



FUEL REPORT

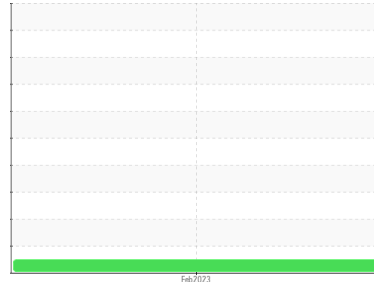
Sample Rating Trend

NORMAL



Machine Id
KIOTI NX5010 VX13-00004

Component
Diesel Fuel
Fluid
NOT GIVEN (--- GAL)



DIAGNOSIS

Recommendation

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 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. Sulfur level is acceptable for ULSD specification.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|--------------------|-------------|-------------|------------|--------------------|----------|----------|
| Sample Number | Client Info | | | KT0000310 | --- | --- |
| Sample Date | Client Info | | | 02 Feb 2023 | --- | --- |
| Machine Age | hrs | Client Info | | 428 | --- | --- |
| Sample Status | | | | NORMAL | --- | --- |

| PHYSICAL PROPERTIES | | method | limit/base | current | history1 | history2 |
|----------------------------|--------|------------------|------------|--------------|----------|----------|
| Specific Gravity | | *ASTM D1298 | | 0.831 | --- | --- |
| Fuel Color | text | *Visual Screen | | Red | --- | --- |
| ASTM Color | scalar | *ASTM D1500 | | L4.0 | --- | --- |
| Visc @ 40°C | cSt | ASTM D445 | | 2.26 | --- | --- |
| Pensky-Martens Flash Point | °C | *PMCC Calculated | | 55 | --- | --- |

| SULFUR CONTENT | | method | limit/base | current | history1 | history2 |
|----------------|-----|-------------|------------|-----------|----------|----------|
| Sulfur | ppm | ASTM D5185m | | 40 | --- | --- |
| Sulfur (UVF) | ppm | ASTM D5453 | | 8 | --- | --- |

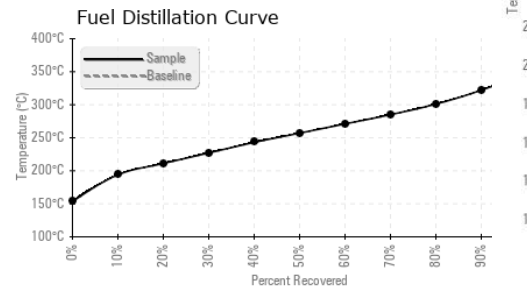
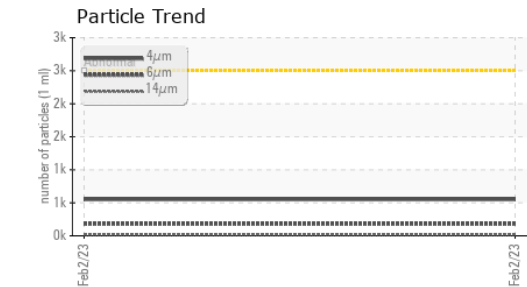
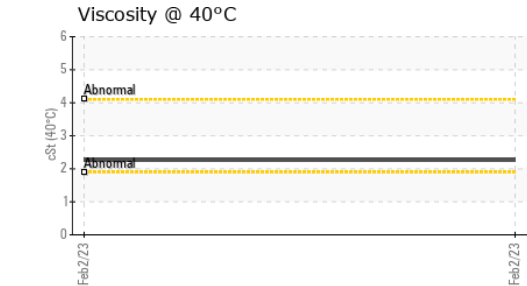
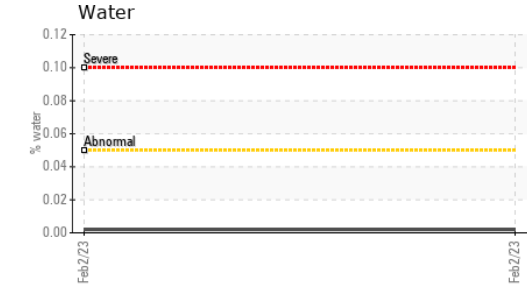
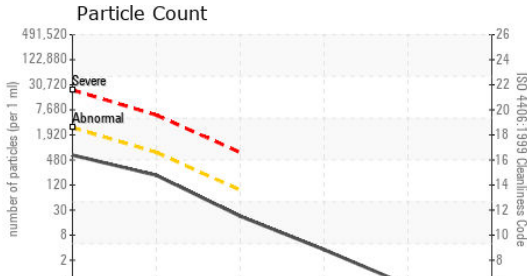
| DISTILLATION | | method | limit/base | current | history1 | history2 |
|------------------------|----|----------|------------|------------|----------|----------|
| Initial Boiling Point | °C | ASTM D86 | | 153 | --- | --- |
| 5% Distillation Point | °C | ASTM D86 | | 183 | --- | --- |
| 10% Distill Point | °C | ASTM D86 | | 194 | --- | --- |
| 15% Distillation Point | °C | ASTM D86 | | 202 | --- | --- |
| 20% Distill Point | °C | ASTM D86 | | 211 | --- | --- |
| 30% Distill Point | °C | ASTM D86 | | 227 | --- | --- |
| 40% Distill Point | °C | ASTM D86 | | 243 | --- | --- |
| 50% Distill Point | °C | ASTM D86 | | 257 | --- | --- |
| 60% Distill Point | °C | ASTM D86 | | 271 | --- | --- |
| 70% Distill Point | °C | ASTM D86 | | 285 | --- | --- |
| 80% Distill Point | °C | ASTM D86 | | 301 | --- | --- |
| 85% Distillation Point | °C | ASTM D86 | | 311 | --- | --- |
| 90% Distill Point | °C | ASTM D86 | | 322 | --- | --- |
| 95% Distillation Point | °C | ASTM D86 | | 339 | --- | --- |
| Final Boiling Point | °C | ASTM D86 | | 348 | --- | --- |
| Distillation Residue | % | ASTM D86 | | 1.4 | --- | --- |
| Distillation Loss | % | ASTM D86 | | 0.7 | --- | --- |

