

## **OIL ANALYSIS REPORT**

#### Sample Rating Trend







1009 Component

Machine Id

Gasoline Engine

GASOLINE ENGINE OIL SAE 0W20 (--- GAL)

### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor. ( Customer Sample Comment: 0w-20 )

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

#### Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0098668		
Sample Date		Client Info		29 Sep 2023		
Machine Age	mls	Client Info		16100		
Oil Age	mls	Client Info		5000		
Oil Changed		Client Info		Changed		
Sample Status				NORMAL		
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>4.0	<1.0		
Glycol		WC Method	27.0	NEG		
					_	
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>150	16		
Chromium	ppm	ASTM D5185m	>20	<1		
Nickel	ppm	ASTM D5185m	>5	<1		
Titanium	ppm	ASTM D5185m		<1		
Silver	ppm	ASTM D5185m	>2	0		
Aluminum	ppm	ASTM D5185m	>40	2		
Lead	ppm	ASTM D5185m	>50	<1		
Copper	ppm	ASTM D5185m	>155	21		
Tin	ppm	ASTM D5185m	>10	<1		
Vanadium	ppm	ASTM D5185m		<1		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		mathad	limit/base		In the second second	biotory/0
ADDITIVES		method				history2
Boron	ppm	ASTM D5185m	75	55	nistory i	nistory2
	ppm ppm					
Boron		ASTM D5185m	75	55		
Boron Barium	ppm	ASTM D5185m ASTM D5185m	75 5	55 0		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	75 5	55 0 226		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	75 5 100	55 0 226 4		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	75 5 100 12	55 0 226 4 462		
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	75 5 100 12 2100	55 0 226 4 462 1250	   	   
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	75 5 100 12 2100 650	55 0 226 4 462 1250 629	   	   
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	75 5 100 12 2100 650 850	55 0 226 4 462 1250 629 774	    	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	75 5 100 12 2100 650 850 2500	55 0 226 4 462 1250 629 774 2300		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	75 5 100 12 2100 650 850 2500	55 0 226 4 4 462 1250 629 774 2300 current	     history1	     history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	75 5 100 12 2100 650 850 2500 <b>limit/base</b> >30	55 0 226 4 462 1250 629 774 2300 current 77	     history1	     history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	75 5 100 12 2100 650 850 2500 2500 <b>imit/base</b> >30 >400 >20	55 0 226 4 4 62 1250 629 774 2300 <b>current</b> 77 4 3	     history1  	     history2  
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	75 5 100 12 2100 650 850 2500 <b>imit/base</b> >30 >400	55 0 226 4 462 1250 629 774 2300 current 77 4 3 3	     history1   history1	     history2   history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	75 5 100 12 2100 650 850 2500 limit/base >30 >400 >20	55 0 226 4 462 1250 629 774 2300 current 77 4 3 3 current 0	     history1   history1	     history2   history2  history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	75 5 100 12 2100 650 850 2500 imit/base >30 >400 >20 imit/base	55 0 226 4 4 62 1250 629 774 2300 <i>current</i> 77 4 3 <i>current</i> 0 10.5	     history1   history1	     history2   history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b> ppm ppm ppm	ASTM D5185m ASTM D5185m	75 5 100 12 2100 650 850 2500 <b>imit/base</b> >30 >400 >20 <b>imit/base</b> >20	55 0 226 4 462 1250 629 774 2300 <b>current</b> 77 4 3 <b>current</b> 0 10.5 22.4	      history1  history1  history1	    history2  history2  history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	75 5 100 12 2100 650 850 2500 imit/base >30 >400 >20 imit/base	55 0 226 4 4 62 1250 629 774 2300 current 77 4 3 current 0 10.5 22.4	      history1   history1  	history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7414	75 5 100 12 2100 650 850 2500 <b>imit/base</b> >30 >400 >20 <b>imit/base</b> >20	55 0 226 4 4 62 1250 629 774 2300 current 77 4 3 current 0 10.5 22.4 current 16.1	      history1  history1  history1	    history2  history2  history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	75 5 100 12 2100 650 850 2500 2500 1imit/base >30 >20 20 1imit/base	55 0 226 4 4 62 1250 629 774 2300 current 77 4 3 current 0 10.5 22.4	      history1  history1  history1  history1	    history2  history2  history2  history2



Sep29/23

# **OIL ANALYSIS REPORT**

scalar

scalar

scalar

\*Visual

\*Visual

\*Visual

NONE

NONE

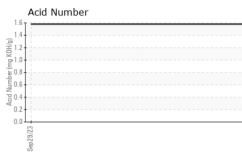
NONE

VISUAL

White Metal

Yellow Metal

Precipitate







NONE

NONE

NONE

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\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Certificate L2367