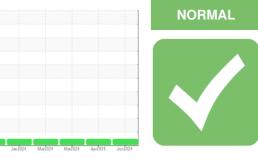


OIL ANALYSIS REPORT

Sample Rating Trend



2365 Component Natural Gas Engine

VALVOLINE PREMIUM BLUE 9200 15W40 (--- GAL)

DIAGNOSIS

Machine Id

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.

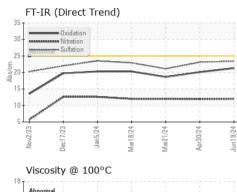
Fluid Condition

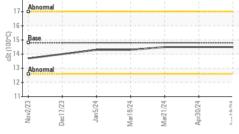
The condition of the oil is acceptable for the time in service.

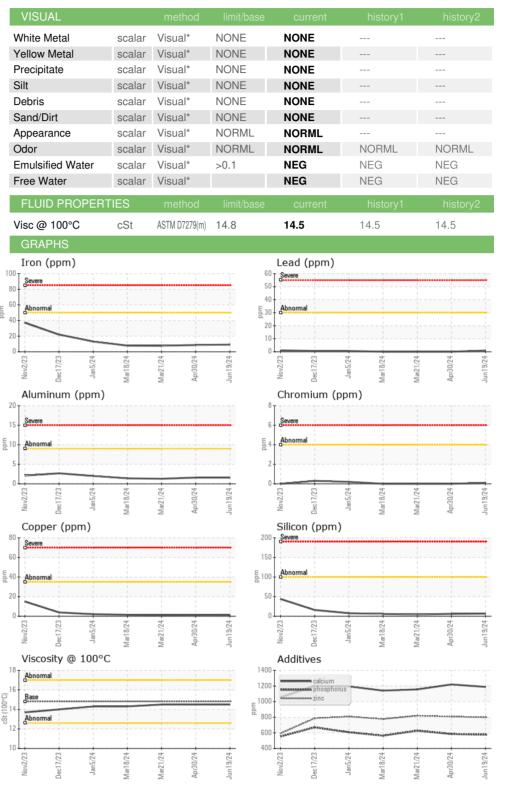
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0937107	WC0937367	WC0917527
Sample Date		Client Info		19 Jun 2024	30 Apr 2024	21 Mar 2024
Machine Age	kms	Client Info		55435	442672	0
Oil Age	kms	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	٧	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	9	9	8
Chromium	ppm	ASTM D5185(m)	>4	<1	0	0
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)	>9	2	2	1
Lead	ppm	ASTM D5185(m)	>30	<1	0	0
Copper	ppm	ASTM D5185(m)	>35	1	1	<1
Tin	ppm	ASTM D5185(m)	>4	<1	<1	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		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185(m)	limit/base	current 6	history1 8	history2 13
	ppm ppm		limit/base			
Boron		ASTM D5185(m)	limit/base	6	8	13
Boron Barium	ppm	ASTM D5185(m) ASTM D5185(m)	limit/base	6 0	8	13 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	6 0 52	8 0 53	13 0 51
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	6 0 52 <1	8 0 53 <1	13 0 51 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	6 0 52 <1 766	8 0 53 <1 782	13 0 51 0 765
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	6 0 52 <1 766 1188	8 0 53 <1 782 1220	13 0 51 0 765 1156
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)	limit/base	6 0 52 <1 766 1188 575	8 0 53 <1 782 1220 584	13 0 51 0 765 1156 628
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)	limit/base	6 0 52 <1 766 1188 575 798	8 0 53 <1 782 1220 584 808	13 0 51 0 765 1156 628 819
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) ASTM D5185(m)	limit/base	6 0 52 <1 766 1188 575 798 1771	8 0 53 <1 782 1220 584 808 1823	13 0 51 0 765 1156 628 819 1842
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)		6 0 52 <1 766 1188 575 798 1771 <1	8 0 53 <1 782 1220 584 808 1823 <1	13 0 51 0 765 1156 628 819 1842 <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	6 0 52 <1 766 1188 575 798 1771 <1 vurrent	8 0 53 <1 782 1220 584 808 1823 <1 history1	13 0 51 0 765 1156 628 819 1842 <1 kistory2
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)	limit/base	6 0 52 <1 766 1188 575 798 1771 <1 current 7	8 0 53 <1 782 1220 584 808 1823 <1 * history1 6	13 0 51 0 765 1156 628 819 1842 <1 kistory2 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)	limit/base >+100	6 0 52 <1 766 1188 575 798 1771 <1 current 7 2	8 0 53 <1 782 1220 584 808 1823 <1 *1 history1 6 2	13 0 51 0 765 1156 628 819 1842 <1 1842 <1 history2 4 4
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)	limit/base >+100 >20	6 0 52 <1 766 1188 575 798 1771 <1 <i>current</i> 7 2 <1	8 0 53 <1 782 1220 584 808 1823 <1 history1 6 2 0	13 0 51 0 765 1156 628 819 1842 <1 history2 4 4 4 5
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	ASTM D5185(m) ASTM D5185(m)	limit/base >+100 >20	6 0 52 <1 766 1188 575 798 1771 <1 current 7 2 <1 current	8 0 53 <1 782 1220 584 808 1823 <1 history1 6 2 0 0 history1	13 0 51 0 765 1156 628 819 1842 <1 history2 4 4 4 <1 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 ppm	ASTM D5185(m) ASTM D5185(m)	limit/base >+100 >20 limit/base	6 0 52 <1 766 1188 575 798 1771 <1 current 7 2 <1 2 <1 current 0	8 0 53 <1 782 1220 584 808 1823 <1 history1 6 2 0 0 history1 0	13 0 51 0 765 1156 628 819 1842 <1 history2 4 4 4 <1 history2 0
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 >+100 >20 limit/base	6 0 52 <1 766 1188 575 798 1771 <1 <i>current</i> 7 2 <1 <i>current</i> 0 12.0	8 0 53 <1 782 1220 584 808 1823 <1 history1 6 2 0 history1 0 history1 0 11.9 23.1	13 0 51 0 765 1156 628 819 1842 <1 history2 4 4 4 <1 history2 0 12.0 21.1
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 D7624*	Iimit/base >+100 >20 Iimit/base >20 30	6 0 52 <1 766 1188 575 798 1771 <1 current 7 2 <1 2 <1 0 12.0 23.4	8 0 53 <1 782 1220 584 808 1823 <1 history1 6 2 0 history1 0 history1 0 11.9	13 0 51 0 765 1156 628 819 1842 <1 history2 4 4 4 <1 history2 0 12.0

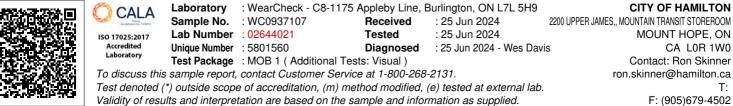


OIL ANALYSIS REPORT









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Contact/Location: Ron Skinner - HAMHAM Page 2 of 2