| IGNITION QUALITY | | method | limit/base | current | history1 | history2 |
|------------------|--|------------|------------|-------------|----------|----------|
| API Gravity | | ASTM D7777 | | 38.8 | --- | --- |
| Cetane Index | | ASTM D4737 | <40.0 | 50.9 | --- | --- |

| 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 | 0.002 | --- | --- |
| ppm Water | ppm | ASTM D6304 | <500 | 18.2 | --- | --- |
| % Gasoline | % | *In-House | <0.50 | 0.0 | --- | --- |
| % Biodiesel | % | *In-House | <20.0 | 0.0 | --- | --- |



FUEL REPORT

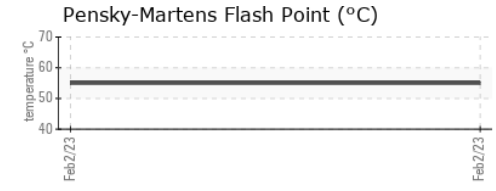
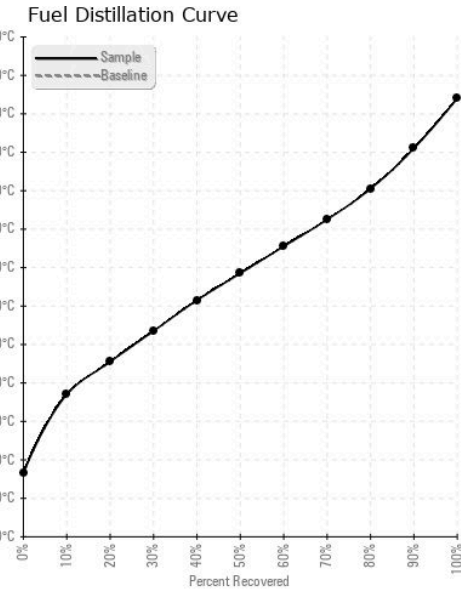


| FLUID CLEANLINESS | method | limit/base | current | history1 | history2 |
|-------------------|--------------|------------|-----------------|----------|----------|
| Particles >4µm | ASTM D7647 | >2500 | 552 | --- | --- |
| Particles >6µm | ASTM D7647 | >640 | 181 | --- | --- |
| Particles >14µm | ASTM D7647 | >80 | 19 | --- | --- |
| Particles >21µm | ASTM D7647 | >20 | 3 | --- | --- |
| Particles >38µm | ASTM D7647 | >4 | 0 | --- | --- |
| Particles >71µm | ASTM D7647 | >3 | 0 | --- | --- |
| Oil Cleanliness | ISO 4406 (c) | >18/16/13 | 16/15/11 | --- | --- |

| 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 | <1 | --- | --- |
| Magnesium | ppm | ASTM D5185m <0.1 | 0 | --- | --- |
| Phosphorus | ppm | ASTM D5185m <0.1 | 2 | --- | --- |
| Zinc | ppm | ASTM D5185m <0.1 | 0 | --- | --- |

| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---------------|--------|------------|---------|----------|----------|
| Color | | | | | |
| Bottom | | | | | |

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KT0000310 **Received** : 06 Feb 2023
Lab Number : **05760310** **Diagnosed** : 09 Feb 2023
Unique Number : 10324917 **Diagnostician** : Doug Bogart
Test Package : DF-2 (Additional Tests: Screen)

ORCHARD HILL FARM EQUIPMENT
 1210 FEDERAL ST
 BELCHERTOWN, MA
 US 01007
 Contact: SERVICE MANAGER
 info@orchardhillsales.com
 T: (413)253-5456
 F:

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)