

OIL ANALYSIS REPORT

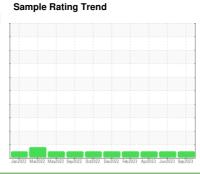
MP-101 [10023530458]

B71457 - VACUUM PUMP BUSCH RA0630 SOUTH RETAIL BACON B71457 (S/N USM121330077)

Component

Vacuum Pump

PETRO CANADA PURITY FG SYNTHETIC 100 (--- GAL)





DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the oil.

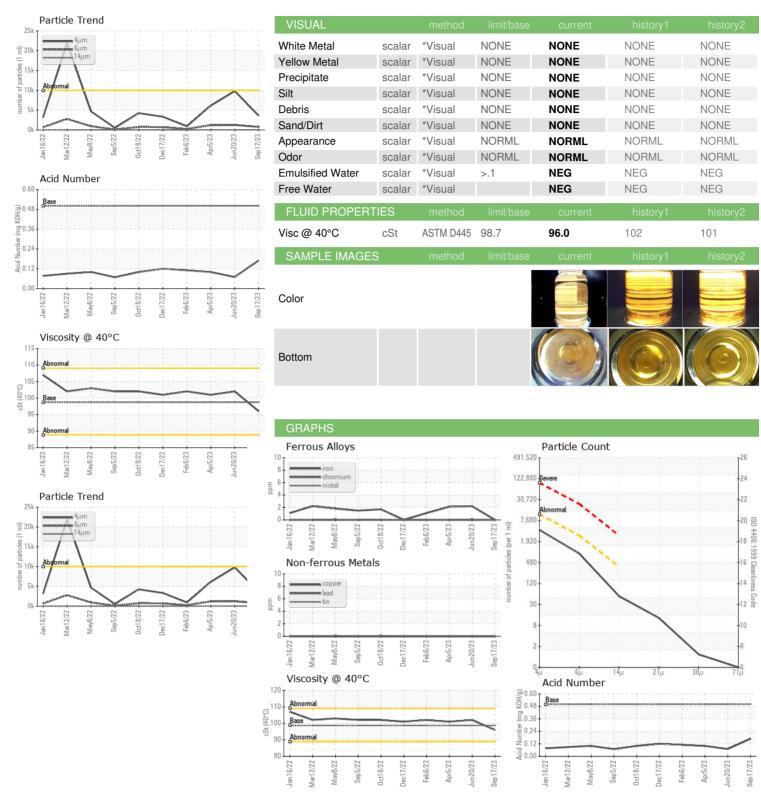
Fluid Condition

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

Sample Date Client Info 17 Sep 2023 20 Jun 2023 05 Apr 2023	Jandžioz Manždoz Manždoz Svapžioz Ovežioz Dvežioz Fanždoz Apržioz Svapžioz Svapžioz Svapžioz Svapžioz Svapžioz							
Sample Date Client Info 17 Sep 2023 20 Jun 2023 05 Apr 2023	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2	
Machine Age hrs Client Info 0 0 0 0 0 0 0 0 0	Sample Number		Client Info		WC0842519	WC0683803	WC0793378	
Oil Age	Sample Date		Client Info		17 Sep 2023	20 Jun 2023	05 Apr 2023	
Client Info Not Changd NORMAL NORMAL NORMAL	Machine Age	hrs	Client Info		0	0	0	
Sample Status NORMAL NORMAL NORMAL NORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 0 2 2 Chromium ppm ASTM D5185m >20 0 0 0 Nickel ppm ASTM D5185m 0 0 0 0 Siliver ppm ASTM D5185m 0 0 0 0 Siliver ppm ASTM D5185m 20 0 <1 <1 Lead ppm ASTM D5185m >20 0 0 0 0 Copper ppm ASTM D5185m >20 0 0 0 0 0 Tin ppm ASTM D5185m >20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Oil Age	hrs	Client Info		0	0	0	
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m ≥20 0 2 2 Chromium ppm ASTM D5185m ≥20 0 0 0 Nickel ppm ASTM D5185m ≥20 0 <1 0 Titanium ppm ASTM D5185m ≥0 0 <0 0 Aluminum ppm ASTM D5185m ≥0 0 <1 <1 Lead ppm ASTM D5185m ≥20 0 0 0 Lead ppm ASTM D5185m ≥20 0 0 0 Tin ppm ASTM D5185m ≥20 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 <th>Oil Changed</th> <th></th> <th>Client Info</th> <th></th> <th>Not Changd</th> <th>N/A</th> <th>N/A</th>	Oil Changed		Client Info		Not Changd	N/A	N/A	
Iron	Sample Status				NORMAL	NORMAL	NORMAL	
Chromium ppm ASTM D5185m >20 0 0 0 Nickel ppm ASTM D5185m >20 0 <1 0 Titanium ppm ASTM D5185m 0 0 0 0 Sillver ppm ASTM D5185m >20 0 <1 <1 Lead ppm ASTM D5185m >20 0 0 0 Tin ppm ASTM D5185m 0 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0	WEAR METALS		method	limit/base	current	history1	history2	
Nickel ppm ASTM D5185m >20 0 <1	Iron	ppm	ASTM D5185m	>20	0	2	2	
Titanium	Chromium	ppm	ASTM D5185m	>20	0	0	0	
Silver	Nickel	ppm	ASTM D5185m	>20	0	<1	0	
Astronomic As	Titanium	ppm	ASTM D5185m		0	0	0	
Lead ppm ASTM D5185m >20 0 0 0 Copper ppm ASTM D5185m >20 0 0 0 Tin ppm ASTM D5185m >20 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 <1	Silver	ppm	ASTM D5185m		0	0	0	
