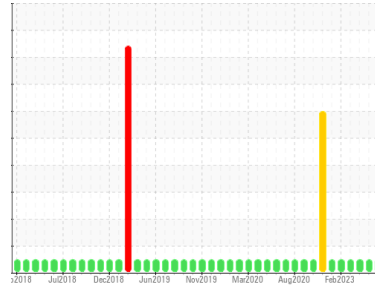


Area  
**Aft Machinery Space [450210622]**  
Machine Id  
**Thruster Aft Port - Steering System (S/N Sample Tag CL-06002-S2)**  
Component  
**Hydraulic System**  
Fluid  
**PETRO CANADA HYDREX MV 36 (200 LTR)**



**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	<b>PC0076367</b>	PC	PC0052576
Sample Date	Client Info	<b>15 Oct 2023</b>	14 Sep 2023	14 Aug 2023
Machine Age	hrs	Client Info	<b>0</b>	0
Oil Age	hrs	Client Info	<b>0</b>	0
Oil Changed	Client Info	<b>N/A</b>	N/A	N/A
Sample Status		<b>NORMAL</b>	NORMAL	NORMAL

**CONTAMINATION** method limit/base current history1 history2

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

PQ		ASTM D8184*		<b>0</b>	0	0
Iron	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	<1	<1
Chromium	ppm	ASTM D5185(m)	>10	<b>0</b>	0	0
Nickel	ppm	ASTM D5185(m)	>10	<b>0</b>	<1	<1
Titanium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	0
Aluminum	ppm	ASTM D5185(m)	>10	<b>0</b>	<1	0
Lead	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	1	0
Copper	ppm	ASTM D5185(m)	>20	<b>4</b>	4	<1
Tin	ppm	ASTM D5185(m)	>10	<b>0</b>	0	0
Antimony	ppm	ASTM D5185(m)		<b>0</b>	0	0
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Beryllium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Cadmium	ppm	ASTM D5185(m)		<b>0</b>	<1	0

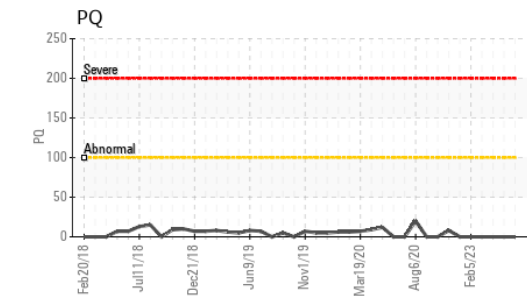
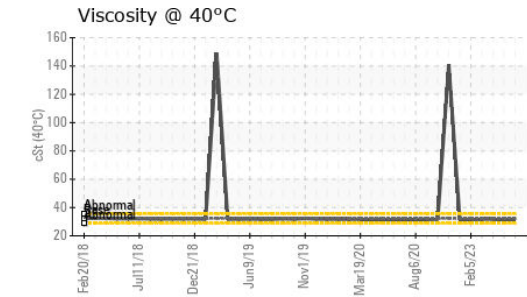
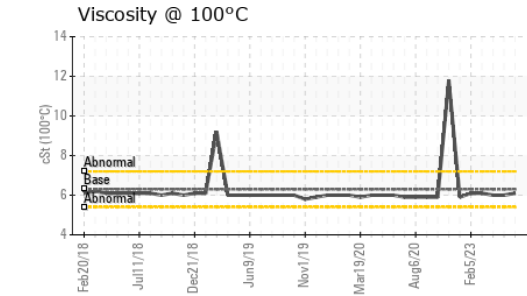
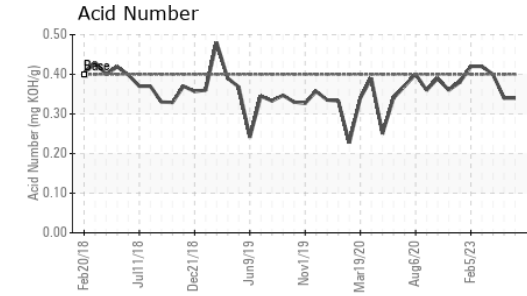
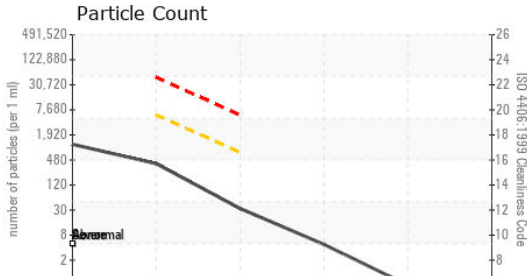
**ADDITIVES** method limit/base current history1 history2

