

OIL ANALYSIS REPORT



Machine Id

1720 Component **Diesel Engine** Fluid **DIESEL ENGINE OIL SAE 15W40 (--- GAL)**

DIAGNOSIS

A Recommendation

Oil and filter change at the time of sampling has been noted. 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 level is low. The condition of the oil is acceptable for the time in service.

SAMELE INFORM	ATION	method	limit/base	current	nistory i	nistory2
Sample Number		Client Info		WC0887547	HRE0000096	WC0810285
Sample Date		Client Info		04 Jun 2024	25 Mar 2024	25 Jan 2024
Machine Age	mls	Client Info		208270	202857	197213
Oil Age	mls	Client Info		0	0	6000
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL
			11 11 11			
CONTAMINATION	1	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	15	10	8
Chromium	ppm	ASTM D5185m	>20	0	<1	0
Nickel	ppm	ASTM D5185m	>4	0	<1	0
Titanium	ppm	ASTM D5185m		<1	2	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	4	2	2
Lead	ppm	ASTM D5185m	>40	0	<1	<1
Copper	ppm	ASTM D5185m	>330	6	6	5
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	<1	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	nom	method ASTM D5185m	limit/base	current	history1	history2
ADDITIVES Boron Barium	ppm	method ASTM D5185m ASTM D5185m	limit/base 250 10	current 123 0	history1 105 0	history2 78 0
ADDITIVES Boron Barium Molybdenum	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100	current 123 0 73	history1 105 0 76	history2 78 0 72
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100	current 123 0 73 0	history1 105 0 76 <1	history2 78 0 72 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100 450	current 123 0 73 0 387	history1 105 0 76 <1 360	history2 78 0 72 <1 240
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000	current 123 0 73 0 387 1503	history1 105 0 76 <1 360 1636	history2 78 0 72 <1 240 1511
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 250 10 100 450 3000 1150	Current 123 0 73 0 387 1503 959	history1 105 0 76 <1 360 1636 1027	history2 78 0 72 <1 240 1511 896
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350	Current 123 0 73 0 387 1503 959 1178	history1 105 0 76 <1 360 1636 1027 1157	history2 78 0 72 <1 240 1511 896 1064
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm	methodASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250	Current 123 0 73 0 387 1503 959 1178 3429	history1 105 0 76 <1 360 1636 1027 1157 3278	history2 78 0 72 <1 240 1511 896 1064 2929
ADDITIVES Boron Barium Molybdenum Maganese 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 250 10 100 450 3000 1150 1350 4250	current 123 0 73 0 387 1503 959 1178 3429 current	history1 105 0 76 <1 360 1636 1027 1157 3278 history1	history2 78 0 72 <1 240 1511 896 1064 2929 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm 1 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 3 ppm 3	method ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >25	current 123 0 73 0 387 1503 959 1178 3429 current 11	history1 105 0 76 <1 360 1636 1027 1157 3278 history1 13	history2 78 0 72 <1 240 1511 896 1064 2929 history2 9
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >25 >158	current 123 0 73 0 387 1503 959 1178 3429 current 11 4	history1 105 0 76 <1 360 1636 1027 1157 3278 history1 13 7	history2 78 0 72 <1 240 1511 896 1064 2929 history2 9 4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Chosphorus Zinc Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm 1 ppm 2 ppm 2	method ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >25 >158	current 123 0 73 0 387 1503 959 1178 3429 current 11 4 <1	history1 105 0 76 <1 360 1636 1027 1157 3278 history1 13 7 2	history2 78 0 72 <1 240 1511 896 1064 2929 history2 9 4 1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Chosphorus Zinc Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm 1 ppm 2 ppm 2 ppm 2 ppm 2 ppm 3 ppm 4 ppm 4 ppm 4 ppm 2 ppm 1 ppm 2 ppm 4	method ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20	current 123 0 73 0 387 1503 959 1178 3429 current 11 4 <1 current	history1 105 0 76 <1 360 1636 1027 1157 3278 history1 13 7 2 history1	history2 78 0 72 <1 240 1511 896 1064 2929 history2 9 4 1 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm 1 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 3 ppm 4 ppm 4	method ASTM D5185m	limit/base 250 10 400 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3	current 123 0 73 0 387 1503 959 1178 3429 current 11 4 <1 current 0.4	history1 105 0 76 <1 360 1636 1027 1157 3278 history1 13 7 2 history1 0.4	history2 78 0 72 <1 240 1511 896 1064 2929 history2 9 4 1 history2 0.4
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 250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3 >20	current 123 0 73 0 387 1503 959 1178 3429 current 11 4 <1 current 0.4 8.3	history1 105 0 76 <1 360 1636 1027 1157 3278 history1 13 7 2 history1 0.4 9.0	history2 78 0 72 <1 240 1511 896 1064 2929 history2 9 4 1 history2 0.4 9.7
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	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3 >20	current 123 0 73 0 387 1503 959 1178 3429 current 11 4 <1 current 0.4 8.3 20.3	history1 105 0 76 <1 360 1636 1027 1157 3278 history1 13 7 2 history1 0.4 9.0 21.8	history2 78 0 72 <1 240 1511 896 1064 2929 history2 9 4 1 history2 0.4 9.7 22.2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3 >20 >30	current 123 0 73 0 387 1503 959 1178 3429 current 11 4 <1 0.4 8.3 20.3	history1 105 0 76 <1 360 1636 1027 1157 3278 history1 13 7 2 history1 0.4 9.0 21.8 history1	history2 78 0 72 <1 240 1511 896 1064 2929 history2 9 4 1 history2 0.4 9.7 22.2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D7185 method *ASTM D7415	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3 >20 >30 25	current 123 0 73 0 387 1503 959 1178 3429 current 11 4 <1 current 0.4 8.3 20.3 current	history1 105 0 76 <1 360 1636 1027 1157 3278 history1 13 7 2 history1 0.4 9.0 21.8 history1 18.9	history2 78 0 72 <1 240 1511 896 1064 2929 history2 9 4 1 history2 0.4 9.7 22.2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA Oxidation Base Number (BN)	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m Method *ASTM D7844 *ASTM D7414 ASTM D78454	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3 >20 >30 limit/base >25 >30	current 123 0 73 0 387 1503 959 1178 3429 current 11 4 <1 current 0.4 8.3 20.3 current 17.5	history1 105 0 76 <1 360 1636 1027 1157 3278 history1 13 7 2 history1 0.4 9.0 21.8 history1 18.9 5.8	history2 78 0 72 <1 240 1511 896 1064 2929 history2 9 4 1 history2 0.4 9.7 22.2 history2 19.7 5.5



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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
		mothod	limit/baco	ourropt	history1	history?
	IE3	method	IIIIIVDase	current	Thistory I	TIIStoryz
Visc @ 100°C	cSt	ASTM D445	14.4	13.8	13.9	12.8
GRAPHS						





Test Package : FLEET

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)

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Certificate 12367

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