

Machine Id **FSP137688 (S/N 3HAMMMMN7KL056814)** Component **Diesel Engine** Fluid **DIESEL ENGINE OIL SAE 15W40 (18 QTS)**

RECOMMENDATION	Test	UOM	Method	Limit/Abn	Current	History1	History2
Descendent the sector interview interview Discourse if the	Sample Number		Client Info		WC0903221	WC0875713	WC0875854
Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.	Sample Date		Client Info		11 Apr 2024	11 Jan 2024	19 Nov 2023
brand, type, and viscosity of the off off your next sample.	Machine Age	mls	Client Info		131998	0	0
	Oil Age	mls	Client Info		0	0	0
	Filter Age	mls	Client Info		0	0	0
	Oil Changed		Client Info		N/A	Changed	Changed
	Filter Changed		Client Info		N/A	Changed	Changed
	Sample Status				NORMAL	NORMAL	ATTENTION
WEAR	Iron	ppm	ASTM D5185m	>100	33	16	18
All component wear rates are normal.	Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
	Nickel	ppm	ASTM D5185m		<1	<1	0
	Titanium	ppm	ASTM D5185m		6	0	<1
	Silver	ppm	ASTM D5185m	>3	0	0	0
	Aluminum	ppm	ASTM D5185m		7	9	13
	Lead	ppm	ASTM D5185m		<1	0	<1
	Copper	ppm	ASTM D5185m	>330	2	<1	3
	Tin	ppm	ASTM D5185m	>15	<1	<1	0
	Vanadium	ppm	ASTM D5185m		<1	<1	<1
	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
					_		
CONTAMINATION	Silicon	ppm	ASTM D5185m		7	4	6
There is no indication of any contamination in the oil.	Potassium	ppm	ASTM D5185m		6	2	6
	Fuel		WC Method	>2.0	<1.0	<1.0	1.8
	Water		WC Method	>0.2	NEG	NEG	NEG
	Glycol	0/	WC Method	0	NEG	NEG	NEG
	Soot %	%	*ASTM D7844		0.5	0.3	0.5
	Nitration	Abs/cm	*ASTM D7624	>20	9.1	6.2 20.8	8.3 20.1
	Sulfation Silt	Abs/.1mm	*ASTM D7415 *Visual	>30 NONE	21.1 NONE	20.8 NONE	20.1 NONE
	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
	Sand/Dirt	scalar scalar	*Visual	NONE	NONE	NONE	NONE
	Appearance		*Visual	NORML	NORML	NORML	NORML
	Odor	scalar scalar	*Visual	NORML	NORML	NORML	NORML
	Emulsified Water		*Visual	>0.2	NEG	NEG	NEG
		Scalai	visuai	20.2		NLG	NLG
FLUID CONDITION	Sodium	ppm	ASTM D5185m	>158	1	<1	2
	Boron	ppm	ASTM D5185m	250	236	398	8
The BN result indicates that there is suitable alkalinity remaining in the	Barium	ppm	ASTM D5185m	10	0	0	0
oil. The condition of the oil is suitable for further service.	Molybdenum	ppm	ASTM D5185m	100	61	80	90
	Manganese	ppm	ASTM D5185m		<1	<1	<1
	Magnesium	ppm	ASTM D5185m	450	535	453	1001
	Calcium	ppm	ASTM D5185m	3000	1403	1247	1152
	Phosphorus	ppm	ASTM D5185m	1150	953	1043	1115
	Zinc	ppm	ASTM D5185m	1350	1049	1219	1338
	Sulfur	ppm	ASTM D5185m	4250	3487	3161	3531
	Oxidation	Abs/.1mm	*ASTM D7414	>25	16.5	15.0	16.4
		L/OLL/					

Base Number (BN) mg KOH/g ASTM D2896 8.5

ASTM D445 14.4

Visc @ 100°C cSt

7.7

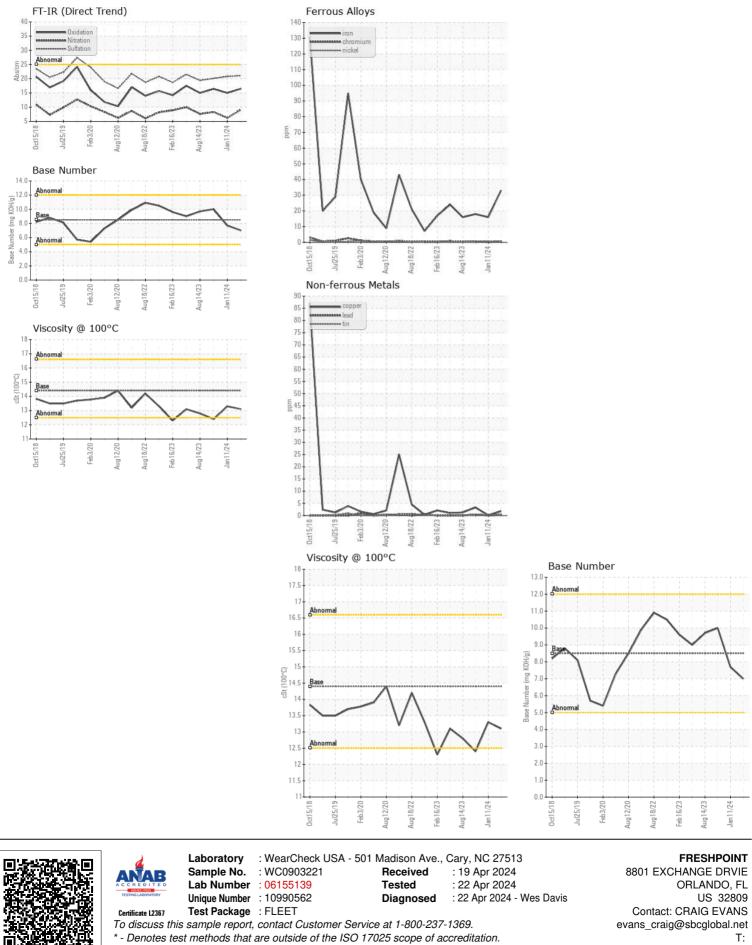
13.3

10.0

12.4

7.0

13.1



* - 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)

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

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