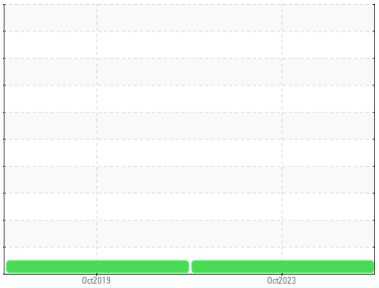
FUEL REPORT

Sample Rating Trend



NORMAL

Machine Id
FAST-C - PUMP NOZZLE
Component
Diesel Fuel
Fluid
DIESEL FUEL No. 1 (--- GAL)

DIAGNOSIS

Recommendation
No corrective action is recommended at this time. 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 moderate 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 is acceptable for ULSD specification.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0869455**	WCDF01936	---
Sample Date		Client Info		**04 Oct 2023**	17 Oct 2019	---
Machine Age	hrs	Client Info		**0**	0	---
Sample Status				**NORMAL**	NORMAL	---

PHYSICAL PROPERTIES		method	limit/base	current	history1	history2
Specific Gravity		*ASTM D1298		**0.838**	0.840	---
Fuel Color	text	*Visual Screen		**Yllow**	Yllow	---
ASTM Color	scalar	*ASTM D1500		**L3.0**	L1.0	---
Visc @ 40°C	cSt	ASTM D445	2.4	**2.4**	2.51	---
Pensky-Martens Flash Point	°C	*PMCC Calculated		**55**	64	---

SULFUR CONTENT		method	limit/base	current	history1	history2
Sulfur	ppm	ASTM D5185m		**0**	11	---
Sulfur (UVF)	ppm	ASTM D5453		**8**	8	---

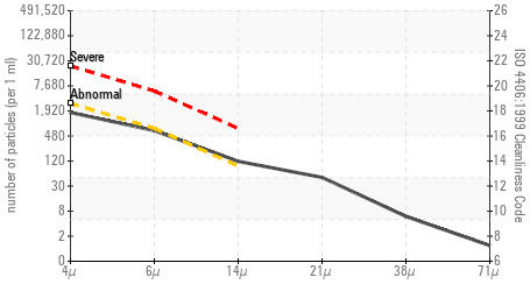
DISTILLATION		method	limit/base	current	history1	history2
Initial Boiling Point	°C	ASTM D86		**154**	161	---
5% Distillation Point	°C	ASTM D86		**186**	188	---
10% Distill Point	°C	ASTM D86		**198**	199	---
15% Distillation Point	°C	ASTM D86		**207**	208	---
20% Distill Point	°C	ASTM D86		**215**	218	---
30% Distill Point	°C	ASTM D86		**230**	232	---
40% Distill Point	°C	ASTM D86		**245**	247	---
50% Distill Point	°C	ASTM D86		**258**	261	---
60% Distill Point	°C	ASTM D86		**273**	275	---
70% Distill Point	°C	ASTM D86		**287**	290	---
80% Distill Point	°C	ASTM D86		**303**	305	---
85% Distillation Point	°C	ASTM D86		**313**	315	---
90% Distill Point	°C	ASTM D86		**325**	326	---
95% Distillation Point	°C	ASTM D86		**342**	343	---
Final Boiling Point	°C	ASTM D86		**350**	352	---
Distillation Residue	%	ASTM D86		**1.4**	1.4	---
Distillation Loss	%	ASTM D86		**0.9**	0.8	---

IGNITION QUALITY		method	limit/base	current	history1	history2
API Gravity		ASTM D7777		**37.4**	37.0	---
Cetane Index		ASTM D4737	<40.0	**48.7**	48.3	---

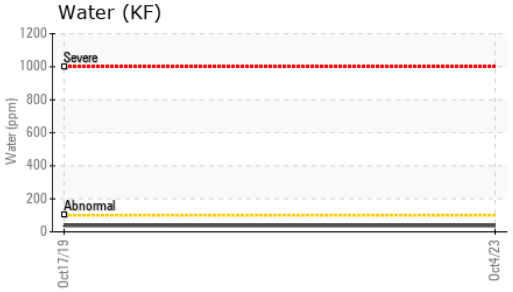
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	<1.0	**0**	<1	---
Sodium	ppm	ASTM D5185m	<0.1	**0**	0	---
Potassium	ppm	ASTM D5185m	<0.1	**<1**	0	---
Water	%	ASTM D6304	<0.05	**0.003**	0.003	---
ppm Water	ppm	ASTM D6304	<500	**37.5**	38.1	---
% Gasoline	%	*In-House	<0.50	**0.0**	0.0	---
% Biodiesel	%	*In-House	<20.0	**0.0**	0.0	---

