

achine Id 336	
omponent	
Diesel Engine	
	AL 3W30 ( Q13)
RECOMMENDATION	

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RECOMMENDATION	Test	UOM	Method	Limit/Abn	Current	History1	History2
	Sample Number		Client Info		HRE0000226	WC0836280	
Resample at the next service interval to monitor.	Sample Date		Client Info		23 May 2024	02 Sep 2023	
	Machine Age	mls	Client Info		246396	119316	
	Oil Age	mls	Client Info		50000	50000	
	Filter Age	mls	Client Info		50000	50000	
	Oil Changed		Client Info		Changed	Changed	
	Filter Changed		Client Info		Changed	Changed	
	Sample Status				NORMAL	ABNORMAL	
WEAR	Iron	ppm	ASTM D5185m	<100	88	<b>1</b> 33	
WEAN	Chromium	ppm	ASTM D5185m		2	4	
All component wear rates are normal.	Nickel	ppm	ASTM D5185m		0	<1	
	Titanium	ppm	ASTM D5185m	24	0	<1	
	Silver	ppm	ASTM D5185m	-3	ہ <1	<1	
	Aluminum		ASTM D5185m		12	42	
	Lead	ppm	ASTM D5185m		12	1	
	Copper	ppm ppm	ASTM D5185m		8	23	
	Tin	ppm	ASTM D5185m		<1	4	
	Vanadium	ppm	ASTM D5185m	210	0	0	
	White Metal	scalar	*Visual	NONE	NONE	NONE	
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
CONTAMINATION	Silicon	ppm	ASTM D5185m		19	20	
There is no indication of any contamination in the oil.	Potassium	ppm	ASTM D5185m		27	113	
	Fuel		WC Method		<1.0	<1.0	
	Water		WC Method	>0.2	NEG	NEG	
	Glycol		WC Method		NEG	NEG	
	Soot %	%	*ASTM D7844	>3	1	0.9	
	Nitration	Abs/cm	*ASTM D7624	>20	16.5	17.7	
	Sulfation	Abs/.1mm	*ASTM D7415		34.3	36.3	
	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		6	10	
	Boron	ppm	ASTM D5185m	250	9	12	
The BN result indicates that there is suitable alkalinity remaining in the	Barium	ppm	ASTM D5185m	10	0	0	
oil. The condition of the oil is acceptable for the time in service.	Molybdenum	ppm	ASTM D5185m	100	72	36	
	Manganese	ppm	ASTM D5185m		2	4	
	Magnesium	ppm	ASTM D5185m	450	1365	1035	
	Calcium	ppm	ASTM D5185m	3000	1200	1454	
	Phosphorus	ppm	ASTM D5185m	1150	1282	1017	
	Zinc	ppm	ASTM D5185m	1350	1645	1217	
	Sulfur	ppm	ASTM D5185m	4250	4148	3917	
	Oxidation	Abs/.1mm	*ASTM D7414	>25	39.3	41.4	

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

ASTM D445 10.9

Visc @ 100°C cSt

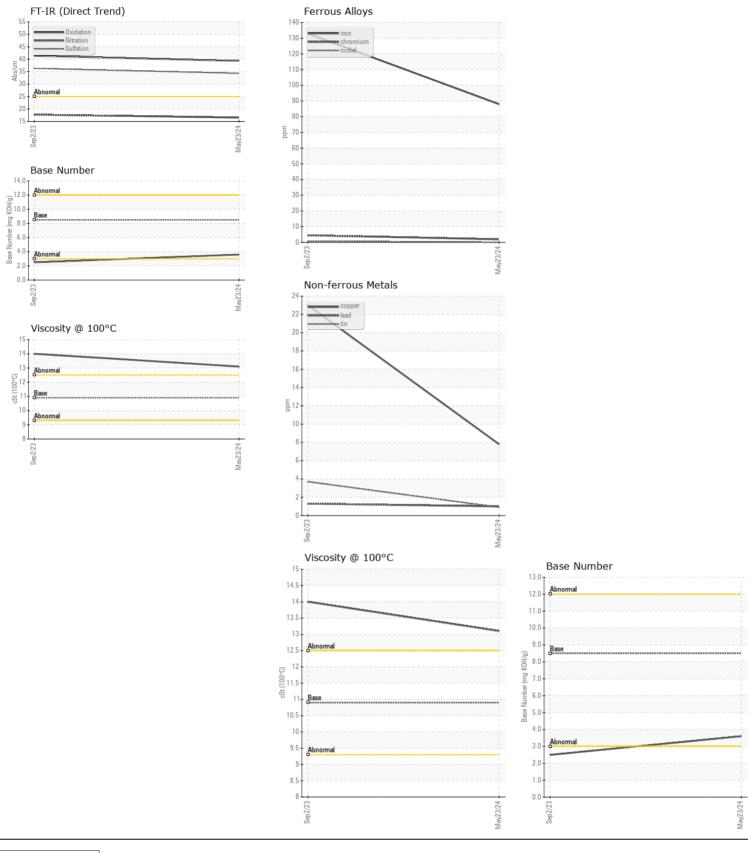
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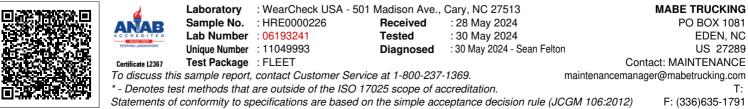
3.6

13.1

2.5

14.0





Contact/Location: MAINTENANCE ? - MABEDE Page 2 of 2