

OIL ANALYSIS REPORT

Sample Rating Trend





Diesel Engine

Fluid

DIESEL ENGINE OIL SAE 10W30 (--- 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.

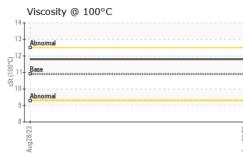
Fluid Condition

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

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0790233		
Sample Date		Client Info		28 Aug 2023		
Machine Age	kms	Client Info		182952		
Oil Age	kms	Client Info		0		
Oil Changed		Client Info		Not Changd		
Sample Status				NORMAL		
CONTAMINATION	N	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0		
Glycol		WC Method		NEG		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>65	10		
Chromium	ppm	ASTM D5185(m)	>5	<1		
Nickel	ppm	ASTM D5185(m)	>3	<1		
Titanium	ppm	ASTM D5185(m)	>5	<1		
Silver	ppm	ASTM D5185(m)	>2	0		
Aluminum	ppm	ASTM D5185(m)	>35	7		
Lead	ppm	ASTM D5185(m)	>10	<1		
Copper	ppm	ASTM D5185(m)	>180	10		
Tin	ppm	ASTM D5185(m)	>8	<1		
Antimony	ppm	ASTM D5185(m)	>35	0		
Vanadium	ppm	ASTM D5185(m)		0		
Beryllium	ppm	ASTM D5185(m)		0		
Cadmium	ppm	ASTM D5185(m)		0		
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185(m)	limit/base 250	current 34	history1	history2
	ppm ppm					
Boron		ASTM D5185(m)	250	34		
Boron Barium	ppm	ASTM D5185(m) ASTM D5185(m)	250 10	34 0		
Boron Barium Molybdenum	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10	34 0 11		
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	34 0 11 <1		
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	34 0 11 <1 770		
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) ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350	34 0 11 <1 770 1306 767 841	 	
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	34 0 11 <1 770 1306 767 841 2456	 	
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) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250	34 0 11 <1 770 1306 767 841		
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	34 0 11 <1 770 1306 767 841 2456		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	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	34 0 11 <1 770 1306 767 841 2456 <1		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS	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	34 0 11 <1 770 1306 767 841 2456 <1		 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS 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) method ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250	34 0 11 <1 770 1306 767 841 2456 <1 <i>current</i> 5	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250 limit/base >15	34 0 11 <1 770 1306 767 841 2456 <1 <u>current</u> 5 3	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250 limit/base >15 >20	34 0 11 <1 770 1306 767 841 2456 <1 2456 <1 <i>current</i> 5 3 10	 history1 	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium INFRA-RED	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 >20 imit/base	34 0 11 <1 770 1306 767 841 2456 <1 <u>current</u> 5 3 10 <u>current</u>	 history1 	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS 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 >20 imit/base >3	34 0 11 <1 770 1306 767 841 2456 <1 <i>current</i> 5 3 10 <i>current</i> 0.2	 history1 history1 history1	 history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250 Jimit/base >20 Jimit/base >3 >20	34 0 11 <1 770 1306 767 841 2456 <1 <i>current</i> 5 3 10 <i>current</i> 0.2 9.1	 history1 history1 history1	 history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS 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 >15 >20 imit/base >3 >20 >30	34 0 11 <1 770 1306 767 841 2456 <1 <u>current</u> 5 3 10 <u>current</u> 0.2 9.1 22.0	 history1 history1	 history2 history2 history2



OIL ANALYSIS REPORT



°C	VISUAL		method	limit/base	current	history1	history2
	White Metal	scalar	Visual*	NONE	VLITE		
	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		
Aug28/23	Appearance	scalar	Visual*	NORML	NORML		
Aug	Odor	scalar	Visual*	NORML	NORML		
	Emulsified Water	scalar	Visual*	>0.2	NEG		
	Free Water	scalar	Visual*		NEG		
	FLUID PROPERT	IES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D7279(m)	10.9	11.8		
	GRAPHS						
	Iron (ppm)				Lead (ppm)		
2	00			30			
1	50 - Severe			25			
톱 1	00-			Ē 15			
	Abnormal 50 -			10	Abnormal		
				5			
				0			/23 -
	Aug28/23			Aug28/23	Aug 28/23		Aug28/23
	Aluminum (ppm)			4	Chromium (p	om)	d.
	⁸⁰			12	T :		
	60 Severe			10	Severe		
E.	40 Abnormal			8 5			
	T			4	Abnormal		
	20			2			
				0			23 -
	Aug28/23			Aug28/23	Aug 28/23		Aug28/23
	⊲ Copper (ppm)			A	⊲ Silicon (ppm)		A
4	00			40			
3	00			30	Severe		
틆2	00 - Abnormal			튭 20	Abnormal		
1	00-			10	•		
	0			0	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
	Aug28/23			Aug28/23	Aug28/23		Aug28/23
	₹ Viscosity @ 100°C			Au	⊮ Soot %		Au
	¹⁴ T			6.0	T :		
	13 - Abnormal			5.0	Severe		
c\$t (100°C)	12 - Base			4.0 82 53.0 2.0	Abnormal		
cSt (10	10			2.0			
	9 Abnormal			1.0	1		
	84			0.0	23		<u> </u>
	Aug28/23			Aug28/23	Aug28/23		Aug28/23
Sample No. Iso 17025:2017 Accredited Unique Number	: WearCheck - C8-11 : WC0790233 I : 02578956 I : 5632016 I : MOB 1 (Additional ⁻	Received Diagnos Diagnos Tests: Vi ice at 1-8	d : 29 / ed : 29 / iician : We sual)	lington, ON L Aug 2023 Aug 2023 s Davis 1.	7L 5H9	4425 CHI	CLEAN FUELS ESSWOOD DR FORONTO, ON CA M3J 2C2 act: Rory Grant

Contact/Location: Rory Grant - CAN442TOR