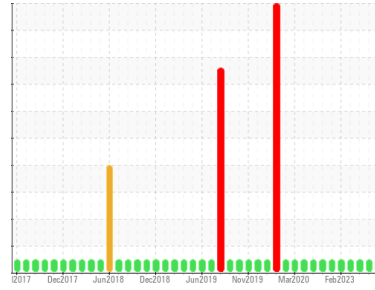


Area
Fwd Machinery Space [450222454]
Machine Id
Thruster Fwd Fore - Steering System (S/N Sample Tag CL-06005-S2)
Component
Hydraulic System
Fluid
PETRO CANADA HYDREX MV 36 (200 LTR)



DIAGNOSIS

Recommendation
Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

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	PC0076468	PC0076370	PC
Sample Date	Client Info	09 Nov 2023	15 Oct 2023	14 Sep 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		NORMAL	NORMAL	NORMAL

CONTAMINATION

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

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	<1	0
Titanium	ppm ASTM D5185(m)	0	0	0
Silver	ppm ASTM D5185(m)	<1	<1	<1
Aluminum	ppm ASTM D5185(m) >10	0	0	0
Lead	ppm ASTM D5185(m) >20	<1	0	<1
Copper	ppm ASTM D5185(m) >20	2	1	1
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

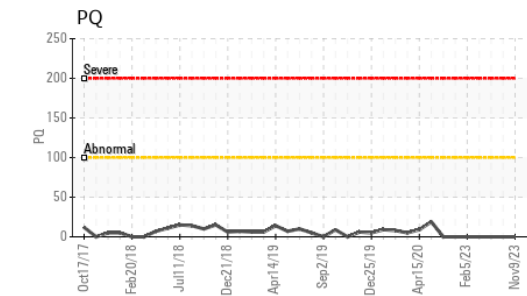
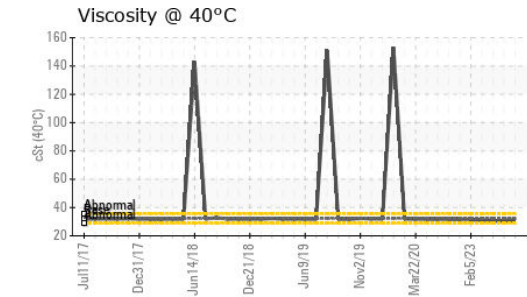
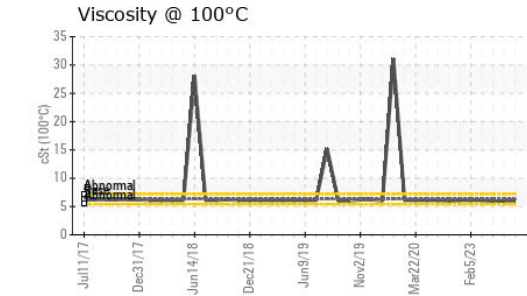
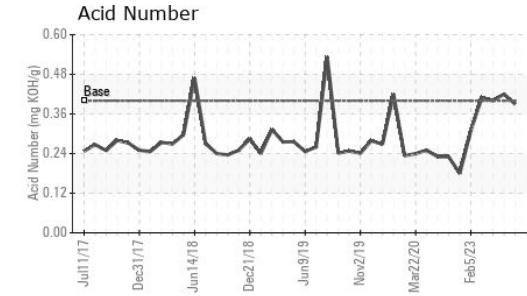
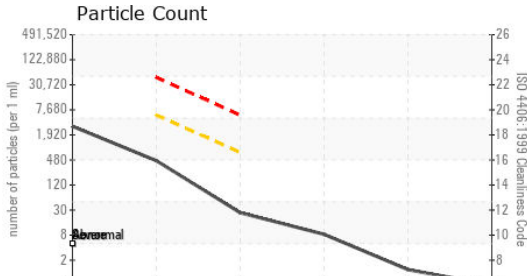
ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185(m) 0	<1	<1	<1
Barium	ppm ASTM D5185(m) 0	<1	<1	0
Molybdenum	ppm ASTM D5185(m) 0	0	0	0
Manganese	ppm ASTM D5185(m) 1	0	0	0
Magnesium	ppm ASTM D5185(m) 0	<1	<1	<1
Calcium	ppm ASTM D5185(m) 135	52	52	52
Phosphorus	ppm ASTM D5185(m) 236	317	319	320
Zinc	ppm ASTM D5185(m) 317	413	410	414
Sulfur	ppm ASTM D5185(m) 561	713	711	717
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)	<1	<1	0
Potassium	ppm ASTM D5185(m) >20	0	0	0

OIL ANALYSIS REPORT



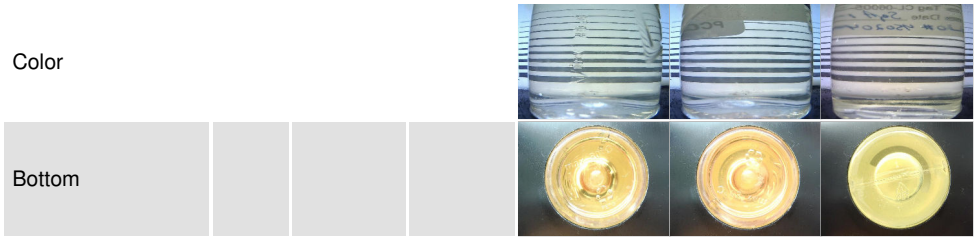
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647			2706	3352	3017
Particles >6µm	ASTM D7647	>5000		406	481	364
Particles >14µm	ASTM D7647	>640		23	23	15
Particles >21µm	ASTM D7647	>160		7	4	3
Particles >38µm	ASTM D7647	>40		1	1	1
Particles >71µm	ASTM D7647	>10		0	0	0
Oil Cleanliness	ISO 4406 (c)	>--/19/16		19/16/12	19/16/12	19/16/11

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.40	0.39	0.42	0.40

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)	32.25	30.6	30.4	30.4
Visc @ 100°C	cSt	ASTM D7279(m)	6.3	6	6	5.9
Viscosity Index (VI)	Scale	ASTM D2270*	148	146	147	142

SAMPLE IMAGES		method	limit/base	current	history1	history2
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Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0076468 **Received** : 27 Nov 2023
Lab Number : **02599016** **Diagnosed** : 28 Nov 2023
Unique Number : 5684096 **Diagnostician** : Kevin Marson
Test Package : MAR 2 (Additional Tests: KV100, PQ, VI)

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 Scotia Centre, 235 Water Street
 St. John's, NL
 CA A1C 1B6
 Contact: Josh Hynes
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 T: (709)778-3575
 F: (709)724-2835

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.