# FUEL REPORT

Sample Rating Trend


**CONTAMINANT**

Machine Id
## 178658 - LENOX BAXER
Component
**Diesel Fuel**
Fluid
**No.2 DIESEL FUEL (ULTRALOW SULPHUR) (--- QTS)**

## DIAGNOSIS

**Recommendation**
We advise that you follow the water drain-off procedure for this component, and use off-line filtration to improve the cleanliness of the system fluid. We recommend you service and check the fuel filters for mucous-like deposits. Check with fuel supplier for biocides available to destroy the microorganisms in the fuel system.

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

**Contaminants**
There is a high amount of particulates present in the fuel. There is a moderate amount of visible silt present in the sample. Excessive free water present. There is a moderate concentration of Bacteria, Yeast and/or Fungus present in the sample.

**Fuel Condition**
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 | | **WC06135405** | --- | --- |
| Sample Date | | Client Info | | **29 Mar 2024** | --- | --- |
| Machine Age | hrs | Client Info | | **0** | --- | --- |
| Sample Status | | | | **ABNORMAL** | --- | --- |

| PHYSICAL PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel Color | text | *Visual Screen | Yllow | **Red** | --- | --- |
| ASTM Color | scalar | *ASTM D1500 | | **L4.0** | --- | --- |
| Visc @ 40°C | cSt | ASTM D445 | 3.0 | **2.46** | --- | --- |
| Pensky-Martens Flash Point | °C | *PMCC Calculated | 52 | **60.9** | --- | --- |

| SULFUR CONTENT | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sulfur | ppm | ASTM D5185m | 10 | **4** | --- | --- |
| Sulfur (UVF) | ppm | ASTM D5453 | | **9** | --- | --- |

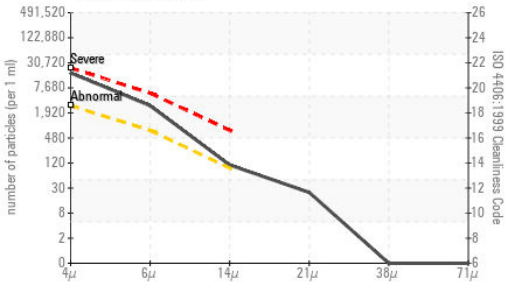
| DISTILLATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Initial Boiling Point | °C | ASTM D86 | 165 | **172** | --- | --- |
| 5% Distillation Point | °C | ASTM D86 | | **195** | --- | --- |
| 10% Distill Point | °C | ASTM D86 | 201 | **205** | --- | --- |
| 15% Distillation Point | °C | ASTM D86 | | **213** | --- | --- |
| 20% Distill Point | °C | ASTM D86 | 216 | **221** | --- | --- |
| 30% Distill Point | °C | ASTM D86 | 230 | **236** | --- | --- |
| 40% Distill Point | °C | ASTM D86 | 243 | **249** | --- | --- |
| 50% Distill Point | °C | ASTM D86 | 255 | **263** | --- | --- |
| 60% Distill Point | °C | ASTM D86 | 267 | **278** | --- | --- |
| 70% Distill Point | °C | ASTM D86 | 280 | **292** | --- | --- |
| 80% Distill Point | °C | ASTM D86 | 295 | **309** | --- | --- |
| 85% Distillation Point | °C | ASTM D86 | | **319** | --- | --- |
| 90% Distill Point | °C | ASTM D86 | 310 | **329** | --- | --- |
| 95% Distillation Point | °C | ASTM D86 | | **343** | --- | --- |
| Final Boiling Point | °C | ASTM D86 | 341 | **357** | --- | --- |

| IGNITION QUALITY | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| API Gravity | | ASTM D7777 | 37.7 | **36** | --- | --- |
| Cetane Index | | ASTM D4737 | <40.0 | **48** | --- | --- |

