

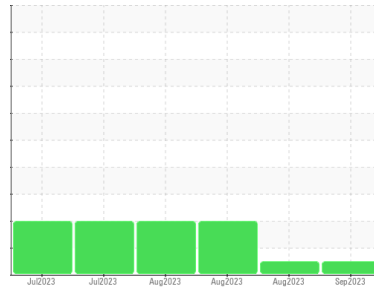


OIL ANALYSIS REPORT



Area
166
Machine Id
414059
Component
Front Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- LTR)

Sample Rating Trend



NORMAL



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

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 INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	GFL0087882	GFL0087857	GFL0091214
Sample Date	Client Info	11 Sep 2023	22 Aug 2023	11 Aug 2023
Machine Age	hrs	3123	451	3123
Oil Age	hrs	600	50	600
Oil Changed	Client Info	Not Chngd	Not Chngd	Not Chngd
Sample Status		NORMAL	NORMAL	ABNORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >3.0	<1.0	<1.0	<1.0
Glycol	WC Method	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >120	6	4	29
Chromium	ppm ASTM D5185m >20	<1	<1	<1
Nickel	ppm ASTM D5185m >5	<1	0	<1
Titanium	ppm ASTM D5185m >2	0	0	<1
Silver	ppm ASTM D5185m >2	<1	<1	<1
Aluminum	ppm ASTM D5185m >20	2	4	9
Lead	ppm ASTM D5185m >40	<1	0	2
Copper	ppm ASTM D5185m >330	18	13	89
Tin	ppm ASTM D5185m >15	<1	<1	2
Vanadium	ppm ASTM D5185m	0	0	<1
Cadmium	ppm ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 250	15	21	268
Barium	ppm ASTM D5185m 10	2	0	0
Molybdenum	ppm ASTM D5185m 100	69	68	109
Manganese	ppm ASTM D5185m	<1	<1	3
Magnesium	ppm ASTM D5185m 450	941	1020	687
Calcium	ppm ASTM D5185m 3000	1120	1148	1535
Phosphorus	ppm ASTM D5185m 1150	1058	1124	727
Zinc	ppm ASTM D5185m 1350	1260	1340	877
Sulfur	ppm ASTM D5185m 4250	3592	4031	2885

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	13	11	▲ 84
Sodium	ppm ASTM D5185m >158	1	2	5
Potassium	ppm ASTM D5185m >20	4	2	24

INFRA-RED

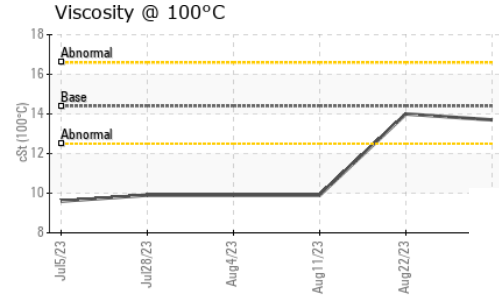
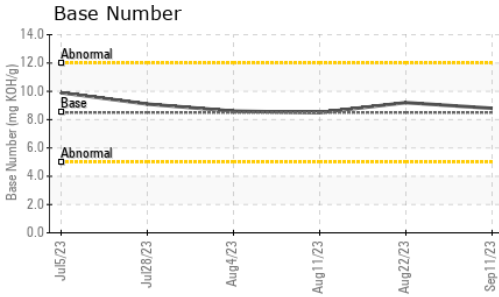
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >4	0.1	0.1	0.2
Nitration	Abs/cm *ASTM D7624 >20	5.7	4.8	7.7
Sulfation	Abs/.1mm *ASTM D7415 >30	18.7	18.0	24.0

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	14.5	14.0	19.9
Base Number (BN)	mg KOH/g ASTM D2896 8.5	8.8	9.2	8.5



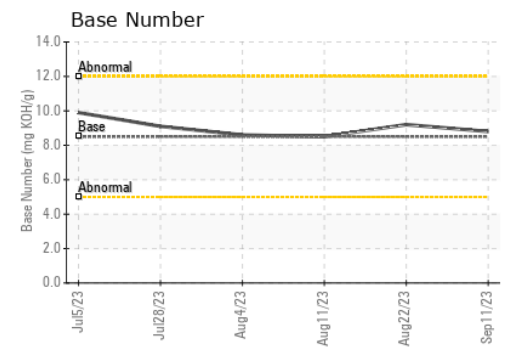
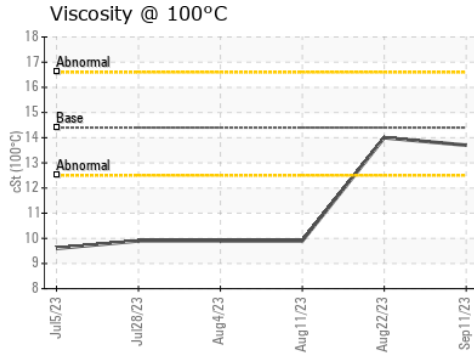
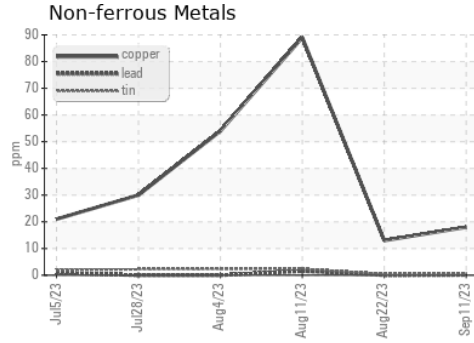
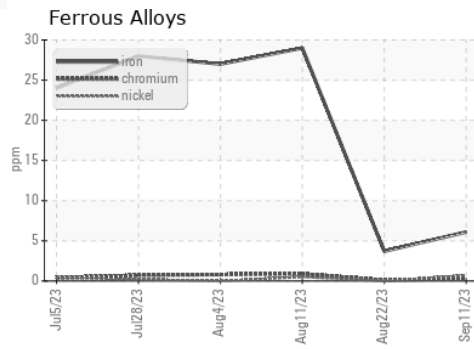
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	13.7	14.0 ▲ 9.9

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0087882 **Received** : 18 Sep 2023
Lab Number : 05953770 **Diagnosed** : 19 Sep 2023
Unique Number : 10654983 **Diagnostician** : Wes Davis
Test Package : FLEET

GFL Environmental - 166 - Phenix City
 18 Old Brickyard Rd
 Phenix City, AL
 US 36869
 Contact: DEAN PEACE JR
 dean.peace@gflenv.com
 T:
 F:

Certificate L2367
 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)