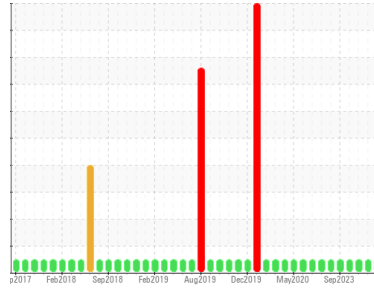


Area  
**Fwd Machinery Space**  
Machine Id  
**Thruster Fwd Fore - Steering System (S/N Sample Tag CL-06005-S2)**  
Component  
**Hydraulic System**  
Fluid  
**PETRO CANADA HYDREX MV 36 (200 LTR)**



**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	<b>PC</b>	PC	PC0076468
Sample Date	Client Info	<b>05 Jan 2024</b>	04 Dec 2023	09 Nov 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>&lt;1</b>	<1	<1
Titanium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)	<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185(m) >10	<b>&lt;1</b>	<1	0
Lead	ppm	ASTM D5185(m) >20	<b>0</b>	<1	<1
Copper	ppm	ASTM D5185(m) >20	<b>2</b>	2	2
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>	0	0

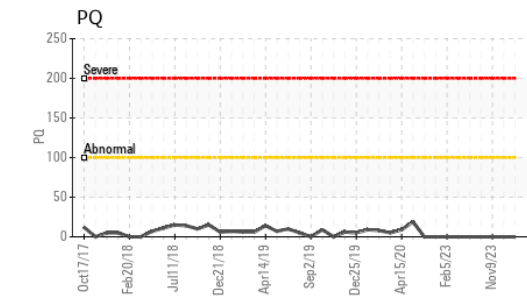
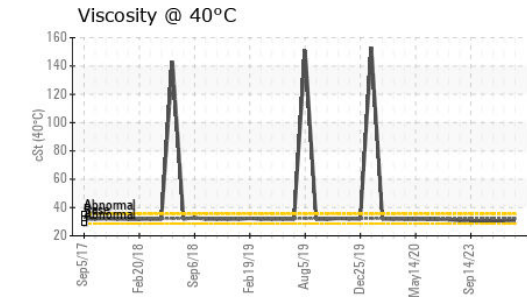
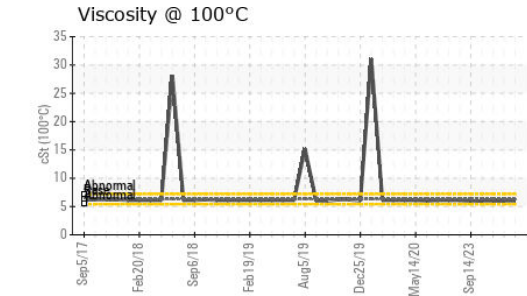
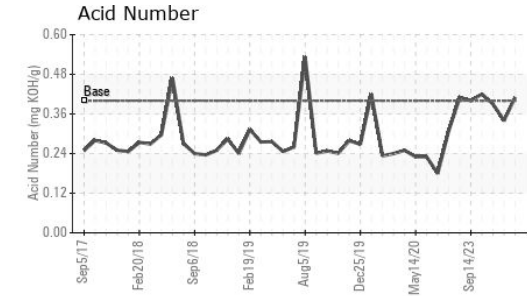
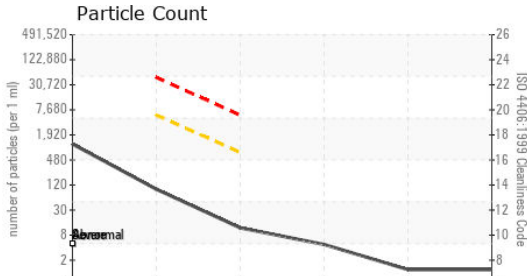
**ADDITIVES** method limit/base current history1 history2

Boron	ppm	ASTM D5185(m) 0	<b>&lt;1</b>	0	<1
Barium	ppm	ASTM D5185(m) 0	<b>0</b>	0	<1
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>&lt;1</b>	1	<1
Calcium	ppm	ASTM D5185(m) 135	<b>50</b>	52	52
Phosphorus	ppm	ASTM D5185(m) 236	<b>318</b>	323	317
Zinc	ppm	ASTM D5185(m) 317	<b>393</b>	405	413
Sulfur	ppm	ASTM D5185(m) 561	<b>959</b>	748	713
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>	<1	<1
Sodium	ppm	ASTM D5185(m)	<b>0</b>	0	<1
Potassium	ppm	ASTM D5185(m) >20	<b>&lt;1</b>	0	0

# OIL ANALYSIS REPORT



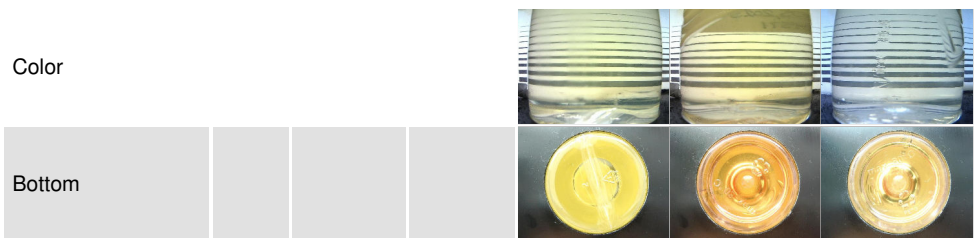
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647			<b>1017</b>	4615	2706
Particles >6µm	ASTM D7647	>5000		<b>84</b>	797	406
Particles >14µm	ASTM D7647	>640		<b>10</b>	57	23
Particles >21µm	ASTM D7647	>160		<b>4</b>	13	7
Particles >38µm	ASTM D7647	>40		<b>1</b>	1	1
Particles >71µm	ASTM D7647	>10		<b>1</b>	0	0
Oil Cleanliness	ISO 4406 (c)	>--/19/16		<b>17/14/10</b>	19/17/13	19/16/12

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.40	<b>0.41</b>	0.34	0.39

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>31.0</b>	30.5	30.6
Visc @ 100°C	cSt	ASTM D7279(m)	6.3	<b>6</b>	6	6
Viscosity Index (VI)	Scale	ASTM D2270*	148	<b>143</b>	146	146

## SAMPLE IMAGES



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC  
**Lab Number** : **02611112**      **Received** : 25 Jan 2024  
**Unique Number** : 5720207      **Diagnosed** : 26 Jan 2024  
**Test Package** : MAR 2 ( Additional Tests: KV100, PQ, VI )      **Diagnostician** : Kevin Marson

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.

**Suncor - Terra Nova Projects**  
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