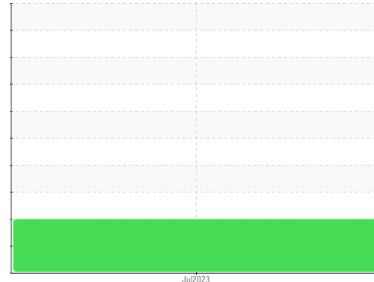




FUEL REPORT

Sample Rating Trend



ISO



Machine Id
UNC ROCKINGHAM - CANCER CENTER

Component
Diesel Fuel

Fluid
DIESEL FUEL No. 2 (--- GAL)

DIAGNOSIS

Recommendation

Recommend pre-filtering 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. There is no bacteria or fungus (yeast and/or mold) indicated in the sample. The water content is negligible.

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	WC0787042	---	---
Sample Date	Client Info	14 Jul 2023	---	---
Machine Age	hrs Client Info	0	---	---
Sample Status		ABNORMAL	---	---

PHYSICAL PROPERTIES

method	limit/base	current	history1	history2
Specific Gravity	*ASTM D1298	0.842	---	---
Fuel Color	text *Visual Screen	Red	---	---
ASTM Color	scalar *ASTM D1500	L4.5	---	---
Visc @ 40°C	cSt ASTM D445 4.1	2.54	---	---
Pensky-Martens Flash Point	°C *PMCC Calculated	58	---	---

SULFUR CONTENT

method	limit/base	current	history1	history2
Sulfur	ppm ASTM D5185m	0	---	---
Sulfur (UVF)	ppm ASTM D5453	10	---	---

DISTILLATION

method	limit/base	current	history1	history2
Initial Boiling Point	°C ASTM D86	161	---	---
5% Distillation Point	°C ASTM D86	188	---	---
10% Distill Point	°C ASTM D86	201	---	---
15% Distillation Point	°C ASTM D86	210	---	---
20% Distill Point	°C ASTM D86	219	---	---
30% Distill Point	°C ASTM D86	234	---	---
40% Distill Point	°C ASTM D86	248	---	---
50% Distill Point	°C ASTM D86	262	---	---
60% Distill Point	°C ASTM D86	277	---	---
70% Distill Point	°C ASTM D86	292	---	---
80% Distill Point	°C ASTM D86	309	---	---
85% Distillation Point	°C ASTM D86	319	---	---
90% Distill Point	°C ASTM D86	331	---	---
95% Distillation Point	°C ASTM D86	351	---	---
Final Boiling Point	°C ASTM D86	354	---	---
Distillation Residue	% ASTM D86	1.4	---	---
Distillation Loss	% ASTM D86	1.8	---	---

IGNITION QUALITY

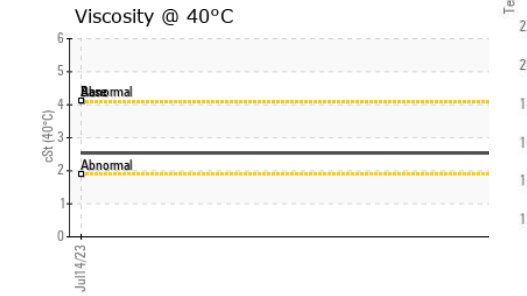
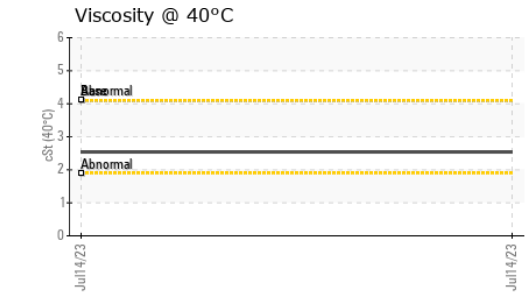
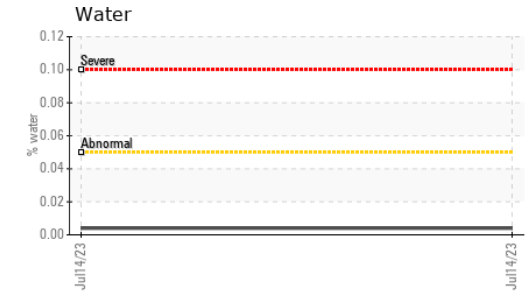
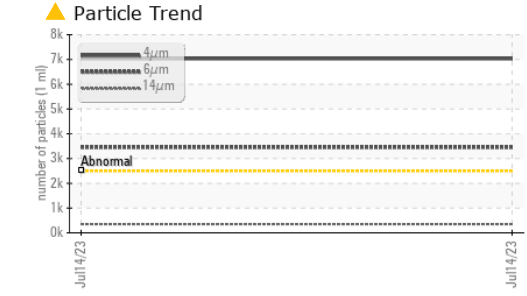
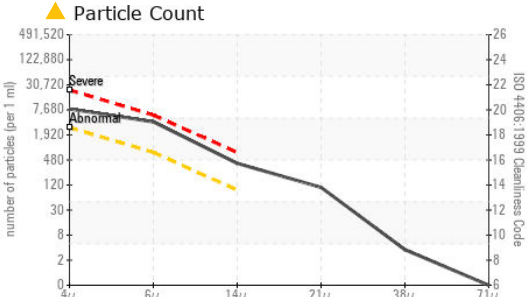
method	limit/base	current	history1	history2
API Gravity	ASTM D7777	36.6	---	---
Cetane Index	ASTM D4737 <40.0	48.2	---	---

