

WEAR NORMAL CONTAMINATION NORMAL FLUID CONDITION NORMAL

Machine Id FREIGHTLINER 19006 Component Diesel Engine Fluid {not provided} (--- GAL)

RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

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Metal levels are typical for a new component breaking in.

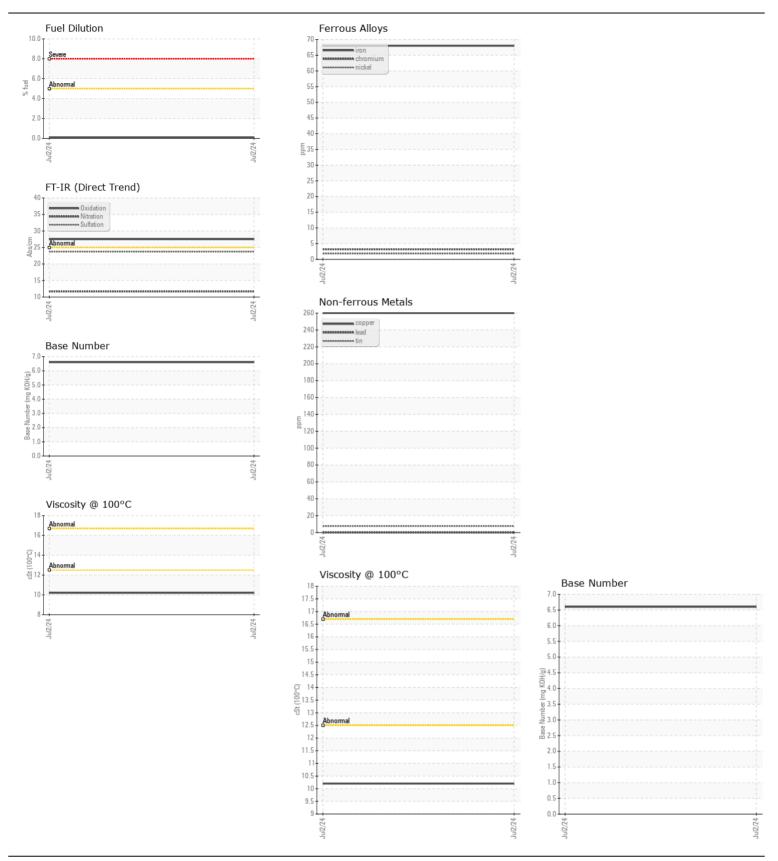
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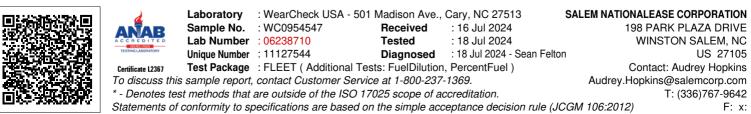
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. Tests indicate that there is no fuel present in the oil. There is no indication of any contamination in the oil.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0954547		
Sample Date		Client Info		02 Jul 2024		
Machine Age	mls	Client Info		33000		
Oil Age	mls	Client Info		25000		
Filter Age	mls	Client Info		0		
Oil Changed		Client Info		N/A		
Filter Changed		Client Info		N/A		
Sample Status				NORMAL		
Iron	ppm	ASTM D5185m	>80	68		
Chromium	ppm	ASTM D5185m	>5	3		
Nickel	ppm	ASTM D5185m	>2	2		
Titanium	ppm	ASTM D5185m		<1		
Silver	ppm	ASTM D5185m	>3	<1		
Aluminum	ppm	ASTM D5185m	>30	50		
Lead	ppm	ASTM D5185m	>30	0		
Copper	ppm	ASTM D5185m	>150	260		
Tin	ppm	ASTM D5185m	>5	8		
Vanadium	ppm	ASTM D5185m		<1		
White Metal	scalar	*Visual	NONE	NONE		
Yellow Metal	scalar	*Visual	NONE	NONE		
	Scalai	visuai	NONL			
Silicon	ppm	ASTM D5185m	>20	8		
Potassium	ppm	ASTM D5185m	>20	117		
Fuel	%	ASTM D3524	>5	0.1		
Water		WC Method	>0.2	NEG		
Glycol		WC Method		NEG		
Soot %	%	*ASTM D7844	>3	0.6		
Nitration	Abs/cm	*ASTM D7624	>20	11.7		
Sulfation	Abs/.1mm	*ASTM D7415	>30	23.7		
Silt	scalar	*Visual	NONE	NONE		
Debris	scalar	*Visual	NONE	NONE		
Sand/Dirt	scalar	*Visual	NONE	NONE		
Appearance	scalar	*Visual	NORML	NORML		
Odor	scalar	*Visual	NORML	NORML		
Emulsified Water		*Visual		NEG		
Emuisilieu waler	scalar	visual	>0.2	NEG		
Sodium	ppm	ASTM D5185m		4		
Boron	ppm	ASTM D5185m		32		
Barium	ppm	ASTM D5185m		0		
Molybdenum	ppm	ASTM D5185m		43		
Manganese	ppm	ASTM D5185m		5		
Magnesium	ppm	ASTM D5185m		523		
Calcium		ASTM D5185m		1702		
Phosphorus	ppm ppm	ASTM D5185m		756		
Zinc		ASTM D5185m		929		
Sulfur	ppm					
	ppm	ASTM D5185m	- OE	1821		
Oxidation	Abs/.1mm	*ASTM D7414	>25	27.5		
Base Number (BN)	mg KOH/g	ASTM D2896		6.6		
Visc @ 100°C	cSt	ASTM D445		10.2		

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.





Contact/Location: Audrey Hopkins - SALWIN Page 2 of 2