supplied.* F: x:

# FERROGRAPHY REPORT

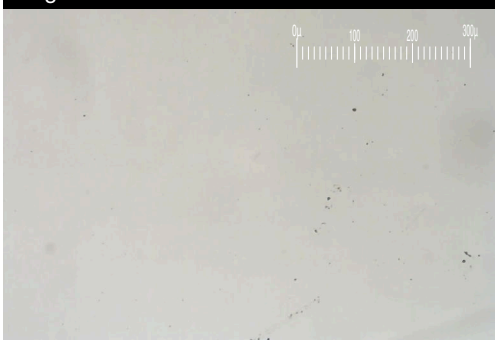
Machine Id
## GS1-G1-BRG1
Component
**Bearing**
Fluid
**AMERICAN CHEMICAL TECH. ECOSAFE FR-68 (23 LTR)**

Magn: 200x Illum: BC



Magn: 50x Illum: RW

Magn: 100x Illum: RW

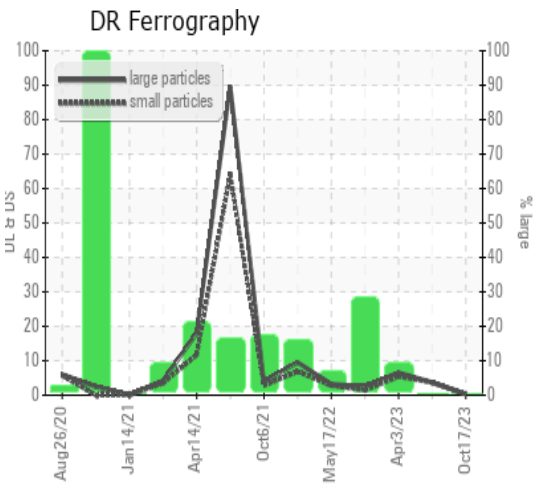


| DR-FERROGRAPHY | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Large Particles | | DR-Ferr* | | **0.3** | 3.7 | 6.5 |
| Small Particles | | DR-Ferr* | | **0.3** | 3.7 | 5.4 |
| Total Particles | | DR-Ferr* | >--- | **0.6** | 7.4 | 11.9 |
| Large Particles Percentage | % | DR-Ferr* | | **0** | 0 | 9.2 |
| Severity Index | | DR-Ferr* | | **0** | 0 | 7 |

| FERROGRAPHY | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Ferrous Rubbing | Scale 0-10 | ASTM D7684* | | **2** | 1 | 1 |
| Ferrous Sliding | Scale 0-10 | ASTM D7684* | | | | |
| Ferrous Cutting | Scale 0-10 | ASTM D7684* | | | | |
| Ferrous Rolling | Scale 0-10 | ASTM D7684* | | **1** | 1 | 1 |
| Ferrous Break-in | Scale 0-10 | ASTM D7684* | | | | |
| Ferrous Spheres | Scale 0-10 | ASTM D7684* | | | | |
| Ferrous Black Oxides | Scale 0-10 | ASTM D7684* | | | | |
| Ferrous Red Oxides | Scale 0-10 | ASTM D7684* | | | | |
| Ferrous Corrosive | Scale 0-10 | ASTM D7684* | | | | |
| Ferrous Other | Scale 0-10 | ASTM D7684* | | | | |
| Nonferrous Rubbing | Scale 0-10 | ASTM D7684* | | | | |
| Nonferrous Sliding | Scale 0-10 | ASTM D7684* | | | | |
| Nonferrous Cutting | Scale 0-10 | ASTM D7684* | | | | |
| Nonferrous Rolling | Scale 0-10 | ASTM D7684* | | | | |
| Nonferrous Other | Scale 0-10 | ASTM D7684* | | | | |
| Carbonaceous Material | Scale 0-10 | ASTM D7684* | | | | |
| Lubricant Degradation | Scale 0-10 | ASTM D7684* | | | | |
| Sand/Dirt | Scale 0-10 | ASTM D7684* | | **1** | 1 | 1 |
| Fibres | Scale 0-10 | ASTM D7684* | | | | |
| Spheres | Scale 0-10 | ASTM D7684* | | | | |
| Other | Scale 0-10 | ASTM D7684* | | **1** | 1 | 1 |

### WEAR

Lead ppm levels are abnormal. A sharp increase in the lead level is noted. Bearing wear is indicated.



*This page left intentionally blank*