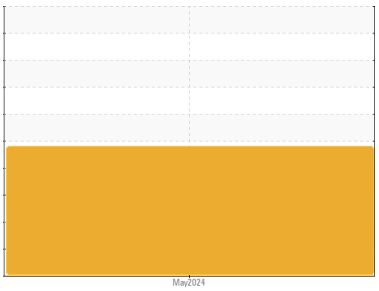
FUEL REPORT

Sample Rating Trend



CONTAMINANT

Machine Id
FIRE PUMP
Component
Diesel Fuel
Fluid
DIESEL FUEL No. 2 (--- GAL)

DIAGNOSIS

Recommendation
We advise that you follow the water drain-off procedure for this component, and use off-line filtration to improve the cleanliness of the system fluid. We recommend you service and check the fuel filters for mucous-like deposits. Check with fuel supplier for biocides available to destroy the microorganisms in the fuel system.

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

Contaminants
There is a high amount of particulates present in the fuel. There is a moderate concentration of Bacteria, Yeast and/or Fungus present in the sample. Moderate concentration of visible dirt/debris present in the fuel.

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		**USP0013454**	---	---
Sample Date		Client Info		**08 May 2024**	---	---
Machine Age	hrs	Client Info		**0**	---	---
Sample Status				**ABNORMAL**	---	---

PHYSICAL PROPERTIES		method	limit/base	current	history1	history2
Fuel Color	text	*Visual Screen		**Red**	---	---
ASTM Color	scalar	*ASTM D1500		**L4.5**	---	---
Visc @ 40°C	cSt	ASTM D445	4.1	**2.68**	---	---
Pensky-Martens Flash Point	°C	*PMCC Calculated		**73.2**	---	---

SULFUR CONTENT		method	limit/base	current	history1	history2
Sulfur	ppm	ASTM D5185m		**23**	---	---
Sulfur (UVF)	ppm	ASTM D5453		**8**	---	---

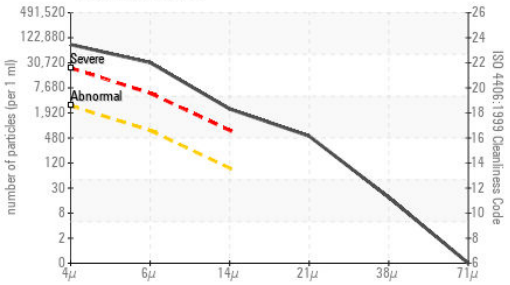
DISTILLATION		method	limit/base	current	history1	history2
Initial Boiling Point	°C	ASTM D86		**185**	---	---
5% Distillation Point	°C	ASTM D86		**208**	---	---
10% Distill Point	°C	ASTM D86		**216**	---	---
15% Distillation Point	°C	ASTM D86		**223**	---	---
20% Distill Point	°C	ASTM D86		**230**	---	---
30% Distill Point	°C	ASTM D86		**243**	---	---
40% Distill Point	°C	ASTM D86		**254**	---	---
50% Distill Point	°C	ASTM D86		**266**	---	---
60% Distill Point	°C	ASTM D86		**278**	---	---
70% Distill Point	°C	ASTM D86		**290**	---	---
80% Distill Point	°C	ASTM D86		**303**	---	---
85% Distillation Point	°C	ASTM D86		**313**	---	---
90% Distill Point	°C	ASTM D86		**322**	---	---
95% Distillation Point	°C	ASTM D86		**338**	---	---
Final Boiling Point	°C	ASTM D86		**352**	---	---

IGNITION QUALITY		method	limit/base	current	history1	history2
API Gravity		ASTM D7777		**33**	---	---
Cetane Index		ASTM D4737	<40.0	**44**	---	---

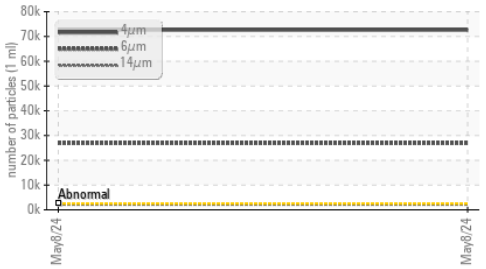
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	<1.0	**0**	---	---
Sodium	ppm	ASTM D5185m	<0.1	**2**	---	---
Potassium	ppm	ASTM D5185m	<0.1	**2**	---	---
Water	%	ASTM D6304	<0.05	**0.008**	---	---
ppm Water	ppm	ASTM D6304	<500	**86**	---	---
% Gasoline	%	*In-House	<0.50	**0.0**	---	---
% Biodiesel	%	*In-House	<20.0	**0.0**	---	---

FUEL REPORT

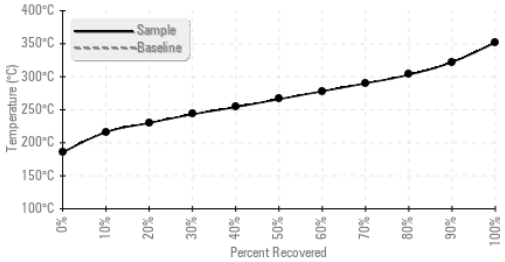
Particle Count



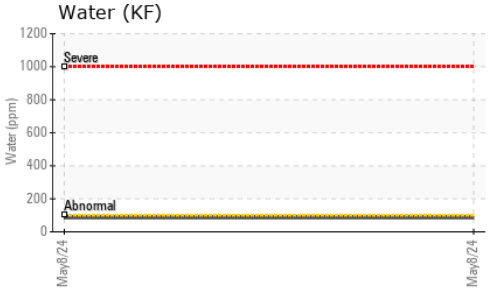
Particle Trend



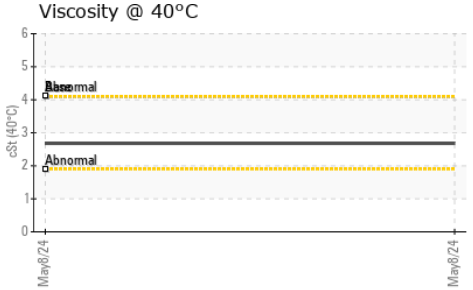
Fuel Distillation Curve



Water (KF)



Viscosity @ 40°C



FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>2500	▲ **72623**	---	---
Particles >6µm	ASTM D7647	>640	▲ **26898**	---	---
Particles >14µm	ASTM D7647	>80	▲ **2088**	---	---
Particles >21µm	ASTM D7647	>20	▲ **467**	---	---
Particles >38µm	ASTM D7647	>4	▲ **16**	---	---
Particles >71µm	ASTM D7647	>3	**0**	---	---
Oil Cleanliness	ISO 4406 (c)	>18/16/13	▲ **23/22/18**	---	---

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

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

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

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : USP0013454
Lab Number : 06193470
Unique Number : 11050222
Test Package : DF-1 (Additional Tests: BACTERIA, CC Flash, Fuel, Screen)

Received : 28 May 2024
Tested : 11 Jun 2024
Diagnosed : 11 Jun 2024 - Doug Bogart

FLINT HILLS RESOURCES - POET
3363 TALON AVE
MENLO, IA
US 50164
Contact: Service Manager

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)

T:
F: