

OIL ANALYSIS REPORT

Sample Rating Trend





Component Diesel Engine

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

DIAGNOSIS
Decommendation

Recommendation

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

Wear

Metal levels are typical for a new component breaking in.

Contamination

There is no indication of any contamination in the oil.

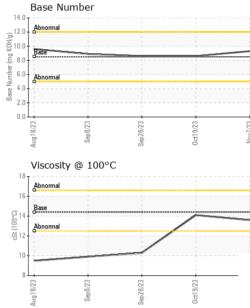
Fluid Condition

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

SAMPLE INFORM						
	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0098456	GFL0086333	GFL0078679
Sample Date		Client Info		07 Nov 2023	19 Oct 2023	28 Sep 2023
Machine Age	hrs	Client Info		757	611	456
Oil Age	hrs	Client Info		757	611	456
Oil Changed		Client Info		N/A	N/A	Not Changd
Sample Status				NORMAL	NORMAL	ABNORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	6	5	28
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	<1	2
Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	4	3	12
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	30	<1	141
Tin	ppm	ASTM D5185m	>15	<1	<1	2
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	<1	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	93	88	247
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	82	64	120
Manganese	ppm	ASTM D5185m		<1	0	4
Magnesium	ppm	ASTM D5185m	450	878	726	721
Calcium	ppm	ASTM D5185m	3000	1250	1134	1367
Phosphorus	ppm	ASTM D5185m	1150	1017	916	709
Zinc	ppm	ASTM D5185m	1350	1183	1073	882
Sulfur	ppm	ASTM D5185m	4250	2858	3512	2599
	TS	method	limit/base	current	history1	history2
CONTAMINAN					,	
CON I AMINAN Silicon	ppm	ASTM D5185m	>25	9	4	66
		ASTM D5185m ASTM D5185m	>25 >158	_		▲ 66 5
Silicon	ppm			9	4	
Silicon Sodium	ppm ppm	ASTM D5185m	>158	9 2	4	5
Silicon Sodium Potassium	ppm ppm	ASTM D5185m ASTM D5185m	>158 >20	9 2 6	4 4 4	5 27
Silicon Sodium Potassium INFRA-RED	ppm ppm ppm	ASTM D5185m ASTM D5185m method	>158 >20 limit/base >4	9 2 6 current	4 4 4 history1	5 27 history2
Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm	ASTM D5185m ASTM D5185m method *ASTM D7844	>158 >20 limit/base >4	9 2 6 current 0.1	4 4 4 history1 0.2	5 27 history2 0.2
Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7824 *ASTM D7624	>158 >20 limit/base >4 >20	9 2 6 current 0.1 6.4	4 4 history1 0.2 6.4	5 27 history2 0.2 8.0
Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7824 *ASTM D7624	>158 >20 limit/base >4 >20 >30	9 2 6 <u>current</u> 0.1 6.4 19.3	4 4 history1 0.2 6.4 19.1	5 27 history2 0.2 8.0 24.2



