



OIL ANALYSIS REPORT

WEAR	MARGINAL
CONTAMINATION	SEVERE
FLUID CONDITION	NORMAL

Machine Id
AH23226 - Starboard Michell thrust Block

Component
Thrust Bearing

Fluid
PETRO CANADA PREMIUM R&O 100 (136 LTR)

RECOMMENDATION

We advise that you check all areas where contaminants can enter the system. We advise that you check for visible metal particles in the oil. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Resample in 30-45 days to monitor this situation.

WEAR

Light concentration of visible metal present.

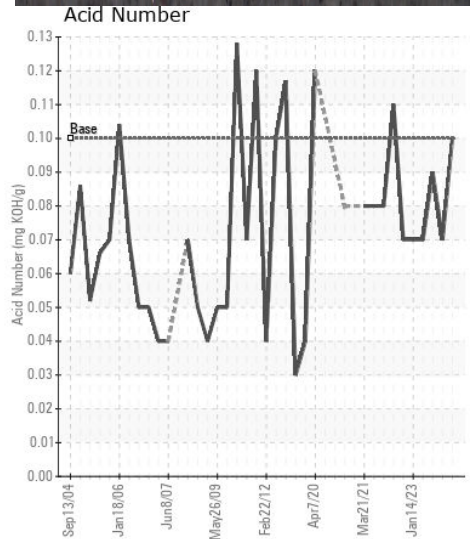
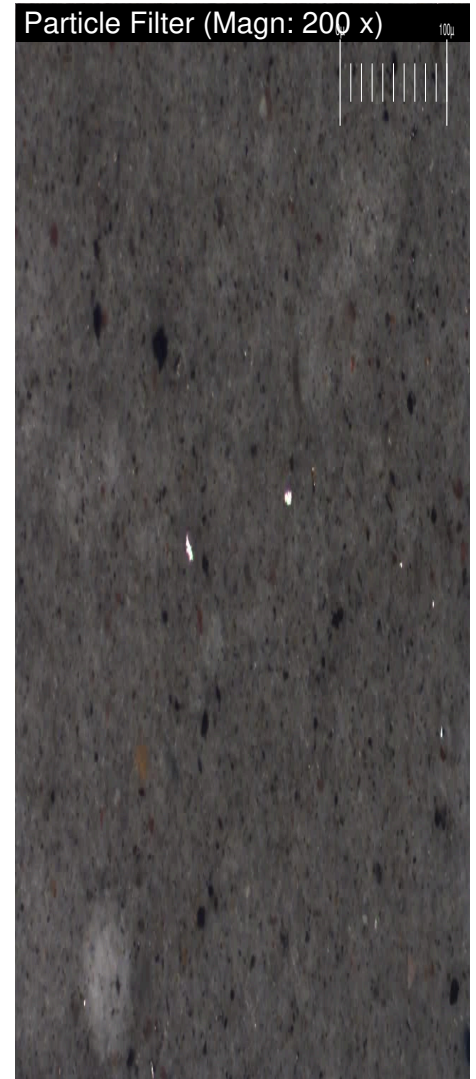
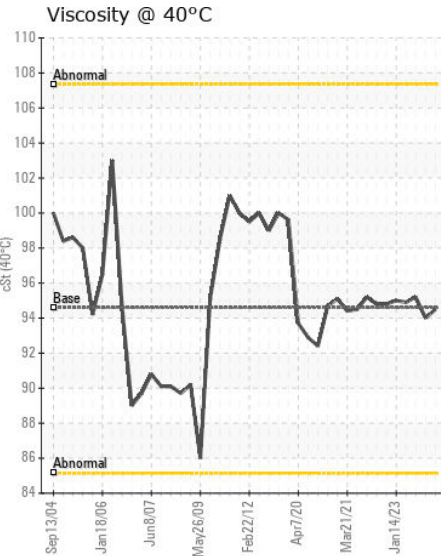
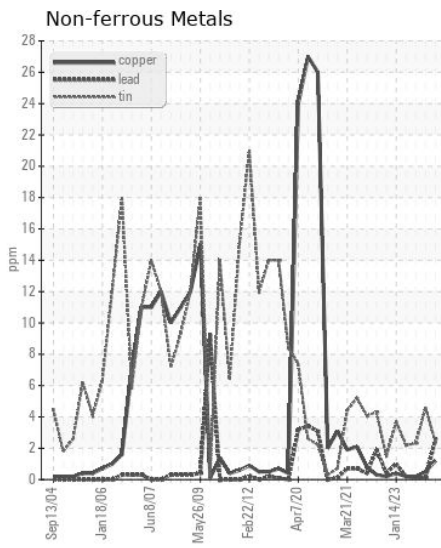
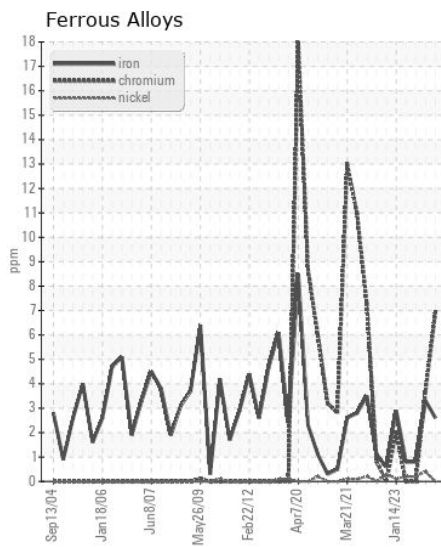
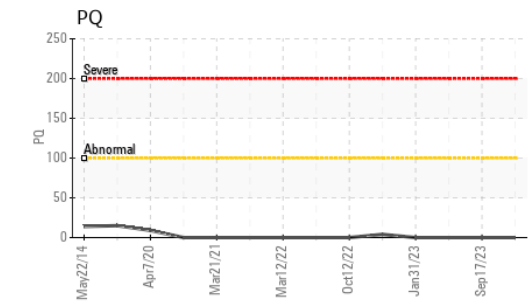
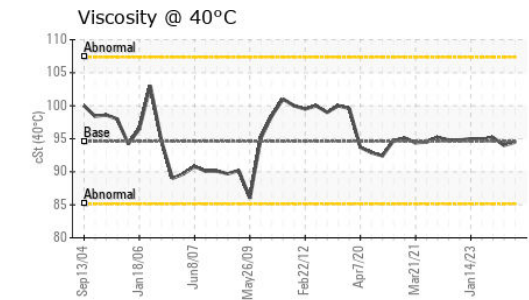
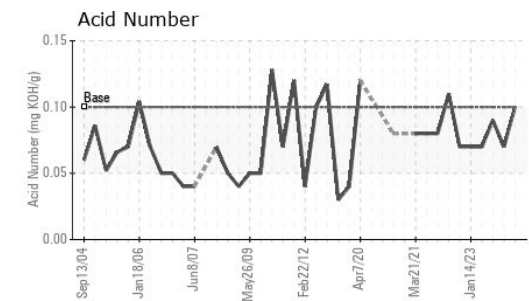
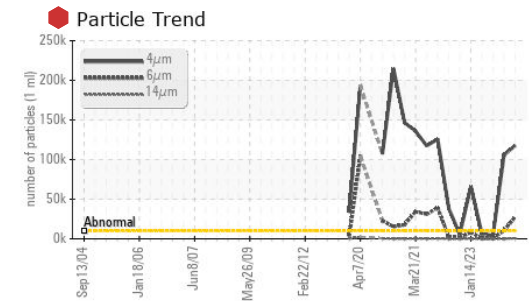
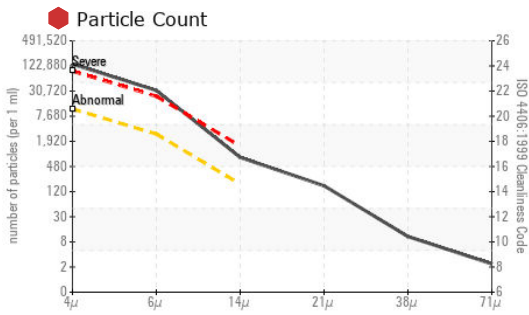
CONTAMINATION

There is a high amount of particulates (2 to 100 microns in size) present in the oil.

