

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id **4483L** 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.

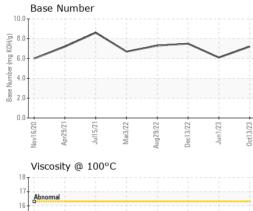
Fluid Condition

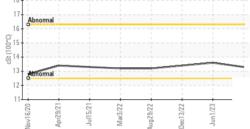
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		IL0032412	IL0028934	IL0028987
Sample Date		Client Info		13 Oct 2023	01 Jun 2023	13 Dec 2022
Machine Age	mls	Client Info		167415	155024	134621
Oil Age	mls	Client Info		0	15000	15000
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	35	53	25
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	<1	0	<1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	6	18	6
Lead	ppm	ASTM D5185m	>40	<1	0	<1
Copper	ppm	ASTM D5185m	>330	2	2	<1
Tin	ppm	ASTM D5185m	>15	0	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
			11 11 11			
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	limit/base	current 0	history1 0	history2 5
	ppm ppm		limit/base			
Boron		ASTM D5185m	limit/base	0	0	5
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	0 4	0	5 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 4 64	0 0 65	5 0 56
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 4 64 <1	0 0 65 <1	5 0 56 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		0 4 64 <1 922	0 0 65 <1 1010	5 0 56 <1 923
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		0 4 64 <1 922 1081	0 0 65 <1 1010 1181	5 0 56 <1 923 1242
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		0 4 64 <1 922 1081 901	0 0 65 <1 1010 1181 978	5 0 56 <1 923 1242 938
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	limit/base	0 4 64 <1 922 1081 901 1240 3273	0 0 65 <1 1010 1181 978 1291	5 0 56 <1 923 1242 938 1333
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		0 4 64 <1 922 1081 901 1240 3273	0 0 65 <1 1010 1181 978 1291 3565	5 0 56 <1 923 1242 938 1333 3345
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	limit/base	0 4 64 <1 922 1081 901 1240 3273 current	0 0 65 <1 1010 1181 978 1291 3565 history1	5 0 56 <1 923 1242 938 1333 3345 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	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	limit/base	0 4 64 <1 922 1081 901 1240 3273 current 5	0 0 65 <1 1010 1181 978 1291 3565 history1 6	5 0 56 <1 923 1242 938 1333 3345 history2 4
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 method ASTM D5185m	limit/base >25 >118	0 4 64 <1 922 1081 901 1240 3273 current 5 0 8	0 0 65 <1 1010 1181 978 1291 3565 history1 6 3	5 0 56 <1 923 1242 938 1333 3345 history2 4 2
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	limit/base >25 >118 >20	0 4 64 <1 922 1081 901 1240 3273 current 5 0 8	0 0 65 <1 1010 1181 978 1291 3565 history1 6 3 3 16	5 0 56 <1 923 1242 938 1333 3345 history2 4 2 8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >118 >20 limit/base	0 4 64 <1 922 1081 901 1240 3273 <u>current</u> 5 0 8	0 0 65 <1 1010 1181 978 1291 3565 history1 6 3 16 history1	5 0 56 <1 923 1242 938 1333 3345 history2 4 2 8 8
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	limit/base >25 >118 >20 limit/base >3	0 4 64 <1 922 1081 901 1240 3273 <u>current</u> 5 0 8 <u>current</u> 0.7	0 0 65 <1 1010 1181 978 1291 3565 history1 6 3 16 history1 1.3	5 0 56 <1 923 1242 938 1333 3345 history2 4 2 8 history2 0.6
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	limit/base >25 >118 >20 limit/base >3 >20	0 4 64 <1 922 1081 901 1240 3273 <u>current</u> 5 0 8 <u>current</u> 0.7 11.5 23.9	0 0 65 <1 1010 1181 978 1291 3565 history1 6 3 6 3 16 history1 1.3 14.0	5 0 56 <1 923 1242 938 1333 3345 history2 4 2 8 history2 0.6 10.6
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	limit/base >25 >118 >20 limit/base >3 >20 >30	0 4 64 <1 922 1081 901 1240 3273 <u>current</u> 5 0 8 <u>current</u> 0.7 11.5 23.9	0 0 65 <1 1010 1181 978 1291 3565 history1 6 3 16 history1 1.3 14.0 27.5	5 0 56 <1 923 1242 938 1333 3345 history2 4 2 8 <u>history2</u> 0.6 10.6 22.6
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 *ASTM D7844	limit/base >25 >118 >20 limit/base >3 >20 >30	0 4 64 31 922 1081 901 1240 3273 current 5 0 8 current 0.7 11.5 23.9 current	0 0 65 <1 1010 1181 978 1291 3565 history1 6 3 16 history1 1.3 14.0 27.5 history1	5 0 56 <1 923 1242 938 1333 3345 history2 4 2 8 history2 0.6 10.6 22.6 history2

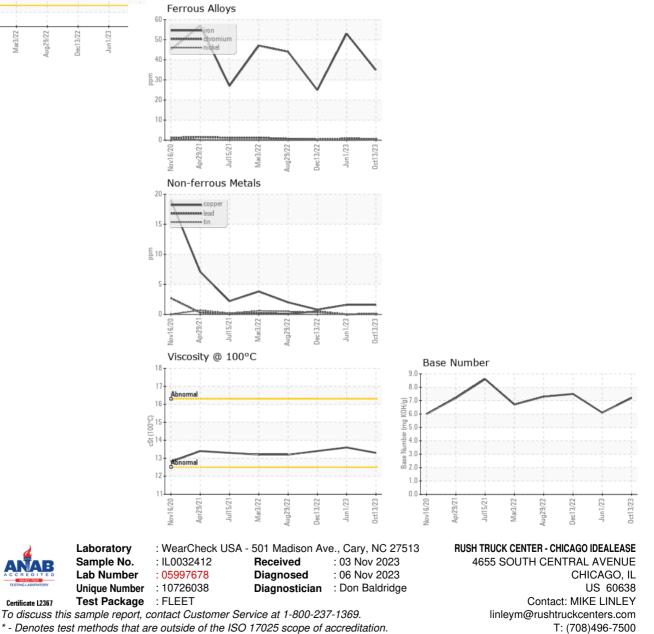


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VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*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 PROPER	TIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445		13.3	13.6	13.4
GRAPHS						



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

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