

OIL ANALYSIS REPORT

Sample Rating Trend

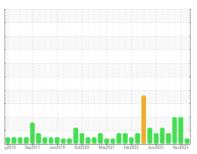
VISCOSITY

MP-105

B45056 - PUMP VACUUM MAIN BUSCH RA 630 HAM LINE 2 (TOP) B45056 (S/N 200008547)

Component Top Vacuum Pump

PETRO CANADA PURITY FG SYNTHETIC 100 (15 LTR)





DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

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

▲ Fluid Condition

The oil viscosity is lower than typical, possibly indicating the addition of lighter grade oil. The AN level is acceptable for this fluid.

Sample Number Client Info WC0880558 WC0855978 WC08mple Date Client Info O9 Jan 2024 O3 Nov 2023 11 Strain Sample Date Wks Client Info O	00 (15 LTR)		g2016 Sep2	017 Jun2018 Oct2020	May2021 Feb2022 Jun202	3 Nov2023	
Sample Date Client Info 09 Jan 2024 03 Nov 2023 11 Story Machine Age wks Client Info 0 0 0 0 Oil Age wks Client Info 0 0 0 0 Oil Changed Client Info N/A N/A N/A N/A Sample Status ATTENTION ABNORMAL ABNORMAL ABNORMAL CONTAMINATION method limit/base current history1 Water WC Method >.1 NEG NEG N WEAR METALS method limit/base current history1 Iron ppm ASTM D5185m >20 0 0 0 Chromium ppm ASTM D5185m >20 0 0 0 0 Chromium ppm ASTM D5185m >20 0 0 0 0 0 Chromium ppm ASTM D5185m >20 0 0 0 0	SAMPLE INFOR	MATION	method	limit/base	current	history1	history
Machine Age wks Client Info 0 <td>Sample Number</td> <td></td> <td>Client Info</td> <td></td> <td>WC0880558</td> <td>WC0855978</td> <td>WC084248</td>	Sample Number		Client Info		WC0880558	WC0855978	WC084248
Oil Age wks Client Info 0	Sample Date		Client Info		09 Jan 2024	03 Nov 2023	11 Sep 202
Contamped Client Info N/A ATTENTION ABNORMAL ABNORMAL	Machine Age	wks	Client Info		0		0
ATTENTION ABNORMAL ABNORMA	Oil Age	wks	Client Info		0	0	0
CONTAMINATION method limit/base current history1 Water WC Method >.1 NEG NEG N WEAR METALS method limit/base current history1 Iron ppm ASTM D5185m >20 <1	Oil Changed		Client Info			N/A	N/A
Water WC Method >.1 NEG NEG N WEAR METALS method limit/base current history1 Iron ppm ASTM D5185m >20 41 0 3 Chromium ppm ASTM D5185m >20 0 0 0 0 Nickel ppm ASTM D5185m >20 0 0 0 0 Titanium ppm ASTM D5185m 0 0 0 0 0 Aluminum ppm ASTM D5185m 0 0 0 0 0 Aluminum ppm ASTM D5185m >20 0 0 1 4 4 Lead ppm ASTM D5185m >20 0 0 1 4 1 4 4 1 4 1 4 1 4 1 4 1 4 1 1 1 1 1 1 1 1 1	Sample Status				ATTENTION	ABNORMAL	ABNORMA
WEAR METALS	CONTAMINATIO	N	method	limit/base	current	history1	history
Iron	Water		WC Method	>.1	NEG	NEG	NEG
Chromium	WEAR METALS		method	limit/base	current	history1	history
Nickel	Iron	ppm	ASTM D5185m	>20	<1	0	3
Titanium ppm ASTM D5185m 0 0 0 0 Silver ppm ASTM D5185m 0 0 0 0 Aluminum ppm ASTM D5185m >20 1 <1 4 Lead ppm ASTM D5185m >20 0 0 < Copper ppm ASTM D5185m >20 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Boron ppm ASTM D5185m 0 0 0 0 Boron ppm ASTM D5185m 0 0 0 0 Boron ppm ASTM D5185m 0 0 0 0 Borium ppm ASTM D5185m 0 0 0 0	Chromium	ppm	ASTM D5185m	>20	0	0	0
