

Area

Aft Machinery Space

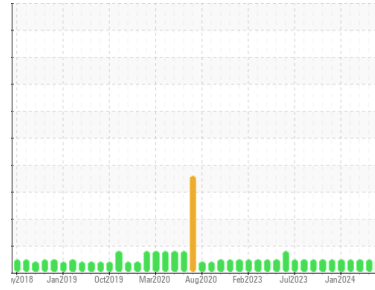
Machine Id
Thruster Aft Center - Lubrication System (S/N Sample Tag CL-06001-S1)

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 IND 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		PC0080167	PC0080150	PC
Sample Date	Client Info		19 Jun 2024	21 May 2024	21 Apr 2024
Machine Age	hrs	Client Info	0	0	0
Oil Age	hrs	Client Info	0	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	<1	0	0
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)		0	0	0
Aluminum	ppm	ASTM D5185(m)	>10	<1	0	0
Lead	ppm	ASTM D5185(m)	>20	0	0	0
Copper	ppm	ASTM D5185(m)	>20	<1	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

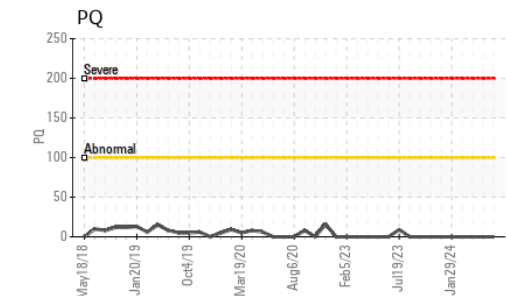
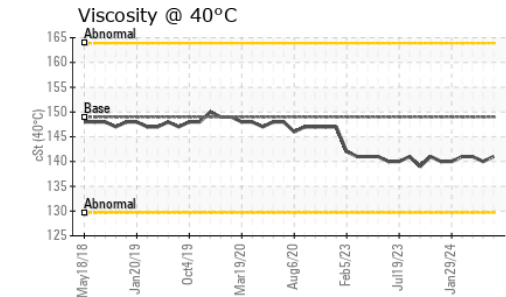
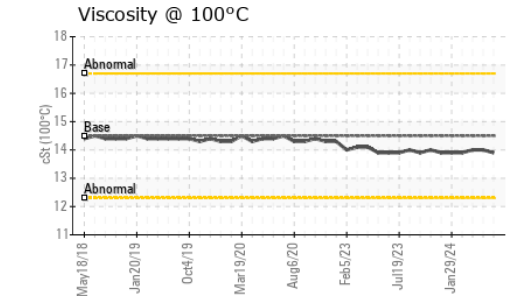
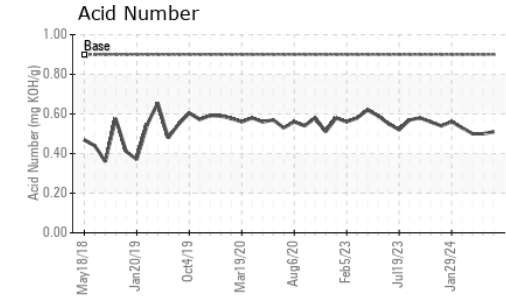
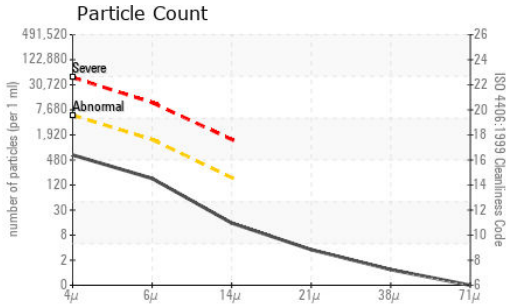
ADDITIVES method limit/base current history1 history2

Boron	ppm	ASTM D5185(m)		3	2	2
Barium	ppm	ASTM D5185(m)		<1	0	<1
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	3
Phosphorus	ppm	ASTM D5185(m)		306	314	299
Zinc	ppm	ASTM D5185(m)		5	6	6
Sulfur	ppm	ASTM D5185(m)		7799	7793	7528
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

CONTAMINANTS method limit/base current history1 history2

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

OIL ANALYSIS REPORT



FLUID CLEANLINESS					
	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000	556	833	969
Particles >6µm	ASTM D7647	>1300	152	246	263
Particles >14µm	ASTM D7647	>160	13	20	19
Particles >21µm	ASTM D7647	>40	3	7	4
Particles >38µm	ASTM D7647	>10	1	1	0
Particles >71µm	ASTM D7647	>3	0	1	0
Oil Cleanliness	ISO 4406 (c)	>19/17/14	16/14/11	17/15/11	17/15/11

FLUID DEGRADATION						
	method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D974*	0.9	0.51	0.50	0.50

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	141	140	141
Visc @ 100°C	cSt	ASTM D7279(m)	14.5	13.9	14.0	14.0
Viscosity Index (VI)	Scale	ASTM D2270*		94	96	95

SAMPLE IMAGES						
	method	limit/base	current	history1	history2	
Color						
Bottom						



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0080167
Lab Number : **02645046**
Unique Number : 5802585
Test Package : MAR 2 (Additional Tests: KV100, PQ, VI)
Received : 02 Jul 2024
Tested : 04 Jul 2024
Diagnosed : 04 Jul 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.