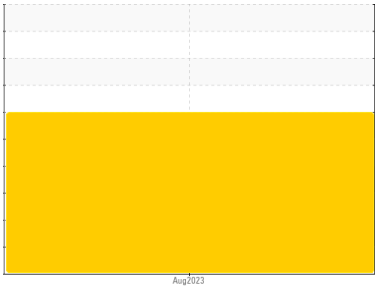
# FUEL REPORT

Sample Rating Trend




**WATER**

Area
**[14576]**
Machine Id
## RI-1 - BIODIESEL
Component
**Tank Diesel Fuel**
Fluid
**DIESEL FUEL No. 1 (--- GAL)**

## DIAGNOSIS

**Recommendation**
This is a baseline read-out on the submitted sample. Please note that the fuel was unsuitable to perform some of the normal laboratory tests.

**Corrosion**
The iron level is abnormal.

**Contaminants**
There is a high amount of particulates present in the fuel. There is a light concentration of water present in the fuel.

**Fuel Condition**
The fuel viscosity is higher than normal. The biodiesel content is higher than normal. Sulfur value derived by ASTM D5453 method for ULSD validation. Sulfur level is acceptable for ULSD specification.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC0850860** | --- | --- |
| Sample Date | | Client Info | | **15 Aug 2023** | --- | --- |
| Machine Age | hrs | Client Info | | **0** | --- | --- |
| Sample Status | | | | **ABNORMAL** | --- | --- |

| PHYSICAL PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| ASTM Color | scalar | *ASTM D1500 | | **L5.5** | --- | --- |
| Visc @ 40°C | cSt | ASTM D445 | 2.4 | ▲ **5.01** | --- | --- |

| SULFUR CONTENT | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sulfur | ppm | ASTM D5185m | | **41** | --- | --- |
| Sulfur (UVF) | ppm | ASTM D5453 | | **11** | --- | --- |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | <1.0 | **<1** | --- | --- |
| Sodium | ppm | ASTM D5185m | <0.1 | **0** | --- | --- |
| Potassium | ppm | ASTM D5185m | <0.1 | **0** | --- | --- |
| Water | % | ASTM D6304 | <0.05 | ▲ **0.179** | --- | --- |
| ppm Water | ppm | ASTM D6304 | <500 | ▲ **1797.1** | --- | --- |
| % Gasoline | % | *In-House | <0.50 | **0.0** | --- | --- |
| % Biodiesel | % | *In-House | <20.0 | ▲ **69.9** | --- | --- |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >2500 | ▲ **67844** | --- | --- |
| Particles >6µm | | ASTM D7647 | >640 | ▲ **24029** | --- | --- |
| Particles >14µm | | ASTM D7647 | >80 | ▲ **2231** | --- | --- |
| Particles >21µm | | ASTM D7647 | >20 | ▲ **650** | --- | --- |
| Particles >38µm | | ASTM D7647 | >4 | ▲ **32** | --- | --- |
| Particles >71µm | | ASTM D7647 | >3 | **1** | --- | --- |
| Oil Cleanliness | | ISO 4406 (c) | >18/16/13 | ▲ **23/22/18** | --- | --- |

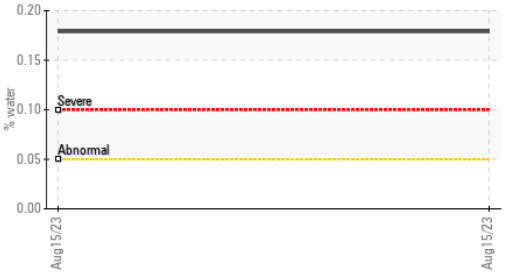
| HEAVY METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Aluminum | ppm | ASTM D5185m | <0.1 | **0** | --- | --- |
| Nickel | ppm | ASTM D5185m | <0.1 | **0** | --- | --- |
| Lead | ppm | ASTM D5185m | <0.1 | **1** | --- | --- |
| Vanadium | ppm | ASTM D5185m | <0.1 | **0** | --- | --- |
| Iron | ppm | ASTM D5185m | <0.1 | ▲ **428** | --- | --- |
| Calcium | ppm | ASTM D5185m | <0.1 | **3** | --- | --- |
| Magnesium | ppm | ASTM D5185m | <0.1 | **3** | --- | --- |
| Phosphorus | ppm | ASTM D5185m | <0.1 | **12** | --- | --- |
| Zinc | ppm | ASTM D5185m | <0.1 | **0** | --- | --- |