Silver ppm ASTM D5185m 0 0 0 Aluminum ppm ASTM D5185m >20 1 <1 4 Lead ppm ASTM D5185m >20 0 0 < Copper ppm ASTM D5185m >20 0 0 0 Vanadium 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 Boron ppm ASTM D5185m 0 0 0 Barium ppm ASTM D5185m 0 0 0 Boron ppm ASTM D5185m 0 0 0 Magnesium ppm ASTM D5185m 0 0 0 Magnesium ppm ASTM D5185m <1 <	Nickel	ppm	ASTM D5185m	>20	0	0	<1
Aluminum ppm ASTM D5185m >20 1 <1 4 4 4 Aluminum ppm ASTM D5185m >20 0 0 0 0 Copper ppm ASTM D5185m >20 0 0 0 0 Vanadium ppm ASTM D5185m >20 0 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 0 ADDITIVES method limit/base current history1 Boron ppm ASTM D5185m 0 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 0 Manganese ppm ASTM D5185m 0 0 0 0 0 Manganese ppm ASTM D5185m 0 0 0 0 0 0 Manganese ppm ASTM D5185m 0 0 0 0 0 0 Calcium ppm ASTM D5185m 0 0 0 0 0 0 Calcium ppm ASTM D5185m 0 0 0 0 0 0 Calcium ppm ASTM D5185m 0 0 0 0 0 0 Calcium ppm ASTM D5185m 0 0 0 0 0 0 Calcium ppm ASTM D5185m 0 0 0 0 0 0 Calcium ppm ASTM D5185m 0 0 0 0 0 0 Calcium ppm ASTM D5185m 0 0 0 0 0 0 Sulfur ppm ASTM D5185m 0 0 0 0 0 0 Sulfur ppm ASTM D5185m 0 0 0 0 0 0 FUITO D CAST 0 0 0 0 0 0 0 0 0 FUITO D 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Titanium	ppm	ASTM D5185m		0	0	0
Lead	Silver	ppm	ASTM D5185m		0	0	0
Copper ppm ASTM D5185m >20 0 <1 < 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 Manganese ppm ASTM D5185m 0 0 0 Magnesium ppm ASTM D5185m 0 0 0 Calcium ppm ASTM D5185m 592 431 4 Phosphorus ppm ASTM D5185m 0 0 0 Sulfur ppm ASTM D5185m 592 431 4 CONTAMINANTS method limit/base current history1 Silic	Aluminum	ppm	ASTM D5185m	>20	1	<1	4
Tin	Lead	ppm	ASTM D5185m	>20	0	0	<1
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 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 0 0 Magnesium ppm ASTM D5185m 0 0 Calcium ppm ASTM D5185m 592 431 4 Phosphorus ppm ASTM D5185m 592 431 4 Zinc ppm ASTM D5185m 0 0 0 Sulfur ppm ASTM D5185m 0 0 0 Sulfur ppm ASTM D5185m >1427 1142 1 CONTAMINANTS method	Copper	ppm	ASTM D5185m	>20	0	<1	<1
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 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 0 Magnesium ppm ASTM D5185m 0 0 Calcium ppm ASTM D5185m 592 431 4 Phosphorus ppm ASTM D5185m 592 431 4 Zinc ppm ASTM D5185m 0 0 0 Sulfur ppm ASTM D5185m 1427 1142 1 CONTAMINANTS method limit/base current history1 CONTAMINANTS method limit/base current history1 CONTAMI	Tin	ppm	ASTM D5185m	>20	0	0	0
ADDITIVES method limit/base current history1 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 0 <	Vanadium	ppm	ASTM D5185m		0	0	0
Soron Sarium S	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 0 0 Magnesium ppm ASTM D5185m 0 0 Calcium ppm ASTM D5185m 41 <1	ADDITIVES		method	limit/base	current	history1	history?
Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m 0 0 < Magnesium ppm ASTM D5185m 0 0 < Calcium ppm ASTM D5185m 592 431 4 Zinc ppm ASTM D5185m 0 0 0 Sulfur ppm ASTM D5185m 1427 1142 1 CONTAMINANTS method limit/base current history1 Silicon ppm ASTM D5185m >15 2 <1 1 Sodium ppm ASTM D5185m >20 <1 <1 Potassium ppm ASTM D5185m >20 <1 <1 <2 Potassium ppm ASTM D5185m >20 <1 <1 <2 Particles >4µm ASTM D7647 >10000 1321 △ 46033 △ 4 Particles >6µm ASTM D7647 >2500 <	Boron	ppm	ASTM D5185m		0	0	0
Manganese ppm ASTM D5185m 0 0 < Magnesium ppm ASTM D5185m 0 0 <	Barium	ppm	ASTM D5185m		0	0	0
Magnesium ppm ASTM D5185m 0 0 < Calcium ppm ASTM D5185m <1	Molybdenum	ppm	ASTM D5185m		0	0	0
Calcium ppm ASTM D5185m <1 <1 2 Phosphorus ppm ASTM D5185m 592 431 4 Zinc ppm ASTM D5185m 0 0 0 Sulfur ppm ASTM D5185m 1427 1142 1 CONTAMINANTS method limit/base current history1 Sodium ppm ASTM D5185m >15 2 <1	Manganese	ppm	ASTM D5185m		0	0	<1
Phosphorus ppm ASTM D5185m 592 431 4 Zinc ppm ASTM D5185m 0 0 0 Sulfur ppm ASTM D5185m 1427 1142 1 CONTAMINANTS method limit/base current history1 Sodium ppm ASTM D5185m >15 2 <1	Magnesium	ppm	ASTM D5185m		0	0	<1
Zinc ppm ASTM D5185m 0 0 0 Sulfur ppm ASTM D5185m 1427 1142 1 CONTAMINANTS method limit/base current history1 Silicon ppm ASTM D5185m >15 2 <1	Calcium	ppm	ASTM D5185m		<1	<1	2
Sulfur ppm ASTM D5185m 1427 1142 1 CONTAMINANTS method limit/base current history1 Silicon ppm ASTM D5185m >15 2 <1	Phosphorus	ppm	ASTM D5185m		592	431	479
CONTAMINANTS method limit/base current history1 Silicon ppm ASTM D5185m >15 2 <1	Zinc	ppm	ASTM D5185m		0	0	0
Silicon ppm ASTM D5185m >15 2 <1 1 Sodium ppm ASTM D5185m 0 <1 < Potassium ppm ASTM D5185m >20 <1 <1 0 FLUID CLEANLINESS method limit/base current history1 Particles >4μm ASTM D7647 >10000 1321 Δ 46033 Δ 4 Particles >6μm ASTM D7647 >2500 309 Δ 10534 Δ 1 Particles >14μm ASTM D7647 >320 19 Δ 550 Δ 6 Particles >21μm ASTM D7647 >80 6 Δ 143 Δ 1 Particles >38μm ASTM D7647 >20 0 8 4 Particles >71μm ASTM D7647 >4 0 0 3 Oil Cleanliness ISO 4406 (c) >20/18/15 18/15/11 Δ 23/21/16 Δ	Sulfur	ppm	ASTM D5185m		1427	1142	1441
Sodium ppm ASTM D5185m 0 <1 < Potassium ppm ASTM D5185m >20 <1	CONTAMINANTS	3	method	limit/base	current	history1	history
Potassium ppm ASTM D5185m >20 <1 <1 0 FLUID CLEANLINESS method limit/base current history1 Particles >4μm ASTM D7647 >10000 1321 46033 4 Particles >6μm ASTM D7647 >2500 309 10534 1 Particles >14μm ASTM D7647 >320 19 550 6 Particles >21μm ASTM D7647 >80 6 143 1 Particles >38μm ASTM D7647 >20 0 8 4 Particles >71μm ASTM D7647 >4 0 0 3 Oil Cleanliness ISO 4406 (c) >20/18/15 18/15/11 23/21/16 2	Silicon	ppm	ASTM D5185m	>15	2	<1	1