OIL ANALYSIS REPORT



		White Metal	scalar	method *Visual	limit/base	current	history1 NONE	history2 NONE
		Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
		Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
		Silt	scalar	*Visual	NONE	NONE	NONE	NONE
		Debris	scalar	*Visual	NONE	NONE	NONE	NONE
		Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
23	23 -		scalar	*Visual	NORML	NORML	NORML	NORML
Sep28/23	0ct19/23 Nov7/23	Odor		*Visual	NORML		NORML	NORML
\$	0	Ouor	scalar			NORML NEG		NEG
		Emulsified Water	scalar	*Visual	>0.2	-	NEG	
		Free Water	scalar	*Visual		NEG	NEG	NEG
		FLUID PROPE		method	limit/base	current	history1	history2
		Visc @ 100°C	cSt	ASTM D445	14.4	13.6	14.1	1 0.3
		GRAPHS						
		Ferrous Alloys						
Sep28/23	0ct19/23 +	25 - iron chromium	\neg	 				
Sepi	Octl	20	\backslash					
		톱 15 -						
		10-						
		5+						
		53 53	23 -	53	23			
		Aug 18/23 Sep 8/23	Sep28/23	0ct19/23	Nov7/23			
		A		0	Z			
		Non-ferrous Meta	ls					
		160 copper	1					
		Research lead	1	 				
		120 - tin						
		120 - tin						
		120 100 <u>E</u> 80	\square	\ \				
		120 100 <u><u><u><u></u></u><u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u></u></u>	1					
		120 in 12						
		120 - in 100 - in 50 - in 60 - in 20 - in 100 - in			_			
		120 100 60 40 20 0	23	23	²³			
		120 - in 100 - in 50 - in 60 - in 20 - in 100 - in	Sep28/23	Oct19/23	Nov1/23			
		Lin Lin Lin Lin Lin Lin Lin Lin	Sep28/23	0ct19/23	Nov7/23	Base Number		
		120 100 60 0 520 0 520 0 520 0 520 0 520 0 520 0 520 0 520 0 520 5 5 5		Oct19/23	14.0	Abnormal		
		Viscosity @ 100°0		Oct19/23	14.0	Abnormal		
		Viscosity @ 100°0		Oct19/23	14.0	Abnormal		
		Viscosity @ 100°0		Oct19/23	14.0	Abnormal		
		Viscosity @ 100°0		Oct19/23	14.0	Abnormal		
		Viscosity @ 100°0		Oct19/23	14.0	Abnormal		
		Viscosity @ 100°C		Oct19/23	14.0 12.0 (0)HOX DU() = 0.0 10, 10.0 10, 10, 10, 10.0 10, 10, 10, 10, 10, 10, 10, 10, 10, 10,	Abnormal Base Abnormal		
		Viscosity @ 100°C		Oct19/23	14.0 12.0 (0)H10.0 bul 38.0 squmy seg 8.4.0 2.0	Abnormal Base Abnormal Abnormal		
		Viscosity @ 100°0	c		14.0 12.0 (6)(H10.0 b) as 0 10) as 0 10	Abnormal Base Abnormal	23	73-
		Viscosity @ 100°0	c		14.0 12.0 (6)(H10.0 b) as 0 10) as 0 10	Abnormal Base Abnormal	ep.28/23	5d19/23
		Viscosity @ 100°0		Oct19/23 Oct19/23	14.0 12.0 (0)H10.0 bul 38.0 squmy seg 8.4.0 2.0	Abnormal Base Abnormal	Sep28/23	Oct19/23
4	Laboratory	Viscosity @ 100°C	C E2082/deg 501 Madi	EZEFTT Son Ave., Ca	14.0 12.0 (0)H10.0 bu) 36.0 3900 W 86.0 2.0 2.0 5000 W 12.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0	Abnormal Base Abnormal E228100	ronmental - 180 -	Tuscaloosa Haulir
NAB	Sample No.	Viscosity @ 100°	501 Madi	son Ave., Ca	14.0 12.0 14.0 12.0 14.0 10.0 14.0 10.0	Abnormal Base Abnormal E228100	ronmental - 180 -	Tuscaloosa Hauli r 701 12TH ST N
	Sample No. Lab Number	Viscosity @ 100°	501 Madi Received Diagnos	son Ave., Ca d : 10 l ed : 10 l	14.0 12.0 14.0 10.0	Abnormal Base Abnormal E228100	ronmental - 180 -	Tuscaloosa Hauli r 701 12TH ST N Tuscaloosa, A
	Sample No. Lab Number Unique Number	Viscosity @ 100° Viscosity @ 100°	501 Madi	son Ave., Ca d : 10 l ed : 10 l	14.0 12.0 14.0 12.0 14.0 10.0 14.0 10.0	Abnormal Base Abnormal EZ/81 Dny EZ/81 Dny GFL Envi	ronmental - 180 - 4	Tuscaloosa Hauli r 701 12TH ST N Tuscaloosa, A US 3540
tificate 12367	Sample No. Lab Number Unique Number Test Package	Viscosity @ 100° Viscosity @ 100°	501 Madi Receive Diagnos	son Ave., Ca d :10 ed :10 tician : We	14.0 12.0 (6)(10.0) 10)(10,0) 10)(10,0) 10)(10,0) 10)(10,0) 10,0)(10,0) 10,0)(10,0) 10,0)(10,0) 10,0)(10,0) 10,0)(10,0) 10,0)(10,0)(10,0) 10,0)(10,0)	Abnormal Base Abnormal EZ/81 Dny EZ/81 Dny GFL Envi	ronmental - 180 - 4 [:] ontact: FREDI	Tuscaloosa Hauli r 701 12TH ST N Tuscaloosa, A



Submitted By: see also GFL868 - Chelsea Bryan