Boron	ppm	ASTM D5185(m)	0	<b>&lt;1</b>	<1	0
Barium	ppm	ASTM D5185(m)	0	<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185(m)	0	<b>0</b>	0	0
Manganese	ppm	ASTM D5185(m)	1	<b>0</b>	0	0
Magnesium	ppm	ASTM D5185(m)	0	<b>0</b>	<1	<1
Calcium	ppm	ASTM D5185(m)	135	<b>48</b>	47	52
Phosphorus	ppm	ASTM D5185(m)	236	<b>319</b>	309	361
Zinc	ppm	ASTM D5185(m)	317	<b>407</b>	380	434
Sulfur	ppm	ASTM D5185(m)	561	<b>719</b>	714	771
Lithium	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	<1

**CONTAMINANTS** method limit/base current history1 history2

Silicon	ppm	ASTM D5185(m)	>15	<b>0</b>	0	<1
Sodium	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	<1
Potassium	ppm	ASTM D5185(m)	>20	<b>0</b>	1	<1

# OIL ANALYSIS REPORT



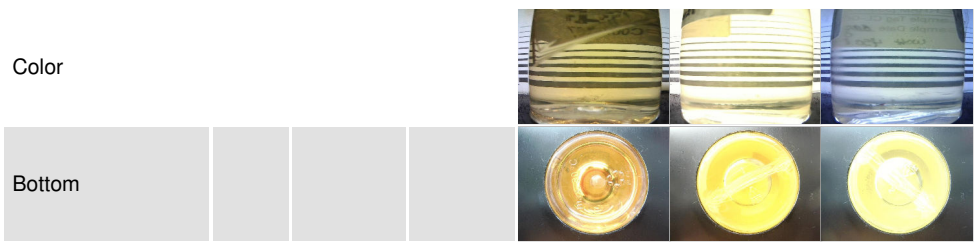
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647			<b>1002</b>	582	3610
Particles >6µm	ASTM D7647	>5000		<b>343</b>	34	306
Particles >14µm	ASTM D7647	>640		<b>29</b>	6	15
Particles >21µm	ASTM D7647	>160		<b>4</b>	2	3
Particles >38µm	ASTM D7647	>40		<b>0</b>	1	0
Particles >71µm	ASTM D7647	>10		<b>0</b>	0	0
Oil Cleanliness	ISO 4406 (c)	>--/19/16		<b>17/16/12</b>	16/12/10	19/15/11

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.40	<b>0.34</b>	0.34	0.40

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Silt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	Visual*	>0.05	<b>NEG</b>	NEG	NEG
Free Water	scalar	Visual*		<b>NEG</b>	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	32.25	<b>31.5</b>	31.5	31.6
Visc @ 100°C	cSt	ASTM D7279(m)	6.3	<b>6.1</b>	6	6
Viscosity Index (VI)	Scale	ASTM D2270*	148	<b>144</b>	139	138

## SAMPLE IMAGES



Color  
  
Bottom



ISO 17025:2017 Accredited Laboratory  
 Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
 Sample No. : PC0076367  
 Lab Number : **02598432**  
 Unique Number : 5683512  
 Test Package : IND 2 ( Additional Tests: KV100, PQ, VI )  
 Received : 23 Nov 2023  
 Diagnosed : 24 Nov 2023  
 Diagnostician : Kevin Marson

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 St. John's, NL  
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