FLUID 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.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0860195	WC0753470	WC0753482
Sample Date		Client Info		10 Dec 2023	17 Sep 2023	23 Mar 2023
Machine Age	mths	Client Info		2	0	0
Oil Age	mths	Client Info		0	0	0
Filter Age	mths	Client Info		0	0	0
Oil Changed		Client Info		Not Chngd	Changed	N/A
Filter Changed		Client Info		Not Chngd	None	N/A
Sample Status				SEVERE	SEVERE	MARGINAL
PQ		ASTM D8184*		0	0	0
Iron	ppm	ASTM D5185(m)	>85	3	3	<1
Chromium	ppm	ASTM D5185(m)	>20	7	4	0
Nickel	ppm	ASTM D5185(m)	>20	0	<1	<1
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)		0	0	0
Aluminum	ppm	ASTM D5185(m)	>40	<1	<1	0
Lead	ppm	ASTM D5185(m)	>60	2	<1	<1
Copper	ppm	ASTM D5185(m)	>7	1	<1	<1
Tin	ppm	ASTM D5185(m)	>40	2	5	2
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual*	NONE	▲ VLITE	NONE	▲ VLITE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185(m)	>20	3	0	0
Potassium	ppm	ASTM D5185(m)	>20	4	0	0
Water		WC Method	>2	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>10000	● 117698	● 105585	4288
Particles >6µm		ASTM D7647	>2500	● 27582	▲ 10245	849
Particles >14µm		ASTM D7647	>160	▲ 695	114	55
Particles >21µm		ASTM D7647	>40	▲ 146	19	13
Particles >38µm		ASTM D7647	>10	9	1	1
Particles >71µm		ASTM D7647	>3	2	0	0
Oil Cleanliness		ISO 4406 (c)	>20/18/14	● 24/22/17	● 24/21/14	19/17/13
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*	>2	NEG	NEG	NEG
Sodium	ppm	ASTM D5185(m)		<1	3	3
Boron	ppm	ASTM D5185(m)	0	0	0	0
Barium	ppm	ASTM D5185(m)	0	0	0	0
Molybdenum	ppm	ASTM D5185(m)	0	0	0	0
Manganese	ppm	ASTM D5185(m)		0	0	0
Magnesium	ppm	ASTM D5185(m)	0	<1	0	0
Calcium	ppm	ASTM D5185(m)	0	<1	2	0
Phosphorus	ppm	ASTM D5185(m)	0	4	12	11
Zinc	ppm	ASTM D5185(m)	0	2	6	5
Sulfur	ppm	ASTM D5185(m)	0	191	151	171
Acid Number (AN)	mg KOH/g	ASTM D974*	0.10	0.10	0.07	0.09
Visc @ 40°C	cSt	ASTM D7279(m)	94.6	94.5	94.0	95.2



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0860195
Lab Number : 02608163
Unique Number : 5709249
Test Package : MAR 2 (Additional Tests: BottomAnalysis, FilterPatch, PQ, PrtCount, PrtFilter, TAN Man)

CANADIAN COAST GUARD/DFO
 CCGS ANN HARVEY, P.O. BOX 5667
 ST. JOHN'S, NL
 CA A1C 5X1
 Contact: Chief Engineer
 annharveyce@ccgs-ngcc.gc.ca

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.

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