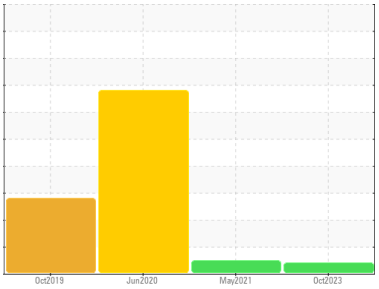
FUEL REPORT

Sample Rating Trend



VIS DEBRIS

Machine Id
CYRUSONE MAIN TANK 2
Component
Diesel Fuel
Fluid
No.2 DIESEL FUEL (ULTRALOW SULPHUR) (--- 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. We were unable to perform a particle count due to a high concentration of particles present in this sample.

Corrosion

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

Contaminants

Moderate concentration of visible dirt/debris present in the fuel. The water content is negligible. There is no bacteria or fungus (yeast and/or mold) present 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		**WC0869457**	WCDF03700	WCDF01997
Sample Date		Client Info		**12 Oct 2023**	03 May 2021	03 Jun 2020
Machine Age	hrs	Client Info		**0**	0	0
Sample Status				**ABNORMAL**	NORMAL	ABNORMAL

PHYSICAL PROPERTIES		method	limit/base	current	history1	history2
Specific Gravity		*ASTM D1298	0.839	**0.842**	0.844	0.845
Fuel Color	text	*Visual Screen	Yllow	**Red**	Red	Red
ASTM Color	scalar	*ASTM D1500		**L4.5**	L6.0	L5.5
Visc @ 40°C	cSt	ASTM D445	3.0	**2.43**	2.42	2.36
Pensky-Martens Flash Point	°C	*PMCC Calculated	52	**58**	62	65

SULFUR CONTENT		method	limit/base	current	history1	history2
Sulfur	ppm	ASTM D5185m	10	**0**	18	4
Sulfur (UVF)	ppm	ASTM D5453		**7**	7	6

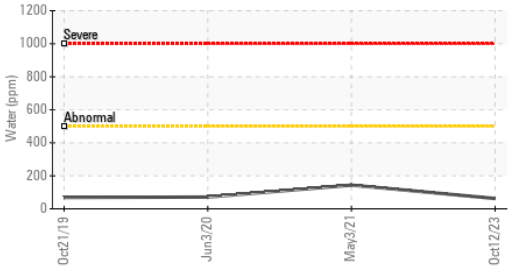
DISTILLATION		method	limit/base	current	history1	history2
Initial Boiling Point	°C	ASTM D86	165	**162**	162	156
5% Distillation Point	°C	ASTM D86		**187**	189	184
10% Distill Point	°C	ASTM D86	201	**198**	199	195
15% Distillation Point	°C	ASTM D86		**207**	208	205
20% Distill Point	°C	ASTM D86	216	**216**	216	213
30% Distill Point	°C	ASTM D86	230	**232**	230	228
40% Distill Point	°C	ASTM D86	243	**246**	245	242
50% Distill Point	°C	ASTM D86	255	**260**	260	257
60% Distill Point	°C	ASTM D86	267	**274**	275	273
70% Distill Point	°C	ASTM D86	280	**289**	291	290
80% Distill Point	°C	ASTM D86	295	**306**	309	308
85% Distillation Point	°C	ASTM D86		**316**	319	318
90% Distill Point	°C	ASTM D86	310	**327**	329	328
95% Distillation Point	°C	ASTM D86		**343**	344	341
Final Boiling Point	°C	ASTM D86	341	**350**	351	351
Distillation Residue	%	ASTM D86	3.0	**1.4**	1.4	1.4
Distillation Loss	%	ASTM D86	3.0	**0.9**	0.9	0.6

IGNITION QUALITY	method	limit/base	current	history1	history2
API Gravity	ASTM D7777	37.7	**36.6**	36.2	36.0
Cetane Index	ASTM D4737	<40.0	**47.5**	46.8	45.9

