# FUEL REPORT

Sample Rating Trend


NORMAL

Area
## VA Ann Arbor Healthcare System [8004 POST]
Machine Id
## [VA Ann Arbor Healthcare System] TANK 3
Component
**Diesel Fuel**
Fluid
**No.2 DIESEL FUEL (ULTRALOW SULPHUR) (25000 GAL)**

## DIAGNOSIS

**Recommendation**
All laboratory tests indicate that this sample meets specifications for No.2 low-sulfur diesel fuel.

**Corrosion**
All metal levels are normal indicating no corrosion in the system.

**Contaminants**
There is no bacteria or fungus (yeast and/or mold) indicated in the sample. The water content is negligible. There is no indication of any contamination in the fuel. The amount and size of particulates present in the system are acceptable.

**Fuel Condition**
Sulfur value derived by ASTM D5453 method for ULSD validation.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC06132847** | --- | --- |
| Sample Date | | Client Info | | **14 Mar 2024** | --- | --- |
| Machine Age | hrs | Client Info | | **0** | --- | --- |
| Sample Status | | | | **NORMAL** | --- | --- |

| PHYSICAL PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Specific Gravity | | *ASTM D1298 | 0.839 | **0.846** | --- | --- |
| Fuel Color | text | *Visual Screen | Yllow | **Red** | --- | --- |
| ASTM Color | scalar | *ASTM D1500 | | **L4.0** | --- | --- |
| Visc @ 40°C | cSt | ASTM D445 | 3.0 | **2.3** | --- | --- |
| Pensky-Martens Flash Point | °C | *PMCC Calculated | 52 | **64.3** | --- | --- |

| SULFUR CONTENT | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sulfur | ppm | ASTM D5185m | 10 | **5** | --- | --- |
| Sulfur (UVF) | ppm | ASTM D5453 | | **43** | --- | --- |

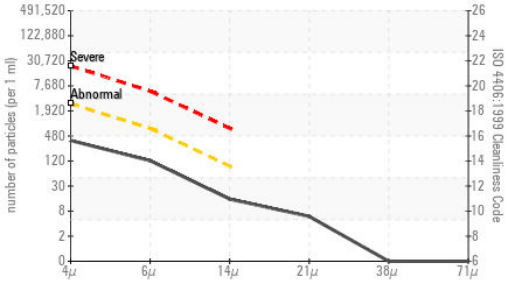
| DISTILLATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Initial Boiling Point | °C | ASTM D86 | 165 | **172** | --- | --- |
| 5% Distillation Point | °C | ASTM D86 | | **197** | --- | --- |
| 10% Distill Point | °C | ASTM D86 | 201 | **205** | --- | --- |
| 15% Distillation Point | °C | ASTM D86 | | **211** | --- | --- |
| 20% Distill Point | °C | ASTM D86 | 216 | **217** | --- | --- |
| 30% Distill Point | °C | ASTM D86 | 230 | **228** | --- | --- |
| 40% Distill Point | °C | ASTM D86 | 243 | **238** | --- | --- |
| 50% Distill Point | °C | ASTM D86 | 255 | **249** | --- | --- |
| 60% Distill Point | °C | ASTM D86 | 267 | **261** | --- | --- |
| 70% Distill Point | °C | ASTM D86 | 280 | **274** | --- | --- |
| 80% Distill Point | °C | ASTM D86 | 295 | **289** | --- | --- |
| 85% Distillation Point | °C | ASTM D86 | | **299** | --- | --- |
| 90% Distill Point | °C | ASTM D86 | 310 | **312** | --- | --- |
| 95% Distillation Point | °C | ASTM D86 | | **333** | --- | --- |
| Final Boiling Point | °C | ASTM D86 | 341 | **346** | --- | --- |
| Distillation Residue | % | ASTM D86 | 3.0 | **1.4** | --- | --- |
| Distillation Loss | % | ASTM D86 | 3.0 | **0.7** | --- | --- |

| IGNITION QUALITY | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| API Gravity | ASTM D7777 | 37.7 | **35.8** | --- | --- |
| Cetane Index | ASTM D4737 | <40.0 | **44.4** | --- | --- |

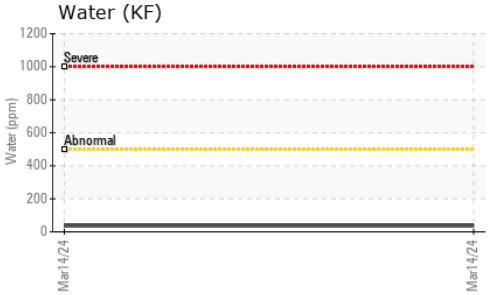
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | <1.0 | **0** | --- | --- |
| Sodium | ppm | ASTM D5185m | <0.1 | **<1** | --- | --- |
| Potassium | ppm | ASTM D5185m | <0.1 | **<1** | --- | --- |
| Water | % | ASTM D6304 | <0.05 | **0.003** | --- | --- |
| ppm Water | ppm | ASTM D6304 | <500 | **36** | --- | --- |
| % Gasoline | % | *In-House | <0.50 | **0.0** | --- | --- |
| % Biodiesel | % | *In-House | <20.0 | **0.0** | --- | --- |

