

OIL ANALYSIS REPORT

Sample Rating Trend





Component Diesel Engine Fluid DIESEL ENGINE OIL SAE 15W40 (--- 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

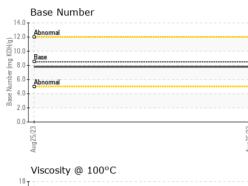
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

				Aug2023		
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0079779		
Sample Date		Client Info		25 Aug 2023		
Machine Age	hrs	Client Info		16317		
Oil Age	hrs	Client Info		592		
Oil Changed		Client Info		Not Changd		
Sample Status				NORMAL		
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0		
Glycol		WC Method		NEG		
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	10		
Chromium	ppm	ASTM D5185m	>20	0		
Nickel	ppm	ASTM D5185m	>4	0		
Titanium	ppm	ASTM D5185m		9		
Silver	ppm	ASTM D5185m	>3	0		
Aluminum	ppm	ASTM D5185m	>20	3		
Lead	ppm	ASTM D5185m	>40	<1		
Copper	ppm	ASTM D5185m	>330	2		
Tin	ppm	ASTM D5185m	>15	<1		
Vanadium	ppm	ASTM D5185m		<1		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	ASTM D5185m	limit/base 250	current 12	history1	history2
	ppm ppm					
Boron Barium		ASTM D5185m	250	12		
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m	250 10	12 0		
Boron	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	250 10	12 0 53		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	12 0 53 <1		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	12 0 53 <1 892		
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000	12 0 53 <1 892 1258	 	
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	250 10 100 450 3000 1150	12 0 53 <1 892 1258 995	 	
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	250 10 100 450 3000 1150 1350	12 0 53 <1 892 1258 995 1235	 	
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	250 10 100 450 3000 1150 1350 4250	12 0 53 <1 892 1258 995 1235 3699		
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	250 10 100 450 3000 1150 1350 4250	12 0 53 <1 892 1258 995 1235 3699 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 method	250 10 100 450 3000 1150 1350 4250 limit/base >25	12 0 53 <1 892 1258 995 1235 3699 current 5	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium	ppm	ASTM D5185m 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 limit/base >25 >158	12 0 53 <1 892 1258 995 1235 3699 current 5 2	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20	12 0 53 <1 892 1258 995 1235 3699 current 5 2 2 <1	 history1 	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 Iimit/base >25 >158 >20 Iimit/base >3	12 0 53 <1 892 1258 995 1235 3699 current 5 2 <1 <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	250 10 100 450 3000 1150 1350 4250 Iimit/base >25 >158 >20 Iimit/base >3	12 0 53 <1 892 1258 995 1235 3699 <i>current</i> 5 2 <1 <i>current</i> 0.3	 history1 history1 	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm rS ppm ppm ppm ppm ppm ppm spm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 imit/base >25 >158 >20 imit/base >3 >20	12 0 53 <1 892 1258 995 1235 3699 <i>current</i> 5 2 <1 5 2 <1 <i>current</i> 0.3 7.8	 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 ppm rS ppm ppm ppm ppm ppm ppm spm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 imit/base >25 >158 >20 imit/base >3 >20	12 0 53 <1 892 1258 995 1235 3699 current 5 2 <1 2 <1 0.3 7.8 18.2	 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 DEGRAD	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	250 10 100 450 3000 1150 1350 4250 imit/base >25 >158 >20 imit/base >3 >20 >30	12 0 53 <1 892 1258 995 1235 3699 <i>current</i> 5 2 <1 <i>current</i> 0.3 7.8 18.2 <i>current</i>	 history1 history1 history1	 history2 history2 history2 history2



17 Abno 16 (0.001) 14 Base

OIL ANALYSIS REPORT



	VISUAL		method	limit/base	current	history1	history2
	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		
Aug.25/23	Appearance	scalar	*Visual	NORML	NORML		
Aug2	Odor	scalar	*Visual	NORML	NORML		
	Emulsified Water	scalar	*Visual	>0.2	NEG		
	Free Water	scalar	*Visual		NEG		
	FLUID PROP	ERTIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	14.4	12.7		
	GRAPHS						
	Ferrous Alloys						
	10 iron						
	8 - Chromium						
	IIICKEI						
	6						
	4						
	2-						
	0		*******				
	Aug 25/23			Aug25/23			
	Aug			Bny			
	Non-ferrous Met	als					
	10 copper 1						
	8 - Beasense lead						
	6						
	4						
	2						
	o Linning and the second secon						
	Aug25/23			Aug25/23			
				Bng			
	Viscosity @ 100°	°C			Base Number		
	18 T			14.0	T ?		
	17- Abnormal			12.0	Abnormal		
	16-			(10, H10.0 (10, H10.0) (10, H1			
	0 15- Base			۳ ۳ 8.0	Base		
	0 15 Base 5 14			ag 6.0	Abnorral		
	13 - Abnormal			PN 83 4 0	Abnormal		
	12 -			2.0	1		
	11						
	5/23				5/23.		
	Aug25/23			Aug25/23	Aug25/23		
				n/ NC 27513	GFL Enviror	nmental - 663 - Lake A	riel (Scranton Hauli
Laboratory Sample No. Lab Number Unique Number		501 Madis Received Diagnose Diagnost	i : 08 : 20 : 08 :	Sep 2023 Sep 2023 s Davis			dustrial Park F Lake Ariel, F US 184
Sample No. Lab Number Unique Number ate 12367 Test Package	: GFL0079779 : 05945379 r : 10635991 : FLEET	Received Diagnose Diagnost	l : 08 : ed : 08 : ician : We	Sep 2023 Sep 2023 s Davis		Contact	dustrial Park I Lake Ariel, I US 184 Eric Buchan
Sample No. Lab Number Unique Number	: GFL0079779 : 05945379 r : 10635991 e : FLEET , contact Customer Ser	Received Diagnose Diagnost	l : 08 : ed : 08 : ician : We 00-237-1369	Sep 2023 Sep 2023 s Davis 9.		Contact	dustrial Park I Lake Ariel, F