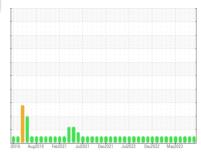


OIL ANALYSIS REPORT

GEORGIA 2015 MACK 2543

Component Diesel Engine

DIESEL ENGINE OIL SAE 15W40 (40 QTS)



Sample Rating Trend



Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

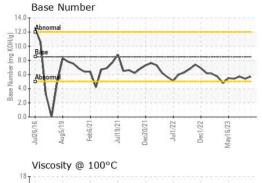
Fluid Condition

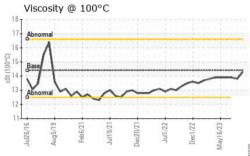
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0646041	WC0754717	WC0754697
Sample Date		Client Info		21 Sep 2023	01 Aug 2023	06 Jun 2023
Machine Age	mls	Client Info		169168	167721	166149
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	V	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	0.0	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	14	25	25
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	<1	<1
Titanium	ppm	ASTM D5185m	>2	3	2	1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	4	4	4
Lead	ppm	ASTM D5185m	>40	<1	<1	<1
Copper	ppm	ASTM D5185m	>330	5	6	6
Tin	ppm	ASTM D5185m	>15	1	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current	history1 41	history2 50
	ppm				•	
Boron	ppm	ASTM D5185m	250	17	41	50
Boron Barium Molybdenum		ASTM D5185m ASTM D5185m	250 10	17 0	41 <1	50 0
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	250 10	17 0 49	41 <1 24	50 0 23
Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	17 0 49 2	41 <1 24 <1	50 0 23 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	17 0 49 2 593	41 <1 24 <1 211	50 0 23 <1 221
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000	17 0 49 2 593 1620	41 <1 24 <1 211 1731	50 0 23 <1 221 1886
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	250 10 100 450 3000 1150	17 0 49 2 593 1620 1053	41 <1 24 <1 211 1731 832	50 0 23 <1 221 1886 889
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 ASTM D5185m	250 10 100 450 3000 1150 1350	17 0 49 2 593 1620 1053 1297	41 <1 24 <1 211 1731 832 1063	50 0 23 <1 221 1886 889 1109
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	250 10 100 450 3000 1150 1350 4250 limit/base	17 0 49 2 593 1620 1053 1297 3016	41 <1 24 <1 211 1731 832 1063 3175	50 0 23 <1 221 1886 889 1109 2965
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base	17 0 49 2 593 1620 1053 1297 3016	41 <1 24 <1 211 1731 832 1063 3175 history1	50 0 23 <1 221 1886 889 1109 2965
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base	17 0 49 2 593 1620 1053 1297 3016 current	41 <1 24 <1 211 1731 832 1063 3175 history1	50 0 23 <1 221 1886 889 1109 2965 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158	17 0 49 2 593 1620 1053 1297 3016 current 9	41 <1 24 <1 211 1731 832 1063 3175 history1 14 12	50 0 23 <1 221 1886 889 1109 2965 history2 14
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20	17 0 49 2 593 1620 1053 1297 3016 current 9 6 7	41 <1 24 <1 211 1731 832 1063 3175 history1 14 12 22	50 0 23 <1 221 1886 889 1109 2965 history2 14 10 27
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	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base	17 0 49 2 593 1620 1053 1297 3016 current 9 6 7	41 <1 24 <1 211 1731 832 1063 3175 history1 14 12 22 history1	50 0 23 <1 221 1886 889 1109 2965 history2 14 10 27 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	ASTM D5185m method *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base	17 0 49 2 593 1620 1053 1297 3016 current 9 6 7 current 0.4	41 <1 24 <1 211 1731 832 1063 3175 history1 14 12 22 history1 0.4	50 0 23 <1 221 1886 889 1109 2965 history2 14 10 27 history2 0.4
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 method *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base	17 0 49 2 593 1620 1053 1297 3016 current 9 6 7 current 0.4 10.8	41 <1 24 <1 211 1731 832 1063 3175 history1 14 12 22 history1 0.4 10.8	50 0 23 <1 221 1886 889 1109 2965 history2 14 10 27 history2 0.4 10.7
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 method *ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >4 >20 >30	17 0 49 2 593 1620 1053 1297 3016 current 9 6 7 current 0.4 10.8 24.8	41 <1 24 <1 211 1731 832 1063 3175 history1 14 12 22 history1 0.4 10.8 24.6	50 0 23 <1 221 1886 889 1109 2965 history2 14 10 27 history2 0.4 10.7 25.1



OIL ANALYSIS REPORT

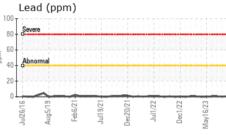


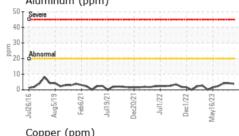


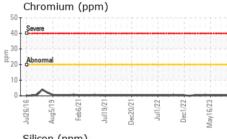
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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

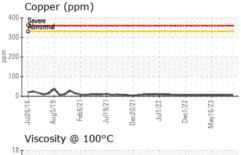
FLUID PROPER	THES	method			riistory i	History∠	
Visc @ 100°C	cSt	ASTM D445	14.4	14.3	13.8	13.9	

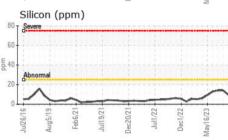
300		n (ppi	m)						
250	Same.	re							
200 E 150		٨							
100	1	mpal				11111		++1+1	
(Jul26/16	Aug5/19	Feb6/21	Jul19/21	Dec20/21-	Jul1/22	Dec1/22 +	May16/23	-
	Alu	minuı	n (pp	m)					

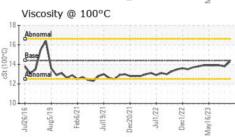


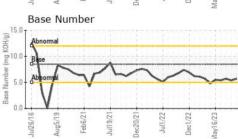
















Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** Test Package : MOB1+

: WC0646041 : 05963968 : 10670519

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received Diagnosed

: 28 Sep 2023 : 29 Sep 2023 Diagnostician : Wes Davis

To discuss this sample report, contact Customer Service at 1-800-237-1369. * - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

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

LIBERTY DISPOSAL 6401 S EASTERN AVE

OKLAHOMA CITY, OK US 73149

Contact: Loran Cottle l.cottle@ldi89.com T: (910)970-0291

F: x: