

OIL ANALYSIS REPORT



Machine Id

55-48 Component Diesel Engine Fluid DIESEL ENGINE OIL SAE 15W40 (--- GAL)

DIAGNOSIS

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 oil viscosity is higher than normal. The BN result indicates that there is suitable alkalinity remaining in the oil.

		method	iiiiii/base	current	Thotory I	motoryz
Sample Number		Client Info		WC0750276	WC0738863	WC0601458
Sample Date		Client Info		06 Mar 2024	09 Feb 2023	30 Jul 2021
Machine Age	hrs	Client Info		2220	2161	0
	hre	Client Info		0	0	0
Oil Age	1115	Client Info		Changed	Changed	Changed
		Client into			Changeu	Changeu
Sample Status				ATTENTION	NORMAL	NORMAL
CONTAMINATION						history2
Fuel		WC Method	<u>\</u> 5	-10	<1.0	<1.0
Wator		WC Mothod	>0.2	NEG	NEG	NEG
Chucol		WC Method	20.2	NEG	NEG	NEG
				NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	51	40	19
Chromium	ppm	ASTM D5185m	>20	6	<1	<1
Nickel	maa	ASTM D5185m	>4	0	0	0
Titanium	mag	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	nnm	ASTM D5185m	>20	4	4	<1
Lead	nnm	ASTM D5185m	×40	2	0	0
Copper	ppm	ASTM D5185m	< <u>330</u>	6	-1	1
Tin	ppm	ASTM D5185m	>330	-1	0	0
Antimony	ppm	ACTM DE105m	>15	<1	0	0
Vanadium	ppin	ACTM DE105m			0	0
vanadium	ррпі	ASTIN DS10311		<1	0	0
O a alvasiu una		ACTM DE10Em		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
Cadmium ADDITIVES	ppm	ASTM D5185m method	limit/base	0 current	0 history1	0 history2
Cadmium ADDITIVES Boron	ppm ppm	ASTM D5185m method ASTM D5185m	limit/base 250	0 current 12	0 history1 84	0 history2 104
Cadmium ADDITIVES Boron Barium	ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	limit/base 250 10	0 current 12 0	0 history1 84 <1	0 history2 104 0
Cadmium ADDITIVES Boron Barium Molybdenum	ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100	0 current 12 0 59	0 history1 84 <1 0	0 history2 104 0 1
Cadmium ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100	0 current 12 0 59 2	0 history1 84 <1 0 0	0 history2 104 0 1 0
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100 450	0 current 12 0 59 2 215	0 history1 84 <1 0 0 621	0 history2 104 0 1 0 31
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000	0 current 12 0 59 2 215 1633	0 history1 84 <1 0 0 621 1329	0 history2 104 0 1 0 31 2294
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000 1150	0 current 12 0 59 2 215 1633 677	0 history1 84 <1 0 0 621 1329 1011	0 history2 104 0 1 0 31 2294 937
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350	0 current 12 0 59 2 215 1633 677 765	0 history1 84 <1 0 0 621 1329 1011 1169	0 history2 104 0 1 0 31 2294 937 1066
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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	limit/base 250 10 100 450 3000 1150 1350 4250	0 current 12 0 59 2 215 1633 677 765 6119	0 history1 84 <1 0 0 621 1329 1011 1169 3743	0 history2 104 0 1 0 31 2294 937 1066 3165
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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 ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250	0 current 12 0 59 2 215 1633 677 765 6119	0 history1 84 <1 0 0 621 1329 1011 1169 3743	0 history2 104 0 1 0 31 2294 937 1066 3165
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	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 ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 Limit/base	0 current 12 0 59 2 215 1633 677 765 6119 current	0 history1 84 <1 0 0 621 1329 1011 1169 3743 history1	0 history2 104 0 1 0 31 2294 937 1066 3165 Xistory2
Cadmium ADDITIVES 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 ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 imit/base >25	0 current 12 0 59 2 215 1633 677 765 6119 current 23	0 history1 84 <1 0 0 621 1329 1011 1169 3743 history1 24	0 history2 104 0 1 0 31 2294 937 1066 3165 3165 history2 6