# FUEL REPORT

Particle Count

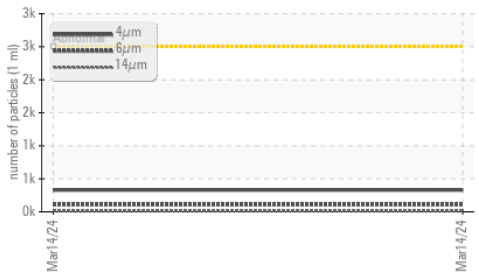



Water (KF)

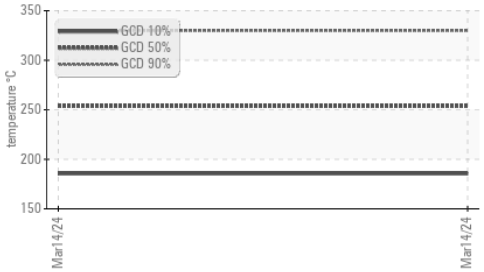



Viscosity @ 40°C


Particle Trend

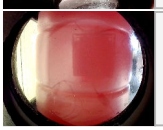



Gas Chromatography (GCD)



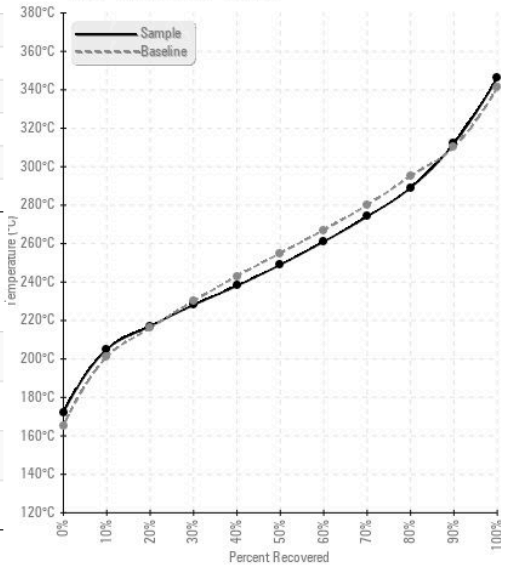

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >2500 | **329** | --- | --- |
| Particles >6µm | | ASTM D7647 | >640 | **108** | --- | --- |
| Particles >14µm | | ASTM D7647 | >80 | **13** | --- | --- |
| Particles >21µm | | ASTM D7647 | >20 | **5** | --- | --- |
| Particles >38µm | | ASTM D7647 | >4 | **0** | --- | --- |
| Particles >71µm | | ASTM D7647 | >3 | **0** | --- | --- |
| Oil Cleanliness | | ISO 4406 (c) | >18/16/13 | **16/14/11** | --- | --- |

| HEAVY METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Aluminum | ppm | ASTM D5185m | <0.1 | **<1** | --- | --- |
| Nickel | ppm | ASTM D5185m | <0.1 | **<1** | --- | --- |
| Lead | ppm | ASTM D5185m | <0.1 | **0** | --- | --- |
| Vanadium | ppm | ASTM D5185m | <0.1 | **0** | --- | --- |
| Iron | ppm | ASTM D5185m | <0.1 | **0** | --- | --- |
| Calcium | ppm | ASTM D5185m | <0.1 | **52** | --- | --- |
| Magnesium | ppm | ASTM D5185m | <0.1 | **0** | --- | --- |
| Phosphorus | ppm | ASTM D5185m | <0.1 | **8** | --- | --- |
| Zinc | ppm | ASTM D5185m | <0.1 | **9** | --- | --- |

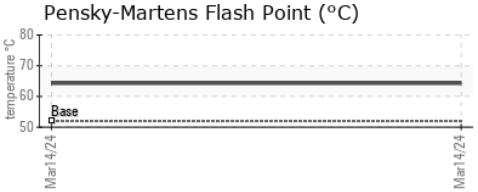
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  | *no image* | *no image* |
| Bottom | | |  | *no image* | *no image* |

## GRAPHS

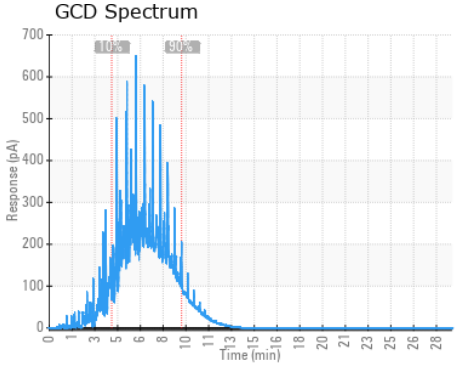
Fuel Distillation Curve




Pensky-Martens Flash Point (°C)




GCD Spectrum




**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC06132847
**Lab Number** : 06132847
**Unique Number** : 10952312
**Test Package** : DF-2 ( Additional Tests: Fuel, Screen )

**Received** : 28 Mar 2024
**Tested** : 10 Apr 2024
**Diagnosed** : 10 Apr 2024 - Doug Bogart

Certificate L2367

*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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