

### **OIL ANALYSIS REPORT**

Sample Rating Trend

NORMAL

Machine Id

# FREIGHTLINER TRUCK 2117

Component Diesel Engine Fluid

MOBIL 15W40 (--- GAL)

#### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

#### Fluid Condition

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

	<b>1ATION</b>	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0917104	WC0906267	
Sample Date		Client Info		06 May 2024	15 Feb 2024	
Machine Age	mls	Client Info		457731	443202	
Oil Age	mls	Client Info		0	0	
Oil Changed		Client Info		Changed	Changed	
Sample Status				NORMAL	NORMAL	
CONTAMINATION	٧	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	
Water		WC Method	>0.2	NEG	NEG	
Glycol		WC Method		NEG	NEG	
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>80	22	11	
Chromium	ppm	ASTM D5185m	>5	2	1	
Nickel	ppm	ASTM D5185m	>2	0	0	
Titanium	ppm	ASTM D5185m		0	<1	
Silver	ppm	ASTM D5185m	>3	0	0	
Aluminum	ppm	ASTM D5185m	>30	2	<1	
Lead	ppm	ASTM D5185m	>30	10	3	
Copper	ppm	ASTM D5185m	>150	<1	<1	
Tin	ppm	ASTM D5185m	>5	<1	<1	
Vanadium	ppm	ASTM D5185m		0	<1	
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES	ppm	ASTM D5185m method	limit/base	0 current	0 history1	history2
	ppm ppm		limit/base			
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 5	history1 2	history2
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	limit/base	current 5 0	history1 2 0	history2 
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 5 0 64	history1 2 0 56	history2  
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 5 0 64 0	history1 2 0 56 0	history2   
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 5 0 64 0 968	history1 2 0 56 0 919	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	Current 5 0 64 0 968 1084	history1 2 0 56 0 919 1064	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	Current 5 0 64 0 968 1084 1075	history1 2 0 56 0 919 1064 923	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	limit/base	current           5           0           64           0           968           1084           1075           1266	history1 2 0 56 0 919 1064 923 1138	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		Current 5 0 64 0 968 1084 1075 1266 2831	history1 2 0 56 0 919 1064 923 1138 3306	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	Current 5 0 64 0 968 1084 1075 1266 2831 Current	history1 2 0 56 0 919 1064 923 1138 3306 history1	history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	limit/base	current           5           0           64           0           968           1084           1075           1266           2831           current           3	history1         2         0         56         0         919         1064         923         1138         3306         history1         2	history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	limit/base >20 >118	current           5           0           64           0           968           1084           1075           1266           2831           current           3           <1	history1         2         0         56         0         919         1064         923         1138         3306         history1         2         3	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	limit/base >20 >118 >20	current         5         0         64         0         968         1084         1075         1266         2831         current         3         <1         2	history1         2         0         56         0         919         1064         923         1138         3306         history1         2         3         0	history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	limit/base >20 >118 >20 Limit/base	current         5         0         64         0         968         1084         1075         1266         2831         current         3         <1         2         current	history1         2         0         56         0         919         1064         923         1138         3306         history1         2         3         0         history1	history2 history2 history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm i ppm i	method           ASTM D5185m	limit/base >20 >118 >20 limit/base >3	current         5         0         64         0         968         1084         1075         1266         2831         current         3         <1         2         current         1.5	history1         2         0         56         0         919         1064         923         1138         3306         history1         2         3         0         history1         0         history1         0.8	history2 history2 history2 history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	limit/base >20 >118 >20 limit/base >3 >20	current         5         0         64         0         968         1084         1075         1266         2831         current         3         <1         2         current         1.5         9.7	history1         2         0         56         0         919         1064         923         1138         3306         history1         2         3         0         history1         0         history1         0.8         7.9	history2  history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m           ASTM D7844           *ASTM D7624           *ASTM D7415           method	Imit/base >20 >118 >20 Imit/base >3 >20 >30	current         5         0         64         0         968         1084         1075         1266         2831         current         3         <1         2         current         1.5         9.7         22.5	history1         2         0         56         0         919         1064         923         1138         3306         history1         2         3         0         history1         0.8         7.9         20.1	history2  history2                        history2  <



30

2!

Abs/cm

10

10.0

6.

-9

18 17

16

cSt (100°C) 14

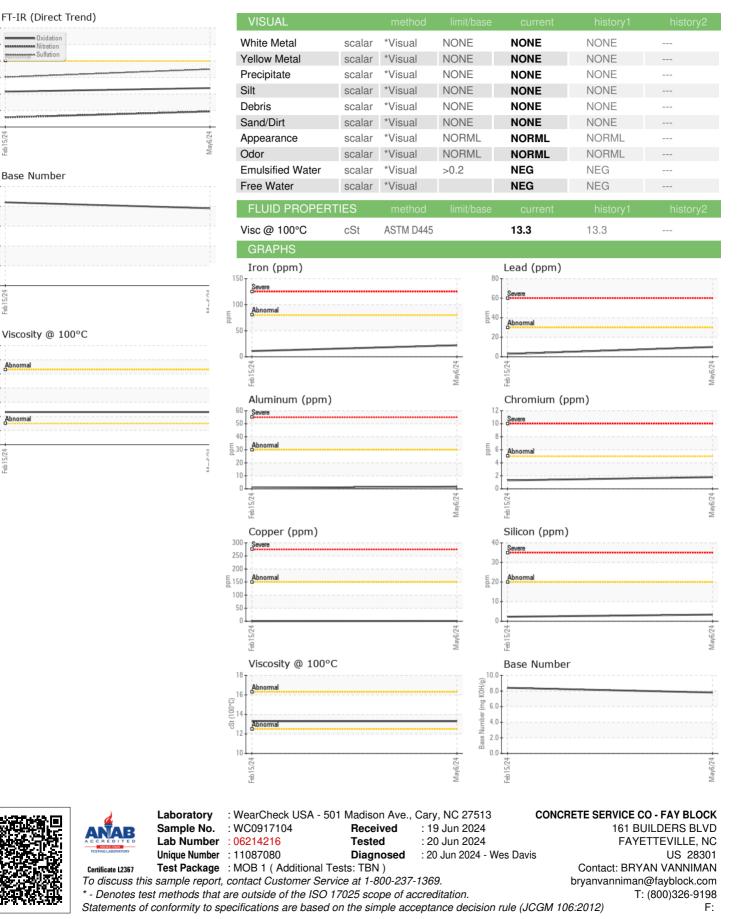
Feb15/24

(mg KOH/g)

mbe 4.

Base 2 ( eb1

## **OIL ANALYSIS REPORT**



Contact/Location: BRYAN VANNIMAN - CONFAY