

OIL ANALYSIS REPORT



Machine Id

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

DIAGNOSIS

Recommendation

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. Please specify the component make and model with your next sample.

Wear

All component wear rates are normal.

Contamination

There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Fluid Condition

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

SAMPLE INFORM	ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0916277	WC0883883	WC0879743
Sample Date		Client Info		15 Apr 2024	01 Feb 2024	26 Nov 2023
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
CONTAMINATION	N	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>100	6	9	6
Chromium	ppm	ASTM D5185(m)	>20	0	0	0
Nickel	ppm	ASTM D5185(m)	>4	0	<1	0
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)	>3	0	0	<1
Aluminum	ppm	ASTM D5185(m)	>20	2	5	2
Lead	ppm	ASTM D5185(m)	>40	0	<1	<1
Copper	ppm	ASTM D5185(m)	>330	<1	<1	<1
Tin	ppm	ASTM D5185(m)	>15	0	0	0
Antimony	ppm	ASTM D5185(m)		0	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		0	0	0
ADDITIVES	ppm	ASTM D5185(m) method	limit/base	0 current	0 history1	0 history2
	ppm ppm	. ,	limit/base		-	-
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185(m)	250	current 52	history1 54	history2 64
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185(m) ASTM D5185(m)	250 10	current 52 0	history1 54 0	history2 64 <1
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10	current 52 0 37	history1 54 0 36	history2 64 <1 33
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10 100	current 52 0 37 <1	history1 54 0 36 0	history2 64 <1 33 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm 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 52 0 37 <1 479	history1 54 0 36 0 457	history2 64 <1 33 0 417
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	methodASTM D5185(m)ASTM D5185(m)ASTM D5185(m)ASTM D5185(m)ASTM D5185(m)ASTM D5185(m)	250 10 100 450 3000	current 52 0 37 <1 479 1583	history1 54 0 36 0 457 1576	history2 64 <1 33 0 417 1624
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	methodASTM 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	current 52 0 37 <1 479 1583 694	history1 54 0 36 0 457 1576 699	history2 64 <1 33 0 417 1624 711
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	methodASTM 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	current 52 0 37 <1 479 1583 694 802	history1 54 0 36 0 457 1576 699 786	history2 64 <1 33 0 417 1624 711 838
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method 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	current 52 0 37 <1 479 1583 694 802 1934	history1 54 0 36 0 457 1576 699 786 2074	history2 64 <1 33 0 417 1624 711 838 2067
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 52 0 37 <1 479 1583 694 802 1934 <1	history1 54 0 36 0 457 1576 699 786 2074 <1	history2 64 <1 33 0 417 1624 711 838 2067 <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 Iimit/base	current 52 0 37 <1 479 1583 694 802 1934 <1 current	history 1 54 0 36 0 457 1576 699 786 2074 <1 history 1	history2 64 <1 33 0 417 1624 711 838 2067 <1 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Chosphorus 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 Iimit/base	current 52 0 37 <1 479 1583 694 802 1934 <1 current	history1 54 0 36 0 457 1576 699 786 2074 <1 history1 14	history2 64 <1 33 0 417 1624 711 838 2067 <1 history2
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 Iimit/base >25 >158	current 52 0 37 <1 479 1583 694 802 1934 <1 current 4 3	history1 54 0 36 0 457 1576 699 786 2074 <1 history1 14 3	history2 64 <1 33 0 417 1624 711 838 2067 <1 history2 5 3
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 Iimit/base >25 >158 >20	current 52 0 37 <1 479 1583 694 802 1934 <1 current 4 3 0	history1 54 0 36 0 457 1576 699 786 2074 <1 history1 14 3 2	history2 64 <1 33 0 417 1624 711 838 2067 <1 history2 5 3 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250 imit/base >25 >158 >20 >5	current 52 0 37 <1 479 1583 694 802 1934 <1 current 4 3 0 \$.9	history1 54 0 36 0 457 1576 699 786 2074 <1 history1 14 3 2 ▲ 6	history2 64 <1 33 0 417 1624 711 838 2067 <1 history2 5 3 <1 5 3 <1 ▲ 5
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250 Iimit/base >25 >20 >5	current 52 0 37 <1 479 1583 694 802 1934 <1 current 4 3 0 ▲ 5.9 current 0.1	history1 54 0 36 0 457 1576 699 786 2074 <1 history1 14 3 2 6 history1 0.1	history2 64 <1 33 0 417 1624 711 838 2067 <1 bistory2 5 3 <1 bistory2 5 3 <1 <5 <5 bistory2 0.1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m) ASTM D7593*	250 10 100 450 3000 1150 1350 4250 I imit/base >25 >158 >20 >5 I imit/base >3	current 52 0 37 <1 479 1583 694 802 1934 <1 current 4 3 0 ▲ 5.9	history1 54 0 36 0 457 1576 699 786 2074 <1 history1 14 3 2 ▲ 6 history1	history2 64 <1 33 0 417 1624 711 838 2067 <1 history2 5 3 <1 5 3 <1 >5 3 <1 >5 3 <1 >5 history2



