

## Machine Id FSP144368 Component Diesel Engine Fluid {not provided} (---- QTS)

RECOMMENDATION	Test	UOM	Method	Limit/Abn	Current	History1	History2
Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.	Sample Number		Client Info		WC0883215	WC0795980	
	Sample Date		Client Info		16 May 2024	02 Oct 2023	
	Machine Age	mls	Client Info		41460	31711	
	Oil Age	mls	Client Info		12000	17000	
	Filter Age	mls	Client Info		12000	17000	
	Oil Changed		Client Info		Changed	Changed	
	Filter Changed		Client Info		Changed	Changed	
	Sample Status				NORMAL	NORMAL	
WEAR	Iron	ppm	ASTM D5185m		46	25	
All component wear rates are normal.	Chromium	ppm	ASTM D5185m		2	2	
	Nickel	ppm	ASTM D5185m	>4	<1	2	
	Titanium	ppm	ASTM D5185m		<1	0	
	Silver	ppm	ASTM D5185m		<1	<1	
	Aluminum	ppm	ASTM D5185m		18	20	
	Lead	ppm	ASTM D5185m		<1	0	
	Copper	ppm	ASTM D5185m		2	3	
	Tin	ppm	ASTM D5185m	>15	<1	<1	
	Vanadium	ppm	ASTM D5185m		<1	<1	
	White Metal	scalar	*Visual	NONE	NONE	NONE	
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
CONTAMINATION	Silicon	ppm	ASTM D5185m	>25	9	7	
CONTAMINATION	Potassium	ppm	ASTM D5185m	-	42	32	
There is no indication of any contamination in the oil.	Fuel	%	ASTM D3524		<1.0	1.8	
	Water	/0	WC Method		NEG	NEG	
	Glycol		WC Method	20.L	NEG	NEG	
	Soot %	%	*ASTM D7844	>3	0.5	0.3	
	Nitration	Abs/cm	*ASTM D7624	>20	8.1	6.1	
	Sulfation	Abs/.1mm	*ASTM D7415		19.2	18.2	
	Silt	scalar	*Visual	NONE	NONE	NONE	
	Debris	scalar	*Visual	NONE	NONE	NONE	
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
	Appearance	scalar	*Visual	NORML	NORML	NORML	
	Odor	scalar	*Visual	NORML	NORML	NORML	
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
FLUID CONDITION	Sodium	ppm	ASTM D5185m		<1	2	
The BN result indicates that there is suitable alkalinity remaining in the	Boron	ppm	ASTM D5185m		3	4	
oil. The condition of the oil is suitable for further service.	Barium	ppm	ASTM D5185m		0	2	
	Molybdenum	ppm	ASTM D5185m		74	61	
	Manganese	ppm	ASTM D5185m		<1	<1	
	Magnesium	ppm	ASTM D5185m		934	908	
	Calcium	ppm	ASTM D5185m		1108	1015	
	Phosphorus	ppm	ASTM D5185m		1008	971	
	Zinc	ppm	ASTM D5185m		1266	1174	
	Sulfur	ppm	ASTM D5185m		3551	3379	

Oxidation

Visc @ 100°C cSt

Abs/.1mm \*ASTM D7414 >25

ASTM D445

Base Number (BN) mg KOH/g ASTM D2896

13.5

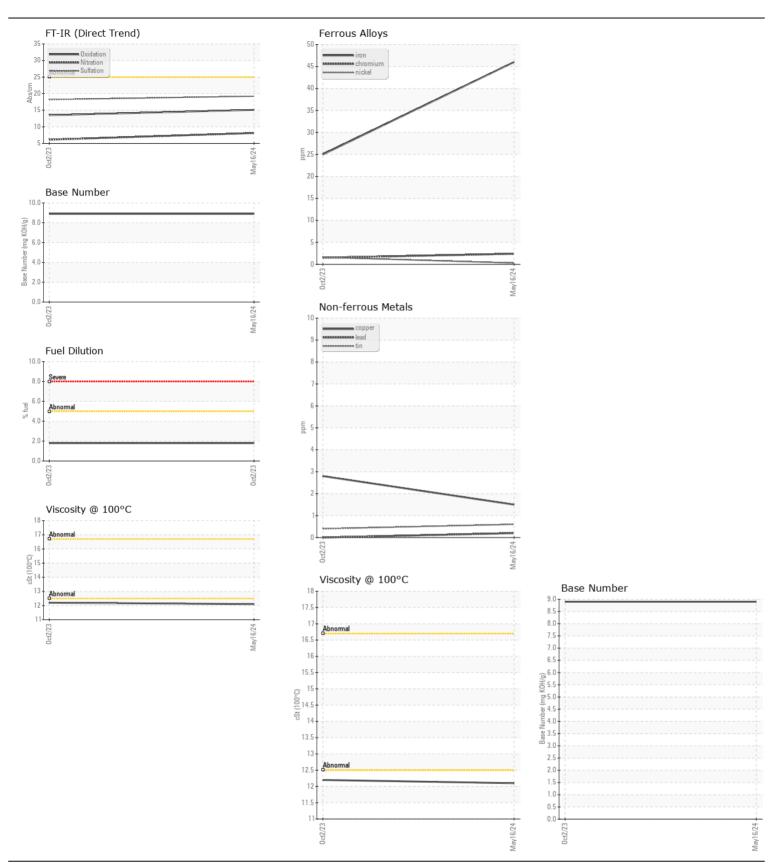
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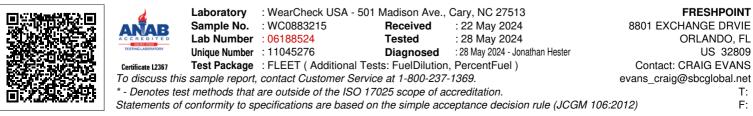
12.2

15.1

8.9

12.1





Contact/Location: CRAIG EVANS - FREORL Page 2 of 2