



FUEL REPORT

CORROSION	NORMAL
CONTAMINANTS	NORMAL
FUEL CONDITION	NORMAL

Machine Id
DUKE NORTH DT 2

Component
Diesel Fuel

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

RECOMMENDATION

All laboratory tests indicate that this sample meets specifications for No.2 low-sulfur diesel fuel.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC05687555	WC04583508	WC04336593
Sample Date		Client Info		07 Nov 2022	31 Oct 2018	29 Oct 2017
Machine Age	hrs	Client Info		0	0	0
Sample Status				NORMAL	NORMAL	NORMAL

CORROSION

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

Aluminum	ppm	ASTM D5185m	<0.1	0	0	0
Nickel	ppm	ASTM D5185m	<0.1	0	0	0
Lead	ppm	ASTM D5185m	<0.1	0	0	<1
Vanadium	ppm	ASTM D5185m	<0.1	0	0	0
Iron	ppm	ASTM D5185m	<0.1	0	<1	0

CONTAMINANTS

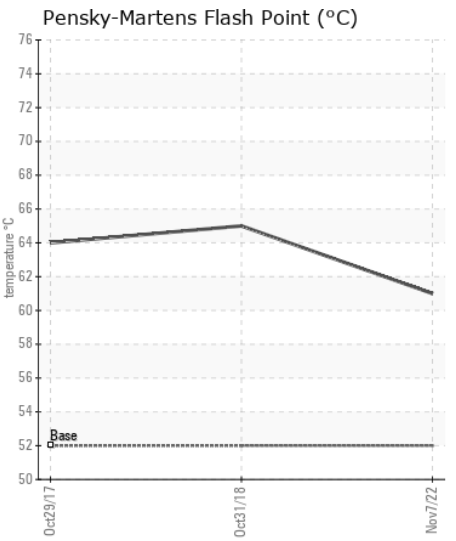
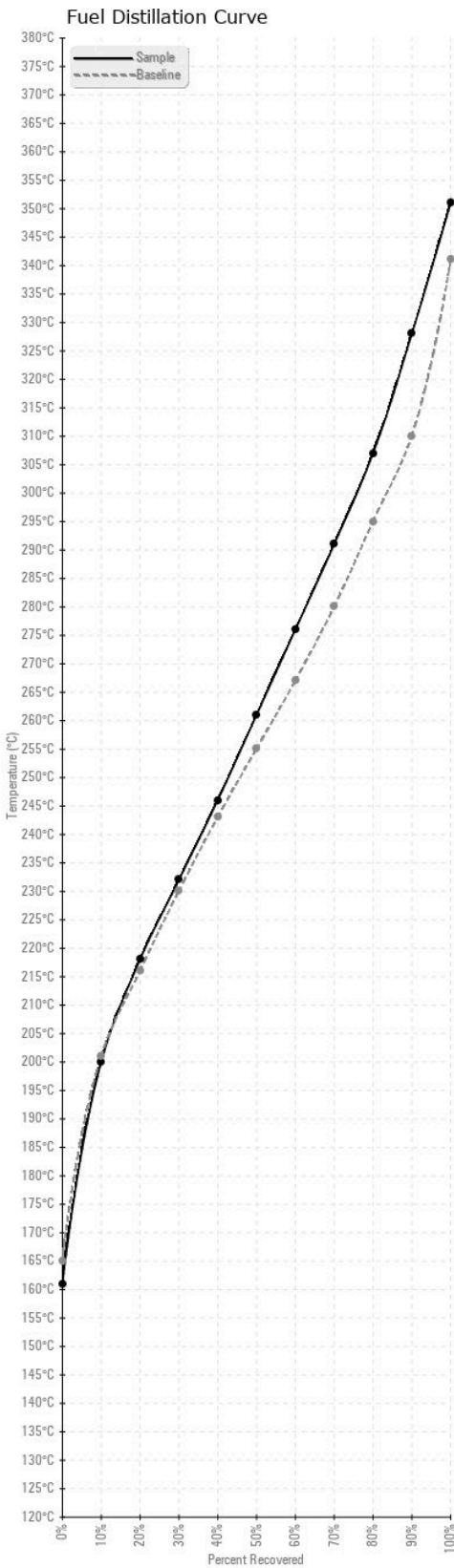
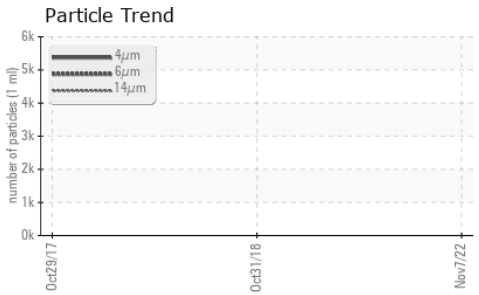
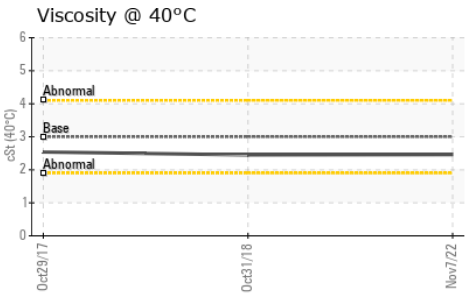
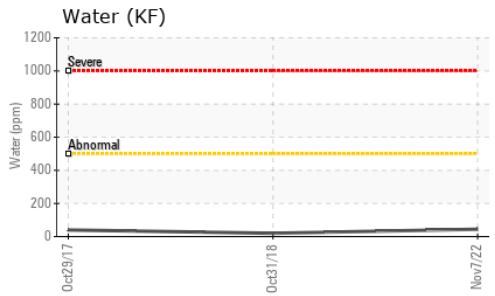
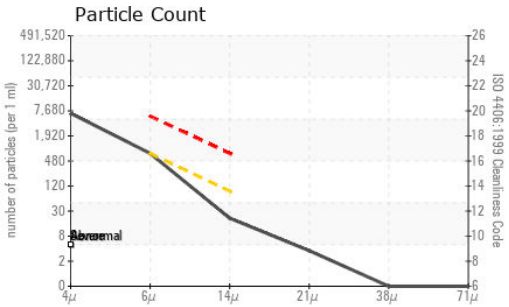
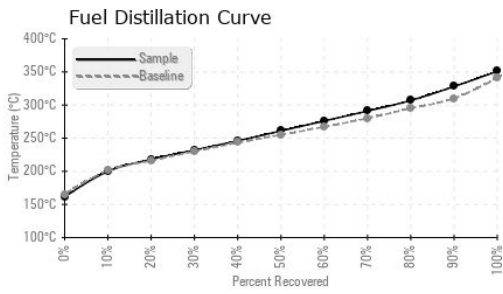
There is no bacteria or fungus (yeast and/or mold) indicated in the sample. The water content is negligible. There is no indication of any contamination in the fuel. The amount and size of particulates present in the system are acceptable.

