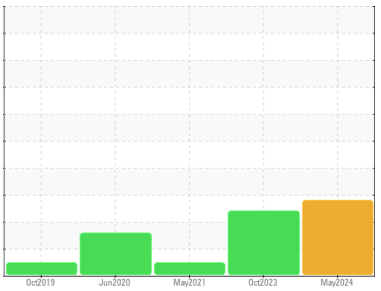
FUEL REPORT

Sample Rating Trend



ISO

Machine Id
CYRUSONE MAIN TANK 3
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.

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

Contaminants
There is a high amount of particulates present in the fuel. Moderate concentration of visible dirt/debris present in the fuel. There is no bacteria or fungus (yeast and/or mold) present 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		**WC0929962**	WC0869458	WCDF03701
Sample Date		Client Info		**28 May 2024**	12 Oct 2023	03 May 2021
Machine Age	hrs	Client Info		**0**	0	0
Sample Status				**ATTENTION**	ATTENTION	NORMAL

PHYSICAL PROPERTIES		method	limit/base	current	history1	history2
Specific Gravity		*ASTM D1298	0.839	**---**	0.841	0.843
Fuel Color	text	*Visual Screen	Yllow	**Red**	Red	Red
ASTM Color	scalar	*ASTM D1500		**L4.5**	L4.5	L6.0
Visc @ 40°C	cSt	ASTM D445	3.0	**2.46**	2.44	2.51
Pensky-Martens Flash Point	°C	*PMCC Calculated	52	**58.9**	59	60

SULFUR CONTENT		method	limit/base	current	history1	history2
Sulfur	ppm	ASTM D5185m	10	**2**	0	10
Sulfur (UVF)	ppm	ASTM D5453		**7**	8	9

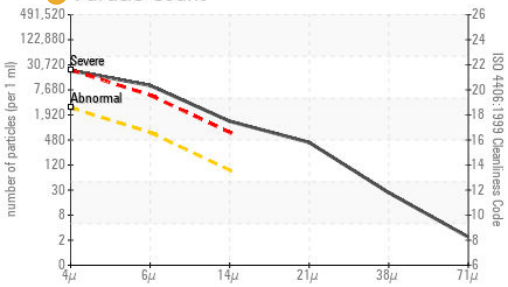
DISTILLATION		method	limit/base	current	history1	history2
Initial Boiling Point	°C	ASTM D86	165	**169**	165	157
5% Distillation Point	°C	ASTM D86		**192**	189	190
10% Distill Point	°C	ASTM D86	201	**202**	199	201
15% Distillation Point	°C	ASTM D86		**209**	208	210
20% Distill Point	°C	ASTM D86	216	**217**	217	218
30% Distill Point	°C	ASTM D86	230	**232**	232	233
40% Distill Point	°C	ASTM D86	243	**246**	247	247
50% Distill Point	°C	ASTM D86	255	**259**	261	262
60% Distill Point	°C	ASTM D86	267	**274**	275	276
70% Distill Point	°C	ASTM D86	280	**288**	290	291
80% Distill Point	°C	ASTM D86	295	**304**	307	307
85% Distillation Point	°C	ASTM D86		**315**	316	316
90% Distill Point	°C	ASTM D86	310	**326**	327	327
95% Distillation Point	°C	ASTM D86		**342**	344	345
Final Boiling Point	°C	ASTM D86	341	**356**	351	351
Distillation Residue	%	ASTM D86	3.0	**---**	1.4	1.4
Distillation Loss	%	ASTM D86	3.0	**---**	0.9	0.8

IGNITION QUALITY	method	limit/base	current	history1	history2
API Gravity	ASTM D7777	37.7	**36**	36.8	36.4
Cetane Index	ASTM D4737	<40.0	**47**	48.2	47.4

