

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id **1651** Component **Diesel Engine**

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

Recommendation

Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. 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

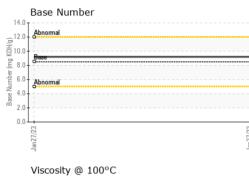
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

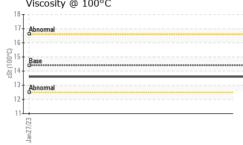
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0759965		
Sample Date		Client Info		27 Jan 2023		
Machine Age	hrs	Client Info		2139		
Oil Age	hrs	Client Info		0		
Oil Changed		Client Info		Changed		
Sample Status				NORMAL		
CONTAMINATION	١	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0		
Glycol		WC Method		NEG		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>80	21		
Chromium	ppm	ASTM D5185m	>5	<1		
Nickel	ppm	ASTM D5185m	>2	0		
Titanium	ppm	ASTM D5185m		<1		
Silver	ppm	ASTM D5185m	>3	0		
Aluminum	ppm	ASTM D5185m	>30	1		
Lead	ppm	ASTM D5185m	>30	0		
Copper	ppm	ASTM D5185m	>150	<1		
Tin	ppm	ASTM D5185m	>5	<1		
Vanadium	ppm	ASTM D5185m		0		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES	1-1-	method	limit/base	current	history1	history2
Boron	nnm	ASTM D5185m	250	5		
Barium	ppm	ASTM D5185m	10	0		
	ppm	ASTM D5185m	100	59		
Molybdenum						
Manganaga	ppm		100			
•	ppm	ASTM D5185m		1		
Magnesium	ppm ppm	ASTM D5185m ASTM D5185m	450	1 968		
Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	450 3000	1 968 1131		
Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	450 3000 1150	1 968 1131 968	 	
Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	450 3000 1150 1350	1 968 1131 968 1262		
Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	450 3000 1150	1 968 1131 968	 	
Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	450 3000 1150 1350 4250 limit/base	1 968 1131 968 1262		
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	450 3000 1150 1350 4250 limit/base >20	1 968 1131 968 1262 3282	 	
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	450 3000 1150 1350 4250 Limit/base >20 >158	1 968 1131 968 1262 3282 current 4 2	 history1	 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	450 3000 1150 1350 4250 Limit/base >20 >158	1 968 1131 968 1262 3282 current 4	 history1 	 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	450 3000 1150 1350 4250 Limit/base >20 >158	1 968 1131 968 1262 3282 current 4 2	 history1 	 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	450 3000 1150 1350 4250 limit/base >20 >158 >20	1 968 1131 968 1262 3282 current 4 2 2	 history1 	 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	450 3000 1150 1350 4250 limit/base >20 >158 >20 limit/base	1 968 1131 968 1262 3282 current 4 2 2 2 current	 history1 history1	 history2 history2
Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D51854	450 3000 1150 1350 4250 limit/base >20 >158 >20 limit/base >3	1 968 1131 968 1262 3282 current 4 2 2 2 current 0.5	 history1 history1 history1	 history2 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	450 3000 1150 1350 4250 limit/base >20 >158 >20 limit/base >3 >20	1 968 1131 968 1262 3282 <u>current</u> 4 2 2 2 <u>current</u> 0.5 9.4	 history1 history1 history1	 history2 history2 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624	450 3000 1150 1350 4250 Iimit/base >20 >158 >20 Iimit/base >3 >20	1 968 1131 968 1262 3282 current 4 2 2 2 current 0.5 9.4 20.5	 history1 history1 history1	 history2 history2 history2



OIL ANALYSIS REPORT

VISUAL





	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		
	Appearance	scalar	*Visual	NORML	NORML		
	Odor	scalar	*Visual	NORML	NORML		
	Emulsified Water	scalar	*Visual	>0.2	NEG		
	Free Water	scalar	*Visual		NEG		
				11 11 11			
	FLUID PROPER		method	limit/base	current	history1	history
	Visc @ 100°C	cSt	ASTM D445	14.4	13.6		
	GRAPHS						
	Ferrous Alloys						
	iron						
	20 - nickel						
	15						
	Edd						
	10						
	5						
							
