# FUEL REPORT

Sample Rating Trend


**WEAR**

Machine Id

## KIOTI KT0001550 (S/N NOT GIVEN)

Component

**Diesel Fuel**

Fluid

**No.2 DIESEL FUEL (ULTRALOW SULPHUR) (--- GAL)**

## DIAGNOSIS

**Recommendation**

We advise that you filter this fluid before use. All other laboratory tests indicate that this sample meets specifications for No.2 ultra-low-sulfur diesel fuel.

**Corrosion**

The iron level is abnormal.

**Contaminants**

There is a moderate amount of silt (particulates < 14 microns in size) present in the fuel. The water content is negligible. There is no bacteria or fungus (yeast and/or mold) indicated 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 | | **KT0001550** | --- | --- |
| Sample Date | | Client Info | | **06 Jun 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 | | **L4.5** | --- | --- |
| Visc @ 40°C | cSt | ASTM D445 | 3.0 | **2.46** | --- | --- |
| Pensky-Martens Flash Point | °C | *PMCC Calculated | 52 | **60.1** | --- | --- |

| SULFUR CONTENT | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sulfur | ppm | ASTM D5185m | 10 | **510** | --- | --- |
| Sulfur (UVF) | ppm | ASTM D5453 | | **9** | --- | --- |

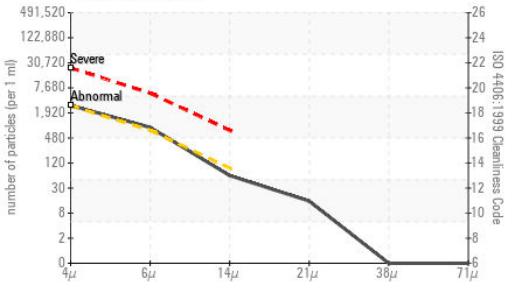
| DISTILLATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Initial Boiling Point | °C | ASTM D86 | 165 | **169** | --- | --- |
| 5% Distillation Point | °C | ASTM D86 | | **192** | --- | --- |
| 10% Distill Point | °C | ASTM D86 | 201 | **203** | --- | --- |
| 15% Distillation Point | °C | ASTM D86 | | **212** | --- | --- |
| 20% Distill Point | °C | ASTM D86 | 216 | **220** | --- | --- |
| 30% Distill Point | °C | ASTM D86 | 230 | **235** | --- | --- |
| 40% Distill Point | °C | ASTM D86 | 243 | **248** | --- | --- |
| 50% Distill Point | °C | ASTM D86 | 255 | **261** | --- | --- |
| 60% Distill Point | °C | ASTM D86 | 267 | **274** | --- | --- |
| 70% Distill Point | °C | ASTM D86 | 280 | **287** | --- | --- |
| 80% Distill Point | °C | ASTM D86 | 295 | **301** | --- | --- |
| 85% Distillation Point | °C | ASTM D86 | | **310** | --- | --- |
| 90% Distill Point | °C | ASTM D86 | 310 | **320** | --- | --- |
| 95% Distillation Point | °C | ASTM D86 | | **336** | --- | --- |
| Final Boiling Point | °C | ASTM D86 | 341 | **352** | --- | --- |

| IGNITION QUALITY | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| API Gravity | | ASTM D7777 | 37.7 | **36** | --- | --- |
| Cetane Index | | ASTM D4737 | <40.0 | **47** | --- | --- |

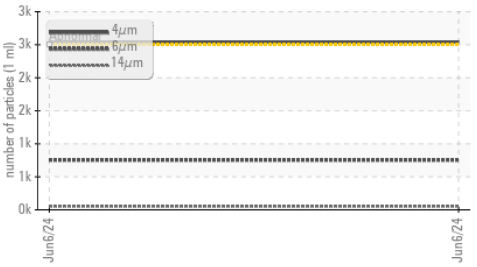
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | <1.0 | **<1** | --- | --- |
| Sodium | ppm | ASTM D5185m | <0.1 | **0** | --- | --- |
| Potassium | ppm | ASTM D5185m | <0.1 | **<1** | --- | --- |
| Water | % | ASTM D6304 | <0.05 | **0.003** | --- | --- |
| ppm Water | ppm | ASTM D6304 | <500 | **34** | --- | --- |
| % Gasoline | % | *In-House | <0.50 | **0.0** | --- | --- |
| % Biodiesel | % | *In-House | <20.0 | **0.0** | --- | --- |