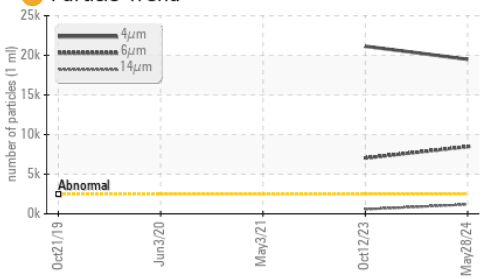
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	<1.0	**0**	0	0
Sodium	ppm	ASTM D5185m	<0.1	**<1**	0	1
Potassium	ppm	ASTM D5185m	<0.1	**0**	<1	<1
Water	%	ASTM D6304	<0.05	**0.006**	0.004	0.004
ppm Water	ppm	ASTM D6304	<500	**66**	48.4	41.8
% Gasoline	%	*In-House	<0.50	**0.0**	0.0	0.0
% Biodiesel	%	*In-House	<20.0	**1.6**	1.9	1.3

FUEL REPORT

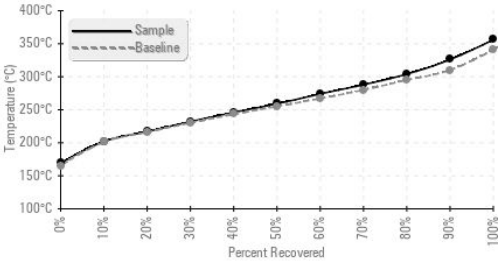
Particle Count



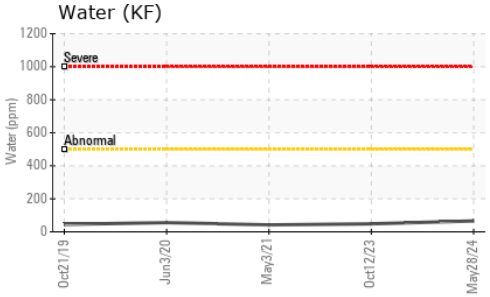
Particle Trend



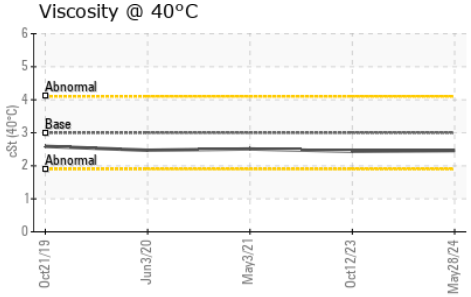
Fuel Distillation Curve



Water (KF)



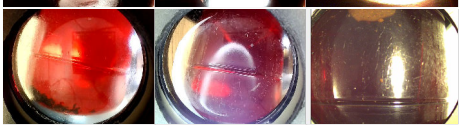
Viscosity @ 40°C



FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>2500	**19497**	21140	---
Particles >6µm		ASTM D7647	>640	**8479**	7037	---
Particles >14µm		ASTM D7647	>80	**1184**	575	---
Particles >21µm		ASTM D7647	>20	**368**	177	---
Particles >38µm		ASTM D7647	>4	**23**	17	---
Particles >71µm		ASTM D7647	>3	**2**	1	---
Oil Cleanliness		ISO 4406 (c)	>18/16/13	**21/20/17**	22/20/16	---

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

HEAVY METALS		method	limit/base	current	history1	history2
Aluminum	ppm	ASTM D5185m	<0.1	**0**	0	<1
Nickel	ppm	ASTM D5185m	<0.1	**0**	0	<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	**0**	0	1
Calcium	ppm	ASTM D5185m	<0.1	**<1**	<1	1
Magnesium	ppm	ASTM D5185m	<0.1	**0**	0	0
Phosphorus	ppm	ASTM D5185m	<0.1	**0**	6	2
Zinc	ppm	ASTM D5185m	<0.1	**0**	0	0

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0929962 **Received** : 30 May 2024
Lab Number : 06195861 **Tested** : 11 Jun 2024
Unique Number : 11057984 **Diagnosed** : 11 Jun 2024 - Doug Bogart
Test Package : DF-2 (Additional Tests: BACTERIA, Fuel, 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: SERVICE
service@vitalfuelsystems.com
T: (919)629-8180
F: (919)303-7399