

### **FUEL REPORT**

Sample Rating Trend

#### NORMAL

# KIOTI DK4710 WGG900241

Diesel Fuel Fluid NOT GIVEN (--- 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. 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.

				0ct2023		
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		KT0000595		
Sample Date		Client Info		21 Oct 2023		
Machine Age	hrs	Client Info		349		
Sample Status				NORMAL		
PHYSICAL PROP	ERTIES	method	limit/base	current	history1	history2
Specific Gravity		*ASTM D1298		0.845		
Fuel Color	text	*Visual Screen		Red		
ASTM Color	scalar	*ASTM D1500		L3.0		
Visc @ 40°C	cSt	ASTM D445		2.5		
Pensky-Martens Flash Point	°C	*PMCC Calculated		57		
SULFUR CONTENT		method	limit/base	current	history1	history2
Sulfur	ppm	ASTM D5185m		9		
Sulfur (UVF)	ppm	ASTM D5453		10		
DISTILLATION		method	limit/base	current	history1	history2
nitial Boiling Point	°C	ASTM D86		158		
5% Distillation Point	°C	ASTM D86		193		
10% Distill Point	°C	ASTM D86		206		
15% Distillation Point	°C	ASTM D86		216		
20% Distill Point	°C	ASTM D86		222		
30% Distill Point	°C	ASTM D86		236		
40% Distill Point	°C	ASTM D86		248		
50% Distill Point	°C	ASTM D86		259		
60% Distill Point	°C	ASTM D86		271		
70% Distill Point	°C	ASTM D86		283		
80% Distill Point	°C	ASTM D86		297		
85% Distillation Point	°C	ASTM D86		306		
90% Distill Point	°C	ASTM D86		316		
95% Distillation Point	°C	ASTM D86		331		
Final Boiling Point	°C	ASTM D86		343		
Distillation Residue	%	ASTM D86		1.4		
Distillation Loss	%	ASTM D86		0.5		
IGNITION QUALIT	Ϋ́	method	limit/base	current	history1	history2
API Gravity		ASTM D7777		36.0		
Cetane Index		ASTM D4737	<40.0	46.4		
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	<1.0	<1		
Sodium	ppm	ASTM D5185m	<0.1	1		
Potassium	ppm	ASTM D5185m	<0.1	0		
Water	%	ASTM D6304	<0.05	0.005		
opm Water	ppm	ASTM D6304	<500	51.5		
% Gasoline	%	*In-House	<0.50	0.0		
% Biodiesel	%	*In-House	<20.0	0.0		



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Particle Count 91,520 T	т26	FLUID CLEANLI	INESS	method	limit/base	current	history1	history2	
22,880 -	-24	Particles >4µm		ASTM D7647	>2500	2570			
30,720 Severe	-22 80	Particles >6µm		ASTM D7647		961			
7,680 Abnomal 1,920	-20 440	Particles >14µm		ASTM D7647		147			
480	-18 1999 -16 Ce	Particles >21µm		ASTM D7647		43			
120-	-14 8	Particles >38µm		ASTM D7647		1			
30	-12 55 -10 Cd	Particles >71µm		ASTM D7647		0			
8	-8	Oil Cleanliness		ISO 4406 (c)		19/17/14			
0 4μ 6μ 14μ 21μ 38μ	714		0				la internet	biotom (O	
Water (KF)		HEAVY METALS	5	method	limit/base	current	history1	history2	
		Aluminum	ppm	ASTM D5185m		0			
1000 - Severe		Nickel	ppm	ASTM D5185m		0			
800		Lead	ppm	ASTM D5185m		0			
600 400		Vanadium	ppm	ASTM D5185m		0			
400		Iron	ppm	ASTM D5185m		0			
200 - Abnormal		Calcium	ppm	ASTM D5185m		<1			
0		Magnesium	ppm	ASTM D5185m		11			
0ct21/23	0ct21/23	Phosphorus	ppm	ASTM D5185m		1			
រ ០	Oct	Zinc	ppm	ASTM D5185m	<0.1	0			
Viscosity @ 40°C		SAMPLE IMAGE	ES	method	limit/base	current	history1	history2	
4 4 2000 3 3 Abnormal 4 Abnormal 4 Abnormal		Color					no image	no image	
0 2 + Abnormal	0ct21/23	Bottom					no image	no image	
8	0	GRAPHS							
Particle Trend		Fuel Distillation Curve Pensky-					ns Flash Point ('	°C)	
3k 4.um		0°C Sample			ي <sup>7</sup>	0 T			
<sup>Ξ</sup> <sup>3k</sup> - <sup>Δ</sup>	5	0°CBaseline			erature 9	0			
<sup>2</sup> / <sub>2</sub> 2 μ 14μm	\$	0°C -			temper				
kg 2k	2	0°C -				1/23		1/23 -	
		0°C -		/		0ct21/23		0ct21/23	
<sup>2</sup> 1k − 1				/					
0k		0°C -	,	/					
0ct21/23	0ct21/23	0°C	1						
0	1	0°C							
Fuel Distillation Curve	년 22	D°C							
00°C Sample		0°C							
50°CBaseline	*								
	18	0°C -							
	16	D°C d							
		(4) H (8)							
	14	0°C -							
00°C		D°C			<u> </u>				
0% 0.00% 30% 50% 50%		30% + + + ↓ 3.0 30% + + + ↓ 3.0	+ + + %0 ≥ 5 Percent Recovered	70% -	90%				
00°C 50°C 00°C 00°C 00°C 00°C 00°C 00°C	12 %08 8 6	0%	Percent Recovered		) <del>,</del>	3 91	PEARS CHARD	ON TRACTOR	
200°C	12	30% + + + ↓ 3.0 30% + + + ↓ 3.0	Percent Recovered	son Ave., Ca	) <del>,</del>	3 <b>SF</b>	PEARS CHARD		
Percent Recovered Lab San Lab	oratory nple No. Number	: WearCheck USA - : KT0000595 : 05993926	Sol Madia Received	son Ave., Ca d : 30 ed : 03	ry, NC 2751 Oct 2023 Nov 2023	3 <b>S</b> F	12	600 GAR HWY HARDON, OH	
200°C 150°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C 00°C	oratory nple No. Number jue Number	: WearCheck USA - : KT0000595 : 05993926 : 10722286	Percent Recovered 501 Madia Received Diagnos Diagnos	son Ave., Ca d : 30 ed : 03 tician : Dou	ry, NC 2751 Oct 2023 Nov 2023	3 <b>S</b> F	120 C	600 GAR HWY HARDON, OH US 44024	
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