Copper ppm ASTM D5185m >20 0 0 0 Tin ppm ASTM D5185m >20 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 Boron ppm ASTM D5185m 0 0 0 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 Magnesium ppm ASTM D5185m 0 <1 <1 Magnesium ppm ASTM D5185m 3 0 <1 <1 Magnesium ppm ASTM D5185m 3 0 <1 <1 Calcium ppm ASTM D5185m 3 0 0 <1 Sulfur ppm ASTM D5185m 122 0 8 Sulfur ppm ASTM D5185m >1023 654<	Aluminum	ppm	ASTM D5185m	>20	0	<1	<1	
Tin ppm ASTM D5185m >20 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Manganese ppm ASTM D5185m 0 <1	Lead	ppm	ASTM D5185m	>20	0	0	0	
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m 0 <1	Copper	ppm	ASTM D5185m	>20	0	0	0	
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 Magnesium ppm ASTM D5185m 0 <1 <1 Magnesium ppm ASTM D5185m 3 0 <1 <1 Calcium ppm ASTM D5185m 3 0 0 Phosphorus ppm ASTM D5185m 12 0 8 Sulfur ppm ASTM D5185m 12 0 8 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 4 6 7 Sodium ppm ASTM D5	Tin	ppm	ASTM D5185m	>20	0	0	0	
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 -1 -1 Magnesium ppm ASTM D5185m 3 0 -1 Calcium ppm ASTM D5185m 3 0 -1 Calcium ppm ASTM D5185m 3 0 0 Phosphorus ppm ASTM D5185m 12 0 8 Sulfur ppm ASTM D5185m 12 0 8 Sulfur ppm ASTM D5185m 1023 654 593 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 4 6 7 Sodium ppm ASTM D5185m >20 <1 <1 <th>Vanadium</th> <th>ppm</th> <th>ASTM D5185m</th> <th></th> <th>0</th> <th>0</th> <th>0</th>	Vanadium	ppm	ASTM D5185m		0	0	0	
Boron ppm ASTM D5185m 0 0 0 0 0	Cadmium	ppm	ASTM D5185m		0	0	0	
Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m 3 0 <1 Magnesium ppm ASTM D5185m 3 0 0 Calcium ppm ASTM D5185m 3 0 0 Phosphorus ppm ASTM D5185m 12 0 8 Sulfur ppm ASTM D5185m 12 0 8 Sulfur ppm ASTM D5185m 1023 654 593 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 4 6 7 Sodium ppm ASTM D5185m >20 <1 1 1 Potassium ppm ASTM D5185m >20 <1 <1 <1 FLUID CLEANLINESS method limit/base current <th>ADDITIVES</th> <th></th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	ADDITIVES		method	limit/base	current	history1	history2	
Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m 0 <1	Boron	ppm	ASTM D5185m		0	0	0	
Manganese ppm ASTM D5185m 0 <1	Barium	ppm	ASTM D5185m		0	0	0	
Magnesium ppm ASTM D5185m 3 0 <1	Molybdenum	ppm	ASTM D5185m		0	0	0	
Calcium ppm ASTM D5185m 3 0 0 Phosphorus ppm ASTM D5185m 408 189 182 Zinc ppm ASTM D5185m 12 0 8 Sulfur ppm ASTM D5185m 1023 654 593 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 4 6 7 Sodium ppm ASTM D5185m >15 4 6 7 Sodium ppm ASTM D5185m >20 <1 1 1 Potassium ppm ASTM D5185m >20 <1 <1 <1 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >2500 761 1249 1206 Particles >21 μm ASTM D7647 >80 11 7 13 Particles >71 μm	Manganese	ppm	ASTM D5185m		0	<1	<1	
