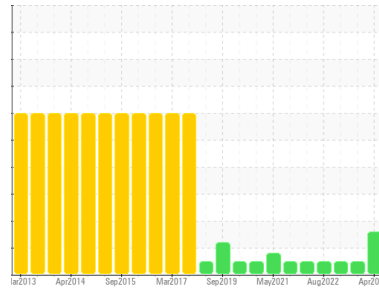




OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Area

BRUCE A/1/71210 [8705209]

Machine Id

1-71210-P2-PM Up Brg Level

Component

Upper Bearing

Fluid

PETRO CANADA TURBOFLO XL68 (--- GAL)

DIAGNOSIS

Recommendation

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

Wear

All component wear rates are normal. The ferrography results are normal indicating no abnormal wear in the system.

Contaminants

There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The water content is negligible. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code.

Oil Condition

The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	WC0871722	WC0815667	WC0801454
Sample Date	Client Info	02 Apr 2024	15 Sep 2023	21 Mar 2023
Machine Age	hrs	0	0	0
Oil Age	hrs	0	0	0
Oil Changed	Client Info	N/A	N/A	N/A
Sample Status		ABNORMAL	NORMAL	NORMAL

WEAR METALS

method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185(m) >10	0	0	0
Chromium	ppm	ASTM D5185(m) >5	0	0	0
Nickel	ppm	ASTM D5185(m) >5	0	0	0
Titanium	ppm	ASTM D5185(m) >5	0	0	0
Silver	ppm	ASTM D5185(m)	0	0	0
Aluminum	ppm	ASTM D5185(m) >5	0	<1	<1
Lead	ppm	ASTM D5185(m) >5	0	1	1
Copper	ppm	ASTM D5185(m) >5	<1	<1	0
Tin	ppm	ASTM D5185(m) >5	0	0	0
Antimony	ppm	ASTM D5185(m)	0	0	<1
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	
Boron	ppm	ASTM D5185(m)	0	0	<1
Barium	ppm	ASTM D5185(m)	0	0	0
Molybdenum	ppm	ASTM D5185(m)	0	0	0
Manganese	ppm	ASTM D5185(m)	0	0	0
Magnesium	ppm	ASTM D5185(m)	0	0	0
Calcium	ppm	ASTM D5185(m)	<1	<1	0
Phosphorus	ppm	ASTM D5185(m)	3	0	0
Zinc	ppm	ASTM D5185(m) 0	3	1	<1
Sulfur	ppm	ASTM D5185(m)	650	634	655
Lithium	ppm	ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m) >5	0	0	0
Sodium	ppm	ASTM D5185(m) >5	<1	0	<1
Potassium	ppm	ASTM D5185(m) >20	0	1	<1
Water	%	ASTM D6304* >0.005	0.001	0.001	0.00
ppm Water	ppm	ASTM D6304* >50	6	1.4	0.00

FLUID CLEANLINESS

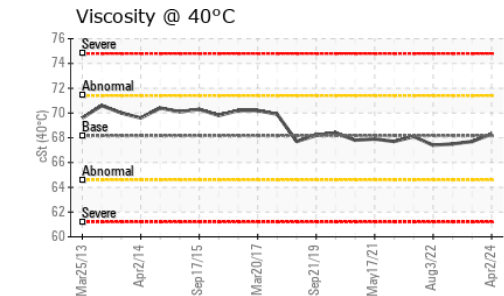
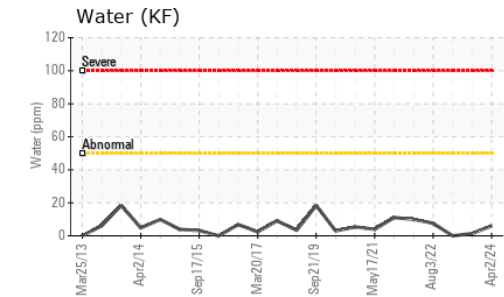
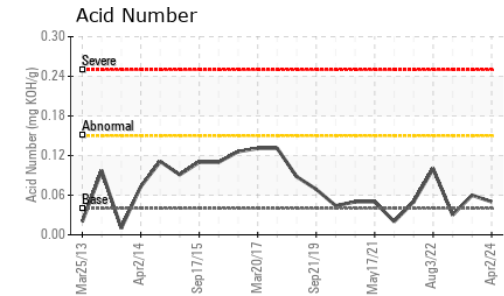
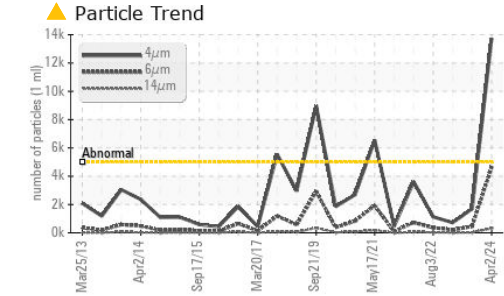
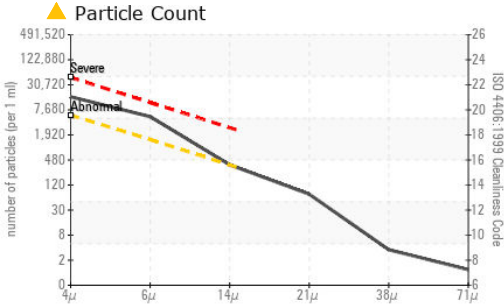
method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647 >5000	▲ 13733	1697	717
Particles >6µm	ASTM D7647 >1300	▲ 4606	455	206
Particles >14µm	ASTM D7647 >320	● 324	32	16
Particles >21µm	ASTM D7647 >80	64	8	2
Particles >38µm	ASTM D7647 >20	3	0	0
Particles >71µm	ASTM D7647 >4	1	0	0
Oil Cleanliness	ISO 4406 (c) >19/17/15	▲ 21/19/16	18/16/12	17/15/11

