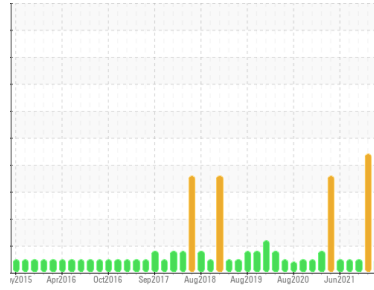


Area
Cranes [450159533]
 Machine Id
Crane - Mid Ship Slewing Gearbox #3 (S/N Sample Tag MA-04002-S9)
 Component
Gearbox
 Fluid
PETRO CANADA GEARLUBE TOS 80W90 (33 LTR)



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	history 1	history 2
Sample Number	Client Info	PC0052199	PC0052002	PC416840
Sample Date	Client Info	14 Jun 2023	02 May 2023	05 Oct 2021
Machine Age	hrs	0	0	0
Oil Age	hrs	0	0	0
Oil Changed	Client Info	N/A	N/A	N/A
Sample Status		NORMAL	SEVERE	NORMAL

WEAR METALS

method	limit/base	current	history 1	history 2
PQ	ASTM D8184*	3	0	0
Iron	ppm ASTM D5185(m) >150	19	3	1
Chromium	ppm ASTM D5185(m) >10	0	0	0
Nickel	ppm ASTM D5185(m) >10	0	0	<1
Titanium	ppm ASTM D5185(m)	0	0	0
Silver	ppm ASTM D5185(m)	0	0	<1
Aluminum	ppm ASTM D5185(m) >5	<1	0	0
Lead	ppm ASTM D5185(m) >65	0	0	0
Copper	ppm ASTM D5185(m) >80	4	<1	<1
Tin	ppm ASTM D5185(m) >8	<1	0	0
Antimony	ppm ASTM D5185(m) >5	0	<1	<1
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	history 1	history 2
Boron	ppm ASTM D5185(m) 240	232	184	241
Barium	ppm ASTM D5185(m) 1	<1	1	0
Molybdenum	ppm ASTM D5185(m) 0.0	<1	<1	0
Manganese	ppm ASTM D5185(m)	<1	0	0
Magnesium	ppm ASTM D5185(m) 2	2	2	2
Calcium	ppm ASTM D5185(m) 6	50	88	12
Phosphorus	ppm ASTM D5185(m) 1000	954	902	959
Zinc	ppm ASTM D5185(m) 3	28	54	13
Sulfur	ppm ASTM D5185(m) 19400	16988	16549	17845
Lithium	ppm ASTM D5185(m)	<1	<1	<1

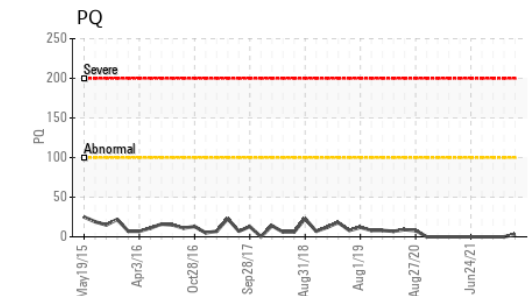
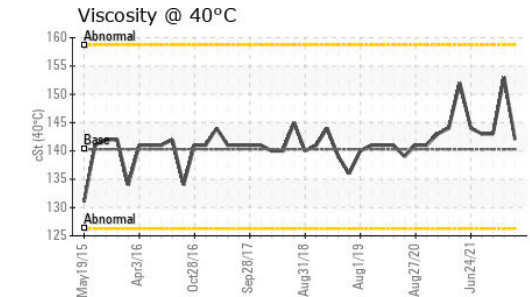
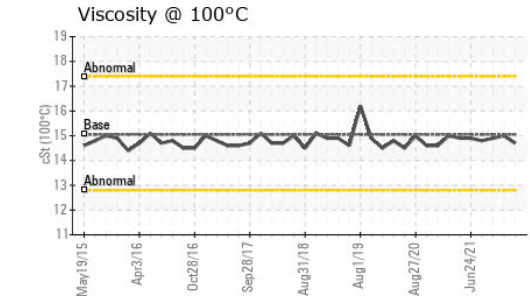
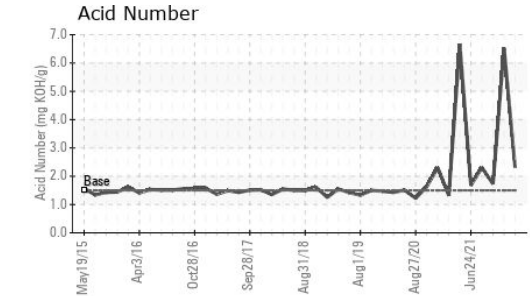
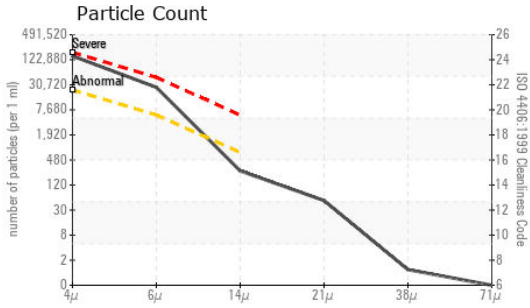
CONTAMINANTS

method	limit/base	current	history 1	history 2
Silicon	ppm ASTM D5185(m) >20	6	3	4
Sodium	ppm ASTM D5185(m)	<1	<1	<1
Potassium	ppm ASTM D5185(m) >20	<1	0	<1

FLUID CLEANLINESS

method	limit/base	current	history 1	history 2
Particles >4µm	ASTM D7647 >20000	130643	▲ 44091	100882
Particles >6µm	ASTM D7647 >5000	23247	▲ 5618	28780
Particles >14µm	ASTM D7647 >640	231	25	104
Particles >21µm	ASTM D7647 >160	45	2	13
Particles >38µm	ASTM D7647 >40	1	0	0
Particles >71µm	ASTM D7647 >10	0	0	0
Oil Cleanliness	ISO 4406 (c) >21/19/16	24/22/15	▲ 23/20/12	24/22/14

OIL ANALYSIS REPORT



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0052199 **Received** : 06 Jul 2023
Lab Number : **02568335** **Diagnosed** : 07 Jul 2023
Unique Number : 5605381 **Diagnostician** : Kevin Marson
Test Package : MAR 2 (Additional Tests: KV100, PQ, PrtCount, TAN Man, VI)

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.

FLUID DEGRADATION		method	limit/base	current	history 1	history 2
Acid Number (AN)	mg KOH/g	ASTM D974*	1.5	2.32	6.52	1.73

VISUAL		method	limit/base	current	history 1	history 2
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	VLITE
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	history 1	history 2
Visc @ 40°C	cSt	ASTM D7279(m)	140.3	142	153	143
Visc @ 100°C	cSt	ASTM D7279(m)	15.05	14.7	15.0	14.9
Viscosity Index (VI)	Scale	ASTM D2270*	109	102	97	104

SAMPLE IMAGES