Phosphorus ppm ASTM D5185m 408 189 182 Zinc ppm ASTM D5185m 12 0 8 Sulfur ppm ASTM D5185m 1023 654 593 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 4 6 7 Sodium ppm ASTM D5185m >15 4 6 7 Sodium ppm ASTM D5185m >20 <1 1 1 Potassium ppm ASTM D5185m >20 <1 <1 <1 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >10000 3621 9806 6148 Particles >6µm ASTM D7647 >320 46 23 56 Particles >21µm ASTM D7647 >80 11 7 13 P	Magnesium	ppm	ASTM D5185m		3	0	<1	
Zinc ppm ASTM D5185m 12 0 8 Sulfur ppm ASTM D5185m 1023 654 593 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 4 6 7 Sodium ppm ASTM D5185m >1 1 1 Potassium ppm ASTM D5185m >20 <1 <1 <1 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >10000 3621 9806 6148 Particles >6µm ASTM D7647 >2500 761 1249 1206 Particles >14µm ASTM D7647 >320 46 23 56 Particles >21µm ASTM D7647 >20 1 1 3 Particles >71µm ASTM D7647 >4 0 0 2 Oil Cleanliness ISO 4406 (Calcium	ppm	ASTM D5185m		3	0	0	
Sulfur ppm ASTM D5185m 1023 654 593 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 4 6 7 Sodium ppm ASTM D5185m >1 1 1 1 Potassium ppm ASTM D5185m >20 <1 <1 <1 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >10000 3621 9806 6148 Particles >6µm ASTM D7647 >2500 761 1249 1206 Particles >14µm ASTM D7647 >320 46 23 56 Particles >21µm ASTM D7647 >80 11 7 13 Particles >71µm ASTM D7647 >4 0 0 2 Oil Cleanliness ISO 4406 (c) >20/18/15 19/17/13 20/17/12 20/17/13 <	Phosphorus	ppm	ASTM D5185m		408	189	182	
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 4 6 7 Sodium ppm ASTM D5185m >20 <1 1 1 Potassium ppm ASTM D5185m >20 <1 <1 <1 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >10000 3621 9806 6148 Particles >6μm ASTM D7647 >2500 761 1249 1206 Particles >14μm ASTM D7647 >320 46 23 56 Particles >21μm ASTM D7647 >80 11 7 13 Particles >38μm ASTM D7647 >20 1 1 3 Particles >71μm ASTM D7647 >4 0 0 2 Oil Cleanliness ISO 4406 (c) >20/18/15 19/17/13 20/17/12 20/17/13	Zinc	ppm	ASTM D5185m		12	0	8	
Silicon ppm ASTM D5185m >15 4 6 7 Sodium ppm ASTM D5185m <1	Sulfur	ppm	ASTM D5185m		1023	654	593	
Sodium ppm ASTM D5185m <1	CONTAMINANTS	;	method	limit/base	current	history1	history2	
Potassium ppm ASTM D5185m >20 <1	Silicon	ppm	ASTM D5185m	>15	4	6	7	
FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >10000 3621 9806 6148 Particles >6μm ASTM D7647 >2500 761 1249 1206 Particles >14μm ASTM D7647 >320 46 23 56 Particles >21μm ASTM D7647 >80 11 7 13 Particles >38μm ASTM D7647 >20 1 1 3 Particles >71μm ASTM D7647 >4 0 0 2 Oil Cleanliness ISO 4406 (c) >20/18/15 19/17/13 20/17/12 20/17/13 FLUID DEGRADATION method limit/base current history1 history2	Sodium	ppm	ASTM D5185m		<1	1	1	
Particles >4μm ASTM D7647 >10000 3621 9806 6148 Particles >6μm ASTM D7647 >2500 761 1249 1206 Particles >14μm ASTM D7647 >320 46 23 56 Particles >21μm ASTM D7647 >80 11 7 13 Particles >38μm ASTM D7647 >20 1 1 3 Particles >71μm ASTM D7647 >4 0 0 2 Oil Cleanliness ISO 4406 (c) >20/18/15 19/17/13 20/17/12 20/17/13 FLUID DEGRADATION method limit/base current history1 history2	Potassium	ppm	ASTM D5185m	>20	<1	<1	<1	