FLUID CLEANLINESS method limit/base current history1 Particles >4μm ASTM D7647 >10000 1321 46033 4 Particles >6μm ASTM D7647 >2500 309 10534 1 Particles >14μm ASTM D7647 >320 19 550 6 Particles >21μm ASTM D7647 >80 6 143 1 Particles >38μm ASTM D7647 >20 0 8 4 Particles >71μm ASTM D7647 >4 0 0 3 Oil Cleanliness ISO 4406 (c) >20/18/15 18/15/11 23/21/16 2	Sodium	ppm	ASTM D5185m		0	<1	<1
Particles >4μm ASTM D7647 >10000 1321 46033 4 Particles >6μm ASTM D7647 >2500 309 10534 1 Particles >14μm ASTM D7647 >320 19 550 6 Particles >21μm ASTM D7647 >80 6 143 1 Particles >38μm ASTM D7647 >20 0 8 4 Particles >71μm ASTM D7647 >4 0 0 3 Oil Cleanliness ISO 4406 (c) >20/18/15 18/15/11 23/21/16 2	Potassium	ppm	ASTM D5185m	>20	<1	<1	0
Particles >6μm ASTM D7647 >2500 309 Δ 10534 Δ 1 Particles >14μm ASTM D7647 >320 19 Δ 550 Δ 6 Particles >21μm ASTM D7647 >80 6 Δ 143 Δ 1 Particles >38μm ASTM D7647 >20 0 8 4 Particles >71μm ASTM D7647 >4 0 0 3 Oil Cleanliness ISO 4406 (c) >20/18/15 18/15/11 Δ 23/21/16 Δ 2	FLUID CLEANLIN	NESS	method	limit/base	current	history1	history:
Particles >14μm ASTM D7647 >320 19 Δ 550 Δ 6 Particles >21μm ASTM D7647 >80 6 Δ 143 Δ 1 Particles >38μm ASTM D7647 >20 0 8 4 Particles >71μm ASTM D7647 >4 0 0 3 Oil Cleanliness ISO 4406 (c) >20/18/15 18/15/11 Δ 23/21/16 Δ 2	Particles >4µm		ASTM D7647	>10000	1321	▲ 46033	△ 40727
Particles >21μm ASTM D7647 >80 6 143 1 Particles >38μm ASTM D7647 >20 0 8 4 Particles >71μm ASTM D7647 >4 0 0 3 Oil Cleanliness ISO 4406 (c) >20/18/15 18/15/11 23/21/16 2	Particles >6µm		ASTM D7647	>2500	309	<u>▲</u> 10534	<u></u> 10444
Particles >38μm ASTM D7647 >20 0 8 4 Particles >71μm ASTM D7647 >4 0 0 3 Oil Cleanliness ISO 4406 (c) >20/18/15 18/15/11 Δ 23/21/16 Δ 2	Particles >14µm		ASTM D7647	>320	19	<u></u> 550	△ 676
Particles >71μm ASTM D7647 >4 0 0 3 Dil Cleanliness ISO 4406 (c) >20/18/15 18/15/11 Δ 23/21/16 Δ 2	Particles >21µm		ASTM D7647	>80	6	▲ 143	<u>▲</u> 155
Oil Cleanliness ISO 4406 (c) >20/18/15 18/15/11 • 23/21/16 • 2	Particles >38µm		ASTM D7647	>20	0	8	4
·	Particles >71µm		ASTM D7647	>4	0	0	3
	Oil Cleanliness		ISO 4406 (c)	>20/18/15	18/15/11	△ 23/21/16	<u>\$\text{23/21/17}\$</u>
FLUID DEGRADATION method limit/base current history1	FLUID DEGRADA	ATION	method	limit/base	current	history1	history:
Acid Number (AN) mg KOH/g ASTM D8045 0.5 0.25 0.152 0	Acid Number (AN)	mg KOH/g	ASTM D8045	0.5	0.25	0.152	0.08



OIL ANALYSIS REPORT







Certificate L2367

Laboratory Sample No. Lab Number

Unique Number

120

110

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : WC0880558 Recieved : 17 Jan 2024 : 06062628 Diagnosed : 24 Jan 2024 : 10834010 Diagnostician : Doug Bogart

Jun 15/23

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

Viscosity @ 40°C

* - 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

Acid Number

(B_{0.60} 0.48 0.48

E 0.36 흘 0.24 ₽ 0.12 00.00 PG

> 1101 NORTH MAIN ST AUSTIN, MN US 55912

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