FUEL REPORT

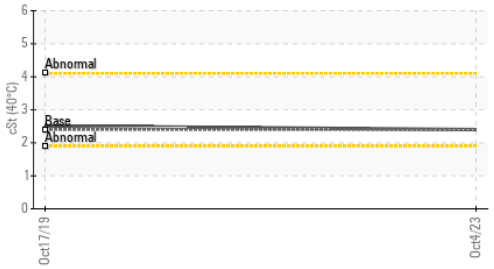
Particle Count



Water (KF)

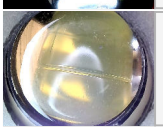


Viscosity @ 40°C



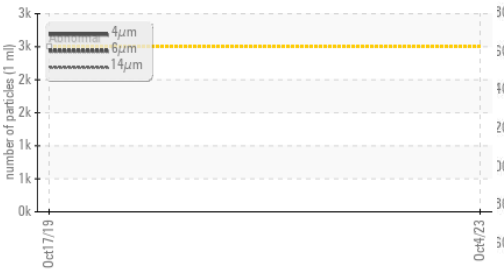
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>2500	**1542**	---	---
Particles >6µm		ASTM D7647	>640	**567**	---	---
Particles >14µm		ASTM D7647	>80	**104**	---	---
Particles >21µm		ASTM D7647	>20	**43**	---	---
Particles >38µm		ASTM D7647	>4	**5**	---	---
Particles >71µm		ASTM D7647	>3	**1**	---	---
Oil Cleanliness		ISO 4406 (c)	>18/16/13	**18/16/14**	---	---

HEAVY METALS		method	limit/base	current	history1	history2
Aluminum	ppm	ASTM D5185m	<0.1	**0**	0	---
Nickel	ppm	ASTM D5185m	<0.1	**0**	0	---
Lead	ppm	ASTM D5185m	<0.1	**0**	0	---
Vanadium	ppm	ASTM D5185m	<0.1	**0**	0	---
Iron	ppm	ASTM D5185m	<0.1	**0**	0	---
Calcium	ppm	ASTM D5185m	<0.1	**<1**	1	---
Magnesium	ppm	ASTM D5185m	<0.1	**0**	0	---
Phosphorus	ppm	ASTM D5185m	<0.1	**6**	3	---
Zinc	ppm	ASTM D5185m	<0.1	**0**	0	---

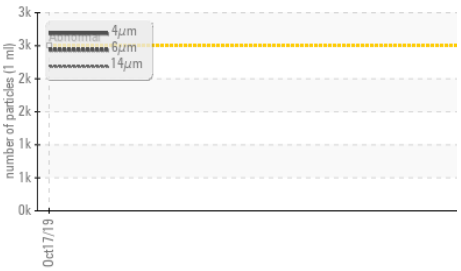
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color				*no image*	*no image*
Bottom				*no image*	*no image*

GRAPHS

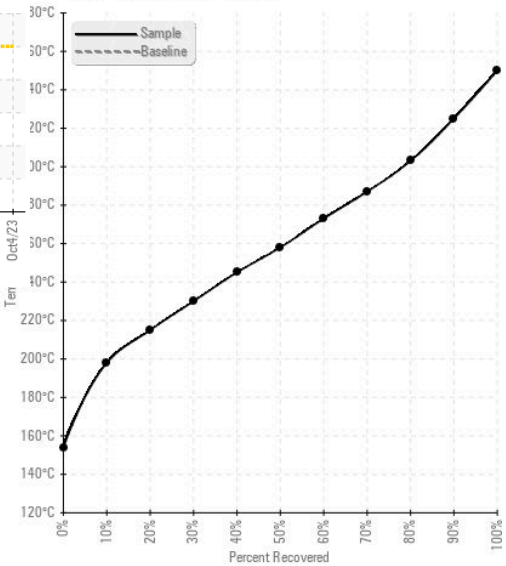
Particle Trend



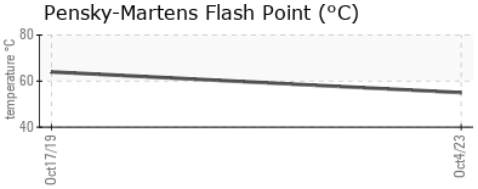
Particle Trend



Fuel Distillation Curve



Pensky-Martens Flash Point (°C)



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0869455 **Received** : 17 Oct 2023
Lab Number : 05981542 **Diagnosed** : 25 Oct 2023
Unique Number : 10698837 **Diagnostician** : Doug Bogart
Test Package : DF-2 (Additional Tests: 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)

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