

OIL ANALYSIS REPORT

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Sample Rating Trend







Machine Id 446028 Component

Diesel Engine Fluid {not provided} (--- GAL)

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

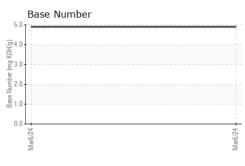
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

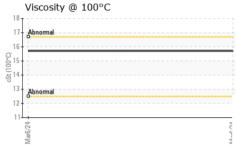
SAMPLE INFORM	ΛΑΤΙΟΝ	method	limit/base	current	history1	history2	
Sample Number		Client Info		GFL0113034			
Sample Date		Client Info		06 Mar 2024			
Machine Age	hrs	Client Info		20662			
Oil Age	hrs	Client Info	0				
Oil Changed		Client Info	N/A				
Sample Status				NORMAL			
CONTAMINAT	ON	method	limit/base	current	history1	history2	
Fuel		WC Method	>3.0	<1.0			
Water		WC Method	>0.2	NEG			
Glycol		WC Method		NEG			
WEAR METAL	S	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>165	57			
Chromium	ppm	ASTM D5185m	>5	5			
Nickel	ppm	ASTM D5185m	>4	<1			
Titanium	ppm	ASTM D5185m	>2	0			
Silver	ppm	ASTM D5185m	>2	0			
Aluminum	ppm	ASTM D5185m	>20	10			
Lead	ppm	ASTM D5185m	>150	<1			
Copper	ppm	ASTM D5185m	>90	8			
Tin	ppm	ASTM D5185m	>5	<1			
Vanadium	ppm	ASTM D5185m		<1			
Cadmium	ppm	ASTM D5185m		0			
ADDITIVES		method	limit/base	current	history1	history2	
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 10	history1	history2	
	ppm ppm		limit/base				
Boron		ASTM D5185m	limit/base	10			
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	10 0			
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	10 0 64			
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	10 0 64 1			
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	10 0 64 1 608			
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	10 0 64 1 608 1822	 	 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	10 0 64 1 608 1822 707	 		
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	limit/base	10 0 64 1 608 1822 707 975	 	 	
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		10 0 64 1 608 1822 707 975 2231			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	10 0 64 1 608 1822 707 975 2231 current	 history1	 history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base >35	10 0 64 1 608 1822 707 975 2231 2231 current 15	 history1	 history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base >35	10 0 64 1 608 1822 707 975 2231 2231 current 15 9	 history1	 history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	limit/base >35 >20	10 0 64 1 608 1822 707 975 2231 current 15 9 <1	 history1 	 history2 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >35 >20 limit/base >7.5	10 0 64 1 608 1822 707 975 2231 current 15 9 <1 <	 history1 history1	 history2 history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	limit/base >35 >20 limit/base >7.5	10 0 64 1 608 1822 707 975 2231 current 15 9 <1 current 0.1	 history1 history1 history1	 history2 history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm t spm ppm ppm ppm ppm spm ppm spm ppm spm ppm spm ppm spm s	ASTM D5185m ASTM D5185m	limit/base >35 >20 limit/base >7.5 >20	10 0 64 1 608 1822 707 975 2231 current 15 9 <1 current 0.1 12.4	 history1 history1 	 history2 history2	
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 t spm ppm ppm ppm ppm spm ppm spm ppm spm ppm spm ppm spm s	ASTM D5185m ASTM D5185m	limit/base >35 >20 limit/base >20 s7.5 >20 >30	10 0 64 1 608 1822 707 975 2231 current 15 9 <1 current 0.1 12.4 23.2	 history1 history1 history1	 history2 history2 history2	
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 TS ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	limit/base >35 >20 limit/base >7.5 >20 >30 limit/base	10 0 64 1 608 1822 707 975 2231 current 15 9 <1 5 9 <1 0.1 12.4 23.2 current	 history1 history1 history1 history1	 history2 history2 history2 history2	



OIL ANALYSIS REPORT

VISUAL





	VISUAL		method	iimii/base	current	riistory i	nistory2
	White Metal	scalar	*Visual	NONE	NONE		
	Yellow Metal	scalar	*Visual	NONE	NONE		
	Precipitate	scalar	*Visual	NONE	NONE		
	Silt	scalar	*Visual	NONE	NONE		
	Debris	scalar	*Visual	NONE	NONE		
	Sand/Dirt	scalar	*Visual	NONE	NONE		
/24 -	Appearance	scalar	*Visual	NORML	NORML		
Mar6/24	Odor	scalar	*Visual	NORML	NORML		
	Emulsified Water	scalar	*Visual	>0.2	NEG		
	Free Water		*Visual	>0.2	NEG		
		scalar	VISUAI		NEG		
	FLUID PROP	ERTIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445		15.7		
	GRAPHS						
	Ferrous Alloys						
	60 iron						
V 61 3-	50 - chromium						
4 U	40						
	튭 30 -						
	20-						
	10-						
	5 2			54			
	Mar6/24			Mar6/24			
				2			
	Non-ferrous Met	als					
	copper						
	8 - nessesses lead						
	4						
	2 -						
	3/24			3/24 -			
	Mar6/24			Mar6/24			
	Viscosity @ 100°	°C			Daga Number		
	¹⁸			5.0	Base Number		
	17- Abnormal						
	16-			₽ ^{4.0}			
				by B3 0			
	()-00 00 15 45 14			(b) 4.0 HOX WOX Build Build Build Build Build Build Build Build Build Build Build Build Build Build Build Build Build Build Build HOX Build Build HOX Build Build HOX Build Build HOX Build Build HOX Build			
	83 14			quin 2.0			
	13 Abnormal			gase			
	12			¹⁰	1		
	11						
	Mar6/24			Mar6/24	Mar6/24 -		
	Mai			Mar	Mai		
			• -		• • · · ·		
Laboratory				r, NC 27513 7 Mar 2024	GFL Env	vironmental - 92	
Sample No.	. : GFL0113034 er : 06111896	Recei Teste				300 Raemisch Roa Waunakee, V	
	er : 10915393	Diagn)8 Mar 2024 0 Mar 2024 - Don Baldridge			US 5359
ificate L2367 Test Package		Diayi				Cont	act: Ben Brig
discuss this sample repo		vice at 1-8	800-237-136	9.			gs@gflenv.co
Denotes test methods that	at are outside of the ISO	17025 sco	pe of accred	litation.		T:	gs@gfienv. (608)770-9
tements of conformity to	specifications are based	l on the sin	nple accepta	nce decision i	ule (JCGM 106	:2012)	

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)