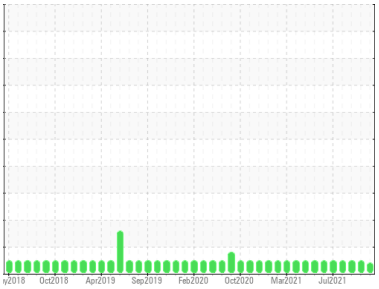
# PROBLEM SUMMARY

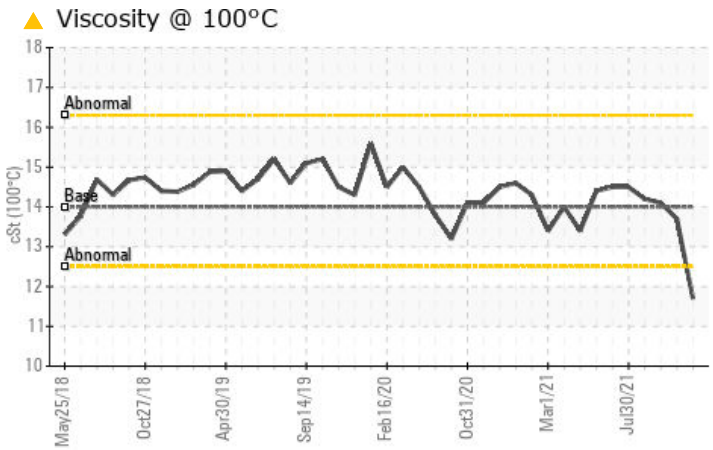
Sample Rating Trend



**VISCOSITY**

Area
## RANDY HOOPER
Machine Id
## [RANDY HOOPER] 008 622755-8
Component
**Starboard Genset**
Fluid
**MOBIL DELVAC 1300 SUPER15W40 (7 GAL)**

## COMPONENT CONDITION SUMMARY




## RECOMMENDATION

No corrective action is recommended at this time.
Resample at the next service interval to monitor.

## PROBLEMATIC TEST RESULTS

| | | | | | | |
|---|---|---|---|---|---|---|
| Sample Status | | | | **ATTENTION** | NORMAL | NORMAL |
| Visc @ 100°C | cSt | ASTM D445 | 14 | ▲ **11.7** | 13.7 | 14.1 |

**Customer Id:** INGPAD
**Sample No.:** MW0037347
**Lab Number:** 05964107
**Test Package:** MAR 2

*To manage this report scan the QR code*

*To discuss the diagnosis or test data:*
Jonathan Hester +1 919-379-4092 x4092
jhester@wearcheckusa.com

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

## RECOMMENDED ACTIONS

*There are no recommended actions for this sample.*

## HISTORICAL DIAGNOSIS

**05 Mar 2022 Diag: Don Baldridge**

NORMAL

Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

**01 Feb 2022 Diag: Jonathan Hester**

NORMAL

Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

**01 Oct 2021 Diag: Don Baldridge**

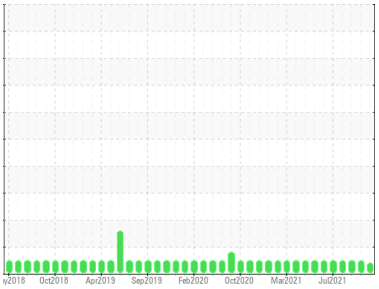
NORMAL

Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

# OIL ANALYSIS REPORT

Sample Rating Trend



VISCOSITY

Area
**RANDY HOOPER**
Machine Id
**[RANDY HOOPER] 008 622755-8**
Component
**Starboard Genset**
Fluid
**MOBIL DELVAC 1300 SUPER15W40 (7 GAL)**

## DIAGNOSIS

**Recommendation**
No corrective action is recommended at this time. Resample at the next service interval to monitor.

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

**Contamination**
Fuel content negligible. There is no indication of any contamination in the oil.

**Fluid Condition**
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **MW0037347** | MW0026258 | MW0018334 |
| Sample Date | | Client Info | | **11 Sep 2023** | 05 Mar 2022 | 01 Feb 2022 |
| Machine Age | hrs | Client Info | | **600** | 35268 | 35255 |
| Oil Age | hrs | Client Info | | **360** | 4 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **ATTENTION** | NORMAL | NORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Glycol | | WC Method | | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >50 | **5** | 14 | 6 |
| Chromium | ppm | ASTM D5185m | >4 | **<1** | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >2 | **0** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185m | >5 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >12 | **<1** | 6 | 4 |
| Lead | ppm | ASTM D5185m | >17 | **1** | <1 | 0 |
| Copper | ppm | ASTM D5185m | >70 | **14** | 2 | <1 |
| Tin | ppm | ASTM D5185m | >15 | **1** | <1 | <1 |
| Antimony | ppm | ASTM D5185m | | **---** | --- | <1 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