# FUEL REPORT

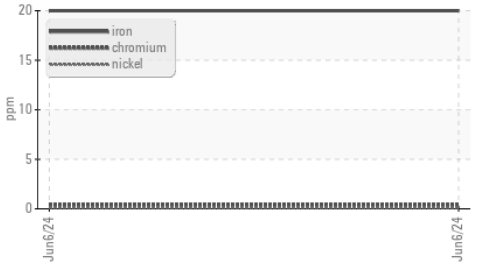
Particle Count




Particle Trend

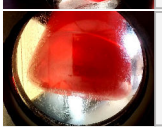



Ferrous Alloys



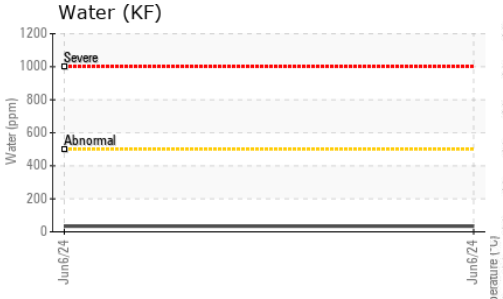

| FLUID CLEANLINESS | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Particles >4µm | ASTM D7647 | >2500 | ▲ **2539** | --- | --- |
| Particles >6µm | ASTM D7647 | >640 | ▲ **754** | --- | --- |
| Particles >14µm | ASTM D7647 | >80 | **53** | --- | --- |
| Particles >21µm | ASTM D7647 | >20 | **13** | --- | --- |
| Particles >38µm | ASTM D7647 | >4 | **0** | --- | --- |
| Particles >71µm | ASTM D7647 | >3 | **0** | --- | --- |
| Oil Cleanliness | ISO 4406 (c) | >18/16/13 | ▲ **19/17/13** | --- | --- |

| 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 | **<1** | --- | --- |
| Vanadium | ppm | ASTM D5185m | <0.1 | **0** | --- | --- |
| Iron | ppm | ASTM D5185m | <0.1 | ▲ **20** | --- | --- |
| Calcium | ppm | ASTM D5185m | <0.1 | **0** | --- | --- |
| Magnesium | ppm | ASTM D5185m | <0.1 | **<1** | --- | --- |
| Phosphorus | ppm | ASTM D5185m | <0.1 | **10** | --- | --- |
| Zinc | ppm | ASTM D5185m | <0.1 | **1** | --- | --- |

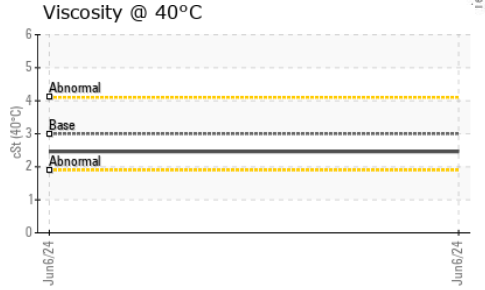
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  | *no image* | *no image* |
| Bottom | | |  | *no image* | *no image* |

## GRAPHS

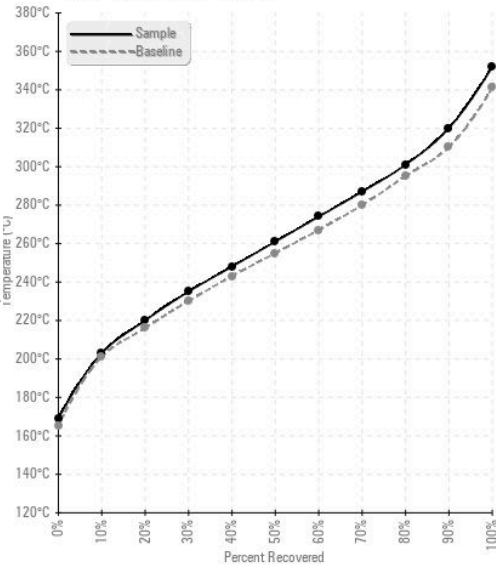
Water (KF)



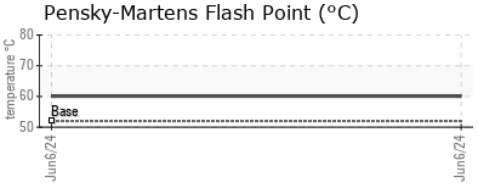

Viscosity @ 40°C



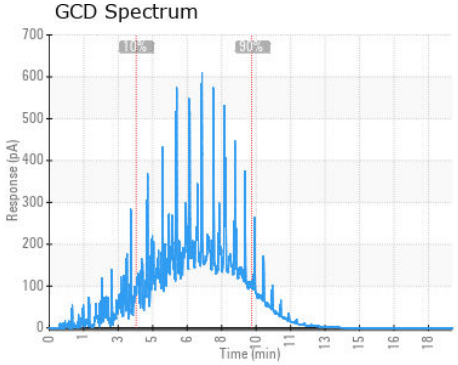

Fuel Distillation Curve




Pensky-Martens Flash Point (°C)




GCD Spectrum




**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : KT0001550 **Received** : 06 Jun 2024
**Lab Number** : 06202343 **Tested** : 18 Jun 2024
**Unique Number** : 11069804 **Diagnosed** : 18 Jun 2024 - Doug Bogart
**Test Package** : DF-2 ( Additional Tests: Fuel, Screen )

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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