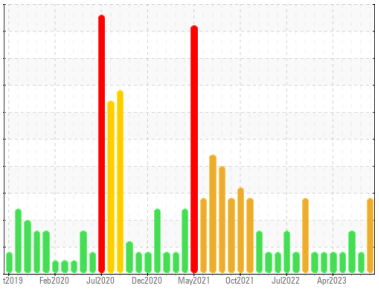
# PROBLEM SUMMARY

Sample Rating Trend

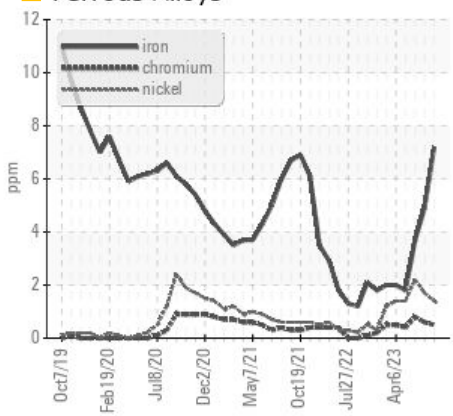


**WEAR**

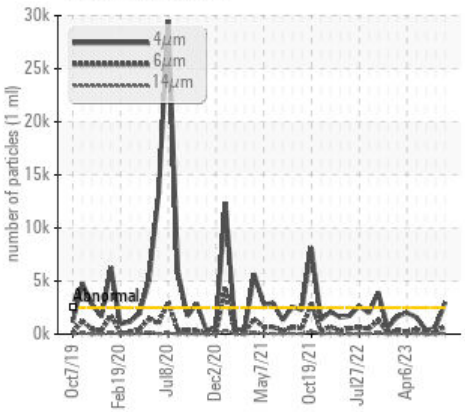
Machine Id
## CO-GEN #2
Component
**Turbine**
Fluid
**MOBIL JET OIL II (120 GAL)**

## COMPONENT CONDITION SUMMARY

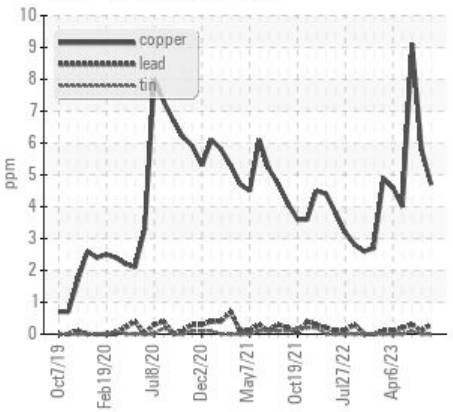
Ferrous Alloys




Particle Trend




Non-ferrous Metals




## RECOMMENDATION

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using IND 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid.

## PROBLEMATIC TEST RESULTS

| Sample Status | | | | **ABNORMAL** | ATTENTION | ABNORMAL |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185(m) | >5 | ▲ **7** | 5 | 4 |
| Copper | ppm | ASTM D5185(m) | >2 | ▲ **5** | ▲ 6 | ▲ 9 |
| Particles >4µm | | ASTM D7647 | >2500 | ▲ **2996** | 575 | 366 |
| Particles >6µm | | ASTM D7647 | >640 | ▲ **731** | 155 | 88 |
| Oil Cleanliness | | ISO 4406 (c) | >18/16/13 | ▲ **19/17/13** | 16/14/11 | 16/14/10 |

**Customer Id:** AVETOR
**Sample No.:** WC0781348
**Lab Number:** 02575916
**Test Package:** IND 2

*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 Filter | --- | --- | ? | We recommend you service the filters on this component. |
| Resample | --- | --- | ? | We recommend an early resample to monitor this condition. |
| Contact Required | --- | --- | ? | Please contact your representative for information regarding the proper sampling kits for your service. |
| Alert | --- | --- | ? | NOTE:  We recommend using IND 3 test kits, |

## HISTORICAL DIAGNOSIS

**10 Jul 2023 Diag: Kevin Marson**

WEAR

We recommend an early resample to monitor this condition. Please contact your representative for information regarding the proper sampling kits for your service. NOTE:  We recommend using IND 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid.Copper ppm levels are noted. All other component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The water content is negligible. 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

**07 Jun 2023 Diag: Kevin Marson**

WEAR

We recommend an early resample to monitor this condition. Please contact your representative for information regarding the proper sampling kits for your service. NOTE:  We recommend using IND 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid.Copper ppm levels are abnormal. Nickel ppm levels are marginal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The water content is negligible. 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

**09 May 2023 Diag: Kevin Marson**

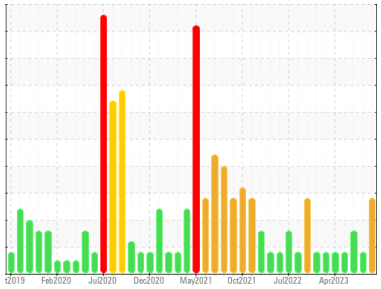
WEAR

We recommend an early resample to monitor this condition. Please contact your representative for information regarding the proper sampling kits for your service. NOTE:  We recommend using IND 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid.Copper ppm levels are noted. All other component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The water content is negligible. 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



**WEAR**

Machine Id
## CO-GEN #2
Component
**Turbine**
Fluid
**MOBIL JET OIL II (120 GAL)**

## DIAGNOSIS

**Recommendation**

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using IND 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid.