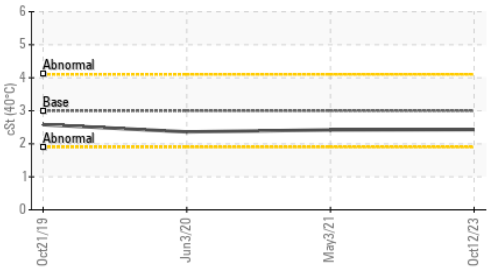
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	<1.0	**0**	0	0
Sodium	ppm	ASTM D5185m	<0.1	**0**	1	<1
Potassium	ppm	ASTM D5185m	<0.1	**<1**	<1	0
Water	%	ASTM D6304	<0.05	**0.006**	0.014	0.007
ppm Water	ppm	ASTM D6304	<500	**62.6**	143.7	71.3
% Gasoline	%	*In-House	<0.50	**0.0**	0.0	0.0
% Biodiesel	%	*In-House	<20.0	**1.9**	3.7	4.6

FUEL REPORT

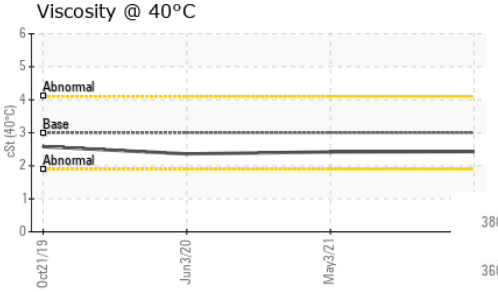
Water (KF)



Viscosity @ 40°C

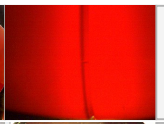
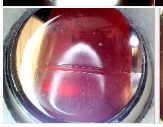


Viscosity @ 40°C



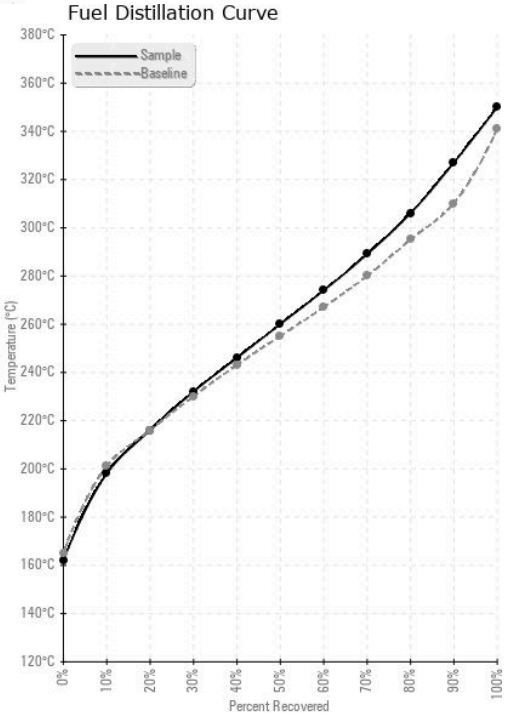
MICROBIAL		method	limit/base	current	history1	history2
Bacteria	CFU/ml	WC-Method	>=100000	**0**	---	▲ 100
Yeast	CFU/ml	WC-Method	>=100000	**0**	---	▲ 10
Mold	Colonies	WC-Method	MODER	**---**	---	---

HEAVY METALS		method	limit/base	current	history1	history2
Aluminum	ppm	ASTM D5185m	<0.1	**0**	<1	<1
Nickel	ppm	ASTM D5185m	<0.1	**0**	1	<1
Lead	ppm	ASTM D5185m	<0.1	**0**	0	0
Vanadium	ppm	ASTM D5185m	<0.1	**0**	0	0
Iron	ppm	ASTM D5185m	<0.1	**1**	<1	<1
Calcium	ppm	ASTM D5185m	<0.1	**<1**	2	0
Magnesium	ppm	ASTM D5185m	<0.1	**<1**	0	0
Phosphorus	ppm	ASTM D5185m	<0.1	**5**	3	0
Zinc	ppm	ASTM D5185m	<0.1	**0**	0	0

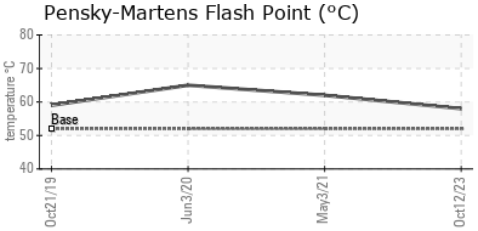
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					*no image*
Bottom					*no image*

GRAPHS

Fuel Distillation Curve



Pensky-Martens Flash Point (°C)



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0869457 **Received** : 17 Oct 2023
Lab Number : 05981547 **Diagnosed** : 25 Oct 2023
Unique Number : 10698842 **Diagnostician** : Doug Bogart
Test Package : DF-2 (Additional Tests: Bacteria, 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