

# **OIL ANALYSIS REPORT**

Area [41585819] **R258** 

Component **Diesel Engine** 

**DIESEL ENGINE OIL SAE 10W30 (--- GAL)** 

# Sample Rating Trend



## **DIAGNOSIS**

### Recommendation

We advise that you check for the source of the coolant leak. We recommend that you drain the oil from the component if this has not already been done. We advise that you flush the component thoroughly before re-filling with oil. We recommend an early resample to monitor this condition.

### Wear

All component wear rates are normal.

### Contamination

Test for glycol is positive. There is a light concentration of glycol present in the oil.

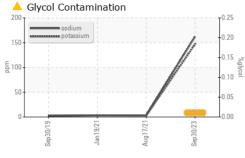
### ▲ Fluid Condition

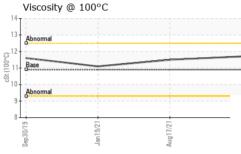
The oil is no longer serviceable due to the presence of contaminants.

	Sop <sup>2</sup> 019 Jan <sup>2</sup> 021 Aug <sup>2</sup> 021 Sop <sup>2</sup> 023					
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0853399	WC0581040	WC0502944
Sample Date		Client Info		30 Sep 2023	17 Aug 2021	19 Jan 2021
Machine Age	kms	Client Info		193471	109271	83543
Oil Age	kms	Client Info		0	0	0
Oil Changed		Client Info		Not Changd	N/A	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL
CONTAMINATION	٧	method	limit/base	current	history1	history2
Fuel		WC Method	>2.0	<1.0	<1.0	<1.0
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>100	27	37	17
Chromium	ppm	ASTM D5185(m)	>20	<1	<1	<1
Nickel	ppm	ASTM D5185(m)	>4	0	<1	<1
Titanium	ppm	ASTM D5185(m)		0	0	<1
Silver	ppm	ASTM D5185(m)	>3	<1	0	<1
Aluminum	ppm	ASTM D5185(m)	>20	5	3	2
Lead	ppm	ASTM D5185(m)	>40	4	1	<1
Copper	ppm	ASTM D5185(m)	>330	4	5	1
Tin	ppm	ASTM D5185(m)	>15	<1	<1	<1
Antimony	ppm	ASTM D5185(m)		0	0	<1
Vanadium	ppm	ASTM D5185(m)		0	<1	<1
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		•	0	0
Gaarmann	ррпп	ASTIVI DS 103(III)		0	0	U
ADDITIVES	ррш	method	limit/base	current	history1	history2
	ppm	. ,	limit/base			
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185(m)	250	current 12	history1	history2
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185(m) ASTM D5185(m)	250 10	current 12 <1	history1 37	history2 74 0
ADDITIVES  Boron  Barium  Molybdenum	ppm ppm	method  ASTM D5185(m)  ASTM D5185(m)  ASTM D5185(m)	250 10	current 12 <1 16	history1 37 0 14	history2 74 0 2
ADDITIVES  Boron  Barium  Molybdenum  Manganese	ppm ppm ppm	method  ASTM D5185(m)  ASTM D5185(m)  ASTM D5185(m)  ASTM D5185(m)	250 10 100	current  12 <1 16 0	history1 37 0 14 <1	history2 74 0 2 <1
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium	ppm ppm ppm ppm	method  ASTM D5185(m)  ASTM D5185(m)  ASTM D5185(m)  ASTM D5185(m)  ASTM D5185(m)	250 10 100 450	current  12 <1 16 0 781	history1 37 0 14 <1 745	history2  74  0  2  <1  726  1353  701
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium	ppm ppm ppm ppm ppm	method  ASTM D5185(m)  ASTM D5185(m)  ASTM D5185(m)  ASTM D5185(m)  ASTM D5185(m)  ASTM D5185(m)	250 10 100 450 3000	current  12 <1 16 0 781 1382	history1  37  0 14 <1 745 1361	history2  74  0  2  <1  726  1353
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus	ppm ppm ppm ppm ppm ppm	method  ASTM D5185(m)	250 10 100 450 3000 1150	current  12 <1 16 0 781 1382 752	history1  37  0 14 <1 745 1361 768	history2  74  0  2  <1  726  1353  701
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc	ppm ppm ppm ppm ppm ppm ppm	method  ASTM D5185(m)	250 10 100 450 3000 1150 1350	current  12 <1 16 0 781 1382 752 822	history1  37  0 14 <1 745 1361 768 850	history2  74  0  2  <1  726  1353  701  816
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc  Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method  ASTM D5185(m)	250 10 100 450 3000 1150 1350	current  12 <1 16 0 781 1382 752 822 2634	history1  37  0 14 <1 745 1361 768 850 2583	history2  74  0  2  <1  726  1353  701  816  2671
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc  Sulfur  Lithium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method  ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250	current  12 <1 16 0 781 1382 752 822 2634 <1	history1  37  0 14 <1 745 1361 768 850 2583 <1	history2  74  0  2  <1  726  1353  701  816  2671  <1
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc  Sulfur  Lithium  CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method  ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250	current  12 <1 16 0 781 1382 752 822 2634 <1 current	history1  37  0 14 <1 745 1361 768 850 2583 <1 history1	history2  74  0  2  <1  726  1353  701  816  2671  <1  history2
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc  Sulfur  Lithium  CONTAMINANTS  Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method  ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250	current  12 <1 16 0 781 1382 752 822 2634 <1 current 7	history1  37  0 14 <1 745 1361 768 850 2583 <1 history1 6	history2  74  0  2  <1  726  1353  701  816  2671  <1  history2  4
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc  Sulfur  Lithium  CONTAMINANTS  Silicon  Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method  ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250 limit/base >25	current  12     <1     16     0     781     1382     752     822     2634     <1     current  7 ▲ 162	history1  37  0 14  <1 745 1361 768 850 2583  <1 history1 6 3	history2  74  0  2  <1  726  1353  701  816  2671  <1  history2  4
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc  Sulfur  Lithium  CONTAMINANTS  Silicon  Sodium  Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method  ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250 limit/base >25	current  12 <1 16 0 781 1382 752 822 2634 <1 current 7 ▲ 162 ▲ 147	history1  37  0 14 <1 745 1361 768 850 2583 <1 history1 6 3 3	history2  74  0  2  <1  726  1353  701  816  2671  <1  history2  4  4  3
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Glycol	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method  ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250  limit/base >25 >20	current  12 <1 16 0 781 1382 752 822 2634 <1 current 7 ▲ 162 ▲ 147 ▲ 0.019	history1  37  0 14 <1 745 1361 768 850 2583 <1 history1 6 3 3 NEG	history2  74  0  2  <1  726  1353  701  816  2671  <1  history2  4  4  3  NEG
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method  ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250  limit/base >25 >20	current  12 <1 16 0 781 1382 752 822 2634 <1 current 7 ▲ 162 ▲ 147 ▲ 0.019 current 1.4	history1  37  0 14 <1 745 1361 768 850 2583 <1 history1 6 3 NEG history1 1.2	history2  74  0  2  <1  726  1353  701  816  2671  <1  history2  4  4  3  NEG  history2  0.3
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method  ASTM D5185(m) ASTM D7922*  method  ASTM D7844*	250 10 100 450 3000 1150 1350 4250  limit/base >25 >20  limit/base >3	current  12 <1 16 0 781 1382 752 822 2634 <1 current 7 ▲ 162 ▲ 147 ▲ 0.019 current	history1  37  0 14 <1 745 1361 768 850 2583 <1 history1 6 3 NEG history1	history2  74  0 2 <1 726 1353 701 816 2671 <1 history2  4 3 NEG history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method  ASTM D5185(m) ASTM D7844* ASTM D7624*	250 10 100 450 3000 1150 1350 4250  limit/base >25 >20  limit/base >3 >20	current  12 <1 16 0 781 1382 752 822 2634 <1 current 7 ▲ 162 ▲ 147 ▲ 0.019 current 1.4 12.5	history1  37  0 14 <1 745 1361 768 850 2583 <1 history1 6 3 NEG history1 1.2 11.9	history2  74  0  2  <1  726  1353  701  816  2671  <1  history2  4  4  3  NEG  history2  0.3  9.1