Silicon	ppm	ASTM D5185m	<1.0	0	<1	0
Sodium	ppm	ASTM D5185m	<0.1	0	<1	0
Potassium	ppm	ASTM D5185m	<0.1	<1	0	0
Water	%	ASTM D6304	<0.05	0.004	0.002	0.004
ppm Water	ppm	ASTM D6304	<500	44.3	20	40
Particles >4µm		ASTM D7647		5848	---	---
Particles >6µm		ASTM D7647	>640	640	---	---
Particles >14µm		ASTM D7647	>80	18	---	---
Particles >21µm		ASTM D7647	>20	3	---	---
Particles >38µm		ASTM D7647	>4	0	---	---
Particles >71µm		ASTM D7647	>3	0	---	---
Oil Cleanliness		ISO 4406 (c)	>-/16/13	20/16/11	---	---
% Gasoline	%	*In-House	<0.50	0.0	0.0	0.0
% Biodiesel	%	*In-House	<20.0	0.0	0.0	0.5
Calcium	ppm	ASTM D5185m	<0.1	0	2	0
Magnesium	ppm	ASTM D5185m	<0.1	0	<1	0
Phosphorus	ppm	ASTM D5185m	<0.1	0	1	0
Zinc	ppm	ASTM D5185m	<0.1	0	1	2

FUEL CONDITION

Sulfur value derived by ASTM D5453 method for ULSD validation. Sulfur level is acceptable for ULSD specification.

Specific Gravity		*ASTM D1298	0.839	0.841	0.842	0.843
Fuel Color	text	*Visual Screen	Yllow	Red	Red	Red
ASTM Color	scalar	*ASTM D1500		L4.0	L5.5	L3.5
Visc @ 40°C	cSt	ASTM D445	3.0	2.46	2.45	2.54
Pensky-Martens Flash Point	°C	*PMCC Calculated	52	61	65	64
Sulfur	ppm	ASTM D5185m	250	7	40	65
Sulfur (UVF)	ppm	ASTM D5453		30	48	69
Initial Boiling Point	°C	ASTM D86	165	161	164	170
10% Distill Point	°C	ASTM D86	201	200	203	205
20% Distill Point	°C	ASTM D86	216	218	220	221
30% Distill Point	°C	ASTM D86	230	232	234	236
40% Distill Point	°C	ASTM D86	243	246	248	249
50% Distill Point	°C	ASTM D86	255	261	262	262
60% Distill Point	°C	ASTM D86	267	276	275	275
70% Distill Point	°C	ASTM D86	280	291	289	289
80% Distill Point	°C	ASTM D86	295	307	305	305
90% Distill Point	°C	ASTM D86	310	328	326	325
Final Boiling Point	°C	ASTM D86	341	351	351	350
Distillation Residue	%	ASTM D86	3.0	1.4	1.1	1.4
Distillation Loss	%	ASTM D86	3.0	0.6	1.1	0.8
API Gravity		ASTM D7777	37.7	36.8	36.6	36.4
Cetane Index		ASTM D4737	<40.0	48.0	47.9	48.1



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC05687555 **Received** : 07 Nov 2022
Lab Number : 05687555 **Tested** : 14 Nov 2022
Unique Number : 10207127 **Diagnosed** : 17 Nov 2022 - Doug Bogart
Test Package : DF-2 (Additional Tests: Screen)

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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)