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm 1 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 4 ppm 4 ppm 4 ppm 4 ppm 4	ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >25 >158	0 current 12 0 59 2 215 1633 677 765 6119 current 23 10	0 history1 84 <1 0 0 621 1329 1011 1169 3743 history1 24 <1	0 history2 104 0 1 0 31 2294 937 1066 3165 3165 history2 6 2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm /	ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 25 >25 >158 >20	0 current 12 0 59 2 215 1633 677 765 6119 current 23 10 2	0 history1 84 <1 0 0 621 1329 1011 1169 3743 history1 24 <1 4	0 history2 104 0 1 0 31 2294 937 1066 3165 history2 6 2 4
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm	ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 imit/base >25 >158 >20	0 current 12 0 59 2 215 1633 677 765 6119 current 23 10 2 2 current	0 history1 84 <1 0 0 621 1329 1011 1169 3743 history1 24 <1 4 history1	0 history2 104 0 1 0 31 2294 937 1066 3165 history2 6 2 4 4
Cadmium 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	ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3	0 current 12 0 59 2 215 1633 677 765 6119 current 23 10 2 current 0.8	0 history1 84 <1 0 0 621 1329 1011 1169 3743 history1 24 <1 4 history1 0.2	0 history2 104 0 1 0 31 2294 937 1066 3165 history2 6 2 4 4 history2 0.1
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 imit/base >25 >158 >20 imit/base >3 >20	0 current 12 0 59 2 215 1633 677 765 6119 current 23 10 2 current 0.8 5.3	0 history1 84 <1 0 0 621 1329 1011 1169 3743 history1 24 <1 4 history1 0.2 7.6	0 history2 104 0 1 0 31 2294 937 1066 3165 history2 6 2 4 4 history2 0.1 6.2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 imit/base >25 >158 >20 imit/base >3 >20 >30	0 current 12 0 59 2 215 1633 677 765 6119 current 23 10 2 current 0.8 5.3 15.5	0 history1 84 <1 0 0 621 1329 1011 1169 3743 history1 24 <1 4 history1 0.2 7.6 18.7	0 history2 104 0 1 0 31 2294 937 1066 3165 history2 6 2 4 4 history2 0.1 6.2 17.7
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ррт ррт р	ASTM D5185m ASTM D7844	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3 >20 >30 limit/base	0 current 12 0 59 2 215 1633 677 765 6119 current 23 10 2 current 0.8 5.3 15.5 current	0 history1 84 <1 0 0 621 1329 1011 1169 3743 history1 24 <1 4 <1 4 history1 0.2 7.6 18.7 history1	0 history2 104 0 1 0 31 2294 937 1066 3165 history2 6 2 4 4 history2 0.1 6.2 17.7 history2
Cadmium 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	ASTM D5185m ASTM D7115 Method *ASTM D7414	limit/base 250 10 100 450 3000 1150 1350 4250 imit/base >25 >158 >20 imit/base >3 >20 >30 >30 >30	0 current 12 0 59 2 215 1633 677 765 6119 current 23 10 2 current 0.8 5.3 15.5 current 6.5	0 history1 84 <1 0 0 621 1329 1011 1169 3743 history1 24 <1 4 <1 4 history1 0.2 7.6 18.7 history1 12.4	0 history2 104 0 1 0 31 2294 937 1066 3165 history2 6 2 4 4 history2 0.1 6.2 17.7 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA Oxidation Base Number (RN)	ррт () ррт () рр	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844 *ASTM D7844 ASTM D7844 *ASTM D7844	limit/base 250 10 100 450 3000 1150 1350 4250 20 imit/base >25 >158 >20 imit/base >3 >20 >30 imit/base >25 >30	0 current 12 0 59 2 215 1633 677 765 6119 current 23 10 2 current 0.8 5.3 15.5 current 6.5 9.3	0 history1 84 <1 0 0 621 1329 1011 1169 3743 history1 24 <1 4 history1 0.2 7.6 18.7 history1 12.4 9.8	0 history2 104 0 1 0 31 2294 937 1066 3165 history2 6 2 4 4 history2 0.1 6.2 17.7 history2 11.9 8 1

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3

30

2!

Abs/cm

10

3

31

21

Abs/cm

15

14 (

0.212.0 0.0 KOH/d) 0.8 Base Number (mg KOH/d) 0.6 Base Number (mg KOH/d) 0.6 CH/d) 0.7 CH/d)

2.0

0.0

Abnorma

Abnorma

OIL ANALYSIS REPORT



Unique Number : 10978104 Diagnosed Test Package : CONST (Additional Tests: TBN) Certificate 12367 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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