

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

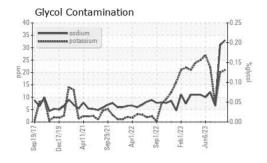
Fluid Condition

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

		p2017 Dec20		Apr2022 Sep2022 Feb2023 .		
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0810693	WC0754712	WC0646041
Sample Date		Client Info		01 Nov 2023	02 Oct 2023	21 Sep 2023
Machine Age	mls	Client Info		171617	169684	169168
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	١	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	28	25	14
Chromium	ppm	ASTM D5185m	>20	<1	0	<1
Nickel	ppm	ASTM D5185m	>5	<1	0	0
Titanium	ppm	ASTM D5185m	>2	2	1	3
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	3	4
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	5	4	5
Tin	ppm	ASTM D5185m	>15	<1	0	1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
	1-1-					
ADDITIVEC						
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	23	22	17
Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m	250 10	23 5	22 0	17 0
Boron		ASTM D5185m ASTM D5185m ASTM D5185m	250	23 5 34	22 0 31	17 0 49
Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	23 5 34 <1	22 0 31 0	17 0 49 2
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	250 10	23 5 34	22 0 31 0 285	17 0 49 2 593
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	23 5 34 <1	22 0 31 0	17 0 49 2
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	23 5 34 <1 286	22 0 31 0 285	17 0 49 2 593
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	23 5 34 <1 286 1763	22 0 31 0 285 1728	17 0 49 2 593 1620
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	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	23 5 34 <1 286 1763 928	22 0 31 0 285 1728 885	17 0 49 2 593 1620 1053
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	23 5 34 <1 286 1763 928 1117	22 0 31 0 285 1728 885 1156	17 0 49 2 593 1620 1053 1297
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250	23 5 34 <1 286 1763 928 1117 3287	22 0 31 0 285 1728 885 1156 2993	17 0 49 2 593 1620 1053 1297 3016
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 >25	23 5 34 <1 286 1763 928 1117 3287 current	22 0 31 0 285 1728 885 1156 2993	17 0 49 2 593 1620 1053 1297 3016 history2
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 >25	23 5 34 <1 286 1763 928 1117 3287 current	22 0 31 0 285 1728 885 1156 2993 history1	17 0 49 2 593 1620 1053 1297 3016 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158	23 5 34 <1 286 1763 928 1117 3287 current 17 33	22 0 31 0 285 1728 885 1156 2993 history1 16 31	17 0 49 2 593 1620 1053 1297 3016 history2
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	23 5 34 <1 286 1763 928 1117 3287 current 17 33 21	22 0 31 0 285 1728 885 1156 2993 history1 16 31 20	17 0 49 2 593 1620 1053 1297 3016 history2 9 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20	23 5 34 <1 286 1763 928 1117 3287 current 17 33 21 NEG	22 0 31 0 285 1728 885 1156 2993 history1 16 31 20 NEG	17 0 49 2 593 1620 1053 1297 3016 history2 9 6 7 NEG
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m *ASTM D2982	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base	23 5 34 <1 286 1763 928 1117 3287 current 17 33 21 NEG current	22 0 31 0 285 1728 885 1156 2993 history1 16 31 20 NEG	17 0 49 2 593 1620 1053 1297 3016 history2 9 6 7 NEG
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m *ASTM D2982 *Method *ASTM D7844	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base	23 5 34 <1 286 1763 928 1117 3287 current 17 33 21 NEG current 0.4	22 0 31 0 285 1728 885 1156 2993 history1 16 31 20 NEG history1 0.4	17 0 49 2 593 1620 1053 1297 3016 history2 9 6 7 NEG history2 0.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m *ASTM D7844 *ASTM D7844	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base	23 5 34 <1 286 1763 928 1117 3287 current 17 33 21 NEG current 0.4 10.7	22 0 31 0 285 1728 885 1156 2993 history1 16 31 20 NEG history1 0.4 10.4	17 0 49 2 593 1620 1053 1297 3016 history2 9 6 7 NEG history2 0.4 10.8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m *ASTM D78185m *ASTM D78185m *ASTM D78185m *ASTM D7844 *ASTM D7624 *ASTM D7415 *Method	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >4 >20 >30 limit/base	23 5 34 <1 286 1763 928 1117 3287 current 17 33 21 NEG current 0.4 10.7 24.4 current	22 0 31 0 285 1728 885 1156 2993 history1 16 31 20 NEG history1 0.4 10.4 23.9 history1	17 0 49 2 593 1620 1053 1297 3016 history2 9 6 7 NEG history2 0.4 10.8 24.8 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D76145	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >4 >20 >30 limit/base >25	23 5 34 <1 286 1763 928 1117 3287 current 17 33 21 NEG current 0.4 10.7 24.4	22 0 31 0 285 1728 885 1156 2993 history1 16 31 20 NEG history1 0.4 10.4 23.9	17 0 49 2 593 1620 1053 1297 3016 history2 9 6 7 NEG history2 0.4 10.8 24.8



OIL ANALYSIS REPORT



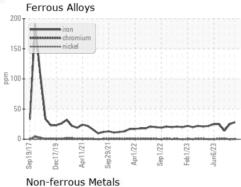
VISUAL		method			HISTORY	nistoryz
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
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

13.8

13.7

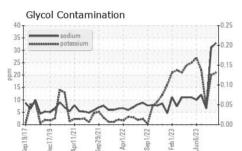
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4-1						-	_/
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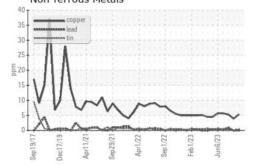


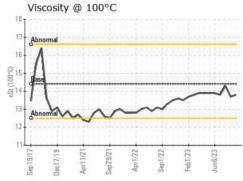


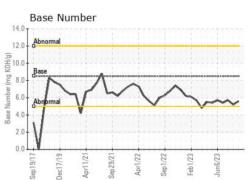
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ASTM D445 14.4













Laboratory

Sample No. Lab Number

: WC0810693 : 06028322 Unique Number : 10778113

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

: 07 Dec 2023 : 10 Dec 2023 Diagnostician : Don Baldridge

Test Package : FLEET (Additional Tests: Glycol)

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

14.3

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Contact/Location: Loran Cottle - SEAOKL