**Wear**

Iron ppm levels are abnormal. Copper ppm levels are noted.

**Contamination**

There is a light amount of silt (particulates < 14 microns in size) present in the oil. The water content is negligible.

**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 | | **WC0781348** | WC0781351 | WC0781353 |
| Sample Date | | Client Info | | **11 Aug 2023** | 10 Jul 2023 | 07 Jun 2023 |
| 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 | | | | **ABNORMAL** | ATTENTION | ABNORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| PQ | | ASTM D8184* | | **0** | --- | --- |
| Iron | ppm | ASTM D5185(m) | >5 | ▲ **7** | 5 | 4 |
| Chromium | ppm | ASTM D5185(m) | >2 | **<1** | <1 | <1 |
| Nickel | ppm | ASTM D5185(m) | >2 | **1** | 2 | ▲ 2 |
| Titanium | ppm | ASTM D5185(m) | >2 | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | >2 | **<1** | <1 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >2 | **0** | <1 | <1 |
| Lead | ppm | ASTM D5185(m) | >4 | **<1** | <1 | <1 |
| Copper | ppm | ASTM D5185(m) | >2 | ▲ **5** | ▲ 6 | ▲ 9 |
| Tin | ppm | ASTM D5185(m) | >3 | **0** | 0 | <1 |
| Antimony | ppm | ASTM D5185(m) | | **0** | 0 | <1 |
| Vanadium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Beryllium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |

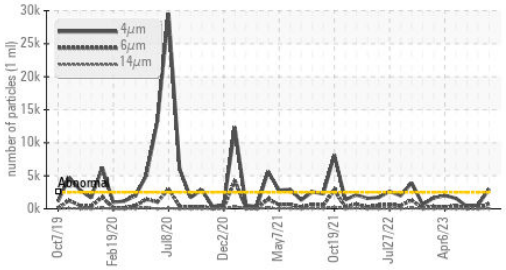
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185(m) | 0.5 | **<1** | <1 | <1 |
| Barium | ppm | ASTM D5185(m) | 0.0 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | 0.0 | **0** | 0 | 0 |
| Manganese | ppm | ASTM D5185(m) | 0.0 | **0** | 0 | 0 |
| Magnesium | ppm | ASTM D5185(m) | 0.0 | **0** | 0 | <1 |
| Calcium | ppm | ASTM D5185(m) | 0.0 | **<1** | 1 | 0 |
| Phosphorus | ppm | ASTM D5185(m) | 3039 | **2321** | 2399 | 2331 |
| Zinc | ppm | ASTM D5185(m) | 0.3 | **2** | 2 | <1 |
| Sulfur | ppm | ASTM D5185(m) | 38 | **5** | 4 | 5 |
| Lithium | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >5 | **<1** | <1 | <1 |
| Sodium | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |
| Potassium | ppm | ASTM D5185(m) | >20 | **<1** | <1 | <1 |
| Water | % | ASTM D6304* | >.1 | **0.085** | 0.071 | 0.024 |
| ppm Water | ppm | ASTM D6304* | >1000 | **857.5** | 710.6 | 245.3 |

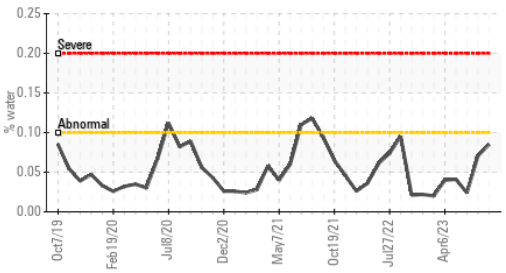
| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >2500 | ▲ **2996** | 575 | 366 |
| Particles >6µm | | ASTM D7647 | >640 | ▲ **731** | 155 | 88 |
| Particles >14µm | | ASTM D7647 | >80 | **63** | 14 | 7 |
| Particles >21µm | | ASTM D7647 | >20 | **25** | 3 | 3 |
| Particles >38µm | | ASTM D7647 | >4 | **2** | 0 | 0 |
| Particles >71µm | | ASTM D7647 | >3 | **0** | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >18/16/13 | ▲ **19/17/13** | 16/14/11 | 16/14/10 |