Particle Filter (Magn: 200 x)





OIL ANALYSIS REPORT



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0871722
Lab Number : 02629642
Unique Number : 5762774
Test Package : IND 2 (Additional Tests: A-FERR, BottomAnalysis, DR-FERR, FILTERPATCH, PrtFilter, RPVOT, TAN (m))

Bruce Power - Bruce A PdM
 P.O.Box 1540, 177 Tie Road., RM-222 U2 Column 2N11 615'
 Tiverton, ON
 CA N0G 2T0
 Contact: Pierre Adouki
 pierre.adouki@brucepower.com

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

T: (519)361-2673
 F:

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.04	0.05	0.06	0.03

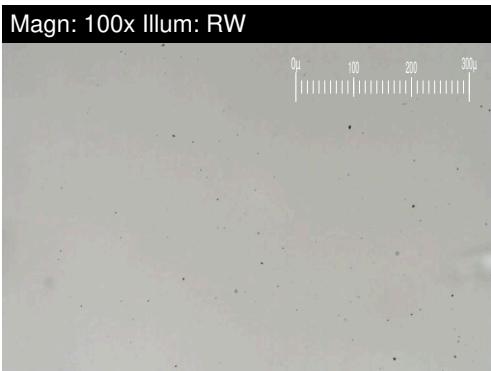
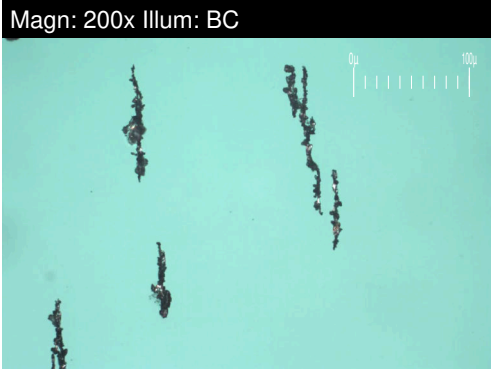
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	VLITE	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.005	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	68.17	68.3	67.7	67.5
Oxidation Test (RPVOT)	minutes	ASTM D2272*	2700	---	---	4027

SAMPLE IMAGES		method	limit/base	current	history1	history2
Color						
Bottom						
PrtFilter					no image	no image

FERROGRAPHY REPORT

Area
BRUCE A/1/71210 [8705209]
 Machine Id
1-71210-P2-PM Up Brg Level
 Component
Upper Bearing
 Fluid
PETRO CANADA TURBOFLO XL68 (--- GAL)

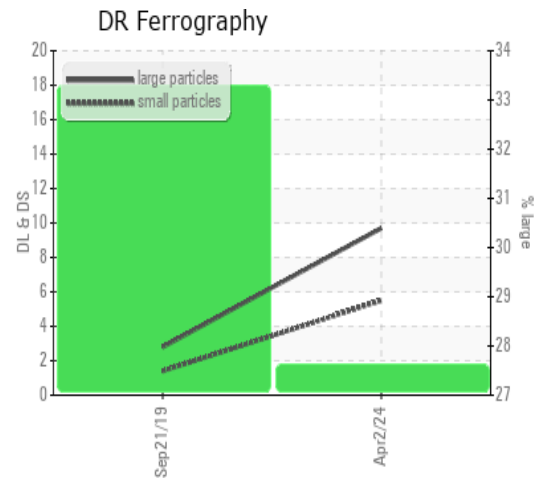


DR-FERROGRAPHY		method	limit/base	current	history1	history2
Large Particles		DR-Ferr*		9.7	---	---
Small Particles		DR-Ferr*		5.5	---	---
Total Particles		DR-Ferr*	>---	15.2	---	---
Large Particles Percentage	%	DR-Ferr*		27.6	---	---
Severity Index		DR-Ferr*		41	---	---

FERROGRAPHY		method	limit/base	current	history1	history2
Ferrous Rubbing	Scale 0-10	ASTM D7684*		3		
Ferrous Sliding	Scale 0-10	ASTM D7684*				
Ferrous Cutting	Scale 0-10	ASTM D7684*				
Ferrous Rolling	Scale 0-10	ASTM D7684*		1		
Ferrous Break-in	Scale 0-10	ASTM D7684*				
Ferrous Spheres	Scale 0-10	ASTM D7684*				
Ferrous Black Oxides	Scale 0-10	ASTM D7684*		1		
Ferrous Red Oxides	Scale 0-10	ASTM D7684*				
Ferrous Corrosive	Scale 0-10	ASTM D7684*				
Ferrous Other	Scale 0-10	ASTM D7684*				
Nonferrous Rubbing	Scale 0-10	ASTM D7684*				
Nonferrous Sliding	Scale 0-10	ASTM D7684*				
Nonferrous Cutting	Scale 0-10	ASTM D7684*				
Nonferrous Rolling	Scale 0-10	ASTM D7684*				
Nonferrous Other	Scale 0-10	ASTM D7684*				
Carbonaceous Material	Scale 0-10	ASTM D7684*				
Lubricant Degradation	Scale 0-10	ASTM D7684*				
Sand/Dirt	Scale 0-10	ASTM D7684*		1		
Fibres	Scale 0-10	ASTM D7684*				
Spheres	Scale 0-10	ASTM D7684*				
Other	Scale 0-10	ASTM D7684*		1		

WEAR

All component wear rates are normal.
 The ferrography results are normal indicating no abnormal wear in the system.



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