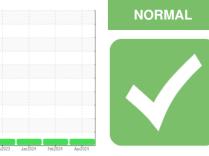


# **OIL ANALYSIS REPORT**



Machine Id **2231** Component **Natural Gas Engine** Fluid **DIESEL ENGINE OIL SAE 15W40 (--- GAL)** 

#### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with 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

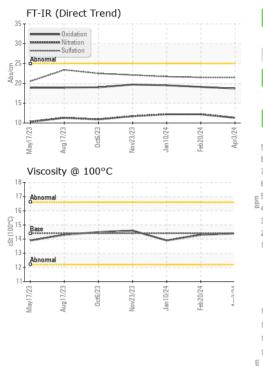
The condition of the oil is acceptable for the time in service.

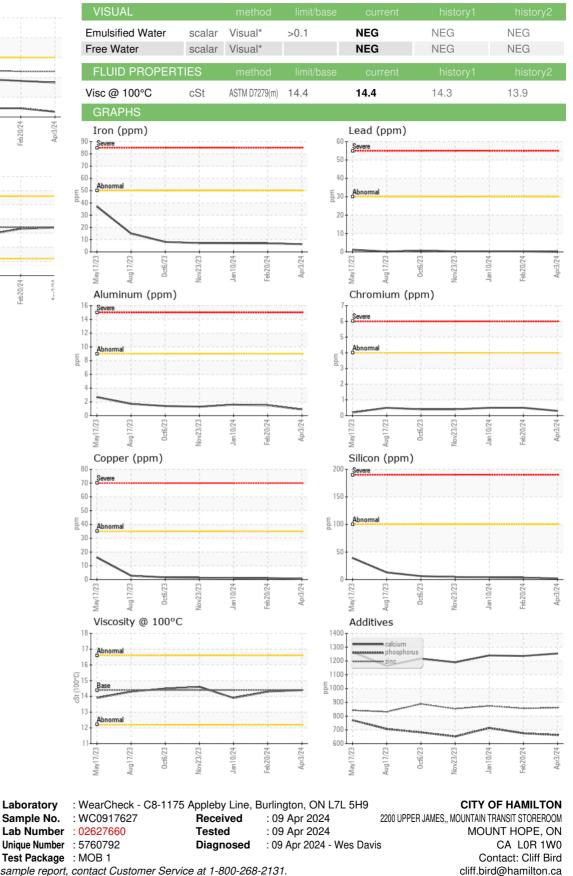
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0917627	WC0877951	WC0890958
Sample Date		Client Info		03 Apr 2024	20 Feb 2024	10 Jan 2024
Machine Age	kms	Client Info		61190	52905	44252
Oil Age	kms	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	۷	method	limit/base	current	history1	history2
Water		WC Method	>0.1	NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>50	6	7	7
Chromium	ppm	ASTM D5185(m)	>4	<1	<1	<1
Nickel	ppm	ASTM D5185(m)	>2	<1	<1	<1
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)	>3	0	0	0
Aluminum	ppm	ASTM D5185(m)		<1	2	2
Lead	ppm	ASTM D5185(m)	>30	0	<1	<1
Copper	ppm	ASTM D5185(m)	>35	<1	1	1
Tin	ppm	ASTM D5185(m)	>4	0	<1	<1
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		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185(m)	limit/base 250	current 17	history1 17	history2 16
	ppm ppm					
Boron		ASTM D5185(m)	250	17	17	16
Boron Barium	ppm	ASTM D5185(m) ASTM D5185(m)	250 10	17 0	17 0	16 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10	17 0 53	17 0 54	16 0 53
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10 100	17 0 53 <1	17 0 54 0	16 0 53 0
Boron Barium Molybdenum Manganese Magnesium	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)	250 10 100 450	17 0 53 <1 819	17 0 54 0 795	16 0 53 0 815
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)	250 10 100 450 3000	17 0 53 <1 819 1254	17 0 54 0 795 1236	16 0 53 0 815 1240
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	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)	250 10 100 450 3000 1150	17 0 53 <1 819 1254 663	17 0 54 0 795 1236 675	16 0 53 0 815 1240 714
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)	250 10 100 450 3000 1150 1350	17 0 53 <1 819 1254 663 861	17 0 54 0 795 1236 675 856	16 0 53 0 815 1240 714 874
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	17 0 53 <1 819 1254 663 861 1978 <1	17 0 54 0 795 1236 675 856 2067	16 0 53 0 815 1240 714 874 2062
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	17 0 53 <1 819 1254 663 861 1978 <1	17 0 54 0 795 1236 675 856 2067 <1	16 0 53 0 815 1240 714 874 2062 <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 <b>imit/base</b> >+100	17 0 53 <1 819 1254 663 861 1978 <1 Current	17 0 54 0 795 1236 675 856 2067 <1 history1	16 0 53 0 815 1240 714 874 2062 <1 <b>history2</b>
