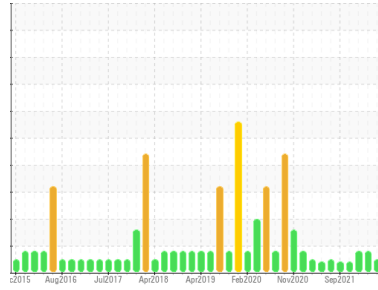


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
Cranes
Machine Id
Crane - Aft - Hoisting Winch (S/N Sample Tag MA-04001-S5)
Component
Winch
Fluid
PETRO CANADA GEARLUBE TOS 80W90 (8 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	PC0039817	PC0052194
Sample Date	Client Info	26 Nov 2023	16 Aug 2023	14 Jun 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	ATTENTION	ATTENTION

CONTAMINATION

method	limit/base	current	history1	history2
Water	WC Method >0.2	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
PQ	ASTM D8184*	0	0	0
Iron	ppm ASTM D5185(m) >30	7	8	6
Chromium	ppm ASTM D5185(m) >2	0	0	0
Nickel	ppm ASTM D5185(m) >2	<1	0	<1
Titanium	ppm ASTM D5185(m) >2	0	0	<1
Silver	ppm ASTM D5185(m) >2	<1	<1	<1
Aluminum	ppm ASTM D5185(m) >5	2	2	<1
Lead	ppm ASTM D5185(m) >70	<1	<1	0
Copper	ppm ASTM D5185(m) >65	<1	<1	<1
Tin	ppm ASTM D5185(m) >9	0	0	0
Antimony	ppm ASTM D5185(m) >5	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	<1

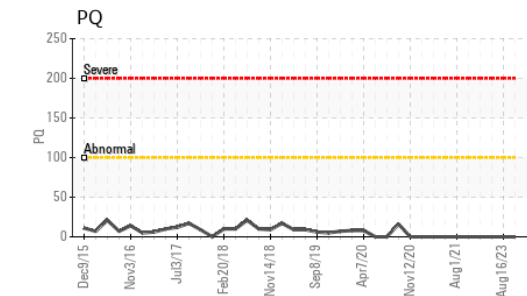
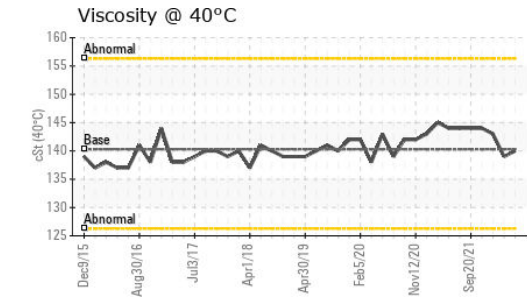
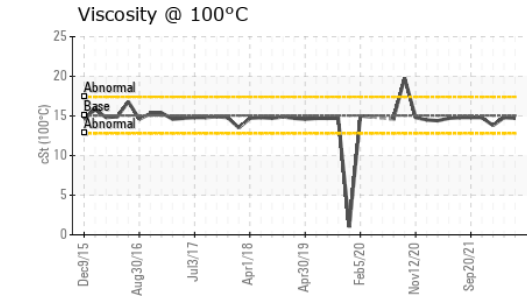
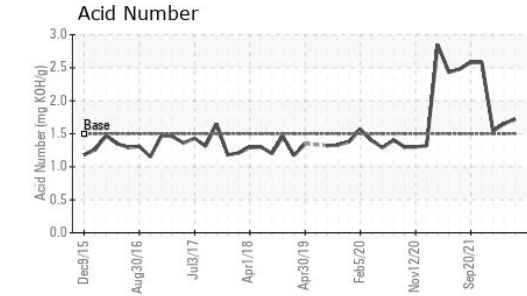
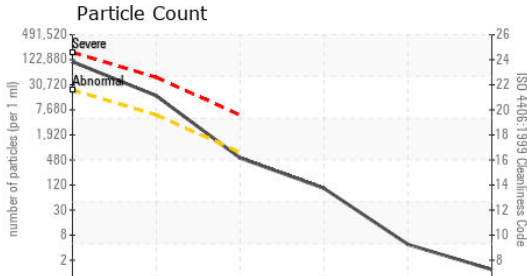
ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185(m) 240	205	224	199
Barium	ppm ASTM D5185(m) 1	<1	0	0
Molybdenum	ppm ASTM D5185(m) 0.0	0	0	0
Manganese	ppm ASTM D5185(m)	0	<1	<1
Magnesium	ppm ASTM D5185(m) 2	<1	1	2
Calcium	ppm ASTM D5185(m) 6	5	5	4
Phosphorus	ppm ASTM D5185(m) 1000	954	1018	1020
Zinc	ppm ASTM D5185(m) 3	78	59	20
Sulfur	ppm ASTM D5185(m) 19400	16845	17018	18958
Lithium	ppm ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185(m) >30	2	2	4
Sodium	ppm ASTM D5185(m)	1	<1	1
Potassium	ppm ASTM D5185(m) >20	0	<1	<1

OIL ANALYSIS REPORT



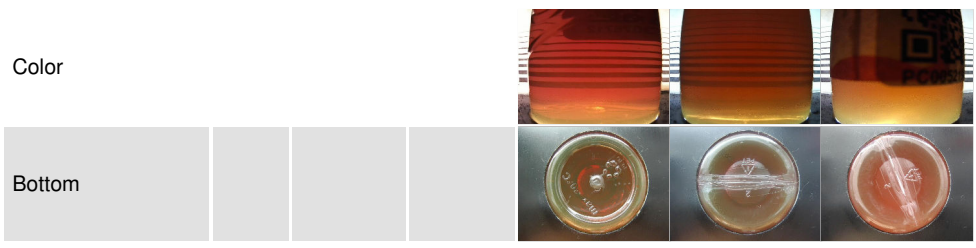
FLUID CLEANLINESS					
method	limit/base	current	history1	history2	
Particles >4µm	ASTM D7647 >20000	95685	127212	127861	
Particles >6µm	ASTM D7647 >5000	14526	46489	54810	
Particles >14µm	ASTM D7647 >640	470 ▲	1130	▲ 1042	
Particles >21µm	ASTM D7647 >160	88	175	79	
Particles >38µm	ASTM D7647 >40	4	4	0	
Particles >71µm	ASTM D7647 >10	1	1	0	
Oil Cleanliness	ISO 4406 (c) >21/19/16	24/21/16 ▲	24/23/17	▲ 24/23/17	

FLUID DEGRADATION					
method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g ASTM D974*	1.5	1.72	1.65	1.54

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	VLITE	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*	>0.2	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)	140.3	140	139	143
Visc @ 100°C	cSt ASTM D7279(m)	15.05	14.7	14.8	13.8
Viscosity Index (VI)	Scale ASTM D2270*	109	104	106	91

SAMPLE IMAGES



Color

Bottom



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC
Lab Number : **02599087** **Received** : 27 Nov 2023
Unique Number : 5684167 **Diagnosed** : 28 Nov 2023
Test Package : MAR 2 (Additional Tests: KV100, PQ, PrtCount, TAN Man, VI) **Diagnostician** : Kevin Marson

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 Scotia Centre, 235 Water Strret
 St. John's, NL
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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.