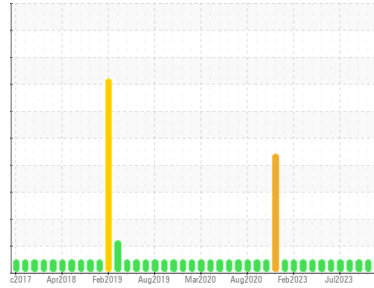


# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Area  
**Aft Machinery Space [450222454]**  
Machine Id  
**Thruster Aft Center - Steering System (S/N Sample Tag CL-06001-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>PC0076465</b>	PC0061555	PC
Sample Date	Client Info	<b>09 Nov 2023</b>	15 Oct 2023	14 Sep 2023
Machine Age	hrs	Client Info	0	0
Oil Age	hrs	Client Info	0	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

## WEAR METALS

method	limit/base	current	history1	history2
PQ	ASTM D8184*	<b>0</b>	0	0
Iron	ppm ASTM D5185(m) >20	<b>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	<1
Aluminum	ppm ASTM D5185(m) >10	<b>0</b>	0	0
Lead	ppm ASTM D5185(m) >20	<b>&lt;1</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

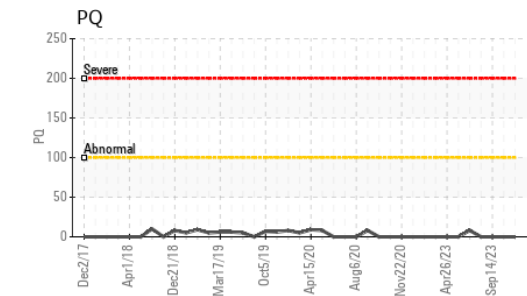
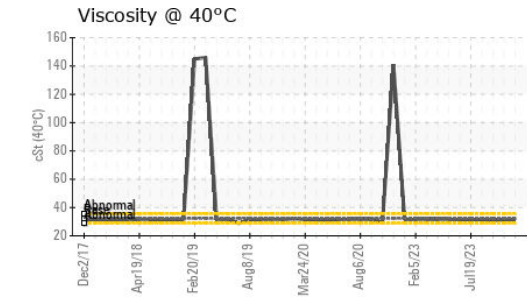
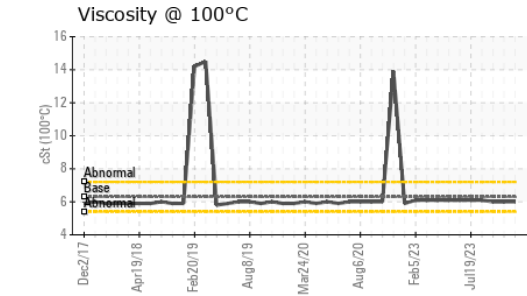
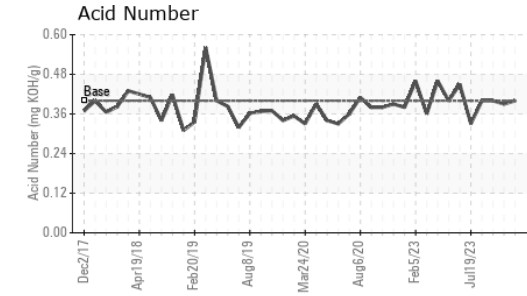
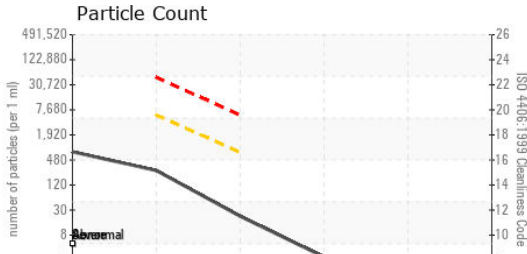
## ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185(m) 0	<b>&lt;1</b>	<1	<1
Barium	ppm ASTM D5185(m) 0	<b>&lt;1</b>	<1	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>&lt;1</b>	<1	<1
Calcium	ppm ASTM D5185(m) 135	<b>71</b>	71	69
Phosphorus	ppm ASTM D5185(m) 236	<b>311</b>	314	312
Zinc	ppm ASTM D5185(m) 317	<b>392</b>	393	391
Sulfur	ppm ASTM D5185(m) 561	<b>728</b>	725	751
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	0
Sodium	ppm ASTM D5185(m)	<b>&lt;1</b>	<1	<1
Potassium	ppm ASTM D5185(m) >20	<b>0</b>	0	0

# OIL ANALYSIS REPORT



FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647			<b>663</b>	922	95
Particles >6µm	ASTM D7647	>5000		<b>236</b>	281	32
Particles >14µm	ASTM D7647	>640		<b>19</b>	20	4
Particles >21µm	ASTM D7647	>160		<b>2</b>	5	1
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>17/15/11</b>	17/15/11	14/12/9

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.40	<b>0.40</b>	0.39	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>31.4</b>	31.4	30.9
Visc @ 100°C	cSt	ASTM D7279(m)	6.3	<b>6</b>	6	6
Viscosity Index (VI)	Scale	ASTM D2270*	148	<b>140</b>	140	143

SAMPLE IMAGES		method	limit/base	current	history1	history2
Color						
Bottom						



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC0076465  
**Lab Number** : **02599015**  
**Unique Number** : 5684095  
**Test Package** : MAR 2 ( Additional Tests: KV100, PQ, VI )  
**Received** : 27 Nov 2023  
**Diagnosed** : 28 Nov 2023  
**Diagnostician** : Kevin Marson

**Suncor - Terra Nova Projects**  
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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.