

OIL ANALYSIS REPORT

SAMPLE INFORMATION method

Sample Rating Trend





NORMAL

713027 Component Diesel Engine Fluid DIESEL ENGINE OIL SAE 40 (--- GAL)

DIAGNOSIS

Machine Id

Recommendation

Resample at the next service interval to monitor. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) DIESEL ENGINE OIL SAE 40. Please confirm.

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 Number		Client Info		GFL0121610	GFL0105082	GFL0105302
Sample Date		Client Info		10 Jun 2024	31 May 2024	31 May 2024
Machine Age	hrs	Client Info		1827	1664	1705
Oil Age	hrs	Client Info		150	150	600
Oil Changed		Client Info		Not Changd	Not Changd	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	ON	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
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>90	7	22	21
Chromium	mag	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	mag	ASTM D5185m	>2	0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	1	2	2
Lead	ppm	ASTM D5185m	>40	<1	0	<1
Copper	mag	ASTM D5185m	>330	1	2	1
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method			history1	history2
ADDITIVES Boron	maa	method ASTM D5185m	limit/base	current	history1 <1	history2 0
ADDITIVES Boron Barium	ppm mag	method ASTM D5185m ASTM D5185m	limit/base 250 10	current <1 0	history1 <1 0	history2 0 0
ADDITIVES Boron Barium Molvbdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100	current <1 0 60	history1 <1 0 57	history2 0 0 56
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100	current <1 0 60 <1	history1 <1 0 57 <1	history2 0 0 56 0
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	<pre>current <1 0 60 <1 949</pre>	history1 <1 0 57 <1 880	history2 0 56 0 871
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 <1 0 60 <1 949 1076	history1 <1 0 57 <1 880 1024	history2 0 56 0 871 1016
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	<pre>current <1 0 60 <1 949 1076 1071</pre>	history1 <1 0 57 <1 880 1024 1019	history2 0 56 0 871 1016 897
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	<pre>current <1 0 60 <1 949 1076 1071 1259</pre>	history1 <1 0 57 <1 880 1024 1019 1183	history2 0 56 0 871 1016 897 1184
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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 <1 0 60 <1 949 1076 1071 1259 3682	history1 <1 0 57 <1 880 1024 1019 1183 3261	history2 0 56 0 871 1016 897 1184 3003
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm 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 limit/base	<1 0 60 <1 949 1076 1071 1259 3682 current	history1 <1 0 57 <1 880 1024 1019 1183 3261 history1	history2 0 56 0 871 1016 897 1184 3003 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm 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 ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >25	current <1 0 60 <1 949 1076 1071 1259 3682 current 3	history1 <1 0 57 <1 880 1024 1019 1183 3261 history1 4	history2 0 56 0 871 1016 897 1184 3003 history2 3
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method 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 limit/base >25 >216	current <1 0 60 <1 949 1076 1071 1259 3682 current 3 8	history1 <1 0 57 <1 880 1024 1019 1183 3261 history1 4 6	history2 0 0 56 0 871 1016 897 1184 3003 history2 3 2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm	method ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 20 <u>limit/base</u> >25 >216 >20	<1 0 60 <1 949 1076 1071 1259 3682 current 3 8 4	<1 0 57 <1 880 1024 1019 1183 3261 history1 4 6 3	history2 0 56 0 871 1016 897 1184 3003 history2 3 2 3
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 20 <u>limit/base</u> >20 Limit/base	current <1 0 60 <1 949 1076 1071 1259 3682 current 3 8 4	history1 <1 0 57 <1 880 1024 1019 1183 3261 history1 4 6 3 history1	history2 0 0 56 0 871 1016 897 1184 3003 history2 3 2 3 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	method ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >25 >216 >20 limit/base >6	current <1 0 60 <1 949 1076 1071 1259 3682 current 3 8 4 current 0,2	history1 <1 0 57 <1 880 1024 1019 1183 3261 history1 4 6 3 history1 0.6	history2 0 0 56 0 871 1016 897 1184 3003 history2 3 2 3 history2 0,7
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	method ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >25 >216 >20 limit/base >6 >20	current <1 0 60 <1 949 1076 1071 1259 3682 current 3 8 4 current 0.2 5.8	history1 <1 0 57 <1 880 1024 1019 1183 3261 history1 4 6 3 history1 0.6 9.1	history2 0 0 56 0 871 1016 897 1184 3003 history2 3 2 3 history2 0.7 9.3
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	method ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 20 25 >216 >20 20 limit/base >6 >20 >20 >30	current <1 0 60 <1 949 1076 1071 1259 3682 current 3 8 4 current 0.2 5.8 18.3	history1 <1 0 57 <1 880 1024 1019 1183 3261 history1 4 6 3 history1 0.6 9.1 19.6	history2 0 0 56 0 871 1016 897 1184 3003 history2 3 2 3 2 3 0.7 9.3 19.9
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 20 25 >216 >216 >20 limit/base >6 >20 >20 >30	current <1 0 60 <1 949 1076 1071 1259 3682 current 3 8 4 current 0.2 5.8 18.3	<1 0 57 <1 880 1024 1019 1183 3261 history1 4 6 3 history1 0.6 9.1 19.6 history1	history2 0 0 56 0 871 1016 897 1184 3003 history2 3 2 3 history2 0.7 9.3 19.9 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7415 method *ASTM D7414	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >20 limit/base >6 >20 >30 limit/base >25 >30	current <1 0 60 <1 949 1076 1071 1259 3682 current 3 8 4 0.2 5.8 18.3 current 14.0	history1 <1 0 57 <1 880 1024 1019 1183 3261 history1 4 6 3 history1 0.6 9.1 19.6 history1 16.3	history2 0 0 56 0 871 1016 897 1184 3003 history2 3 2 3 2 3 history2 0.7 9.3 19.9 history2 16.4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation Base Number (RN)	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D7844 *ASTM D7414 *ASTM D7414 ASTM D7849	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >20 limit/base >6 >20 s30 limit/base >25 >216 >20	current <1 0 60 <1 949 1076 1071 1259 3682 current 3 8 4 current 0.2 5.8 18.3 current 14.0 9.5	history1 <1 0 57 <1 880 1024 1019 1183 3261 history1 4 6 3 history1 0.6 9.1 19.6 history1 16.3 7.8	history2 0 0 56 0 871 1016 897 1184 3003 history2 3 2 3 history2 0.7 9.3 19.9 history2 16.4 8,2



OIL ANALYSIS REPORT





VISUAL		method				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 PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	13.8	13.9	13.9
GRAPHS						





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. : GFL0121610 Received : 14 Jun 2024 Lab Number : 06209781 Tested : 15 Jun 2024 Lebanon, MO US 65536 Unique Number : 11082645 Diagnosed : 15 Jun 2024 - Wes Davis Test Package : FLEET Contact: Gary Southard Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. gsouthard@gflenv.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

Submitted By: Gary Southard Page 2 of 2