



FUEL REPORT

Sample Rating Trend



ISO



Machine Id
ZDC AST 2 12 IN
 Component
Diesel Fuel
 Fluid
 DIESEL FUEL No. 2 (--- GAL)

DIAGNOSIS

Recommendation

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

Corrosion

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

Contaminants

There is a high amount of particulates 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 above maximum allowed value for ULSD specification.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|--------------------|-------------|-------------|------------|--------------------|----------|----------|
| Sample Number | Client Info | | | WC0929971 | --- | --- |
| Sample Date | Client Info | | | 08 May 2024 | --- | --- |
| Machine Age | hrs | Client Info | | 0 | --- | --- |
| Sample Status | | | | ABNORMAL | --- | --- |

| PHYSICAL PROPERTIES | | method | limit/base | current | history1 | history2 |
|----------------------------|--------|------------------|------------|-------------|----------|----------|
| Fuel Color | text | *Visual Screen | | Red | --- | --- |
| ASTM Color | scalar | *ASTM D1500 | | L4.5 | --- | --- |
| Visc @ 40°C | cSt | ASTM D445 | 4.1 | 2.53 | --- | --- |
| Pensky-Martens Flash Point | °C | *PMCC Calculated | | 61 | --- | --- |

| SULFUR CONTENT | | method | limit/base | current | history1 | history2 |
|----------------|-----|-------------|------------|----------|----------|----------|
| Sulfur | ppm | ASTM D5185m | | 0 | --- | --- |
| Sulfur (UVF) | ppm | ASTM D5453 | | 9 | --- | --- |

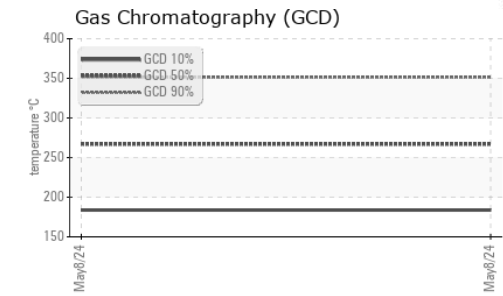
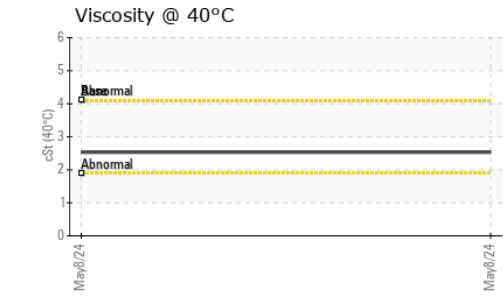
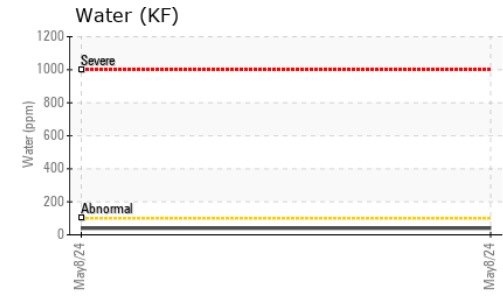
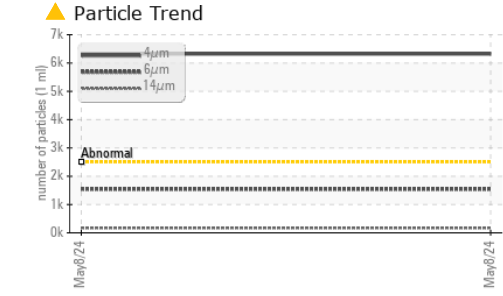
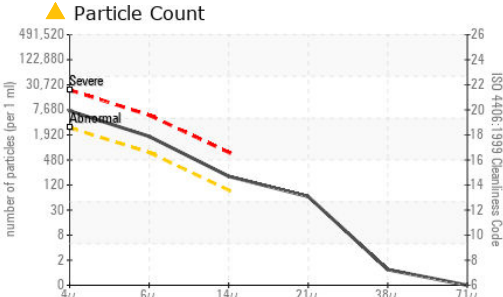
| DISTILLATION | | method | limit/base | current | history1 | history2 |
|------------------------|----|----------|------------|------------|----------|----------|
| Initial Boiling Point | °C | ASTM D86 | | 172 | --- | --- |
| 5% Distillation Point | °C | ASTM D86 | | 196 | --- | --- |
| 10% Distill Point | °C | ASTM D86 | | 206 | --- | --- |
| 15% Distillation Point | °C | ASTM D86 | | 214 | --- | --- |
| 20% Distill Point | °C | ASTM D86 | | 222 | --- | --- |
| 30% Distill Point | °C | ASTM D86 | | 237 | --- | --- |
| 40% Distill Point | °C | ASTM D86 | | 251 | --- | --- |
| 50% Distill Point | °C | ASTM D86 | | 264 | --- | --- |
| 60% Distill Point | °C | ASTM D86 | | 278 | --- | --- |
| 70% Distill Point | °C | ASTM D86 | | 292 | --- | --- |
| 80% Distill Point | °C | ASTM D86 | | 308 | --- | --- |
| 85% Distillation Point | °C | ASTM D86 | | 318 | --- | --- |
| 90% Distill Point | °C | ASTM D86 | | 329 | --- | --- |
| 95% Distillation Point | °C | ASTM D86 | | 344 | --- | --- |
| Final Boiling Point | °C | ASTM D86 | | 357 | --- | --- |

