

# **OIL ANALYSIS REPORT**

Sample Rating Trend

NORMAL

## YANMAR NO UNIT WC0840681 Component

**Diesel Engine** Flui

SHELL ROTELLA T SB SAE 0W30 (--- GAL)

#### 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.

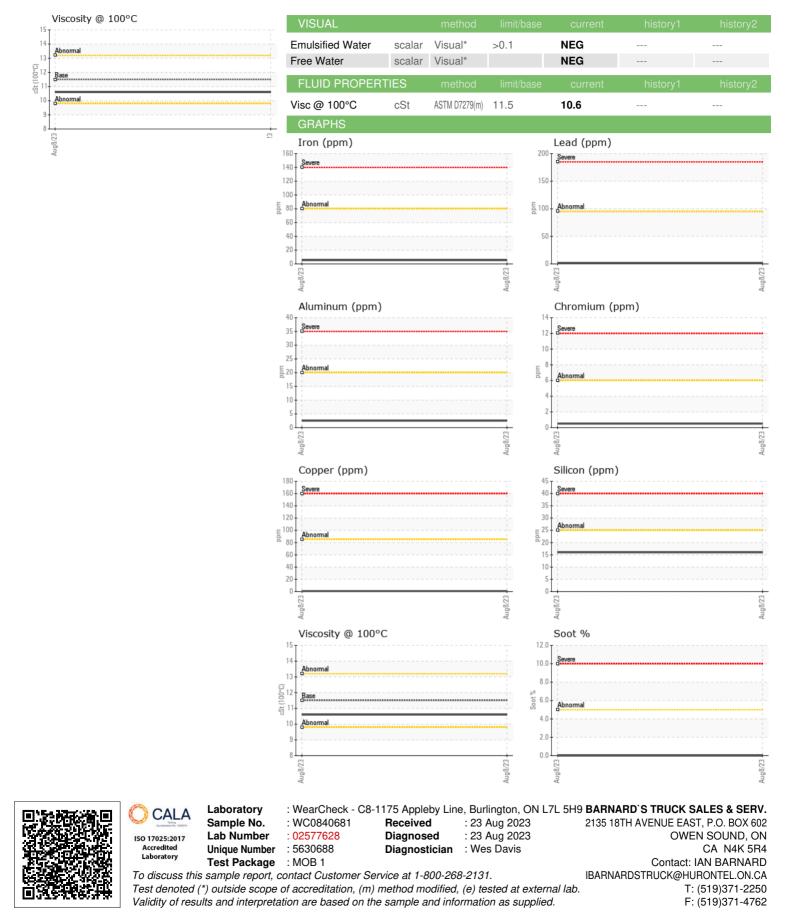
### Fluid Condition

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		WC0840681		
Sample Date		Client Info		08 Aug 2023		
Machine Age	hrs	Client Info		4058		
Oil Age	hrs	Client Info		40		
Oil Changed		Client Info		Changed		
Sample Status				NORMAL		
CONTAMINATION	J	method	limit/base	current	history1	history2
Fuel		WC Method	>4.0	<1.0		
Glycol		WC Method		NEG		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>80	5		
Chromium	ppm	ASTM D5185(m)	>6	<1		
Nickel	ppm	ASTM D5185(m)	>2	0		
Titanium	ppm	ASTM D5185(m)	>2	0		
Silver	ppm	ASTM D5185(m)	>2	0		
Aluminum	ppm	ASTM D5185(m)	>20	2		
Lead	ppm	ASTM D5185(m)	>95	1		
Copper	ppm	ASTM D5185(m)		<1		
Tin	ppm	ASTM D5185(m)	>9	0		
Antimony	ppm	ASTM D5185(m)	20	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	maa	method ASTM D5185(m)	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	limit/base	16		
Boron Barium	ppm	ASTM D5185(m) ASTM D5185(m)	limit/base	16 0		
Boron Barium Molybdenum	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	16 0 110		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	16 0 110 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)	limit/base	16 0 110 0 85		
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)	limit/base	16 0 110 0 85 2550		
Boron Barium Molybdenum Manganese Magnesium	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)	limit/base	16 0 110 0 85 2550 1092	  	  
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)	limit/base	16 0 110 0 85 2550	  	
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)	limit/base	16 0 110 0 85 2550 1092 1186		
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)	limit/base	16 0 110 0 85 2550 1092 1186 2578		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	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)		16 0 110 0 85 2550 1092 1186 2578 <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)	limit/base	16 0 110 0 85 2550 1092 1186 2578 <1 <1	      history1	       history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon	ppm	ASTM D5185(m) ASTM D5185(m)	limit/base	16 0 110 0 85 2550 1092 1186 2578 <1 current 16	      history1	      history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium	ppm	ASTM D5185(m) ASTM D5185(m)	limit/base	16 0 110 0 85 2550 1092 1186 2578 <1 <b>current</b> 16 2	      history1	      history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm	ASTM D5185(m) ASTM D5185(m)	limit/base >25 >20	16 0 110 0 85 2550 1092 1186 2578 <1 2578 <1 2578 <1 2578 <1	      history1  	       history2  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   ppm	ASTM D5185(m) ASTM D5185(m)	limit/base >25 >20 limit/base	16 0 110 0 85 2550 1092 1186 2578 <1 current 16 2 2 <1	      history1   history1	      history2   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)	limit/base >25 >20 limit/base	16 0 110 0 85 2550 1092 1186 2578 <1 <b>current</b> 16 2 2 <1 <b>current</b> 0	      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)	limit/base >25 >20 limit/base	16 0 110 0 85 2550 1092 1186 2578 <1 <i>current</i> 16 2 2 <1 <i>current</i> 0 7.9	      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 D7844* ASTM D7624* ASTM D7415*	limit/base >25 >20 limit/base >20 limit/base	16 0 110 0 85 2550 1092 1186 2578 <1 <i>current</i> 16 2 2 <1 <i>current</i> 0 7.9 18.6	      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 D5185(m)	limit/base >25 >20 limit/base	16 0 110 0 85 2550 1092 1186 2578 <1 <i>current</i> 16 2 <1 <i>current</i> 0 7.9 18.6 <i>current</i> 13.3		       history2  history2  history2



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Contact/Location: IAN BARNARD - BAROWE