| SAMPLE IMAGES | | | | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Color | | | | *no image* | *no image* | *no image* |
| Bottom | | | | *no image* | *no image* | *no image* |

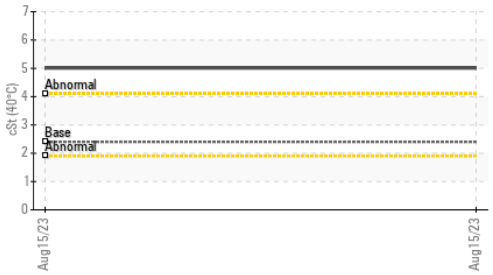
# FUEL REPORT

## GRAPHS

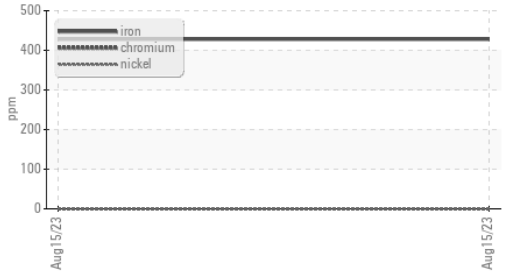
Water



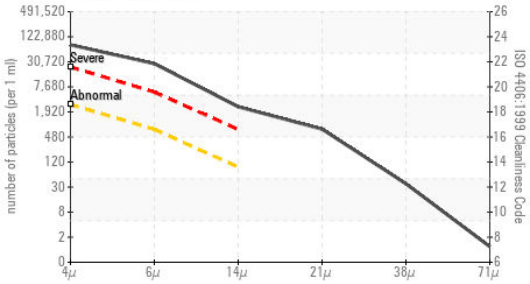

Viscosity @ 40°C



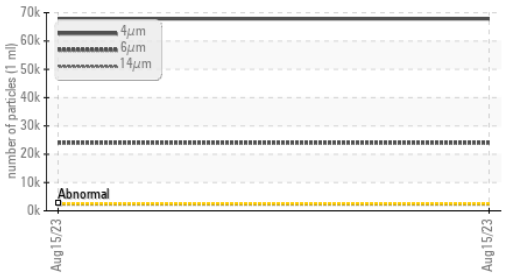

Ferrous Alloys



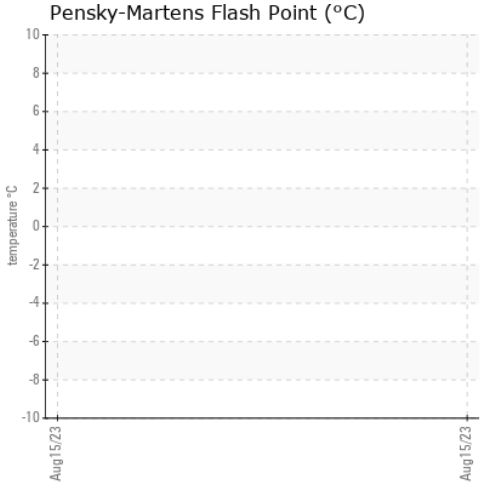

Particle Count




Particle Trend




Pensky-Martens Flash Point (°C)




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0850860
**Lab Number** : 05928541
**Unique Number** : 10608488
**Test Package** : DF-2 ( Additional Tests: Screen )

**Received** : 18 Aug 2023
**Diagnosed** : 25 Aug 2023
**Diagnostician** : Doug Bogart

*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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