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

| 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 | 0 | --- | --- |
| Water | % | ASTM D6304 | <0.05 | 0.004 | --- | --- |
| ppm Water | ppm | ASTM D6304 | <500 | 40 | --- | --- |
| % Gasoline | % | *In-House | <0.50 | 0.0 | --- | --- |
| % Biodiesel | % | *In-House | <20.0 | 1.6 | --- | --- |



FUEL REPORT

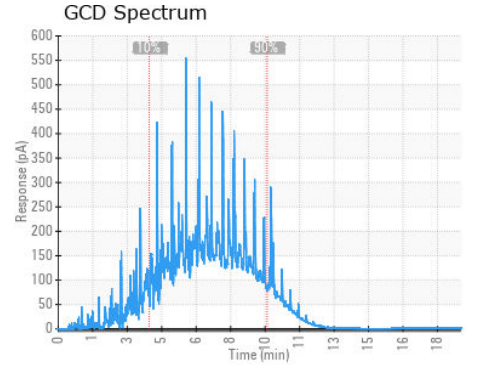
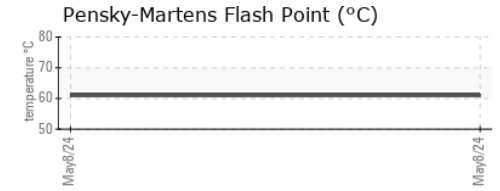
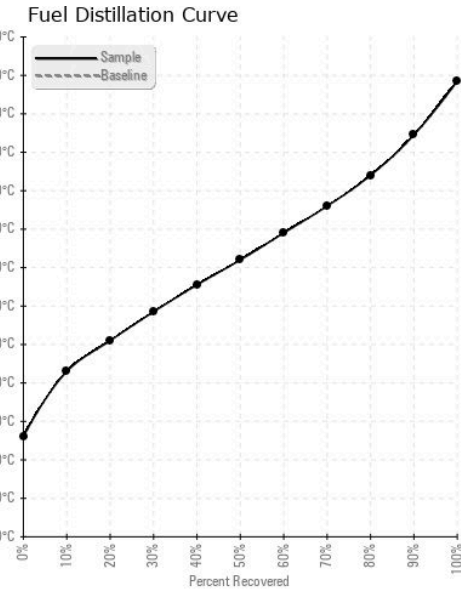


| FLUID CLEANLINESS | method | limit/base | current | history1 | history2 |
|-------------------|--------------|------------|------------|----------|----------|
| Particles >4µm | ASTM D7647 | >2500 | ▲ 6322 | --- | --- |
| Particles >6µm | ASTM D7647 | >640 | ▲ 1546 | --- | --- |
| Particles >14µm | ASTM D7647 | >80 | ▲ 171 | --- | --- |
| Particles >21µm | ASTM D7647 | >20 | ▲ 56 | --- | --- |
| Particles >38µm | ASTM D7647 | >4 | 1 | --- | --- |
| Particles >71µm | ASTM D7647 | >3 | 0 | --- | --- |
| Oil Cleanliness | ISO 4406 (c) | >18/16/13 | ▲ 20/18/15 | --- | --- |

| 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 | 0 | --- | --- |
| 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 |

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0929971 **Received** : 09 May 2024
Lab Number : 06174989 **Tested** : 24 May 2024
Unique Number : 11021042 **Diagnosed** : 24 May 2024 - Doug Bogart
Test Package : DF-2 (Additional Tests: Fuel, Screen)

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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)