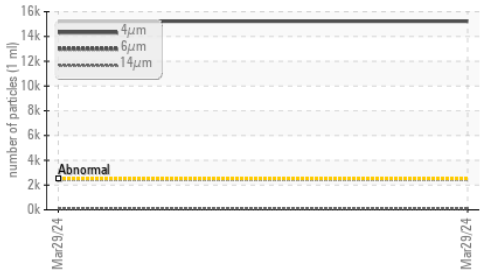
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | <1.0 | **<1** | --- | --- |
| Sodium | ppm | ASTM D5185m | <0.1 | **1** | --- | --- |
| Potassium | ppm | ASTM D5185m | <0.1 | **0** | --- | --- |
| Water | % | ASTM D6304 | <0.05 | **0.020** | --- | --- |
| ppm Water | ppm | ASTM D6304 | <500 | **205** | --- | --- |
| % Gasoline | % | *In-House | <0.50 | **0.0** | --- | --- |
| % Biodiesel | % | *In-House | <20.0 | **3.0** | --- | --- |

# FUEL REPORT

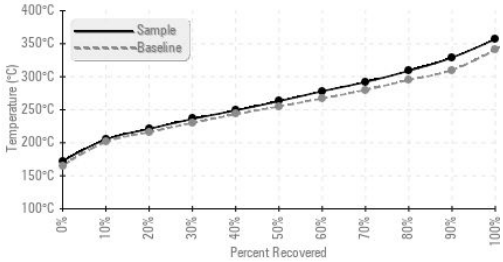
Particle Count



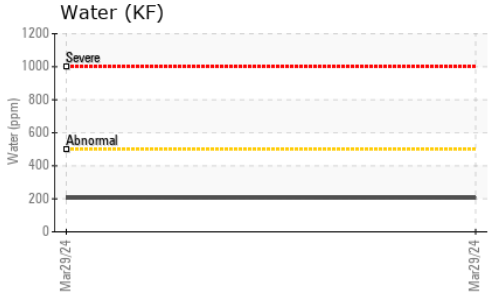

Particle Trend



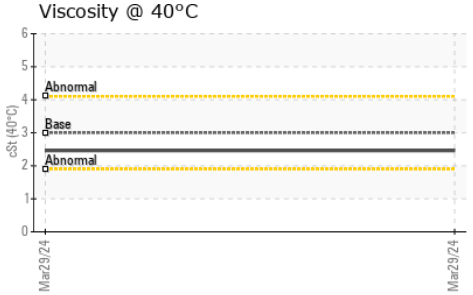

Fuel Distillation Curve




Water (KF)




Viscosity @ 40°C




| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >2500 | ▲ **15227** | --- | --- |
| Particles >6µm | | ASTM D7647 | >640 | ▲ **2504** | --- | --- |
| Particles >14µm | | ASTM D7647 | >80 | ▲ **95** | --- | --- |
| Particles >21µm | | ASTM D7647 | >20 | ▲ **21** | --- | --- |
| Particles >38µm | | ASTM D7647 | >4 | **0** | --- | --- |
| Particles >71µm | | ASTM D7647 | >3 | **0** | --- | --- |
| Oil Cleanliness | | ISO 4406 (c) | >18/16/13 | ▲ **21/19/14** | --- | --- |

| MICROBIAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Bacteria | CFU/ml | WC-Method | >=100000 | ▲ **100** | --- | --- |
| Yeast | CFU/ml | WC-Method | >=100000 | ▲ **10** | --- | --- |
| Mold | Colonies | WC-Method | MODER | **---** | --- | --- |

| 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 | **0** | --- | --- |
| Vanadium | ppm | ASTM D5185m | <0.1 | **0** | --- | --- |
| Iron | ppm | ASTM D5185m | <0.1 | **<1** | --- | --- |
| Calcium | ppm | ASTM D5185m | <0.1 | **0** | --- | --- |
| Magnesium | ppm | ASTM D5185m | <0.1 | **0** | --- | --- |
| Phosphorus | ppm | ASTM D5185m | <0.1 | **0** | --- | --- |
| Zinc | ppm | ASTM D5185m | <0.1 | **0** | --- | --- |

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

Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC06135405 **Received** : 01 Apr 2024
**Lab Number** : 06135405 **Tested** : 11 Apr 2024
**Unique Number** : 10954870 **Diagnosed** : 11 Apr 2024 - Doug Bogart
**Test Package** : DF-2 ( Additional Tests: Bacteria, Fuel, Screen )

*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)*

**COUCH OIL COMPANY**
2907 HILLSBOROUGH RD
DURHAM, NC
US 27705
Contact: JESSE BROWN
jesse@couchoilcompany.com
T: (919)285-5408
F: