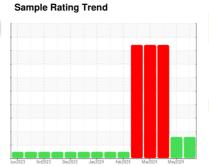


OIL ANALYSIS REPORT



Area (34744UA) 813000 Diesel Engine

DIESEL ENGINE OIL SAE 40 (--- GAL)





Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Sodium and/or potassium levels are high. Test for glycol is negative.

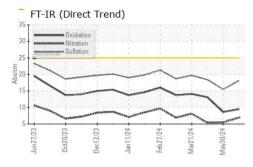
Fluid Condition

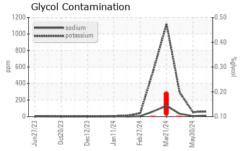
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

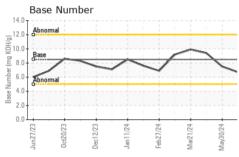
AL 40 (GAL)						
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0122015	GFL0122067	GFL0116573
Sample Date		Client Info		25 Jun 2024	30 May 2024	16 Apr 2024
Machine Age	hrs	Client Info		4368	4190	4036
Oil Age	hrs	Client Info		3927	3903	3863
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				ATTENTION	ATTENTION	SEVERE
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	0.4	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	15	10	16
Chromium	ppm	ASTM D5185m	>20	<1	<1	1
Nickel	ppm	ASTM D5185m	>5	<1	<1	1
Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	4	4	2
Lead	ppm	ASTM D5185m	>40	<1	<1	1
Copper	ppm	ASTM D5185m	>330	4	4	11
Tin	ppm	ASTM D5185m	>15	<1	<1	1
Vanadium	ppm	ASTM D5185m		<1	<1	<1
Cadmium	ppm	ASTM D5185m		0	<1	1
ADDITIVES		and the section of	1111-71		11.5	la la tama O
ADDITIVES						
Boron	ppm	ASTM D5185m	250	current 1	history1 0	14
	ppm					
Boron		ASTM D5185m	250	1	0	14
Boron Barium	ppm	ASTM D5185m ASTM D5185m	250 10	1 0	0	14 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	250 10	1 0 13	0 0 11	14 0 83
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	1 0 13 <1	0 0 11 <1	14 0 83 2
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	1 0 13 <1 80	0 0 11 <1 78	14 0 83 2 839
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	1 0 13 <1 80 2297	0 0 11 <1 78 2118	14 0 83 2 839 1086
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	1 0 13 <1 80 2297 925	0 0 11 <1 78 2118 931	14 0 83 2 839 1086 1027
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	1 0 13 <1 80 2297 925 1117	0 0 11 <1 78 2118 931 1069	14 0 83 2 839 1086 1027 1126
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	1 0 13 <1 80 2297 925 1117 3857	0 0 11 <1 78 2118 931 1069 3965	14 0 83 2 839 1086 1027 1126 3305
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base	1 0 13 <1 80 2297 925 1117 3857 current	0 0 11 <1 78 2118 931 1069 3965 history1	14 0 83 2 839 1086 1027 1126 3305
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25	1 0 13 <1 80 2297 925 1117 3857 current	0 0 11 <1 78 2118 931 1069 3965 history1	14 0 83 2 839 1086 1027 1126 3305 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >216	1 0 13 <1 80 2297 925 1117 3857 current 7	0 0 11 <1 78 2118 931 1069 3965 history1 4	14 0 83 2 839 1086 1027 1126 3305 history2 5 34
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >216	1 0 13 <1 80 2297 925 1117 3857 current 7 12	0 0 11 <1 78 2118 931 1069 3965 history1 4 6	14 0 83 2 839 1086 1027 1126 3305 history2 5 34 290
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol	ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >216 >20	1 0 13 <1 80 2297 925 1117 3857 current 7 12 60 NEG	0 0 11 <1 78 2118 931 1069 3965 history1 4 6 55 NEG	14 0 83 2 839 1086 1027 1126 3305 history2 5 34 ▲ 290 ▲ 0.10
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED	ppm	ASTM D5185m *ASTM D2982 *Method	250 10 100 450 3000 1150 1350 4250 limit/base >25 >216 >20	1 0 13 <1 80 2297 925 1117 3857 current 7 12 60 NEG current	0 0 11 <1 78 2118 931 1069 3965 history1 4 6 55 NEG history1	14 0 83 2 839 1086 1027 1126 3305 history2 5 34 ▲ 290 ▲ 0.10 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm	ASTM D5185m *ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >216 >20 limit/base	1 0 13 <1 80 2297 925 1117 3857 current 7 12 60 NEG	0 0 11 <1 78 2118 931 1069 3965 history1 4 6 55 NEG history1 0.2	14 0 83 2 839 1086 1027 1126 3305 history2 5 34 ▲ 290 ▲ 0.10 history2 0.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ppm	ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D76145	250 10 100 450 3000 1150 1350 4250 limit/base >25 >216 >20 limit/base	1 0 13 <1 80 2297 925 1117 3857 current 7 12 60 NEG current 0.7 6.9	0 0 11 <1 78 2118 931 1069 3965 history1 4 6 55 NEG history1 0.2 5.5	14 0 83 2 839 1086 1027 1126 3305 history2 5 34 ▲ 290 ▲ 0.10 history2 0.4 5.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m **ASTM D5185m **ASTM D5185m **ASTM D5185m **ASTM D5185m **ASTM D5185m **ASTM D7844 **ASTM D7844 **ASTM D7844 **ASTM D7844 **ASTM D7844 **ASTM D7844	250 10 100 450 3000 1150 1350 4250 limit/base >25 >216 >20 limit/base >4 >20 >30 limit/base	1 0 13 <1 80 2297 925 1117 3857 current 7 12 60 NEG current 0.7 6.9 18.1	0 0 11 <1 78 2118 931 1069 3965 history1 4 6 55 NEG history1 0.2 5.5 15.5	14 0 83 2 839 1086 1027 1126 3305 history2 5 34 ▲ 290 ▲ 0.10 history2 0.4 5.4 18.4 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D76145	250 10 100 450 3000 1150 1350 4250 limit/base >25 >216 >20 limit/base >4 >20 >30	1 0 13 <1 80 2297 925 1117 3857 current 7 12 60 NEG current 0.7 6.9 18.1	0 0 11 <1 78 2118 931 1069 3965 history1 4 6 55 NEG history1 0.2 5.5 15.5	14 0 83 2 839 1086 1027 1126 3305 history2 5 34 ▲ 290 ▲ 0.10 history2 0.4 5.4 18.4

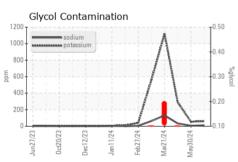


OIL ANALYSIS REPORT



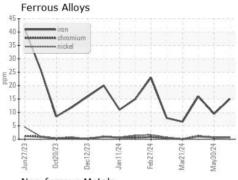


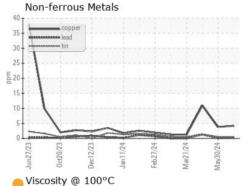


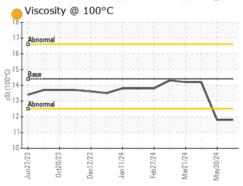


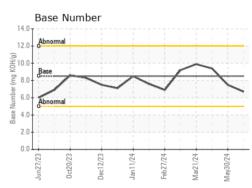
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

LLOID PROPE	EULIES					
Visc @ 100°C	cSt	ASTM D445	14.4	11.8	11.8	14.2













Laboratory Sample No.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0122015 Lab Number : 06222180 Unique Number : 11100377

Received **Tested** Diagnosed

: 27 Jun 2024 : 01 Jul 2024

: 01 Jul 2024 - Jonathan Hester

GFL Environmental - 652 - Fredericksburg Hauling 10954 Houser Drive

Fredericksburg, VA US 22408

wmilo@gflenv.com

Contact: WILLIAM MILO

Test Package : FLEET (Additional Tests: Glycol) 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)

Report Id: GFL652 [WUSCAR] 06222180 (Generated: 07/02/2024 03:52:06) Rev: 1

Submitted By: TECHNICIAN ACCOUNT

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