

### **OIL ANALYSIS REPORT**



# Machine Id 59507

#### Component Diesel Engine

Fluid MOBIL DELVAC 1300 SUPER15W40 (--- QTS)

#### 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.

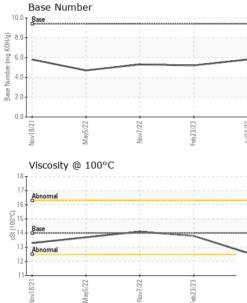
#### Fluid Condition

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

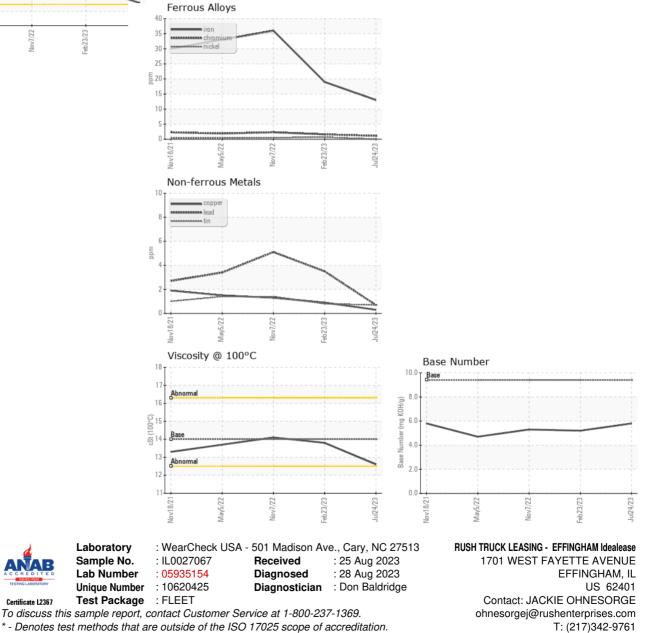
SAMPLE INFORM	<b>IATION</b>	method	limit/base	current	history1	history2
Sample Number		Client Info		IL0027067	IL0027115	IL0027137
Sample Date		Client Info		24 Jul 2023	23 Feb 2023	07 Nov 2022
Machine Age	mls	Client Info		235794	204397	174180
Oil Age	mls	Client Info		31397	30217	42202
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATIO	N	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	13	19	36
Chromium	ppm	ASTM D5185m	>20	1	2	2
Nickel	ppm	ASTM D5185m	>4	0	<1	<1
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>3	0	<1	0
Aluminum	ppm	ASTM D5185m	>20	5	2	4
Lead	ppm	ASTM D5185m	>40	<1	4	5
Copper	ppm	ASTM D5185m	>330	<1	<1	1
Tin	ppm	ASTM D5185m	>15	<1	<1	1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
			11 1. 0			la la taux O
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	Method ASTM D5185m	limit/base	current 49	history1 20	nistory2 12
	ppm ppm	ASTM D5185m				
Boron		ASTM D5185m	0	49	20	12
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	49 0	20 0	12 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	49 0 13	20 0 33	12 0 38
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	49 0 13 <1	20 0 33 1	12 0 38 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	49 0 13 <1 251 2099 941	20 0 33 1 855 1332 913	12 0 38 <1 759 1420 807
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	49 0 13 <1 251 2099 941 1194	20 0 33 1 855 1332 913 1109	12 0 38 <1 759 1420 807 1034
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	49 0 13 <1 251 2099 941	20 0 33 1 855 1332 913	12 0 38 <1 759 1420 807
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	49 0 13 <1 251 2099 941 1194	20 0 33 1 855 1332 913 1109	12 0 38 <1 759 1420 807 1034
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 0 Init/base	49 0 13 <1 251 2099 941 1194 3883	20 0 33 1 855 1332 913 1109 3655 history1 3	12 0 38 <1 759 1420 807 1034 2978
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 0 Init/base	49 0 13 <1 251 2099 941 1194 3883 current	20 0 33 1 855 1332 913 1109 3655 history1	12 0 38 <1 759 1420 807 1034 2978 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	0 0 0 0 limit/base >25	49 0 13 <1 251 2099 941 1194 3883 current 4	20 0 33 1 855 1332 913 1109 3655 history1 3	12 0 38 <1 759 1420 807 1034 2978 history2 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	0 0 0 0 limit/base >25	49 0 13 <1 251 2099 941 1194 3883 <u>current</u> 4 2	20 0 33 1 855 1332 913 1109 3655 history1 3 2	12 0 38 <1 759 1420 807 1034 2978 history2 7 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	49 0 13 <1 251 2099 941 1194 3883 <u>current</u> 4 2 8 <u>current</u> 0.3	20 0 33 1 855 1332 913 1109 3655 history1 3 2 6	12 0 38 <1 759 1420 807 1034 2978 history2 7 3 7 3 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	49 0 13 <1 251 2099 941 1194 3883 <u>current</u> 4 2 8 8	20 0 33 1 855 1332 913 1109 3655 history1 3 2 6	12 0 38 <1 759 1420 807 1034 2978 history2 7 3 7 3 7 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	49 0 13 <1 251 2099 941 1194 3883 <u>current</u> 4 2 8 <u>current</u> 0.3	20 0 33 1 855 1332 913 1109 3655 history1 3 2 6 history1 0.3	12 0 38 <1 759 1420 807 1034 2978 history2 7 3 7 3 7 history2 0.5
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	ASTM D5185m ASTM D5185m	0 0 0 0 limit/base >25 >20 limit/base >3 >20	49 0 13 <1 251 2099 941 1194 3883 current 4 2 8 <i>current</i> 0.3 10.3	20 0 33 1 855 1332 913 1109 3655 history1 3 2 6 history1 0.3 10.5	12 0 38 <1 759 1420 807 1034 2978 history2 7 3 7 history2 0.5 13.5
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	ASTM D5185m ASTM D5185m	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	49 0 13 <1 251 2099 941 1194 3883 <u>current</u> 4 2 8 <u>current</u> 0.3 10.3 23.3	20 0 33 1 855 1332 913 1109 3655 history1 3 2 6 <u>history1</u> 0.3 10.5 23.1	12 0 38 <1 759 1420 807 1034 2978 history2 7 3 7 history2 0.5 13.5 29.7
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	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 0 0 1 1 2 2 5 2 1 1 1 1 1 2 3 2 0 1 2 0 1 1 1 2 1 2 1 2 1 2 2 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2	49 0 13 <1 251 2099 941 1194 3883 current 4 2 8 current 0.3 10.3 23.3 current	20 0 33 1 855 1332 913 1109 3655 history1 3 2 6 history1 0.3 10.5 23.1 history1	12 0 38 <1 759 1420 807 1034 2978 history2 7 3 7 history2 0.5 13.5 29.7 history2



## **OIL ANALYSIS REPORT**



VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14	12.6	13.8	14.1
GRAPHS						



Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Certificate L2367

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