

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 413135 Component

Fluid

Diesel Engine

DIESEL ENGINE OIL SAE 15W40 (--- GAL)

DIAGNOSIS

Recommendation

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.

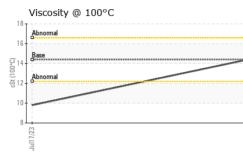
Fluid Condition

The condition of the oil is acceptable for the time in service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2	
Sample Number		Client Info		GFL0091069	GFL0086483		
Sample Date		Client Info		23 Aug 2023	17 Jul 2023		
Machine Age	hrs	Client Info		21854	564		
Oil Age	hrs	Client Info		0	0		
Oil Changed		Client Info		Not Changd	Changed		
Sample Status				NORMAL	ABNORMAL		
CONTAMINATI	ON	method	limit/base	current	history1	history2	
Fuel		WC Method	>3.0	<1.0	0.6		
Glycol		WC Method		NEG	NEG		
WEAR METALS	S	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185(m)	>120	3	32		
Chromium	ppm	ASTM D5185(m)	>20	0	<1		
Nickel	ppm	ASTM D5185(m)	>5	0	3		
Titanium	ppm	ASTM D5185(m)	>2	0	0		
Silver	ppm	ASTM D5185(m)	>2	<1	1		
Aluminum	ppm	ASTM D5185(m)	>20	<1	6		
Lead	ppm	ASTM D5185(m)	>40	<1	8		
Copper	ppm	ASTM D5185(m)	>330	10	297		
Tin	ppm	ASTM D5185(m)	>15	0	3		
Antimony	ppm	ASTM D5185(m)		<1	0		
Vanadium	ppm	ASTM D5185(m)		0	0		
Beryllium	ppm	ASTM D5185(m)		0	0		
Cadmium	ppm	ASTM D5185(m)		0	0		
ADDITIVES		method	limit/base	current	history1	history2	
ADDITIVES Boron	ppm	method ASTM D5185(m)	limit/base 250	current 7	history1 209	history2	
	ppm ppm						
Boron		ASTM D5185(m)	250	7	209		
Boron Barium	ppm	ASTM D5185(m) ASTM D5185(m)	250 10	7 0	209 <1		
Boron Barium Molybdenum	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10	7 0 58	209 <1 119		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10 100	7 0 58 <1	209 <1 119 4		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10 100 450	7 0 58 <1 956 1052 1063	209 <1 119 4 698		
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000	7 0 58 <1 956 1052	209 <1 119 4 698 1442	 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250	7 0 58 <1 956 1052 1063 1168 2657	209 <1 119 4 698 1442 720		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250	7 0 58 <1 956 1052 1063 1168	209 <1 119 4 698 1442 720 810		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250	7 0 58 <1 956 1052 1063 1168 2657	209 <1 119 4 698 1442 720 810 1969		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250	7 0 58 <1 956 1052 1063 1168 2657 <1	209 <1 119 4 698 1442 720 810 1969 <1		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250 Limit/base	7 0 58 <1 956 1052 1063 1168 2657 <1 current	209 <1 119 4 698 1442 720 810 1969 <1 history1	 history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250 imit/base >25	7 0 58 <1 956 1052 1063 1168 2657 <1 current 4	209 <1 119 4 698 1442 720 810 1969 <1 history1 66	 history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250 imit/base >25 >158	7 0 58 <1 956 1052 1063 1168 2657 <1 <i>current</i> 4 1 <1 <1	209 <1 119 4 698 1442 720 810 1969 <1 history1 66 3 11 history1	 history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250 imit/base >25 >158 >20	7 0 58 <1 956 1052 1063 1168 2657 <1 <i>current</i> 4 1 <1 <1 <i>current</i>	209 <1 119 4 698 1442 720 810 1969 <1 history1 66 3 11 66 3 11 history1 0.1	 history2 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250 imit/base >25 >158 >20	7 0 58 <1 956 1052 1063 1168 2657 <1 <i>current</i> 4 1 <1 <1	209 <1 119 4 698 1442 720 810 1969 <1 history1 66 3 11 history1	 history2 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250 imit/base >25 >158 >20 imit/base >4	7 0 58 <1 956 1052 1063 1168 2657 <1 <i>current</i> 4 1 <1 <1 <i>current</i>	209 <1 119 4 698 1442 720 810 1969 <1 history1 66 3 11 66 3 11 history1 0.1	 history2 history2 history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7844* ASTM D7624* ASTM D7624*	250 10 100 450 3000 1150 1350 4250 i mit/base >25 >158 >20 i mit/base >4 >20	7 0 58 <1 956 1052 1063 1168 2657 <1 <i>current</i> 4 1 <1 <1 <i>current</i> 0 4.6 18.8	209 <1 119 4 698 1442 720 810 1969 <1 history1 66 3 11 history1 0.1 10.0	 history2 history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7844* ASTM D7624*	250 10 100 450 3000 1150 1350 4250 imit/base >25 >158 >20 imit/base >4 >20	7 0 58 <1 956 1052 1063 1168 2657 <1 <i>current</i> 4 1 <1 <1 <i>current</i> 0 4.6 18.8	209 <1 119 4 698 1442 720 810 1969 <1 history1 66 3 11 66 3 11 0.1 0.1 0.1 10.0 25.1	 history2 history2 history2	



OIL ANALYSIS REPORT



l°C	VISUAL		method	limit/base		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	VLITE	NONE			
	Sand/Dirt	scalar	Visual*	NONE	NONE	NONE			
Aug23/23	Appearance	scalar	Visual*	NORML	NORML	NORML			
Aun	Odor	scalar	Visual*	NORML	NORML	NORML			
	Emulsified Water	scalar	Visual*	>0.2	NEG	NEG			
	Free Water	scalar	Visual*		NEG	NEG			
	FLUID PROPE	RTIES	method	limit/base	current	history1	history2		
	Visc @ 100°C	cSt	ASTM D7279(m)	14.4	14.4	9 .8			
	GRAPHS								
	Iron (ppm)		Lead (ppm)						
	250 Severe			100	Sminn				
	200 -								
	150 Abnormal			E 4(Abnormal		-		
	50-)				
	0								
	Jul 7/23			Aug23/23	Jul17/23		Aug23/23		
	→ Aluminum (ppm)			Aı		∽ Chromium (ppm)			
	⁵⁰ Severe			50	T				
	40-			40					
E	20 Abnormal			³⁰ 20)				
E									
	10			10					
	1/23						3/23		
	Jult 7/23			Aug23/23	Jul17/23		Aug23/23		
	Copper (ppm)				Silicon (ppm)			
	400 Severe			80	Severe				
:	300			60					
Edd	200-			E 40					
	100-			20	Abnormal				
	0) 				
	Jul 7/23			Aug23/23	Jul17/23		Aug23/23		
				Aug			Aug		
	Viscosity @ 100°C				Soot %				
	Abnormal			6.0	Severe				
	Base			54.(8					
	312 Abnormal								
	10			2.0					
				0.0			/23		
	Jul17/23			Aug23/23	Jul17/23		Aug23/23		
Laboratory Sample No. Lab Number Unique Number Test Package To discuss this sample report, c Test denoted (*) outside scope of Validity of results and interpretai	: 02577955 : 5631015 : MOB 1 (Additional ⁻ ontact Customer Servi of accreditation, (m) m	Received Diagnos Diagnos Tests: Vi ice at 1-8 ethod mo	d : 24 / ed : 24 / tician : We sual) 800-268-213 podified, (e) te	Aug 2023 Aug 2023 s Davis 1. ested at extern	14131 nal lab.	MHave			