

OIL ANALYSIS REPORT

Area [1144868] 810053

Component **Diesel Engine**

DIESEL ENGINE OIL SAE 40 (--- GAL)

Sample Rating Trend



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

All component wear rates are normal.

Contamination

Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

Fluid Condition

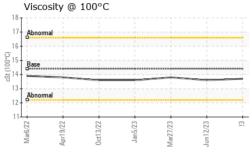
The condition of the oil is acceptable for the time in

		Mar2022	Apr2022 Oct2022	Jan2023 Mar2023 Jun2023	Sep2023		
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2	
Sample Number		Client Info		GFL0093925	GFL0062932	GFL0062912	
Sample Date		Client Info		17 Sep 2023	12 Jun 2023	27 Mar 2023	
Machine Age	hrs	Client Info		0	3497	2981	
Oil Age	hrs	Client Info		0	0	0	
Oil Changed		Client Info		N/A	N/A	N/A	
Sample Status				NORMAL	NORMAL	NORMAL	
CONTAMINATI	ION	method	limit/base	current	history1	history2	
Fuel		WC Method	>5	<1.0	<1.0	<1.0	
Glycol		WC Method		NEG	NEG	NEG	
WEAR METALS	S	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185(m)	>100	25	20	17	
Chromium	ppm	ASTM D5185(m)	>20	<1	<1	<1	
Nickel	ppm	ASTM D5185(m)	>4	<1	<1	0	
Titanium	ppm	ASTM D5185(m)		0	0	<1	
Silver	ppm	ASTM D5185(m)	>3	<1	<1	0	
Aluminum	ppm	ASTM D5185(m)	>20	8	3	4	
Lead	ppm	ASTM D5185(m)	>40	<1	<1	<1	
Copper	ppm	ASTM D5185(m)	>330	2	2	3	
Tin	ppm	ASTM D5185(m)	>15	<1	<1	<1	
Antimony	ppm	ASTM D5185(m)		0	0	0	
Vanadium	ppm	ASTM D5185(m)		0	0	0	
Beryllium	ppm	ASTM D5185(m)		0	0	0	
Cadmium	ppm	ASTM D5185(m)		0	0	0	
ADDITIVES		method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185(m)	250	5	8	4	
Barium	ppm	ASTM D5185(m)	10	0	0	0	
Molybdenum	ppm	ASTM D5185(m)	100	59	60	59	
Manganese	ppm	ASTM D5185(m)		<1	<1	<1	
Magnesium	ppm	ASTM D5185(m)	450	950	957	966	
Calcium	ppm	ASTM D5185(m)	3000	1065	1085	1108	
Phosphorus	ppm	ASTM D5185(m)	1150	1058	1055	1064	
Zinc	ppm	ASTM D5185(m)		1187	1195	1187	
Sulfur	ppm	ASTM D5185(m)	4250	2443	2497	2537	
Lithium	ppm	ASTM D5185(m)		<1	<1	<1	
CONTAMINAN	TS	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m)	>25	4	3	3	
Sodium	ppm	ASTM D5185(m)	>216	9	8	8	
Potassium	ppm	ASTM D5185(m)	>20	12	3	6	
INFRA-RED		method	limit/base	current	history1	history2	
Soot %	%	ASTM D7844*	>3	0.5	0.3	0.2	
Nitration	Abs/cm	ASTM D7624*	>20	9.7	9.4	9.1	
Sulfation	Abs/.1mm	ASTM D7415*	>30	21.0	20.3	22.4	
FLUID DEGRAD	ATION	method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	ASTM D7414*	>25	17.8	17.4	16.6	

Contact/Location: Andrea Michael - GFL777



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VISUAL		method		current		history2	
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG	
Free Water	scalar	Visual*		NEG	NEG	NEG	
FLUID PROPE	DTIEC	and the section of	Page 21 / Page 22 - 2		11.0	111	
LLOID LUCLE	RIIES	method				history2	
Visc @ 100°C	cSt	ASTM D7279(m)		13.7	13.6	13.8	
					,		

Visc @ 100°C	cSt	ASTM [D7279(m)	14.4	13.7	1	3.6		13.8	
GRAPHS										
Iron (ppm)					Lead (ppm)				
Saura.					80 Severe					
					70					
50					Abnormal					
00 - Abnormal					30					
50-					20					
2 2 2	33	33	13	- 23	0			23		
Mar6/22 Apr19/22 Oct13/22	Jan5/23	Mar27/23	Jun12/23	Sep17/23	Mar6/22 Apr19/22	Oct13/22	Jan5/23	Mar27/23	Jun12/23	Sep 17/23
Aluminum (ppm	1)	_	7	0,	Chromium			_	7	0,
Severe					45 40 Severe					
5-					35-					
Abnormal					30 +					
Abnormal					25 20 Abnormal					
0+1					10					
5			_		0					
Mar6/22 Apr19/22 Oct13/22	Jan5/23	Mar27/23	Jun12/23	Sep17/23	Mar6/22 Apr19/22	0ct13/22	Jan5/23	Mar27/23	Jun12/23	Sep17/23
Copper (ppm)	7	M	ng.	S	≥ ₹ Silicon (ppr		7	Ň	٦	S
Severe					80 Severe					
D - Abnormal					60					
0					50-					
					840 - Abnormal 30 - Abnormal					
0					20					
					10					
Mar6/22 Apr19/22	Jan5/23 -	Mar27/23	Jun12/23 -	Sep17/23-	Mar6/22 -	Oct13/22 -	Jan5/23 -	Mar27/23 -	Jun12/23 -	Sep17/23
		Mar	Jul	Sep		Oct	ΡP	Mar	Jul	Sen
Viscosity @ 100	°С				Soot %					
7 Abnormal					5.0 - Severe					
6					4.0					
Base					Abnormal					
3					2.0					
2 Abnormal					1.0					
1 22 22	/23	/23	/23	/23	0.0	122	/23-	/23-	/23-	eo17/23
Mar6/22 - Apr1 9/22 - Oct1 3/22 -	Jan5/23	Nar27/23	un12/23 •	ep17/23	Mar6/22 -	ct13/22	Jan5/23	lar27/23	un12/23 •	71 ua



CALA ISO 17025:2017 Accredited Laboratory

Laboratory Sample No. Lab Number Unique Number : 5644126

Test Package : MOB 1

: GFL0093925

: 02583061

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 777 - Belleville-Municipal waste Received : 18 Sep 2023 Diagnosed : 18 Sep 2023

Diagnostician : Wes Davis

197 Putman Industrial Road Belleville, ON

CA K8N 4Z6 Contact: Andrea Michael amichael@gflenv.com T: (613)962-7144

To discuss this sample report, contact Customer Service at 1-800-268-2131. Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. Validity of results and interpretation are based on the sample and information as supplied.

F: (613)962-1994