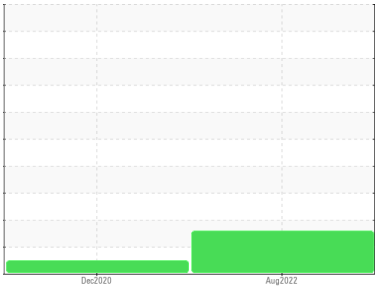
# PROBLEM SUMMARY

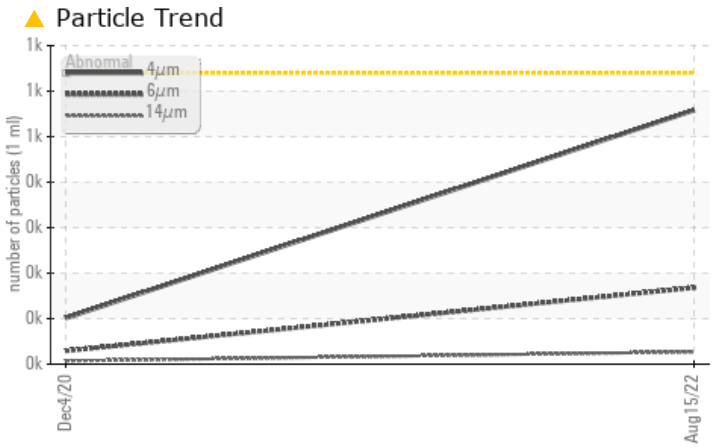
Area
**CTF**
Machine Id
**Dyno Side B**
Component
**Main Hydraulic System**
Fluid
**ESSO NUTO H ISO 46 (250 GAL)**

**Sample Rating Trend**




**ISO**

## COMPONENT CONDITION SUMMARY




## RECOMMENDATION

No corrective action is recommended at this time. The filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

## PROBLEMATIC TEST RESULTS

| | | | | | | |
|---|---|---|---|---|---|---|
| Sample Status | | | | **ATTENTION** | NORMAL | --- |
| Particles >6µm | | ASTM D7647 | >160 | ▲ **168** | 29 | --- |
| Particles >14µm | | ASTM D7647 | >20 | ▲ **27** | 7 | --- |
| Particles >21µm | | ASTM D7647 | >4 | ▲ **8** | 4 | --- |
| Oil Cleanliness | | ISO 4406 (c) | >16/14/11 | ▲ **16/15/12** | 14/12/10 | --- |


**Customer Id:** MICGRE
**Sample No.:** WC0500751
**Lab Number:** 05621743
**Test Package:** IND 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

**04 Dec 2020 Diag: Angela Borella**

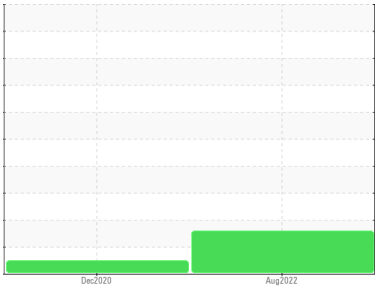
**NORMAL**

Resample at the next service interval to monitor.All component wear rates are normal. The amount and size of particulates present in the system are acceptable. 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**

# OIL ANALYSIS REPORT

Sample Rating Trend




ISO

Area
**CTF**
Machine Id
**Dyno Side B**
Component
**Main Hydraulic System**
Fluid
**ESSO NUTO H ISO 46 (250 GAL)**

## DIAGNOSIS

**Recommendation**
No corrective action is recommended at this time. The filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

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

**Contamination**
There is a moderate amount of particulates present in the oil.

**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 | | **WC0500751** | WC0500743 | --- |
| Sample Date | | Client Info | | **15 Aug 2022** | 04 Dec 2020 | --- |
| Machine Age | yrs | Client Info | | **32** | 0 | --- |
| Oil Age | yrs | Client Info | | **3** | 0 | --- |
| Oil Changed | | Client Info | | **Not Changd** | N/A | --- |
| Sample Status | | | | **ATTENTION** | NORMAL | --- |

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

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 0 | **0** | 0 | --- |
| Barium | ppm | ASTM D5185m | 0 | **0** | 0 | --- |
| Molybdenum | ppm | ASTM D5185m | 0 | **<1** | 0 | --- |
| Manganese | ppm | ASTM D5185m | | **0** | 0 | --- |
| Magnesium | ppm | ASTM D5185m | 5 | **1** | 0 | --- |
| Calcium | ppm | ASTM D5185m | 50 | **54** | 48 | --- |
| Phosphorus | ppm | ASTM D5185m | 330 | **366** | 375 | --- |
| Zinc | ppm | ASTM D5185m | 410 | **497** | 450 | --- |
| Sulfur | ppm | ASTM D5185m | 2700 | **3770** | 1017 | --- |

