

Area
Aft Machinery Space [450328086]
Machine Id
Thruster Aft Starboard - Lubrication System (S/N Sample Tag CL-06003-S1)
Component
Lube System
Fluid
PETRO CANADA ENERGOL GR-XP ISO 150 (5000 LTR)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using MAR 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid.

Wear
Component wear rates appear to be normal (unconfirmed).

Contamination
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

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

SAMPLE INFORMATION method limit/base current history1 history2

Sample Number	Client Info	PC	PC0082723	PC0080539
Sample Date	Client Info	21 Apr 2024	26 Feb 2024	29 Jan 2024
Machine Age	hrs	Client Info	0	0
Oil Age	hrs	Client Info	0	0
Oil Changed	Client Info	N/A	N/A	N/A
Sample Status		NORMAL	NORMAL	NORMAL

CONTAMINATION method limit/base current history1 history2

Water	WC Method	>0.05	NEG	NEG	NEG
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WEAR METALS method limit/base current history1 history2

PQ	ASTM D8184*		0	0	0
Iron	ppm	ASTM D5185(m) >20	1	1	1
Chromium	ppm	ASTM D5185(m) >10	0	0	0
Nickel	ppm	ASTM D5185(m) >10	0	<1	0
Titanium	ppm	ASTM D5185(m)	0	0	0
Silver	ppm	ASTM D5185(m)	0	0	0
Aluminum	ppm	ASTM D5185(m) >10	0	<1	<1
Lead	ppm	ASTM D5185(m) >20	0	0	<1
Copper	ppm	ASTM D5185(m) >20	0	0	0
Tin	ppm	ASTM D5185(m) >10	0	0	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

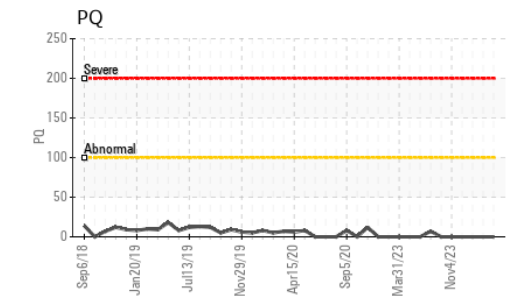
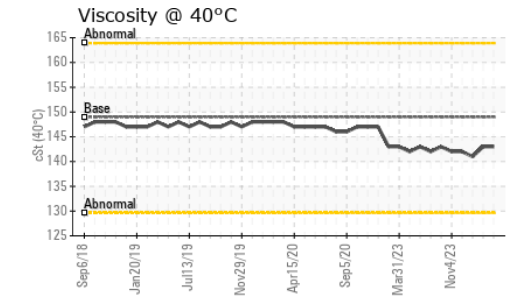
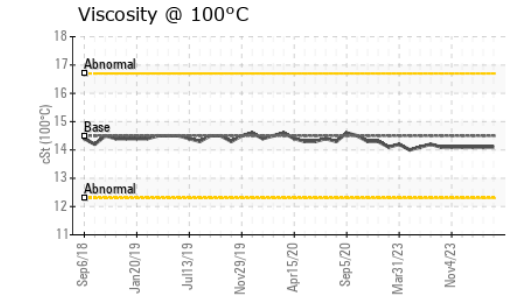
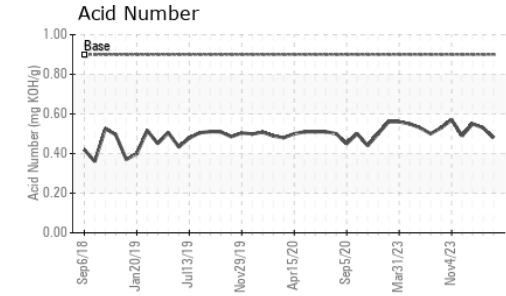
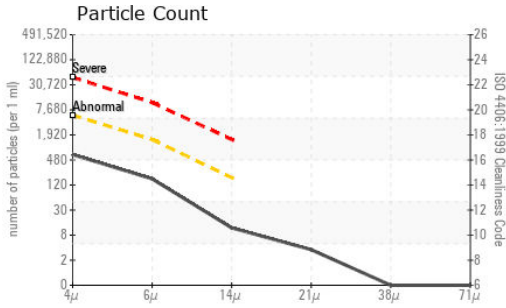
ADDITIVES method limit/base current history1 history2

Boron	ppm	ASTM D5185(m)	2	2	2
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)	<1	<1	<1
Calcium	ppm	ASTM D5185(m)	2	2	2
Phosphorus	ppm	ASTM D5185(m)	250	270	268
Zinc	ppm	ASTM D5185(m)	4	5	4
Sulfur	ppm	ASTM D5185(m)	10160	11159	10979
Lithium	ppm	ASTM D5185(m)	<1	<1	<1

CONTAMINANTS method limit/base current history1 history2

Silicon	ppm	ASTM D5185(m) >15	0	1	3
Sodium	ppm	ASTM D5185(m)	0	0	0
Potassium	ppm	ASTM D5185(m) >20	<1	<1	<1

OIL ANALYSIS REPORT



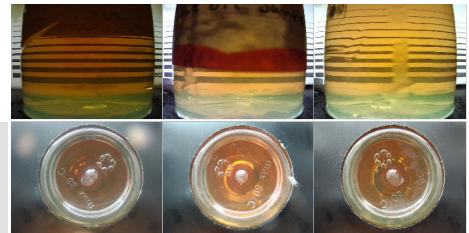
FLUID CLEANLINESS					
method	limit/base	current	history1	history2	
Particles >4µm	ASTM D7647	>5000	569	427	1000
Particles >6µm	ASTM D7647	>1300	149	113	212
Particles >14µm	ASTM D7647	>160	10	11	12
Particles >21µm	ASTM D7647	>40	3	4	4
Particles >38µm	ASTM D7647	>10	0	1	1
Particles >71µm	ASTM D7647	>3	0	1	1
Oil Cleanliness	ISO 4406 (c)	>19/17/14	16/14/10	16/14/11	17/15/11

FLUID DEGRADATION					
method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g ASTM D974*	0.9	0.48	0.53	0.55

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	NONE	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*	>0.05	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)	149	143	143	141	
Visc @ 100°C	cSt ASTM D7279(m)	14.5	14.1	14.1	14.1	
Viscosity Index (VI)	Scale ASTM D2270*		95	95	96	

SAMPLE IMAGES						
method	limit/base	current	history1	history2		
Color						
Bottom						



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC
Lab Number : **02634777**
Unique Number : 5775930
Test Package : MAR 2 (Additional Tests: KV100, PQ, VI)
Received : 10 May 2024
Tested : 13 May 2024
Diagnosed : 13 May 2024 - Kevin Marson

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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.