# OIL ANALYSIS REPORT

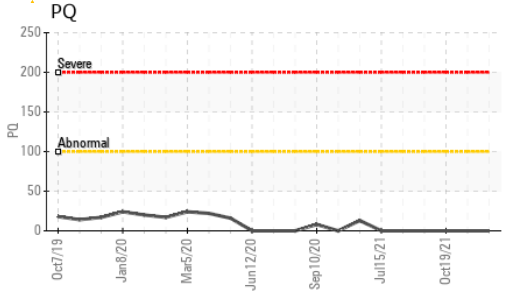
Particle Trend



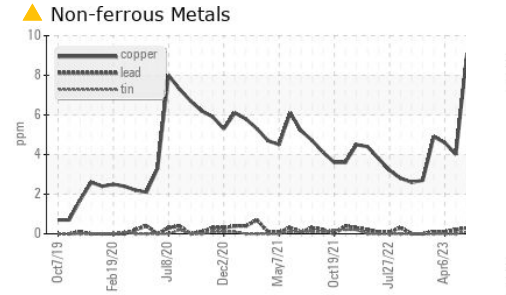

Water



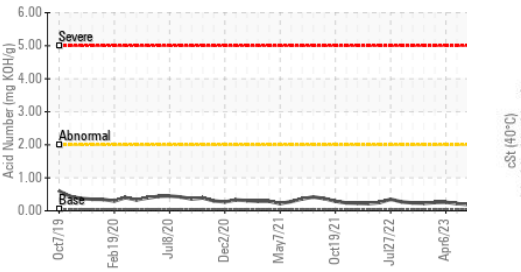

PQ




Non-ferrous Metals



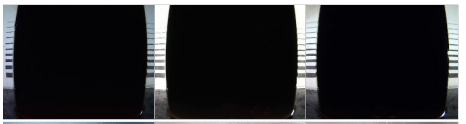

Acid Number




| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D974* | 0.05 | **0.23** | 0.19 | 0.19 |

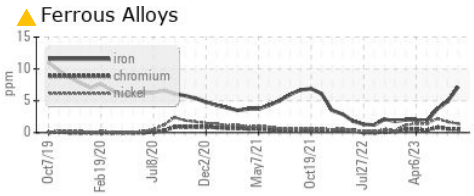
| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | Visual* | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | Visual* | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | Visual* | NONE | **NONE** | NONE | NONE |
| Silt | scalar | Visual* | NONE | **VLITE** | 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* | >.1 | **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) | 25.4 | **27.3** | 27.4 | 27.9 |

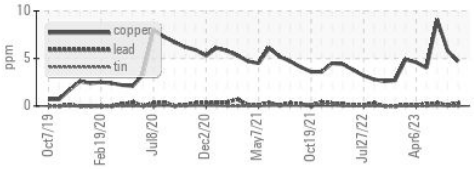
| SAMPLE IMAGES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Color | | | |  | | |
| Bottom | | | |  | | |

## GRAPHS

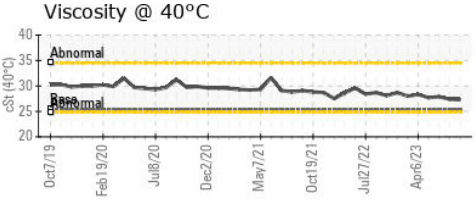
Ferrous Alloys



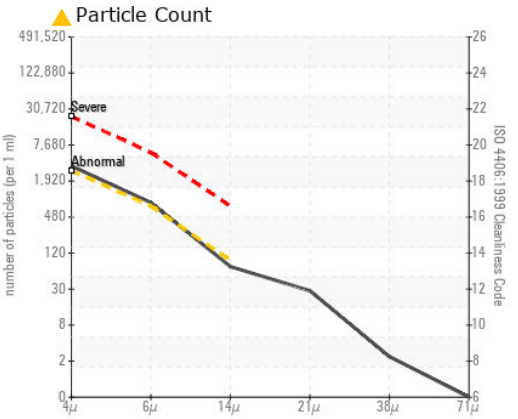

Non-ferrous Metals



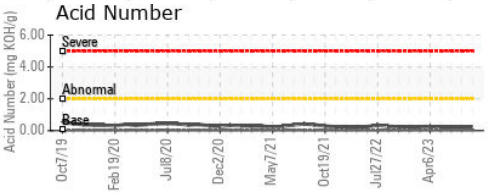

Viscosity @ 40°C




Particle Count




Acid Number




ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
**Sample No.** : WC0781348 **Received** : 15 Aug 2023
**Lab Number** : 02575916 **Diagnosed** : 16 Aug 2023
**Unique Number** : 5628976 **Diagnostician** : Kevin Marson
**Test Package** : IND 2 ( Additional Tests: PQ )

*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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