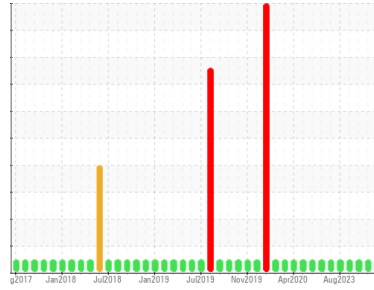


Area
Fwd Machinery Space [450234571]
Machine Id
Thruster Fwd Fore - Steering System (S/N Sample Tag CL-06005-S2)
Component
Hydraulic System
Fluid
PETRO CANADA HYDREX MV 36 (200 LTR)



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	PC	PC0076468	PC0076370
Sample Date	Client Info	04 Dec 2023	09 Nov 2023	15 Oct 2023
Machine Age	hrs	Client Info	0	0
Oil Age	hrs	Client Info	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	<1
Titanium	ppm	ASTM D5185(m)	0	0	0
Silver	ppm	ASTM D5185(m)	0	<1	<1
Aluminum	ppm	ASTM D5185(m) >10	<1	0	0
Lead	ppm	ASTM D5185(m) >20	<1	<1	0
Copper	ppm	ASTM D5185(m) >20	2	2	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

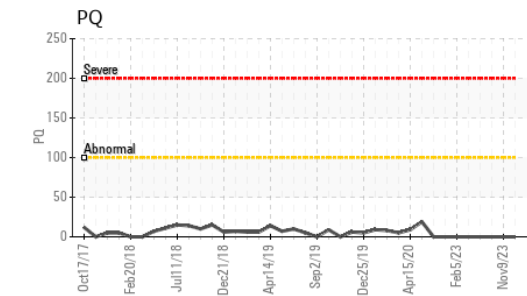
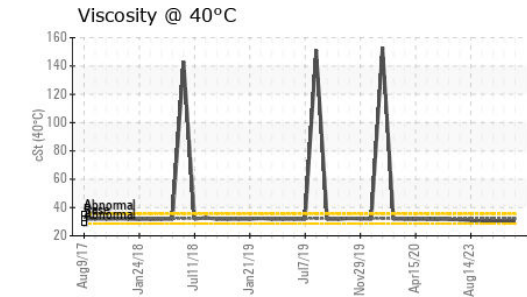
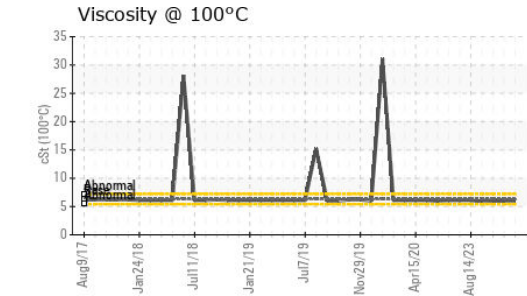
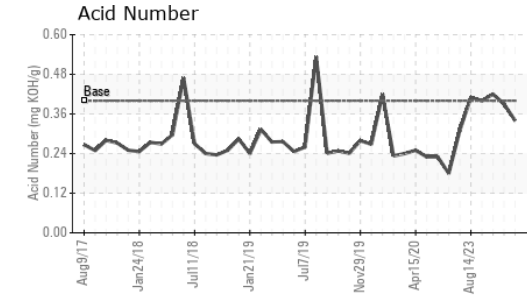
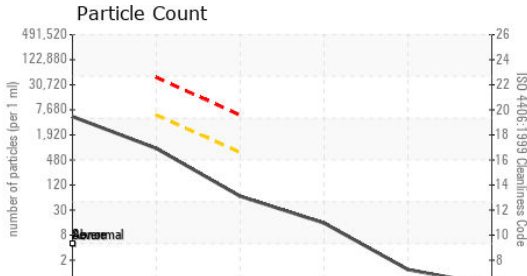
ADDITIVES method limit/base current history1 history2

Boron	ppm	ASTM D5185(m) 0	0	<1	<1
Barium	ppm	ASTM D5185(m) 0	0	<1	<1
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	323	317	319
Zinc	ppm	ASTM D5185(m) 317	405	413	410
Sulfur	ppm	ASTM D5185(m) 561	748	713	711
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	<1	<1
Potassium	ppm	ASTM D5185(m) >20	0	0	0

OIL ANALYSIS REPORT



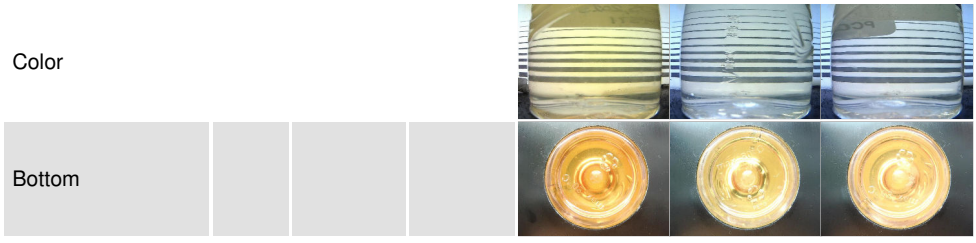
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647			4615	2706	3352
Particles >6µm	ASTM D7647	>5000		797	406	481
Particles >14µm	ASTM D7647	>640		57	23	23
Particles >21µm	ASTM D7647	>160		13	7	4
Particles >38µm	ASTM D7647	>40		1	1	1
Particles >71µm	ASTM D7647	>10		0	0	0
Oil Cleanliness	ISO 4406 (c)	>--/19/16		19/17/13	19/16/12	19/16/12

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.40	0.34	0.39	0.42

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	30.5	30.6	30.4
Visc @ 100°C	cSt	ASTM D7279(m)	6.3	6	6	6
Viscosity Index (VI)	Scale	ASTM D2270*	148	146	146	147

SAMPLE IMAGES



Color

Bottom



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC
Lab Number : **02605546**
Unique Number : 5698631
Test Package : MAR 2 (Additional Tests: KV100, PQ, VI)

Received : 28 Dec 2023
Diagnosed : 02 Jan 2024
Diagnostician : Kevin Marson

Suncor - Terra Nova Projects
 Scotia Centre, 235 Water Street
 St. John's, NL
 CA A1C 1B6
 Contact: Josh Hynes
 joshhynes@suncor.com
 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.