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	46.2	---	---
% Gasoline	% *In-House <0.50	0.0	---	---
% Biodiesel	% *In-House <20.0	0.0	---	---



FUEL REPORT

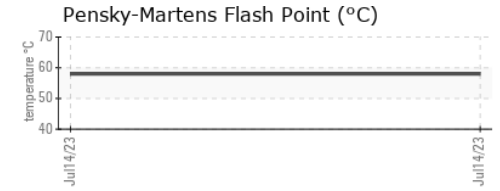
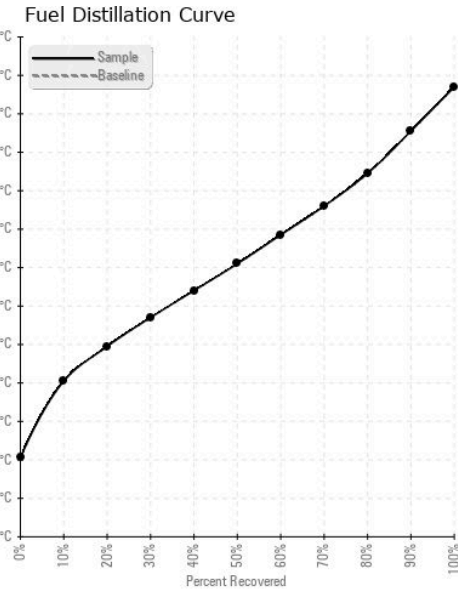


FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>2500	▲ 7032	---	---
Particles >6µm	ASTM D7647	>640	▲ 3456	---	---
Particles >14µm	ASTM D7647	>80	▲ 350	---	---
Particles >21µm	ASTM D7647	>20	▲ 93	---	---
Particles >38µm	ASTM D7647	>4	3	---	---
Particles >71µm	ASTM D7647	>3	0	---	---
Oil Cleanliness	ISO 4406 (c)	>18/16/13	▲ 20/19/16	---	---

HEAVY METALS	method	limit/base	current	history1	history2	
Aluminum	ppm	ASTM D5185m	<0.1	<1	---	---
Nickel	ppm	ASTM D5185m	<0.1	0	---	---
Lead	ppm	ASTM D5185m	<0.1	0	---	---
Vanadium	ppm	ASTM D5185m	<0.1	<1	---	---
Iron	ppm	ASTM D5185m	<0.1	0	---	---
Calcium	ppm	ASTM D5185m	<0.1	0	---	---
Magnesium	ppm	ASTM D5185m	<0.1	<1	---	---
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. : WC0787042 **Received** : 19 Jul 2023
Lab Number : 05902710 **Diagnosed** : 26 Jul 2023
Unique Number : 10564066 **Diagnostician** : Doug Bogart
Test Package : DF-2 (Additional Tests: Screen)

VITAL FUEL SYSTEMS
 1076 CLASSIC RD
 APEX, NC
 US 27539
 Contact: JOHN MORREALE
 jmorreale@vitalfuelsystems.com
 T: (919)629-8180
 F: (919)303-7399

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)