# **OIL ANALYSIS REPORT**

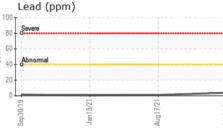


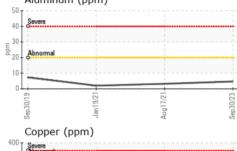


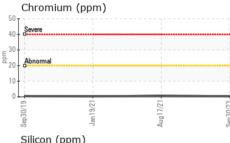
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE		
Yellow Metal	scalar	Visual*	NONE	NONE		
Precipitate	scalar	Visual*	NONE	NONE		
Silt	scalar	Visual*	NONE	NONE		
Debris	scalar	Visual*	NONE	NONE		
Sand/Dirt	scalar	Visual*	NONE	VLITE		
Appearance	scalar	Visual*	NORML	NORML		
Odor	scalar	Visual*	NORML	NORML		
<b>Emulsified Water</b>	scalar	Visual*	>0.2	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG
FLUID PROPERT	TIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	10.9	11.7	11.5	11.1

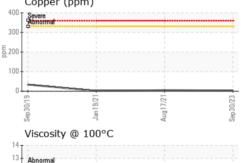
	O			
250	Iron (ppm	)		
200	Savara			
E 150				
E 100	Abnormal			
50	)-			
(	) <del>[ _</del>			
	Sep30/19	Jan19/21	Aug17/	Sep30/23
-	Aluminum	(ppm)		
50	Savara			
E. 30				
ū.				

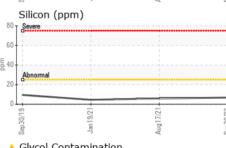
**GRAPHS** 

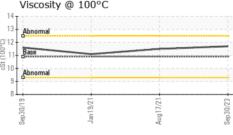


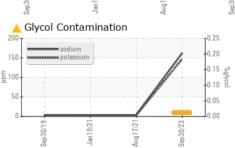














CALA ISO 17025:2017 Accredited Laboratory

Laboratory Sample No. Lab Number **Unique Number** 

: WC0853399 : 02587069

: 5656135

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 Received : 05 Oct 2023 Diagnosed : 06 Oct 2023

Diagnostician : Wes Davis Test Package : MOB 1 (Additional Tests: Glycol, Visual)

To discuss this sample report, contact Customer Service at 1-800-268-2131.

Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab. Validity of results and interpretation are based on the sample and information as supplied.

**Rush Truck Centres** 7450 Torbram Rd. Mississauga, ON **CA L4T 1G9** Contact: Serdar Okur sokur@rushtruckcentres.ca T: (905)671-7600