	Jan 27/23			Jan 27/23			
				10			
	Non-ferrous Met	als					
	10 copper	als					
	¹⁰ T	als					
	10 - copper	als					
	a copper b copper	als					
	10 - copper	als					
	a copper b copper	als					
	a copper b copper	als					
	10 8 6 4 2 0	als					
	10 8 6 4 2 0	als					
	10 8 6 4 2 0 E 2 10 E 2 10 E 2 10 E 2 10 E 2 10 E 2 10 E 2 E E E E E E E E E E E E E			an21/23			
	Viscosity @ 100				Base Number		
	Viscosity @ 1004				T.		
	Viscosity @ 100			EX CTE T 14.0 12.0			
	Viscosity @ 1000			EX CTE T 14.0 12.0	T.		
	Viscosity @ 100 ⁴			EX CTE T 14.0 12.0	T.		
	Viscosity @ 100 ⁴			EX CTE T 14.0 12.0	Abnormal Base		
	Viscosity @ 1000			EX CTE T 14.0 12.0	T.		
	¹⁰ ⁸ ⁶ ⁶ ¹⁰ ¹⁰ ¹⁰ ¹⁰ ¹⁰ ¹⁰ ¹⁰ ¹⁰			EZUZ2140 (0)HOX Building 8.0 (0)HOX Building 8	Abnormal Base		
	Viscosity @ 1000			14.0 12.0 (b)10.0 b) b) b	Abnormal Base		
	¹⁰ ⁸ ⁶ ⁶ ¹ ¹⁰ ¹⁰ ¹⁰ ¹⁰ ¹⁰ ¹⁰ ¹⁰			EZ L/Z LUE 14.0 (D)HOJ DU 12.0 (D)HOJ DU 14.0 12.0 (D)HOJ DU 14.0 12.0 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0	Abnormal Base Abnormal		
	¹⁰ ⁸ ⁶ ⁶ ¹ ¹⁰ ¹⁰ ¹⁰ ¹⁰ ¹⁰ ¹⁰ ¹⁰			EZ L/Z LUE 14.0 (D)HOJ DU 12.0 (D)HOJ DU 14.0 12.0 (D)HOJ DU 14.0 12.0 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0	Abnormal Base Abnormal		
	10 8 6 4 2 0 EXI 12 Viscosity @ 1000 10 10 10 10 10 10 10 10 10			14.0 12.0 (b)10.0 b) b) b	Abnormal Base		
to a source of the source of t	¹⁰ ⁸ ⁶ ⁶ ¹ ¹⁰ ¹⁰ ¹⁰ ¹⁰ ¹⁰ ¹⁰ ¹⁰	°C	son Ave., Ca	ECULQUER ECULQUER ECULQUE E	Abnormal Base Abnormal	alley Waste - Mou	Int Union Loca
	Viscosity @ 1000 Base Viscosity @ 1000 Base EXECUTE Viscosity @ 1000 Base EXECUTE EXE	°C - 501 Madia Received	d :15 l	ECUCQUEF, 14.0 12.0 14.0 12.0 14.0 12.0 14.0 12.0 14.0 12.0 10/HOX BU Jagund 8.0 2.0 0.0 10.0	Abnormal Base Abnormal	alley Waste - Mou 11763 S	Shirley Ayr R
10-100 FT - 0	¹⁰ ¹¹ ¹¹	°C - 501 Madi Received Diagnos	d :15 ed :16	ECULQUER 14.0 12.0 (0)HOX Bu Jaguny 8.0 4.0 2.0 0.0 ECULQUER 0.0 14.0 12.0 0.0 12.0 0.0 12.0 0.0 12.0 0.0 10.0 0.0 10.0 0.0 10.0 0.0	Abnormal Base Abnormal	alley Waste - Mou 11763 S	Shirley Ayr R <i>I</i> lount Union,
	Viscosity @ 1000 Base Viscosity @ 1000 Base EXECUTE Viscosity @ 1000 Base EXECUTE EXE	°C - 501 Madii Received Diagnos Diagnosi	d :15 ed :16 ti cian :We	ECUCQUEF, 14.0 12.0 14.0 12.0 14.0 12.0 14.0 12.0 14.0 12.0 10/HOX BU Jagund 8.0 2.0 0.0 10.0	Abnormal Base Abnormal	alley Waste - Mou 11763 S N	Shirley Ayr R

To discuss this sample * - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

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

Certificate L2367

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