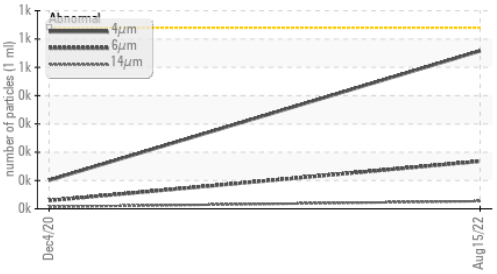
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >15 | **0** | <1 | --- |
| Sodium | ppm | ASTM D5185m | | **0** | 0 | --- |
| Potassium | ppm | ASTM D5185m | >20 | **<1** | 0 | --- |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >640 | **558** | 101 | --- |
| Particles >6µm | | ASTM D7647 | >160 | ▲ **168** | 29 | --- |
| Particles >14µm | | ASTM D7647 | >20 | ▲ **27** | 7 | --- |
| Particles >21µm | | ASTM D7647 | >4 | ▲ **8** | 4 | --- |
| Particles >38µm | | ASTM D7647 | >3 | **1** | 1 | --- |
| Particles >71µm | | ASTM D7647 | >3 | **0** | 1 | --- |
| Oil Cleanliness | | ISO 4406 (c) | >16/14/11 | ▲ **16/15/12** | 14/12/10 | --- |

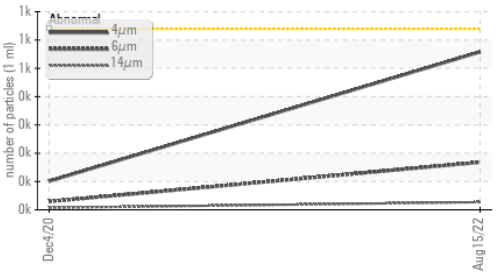
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.45 | **0.25** | 0.305 | --- |

# OIL ANALYSIS REPORT

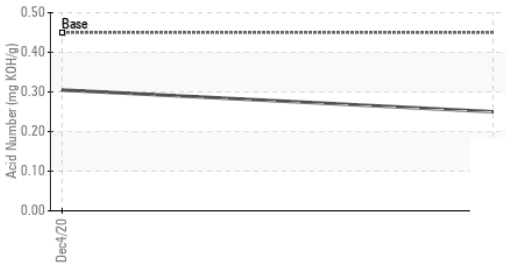
Particle Trend



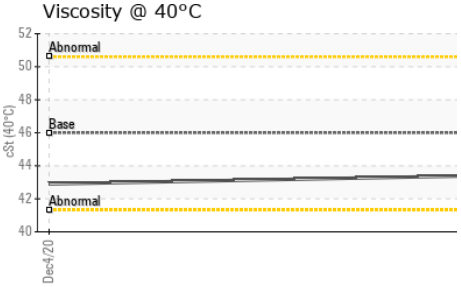

Particle Trend




Acid Number

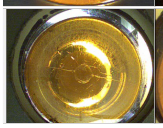
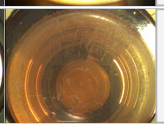



Viscosity @ 40°C



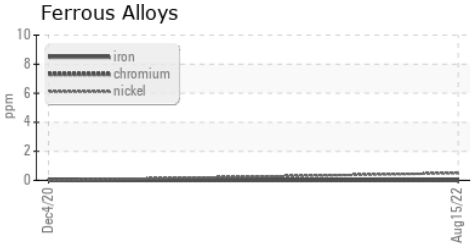

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Silt | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Debris | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Sand/Dirt | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Appearance | scalar | *Visual | NORML | **NORML** | NORML | --- |
| Odor | scalar | *Visual | NORML | **NORML** | NORML | --- |
| Emulsified Water | scalar | *Visual | >0.05 | **NEG** | NEG | --- |
| Free Water | scalar | *Visual | | **NEG** | NEG | --- |

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 46 | **43.4** | 42.9 | --- |

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

## GRAPHS

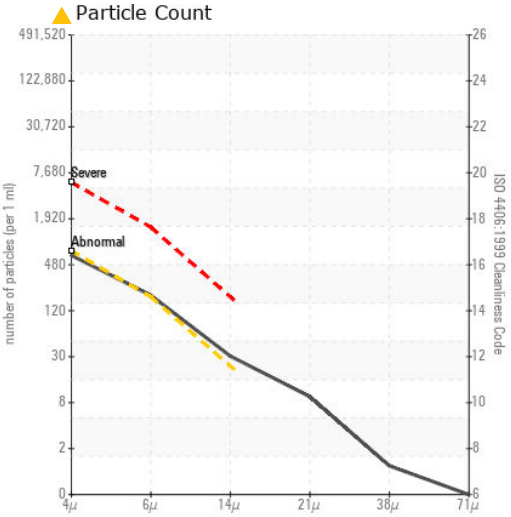
Ferrous Alloys



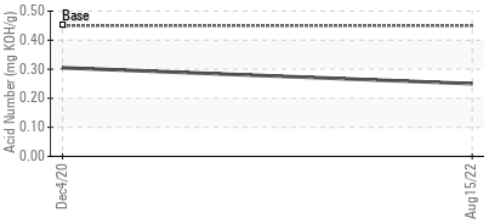

Non-ferrous Metals


Viscosity @ 40°C


Particle Count




Acid Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0500751
**Lab Number** : 05621743
**Unique Number** : 10101250
**Test Package** : IND 2

**Received** : 19 Aug 2022
**Diagnosed** : 22 Aug 2022
**Diagnostician** : Jonathan Hester

*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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