OIL ANALYSIS REPORT

FT-IR (Direct Trend)	FLUID DEGRAD	ATION	method	limit/base	current	history1	history2
Oxidation Nitration	Oxidation	Abs/.1mm	ASTM D7414*	>25	19.7	19.6	19.0
	VISUAL		method	limit/base	current	history1	history2
	White Metal	scalar	Visual*	NONE	NONE	VLITE	
	Yellow Metal	scalar	Visual*	NONE	NONE	NONE	
	Precipitate	scalar	Visual*	NONE	NONE	NONE	
Feb1/24 -	Silt Debris	scalar	Visual*	NONE	NONE	NONE	
100 L	-	scalar	Visual*	NONE	VLITE	VLITE	
/iscosity @ 100°C	Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	
Abnormal	Appearance Odor	scalar scalar	Visual* Visual*	NORML NORML	NORML NORML	NORML NORML	NORML
	Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Base	Free Water	scalar	Visual*		NEG	NEG	NEG
Abnormal	FLUID PROPER		method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D7279(m)		▲ 11.5	▲ 11.4	▲ 11.4
54	+	501	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				- (1.T
Feb1/24	GRAPHS Iron (ppm)				Lead (ppm)		
, «	²⁵⁰			100	0 T 10 mm		
T-IR (Direct Trend)	_ 150	1					
Oxidation Nitration	Abnormal			면 40			1
annammar Sulfation	50 -				1+		
		/24		5/24	3/23	/24	24
	Nov26/23	Feb1/24		Apr15/24	Nov26/23	Feb 1/24	Apr15/24
	Aluminum (ppm)			ppm)			
42/. 42/.	50 40 Severe	1		50	Courses.	1	
Feb 1/24							
	and a second sec	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		³⁰ 20		 	
	10	_		10			
	Nov26/23	Feb1/24 -		Apr15/24	Vov26/23	Feb1/24 -	Apr15/24
		Fel		Apr	2		Aprl
	Copper (ppm)			80	Silicon (ppm)	
	300 - Severe			60	1		1
	톱 200			틆 40	0		
	100 -			20	Abitotitia		
	0	4		0		44	
	Nov26/23	Feb1/24		Apr15/24	Nav26/23	Feb1/24 .	Apr15/24
	≥ ∧ Viscosity @ 100°			⊲ _	≗ Fuel Dilution		AF
		1		10.0	T		
	16			8.0			
	G 10 Base 14 Abnormal			필 6.0 및 6.0 % 4.0	Abnormal		
				2.0	D		
	10	/24		0.0		/24	24
	Nov26/23	Feb1/24		Apr15/24	Nov26/23	Feb 1/24	Apr15/24
	-	75 Appleby Recei Teste Diagr	ived :17 ed :18	ngton, ON L7L 7 Apr 2024 8 Apr 2024 3 Apr 2024 - W	1350 Go	overnment Rd. W, M	o Eagle Canada IACASSA COMPLEX irkland Lake, ON CA P2N 3J1

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.

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