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon	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 <b>Iimit/base</b> >+100	17 0 53 <1 819 1254 663 861 1978 <1 2	17 0 54 0 795 1236 675 856 2067 <1 history1 4	16 0 53 0 815 1240 714 874 2062 <1 <b>history2</b> 4
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 <b>imit/base</b> >+100 >158	17 0 53 <1 819 1254 663 861 1978 <1 <i>current</i> 2 2 2 2 <1	17 0 54 0 795 1236 675 856 2067 <1 <b>history1</b> 4 3	16 0 53 0 815 1240 714 874 2062 <1 2062 <1 history2 4 3
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 <b>binit/base</b> >+100 >158 >20	17 0 53 <1 819 1254 663 861 1978 <1 <i>current</i> 2 2 2 2 <1	17 0 54 0 795 1236 675 856 2067 <1 <b>history1</b> 4 3 <1	16 0 53 0 815 1240 714 874 2062 <1 <b>history2</b> 4 3 0
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 <b>binit/base</b> >+100 >158 >20	17 0 53 <1 819 1254 663 861 1978 <1 current 2 2 2 <1 current	17 0 54 0 795 1236 675 856 2067 <1 <b>bistory1</b> 4 3 <1 <b>bistory1</b>	16 0 53 0 815 1240 714 874 2062 <1 <b>kistory2</b> 4 3 0 <b>kistory2</b>
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   ppm	ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >+100 >158 >20 <b>limit/base</b>	17 0 53 <1 819 1254 663 861 1978 <1 current 2 2 2 <1 current 0	17 0 54 0 795 1236 675 856 2067 <1 <b>bistory1</b> 4 3 <1 <b>history1</b> 0	16 0 53 0 815 1240 714 874 2062 <1 <b>kistory2</b> 4 3 0 <b>kistory2</b> 0
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 D5185(m)	250 10 100 450 3000 1150 1350 4250 <b>Jimit/base</b> >+100 >158 >20 <b>Jimit/base</b>	17 0 53 <1 819 1254 663 861 1978 <1 Current 2 2 2 <1 Current 0 11.3 21.5	17 0 54 0 795 1236 675 856 2067 <1 <b>history1</b> 4 3 <1 <b>history1</b> 0 12.2 21.5	16 0 53 0 815 1240 714 874 2062 <1 <b>history2</b> 4 3 0 <b>history2</b> 0 12.2 21.7
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 <b>imit/base</b> >20 <b>imit/base</b> >20 >20 >30	17 0 53 <1 819 1254 663 861 1978 <1 Current 2 2 2 <1 Current 0 11.3 21.5	17 0 54 0 795 1236 675 856 2067 <1 <b>history1</b> 4 3 <1 <b>history1</b> 0 12.2	16 0 53 0 815 1240 714 874 2062 <1 <b>history2</b> 4 3 0 <b>history2</b> 0 12.2

Contact/Location: Cliff Bird - HAMHAM Page 1 of 2



# **OIL ANALYSIS REPORT**





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.

F: (905)679-4502 Contact/Location: Cliff Bird - HAMHAM

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