Particles >6μm ASTM D7647 >2500 761 1249 1206 Particles >14μm ASTM D7647 >320 46 23 56 Particles >21μm ASTM D7647 >80 11 7 13 Particles >38μm ASTM D7647 >20 1 1 3 Particles >71μm ASTM D7647 >4 0 0 2 Oil Cleanliness ISO 4406 (c) >20/18/15 19/17/13 20/17/12 20/17/13 FLUID DEGRADATION method limit/base current history1 history2	FLUID CLEANLIN	IESS	method	limit/base	current	history1	history2	
Particles >14μm ASTM D7647 >320 46 23 56 Particles >21μm ASTM D7647 >80 11 7 13 Particles >38μm ASTM D7647 >20 1 1 3 Particles >71μm ASTM D7647 >4 0 0 2 Oil Cleanliness ISO 4406 (c) >20/18/15 19/17/13 20/17/12 20/17/13 FLUID DEGRADATION method limit/base current history1 history2	Particles >4µm		ASTM D7647	>10000	3621	9806	6148	
Particles >21μm ASTM D7647 >80 11 7 13 Particles >38μm ASTM D7647 >20 1 1 3 Particles >71μm ASTM D7647 >4 0 0 2 Oil Cleanliness ISO 4406 (c) >20/18/15 19/17/13 20/17/12 20/17/13 FLUID DEGRADATION method limit/base current history1 history2	Particles >6µm		ASTM D7647	>2500	761	1249	1206	
Particles >38μm ASTM D7647 >20 1 1 3 Particles >71μm ASTM D7647 >4 0 0 2 Oil Cleanliness ISO 4406 (c) >20/18/15 19/17/13 20/17/12 20/17/13 FLUID DEGRADATION method limit/base current history1 history2	Particles >14µm		ASTM D7647	>320	46	23	56	
Particles >71μm ASTM D7647 >4 0 0 2 Oil Cleanliness ISO 4406 (c) >20/18/15 19/17/13 20/17/12 20/17/13 FLUID DEGRADATION method limit/base current history1 history2	Particles >21µm		ASTM D7647	>80	11	7	13	
Oil Cleanliness ISO 4406 (c) >20/18/15 19/17/13 20/17/12 20/17/13 FLUID DEGRADATION method limit/base current history1 history2	Particles >38μm		ASTM D7647	>20	1	1	3	
FLUID DEGRADATION method limit/base current history1 history2	Particles >71μm		ASTM D7647	>4	0	0	2	
	Oil Cleanliness		ISO 4406 (c)	>20/18/15	19/17/13	20/17/12	20/17/13	
Acid Number (AN) mg KOH/g ASTM D8045 0.5 0.17 0.07 0.10	FLUID DEGRADA	TION	method	limit/base	current	history1	history2	
	Acid Number (AN)	mg KOH/g	ASTM D8045	0.5	0.17	0.07	0.10	



OIL ANALYSIS REPORT







Certificate L2367

Laboratory Sample No. Lab Number **Unique Number**

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : WC0842519

: 05964580

Received Diagnosed Diagnostician : 29 Sep 2023

: 02 Oct 2023

: Don Baldridge

: 10671131 Test Package : IND 2 (Additional Tests: PrtCount) To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - 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)

HORMEL FOODS - AUSTIN

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Contact: RYAN LOWE rslowe@hormel.com T: (507)437-5674 F: (507)437-9805