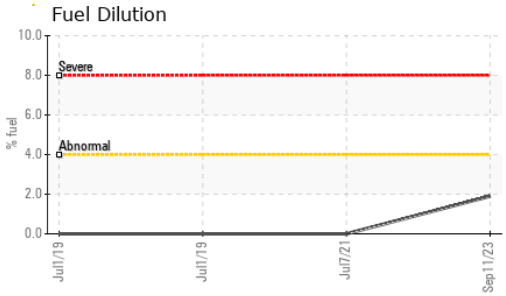
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 0 | **<1** | 4 | 400 |
| Barium | ppm | ASTM D5185m | 0 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 0 | **58** | 65 | 123 |
| Manganese | ppm | ASTM D5185m | | **1** | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 0 | **961** | 1018 | 683 |
| Calcium | ppm | ASTM D5185m | | **1036** | 1170 | 1564 |
| Phosphorus | ppm | ASTM D5185m | | **1022** | 1141 | 724 |
| Zinc | ppm | ASTM D5185m | | **1228** | 1367 | 875 |
| Sulfur | ppm | ASTM D5185m | | **3136** | 3074 | 2157 |

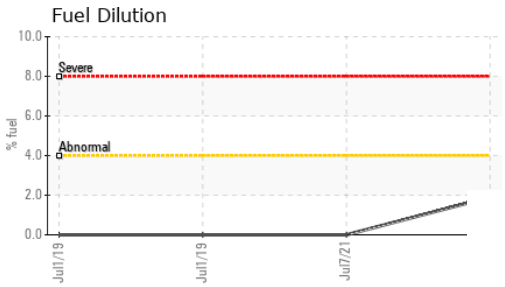
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **5** | 5 | 5 |
| Sodium | ppm | ASTM D5185m | | **4** | 2 | <1 |
| Potassium | ppm | ASTM D5185m | >20 | **2** | 11 | 0 |
| Fuel | % | ASTM D3524 | >4.0 | **1.9** | <1.0 | <1.0 |

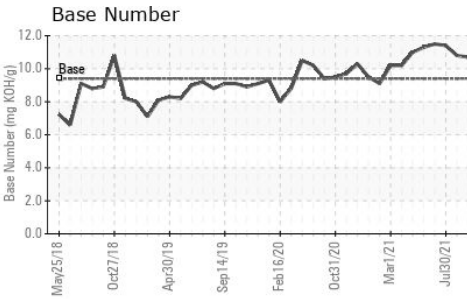
| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | | **0.1** | 0.2 | 0.7 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **7.2** | 5.4 | 7.1 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **23.5** | 24.3 | 26.1 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **17.7** | 16.4 | 17.8 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.4 | **9.1** | 10.6 | 10.7 |

# OIL ANALYSIS REPORT



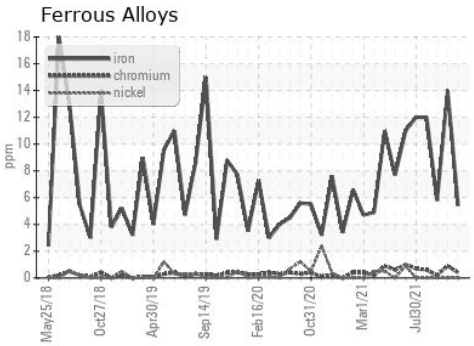



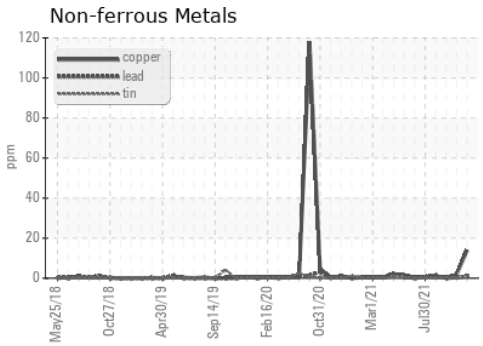



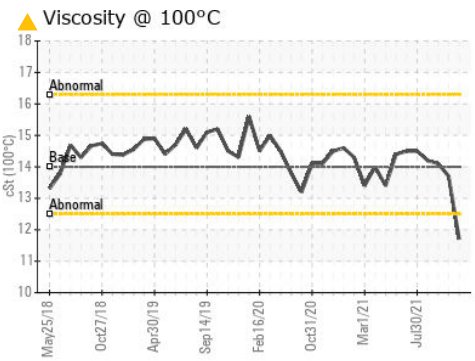

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Silt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Debris | scalar | *Visual | NONE | **NONE** | 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 | >0.1 | **NEG** | NEG | NEG |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

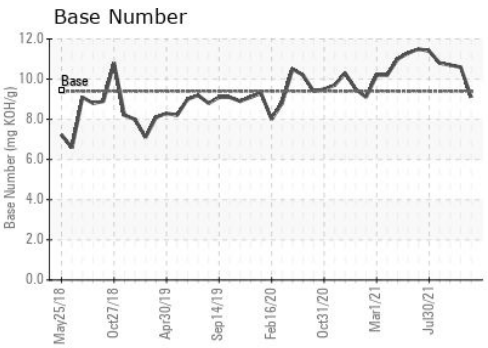
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 14 | ▲ **11.7** | 13.7 | 14.1 |

## GRAPHS




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : MW0037347 **Received** : 28 Sep 2023
**Lab Number** : 05964107 **Diagnosed** : 02 Oct 2023
**Unique Number** : 10670658 **Diagnostician** : Jonathan Hester
**Test Package** : MAR 2 ( Additional Tests: FuelDilution, PercentFuel )

*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)*

**INGRAM BARGE**
900 S 3RD ST
PADUCAH, KY
US 42003
Contact: JEFF BISHOP
jeff.bishop@ingrambarge.com
T:
F: (615)695-3697