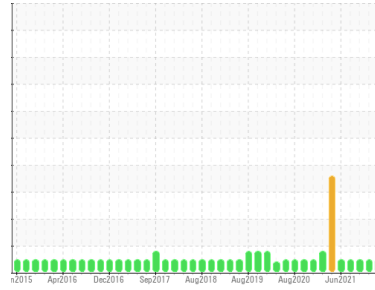


Area
Cranes [450159533]
Machine Id
Crane - Mid Ship Slewing Gearbox #2 (S/N Sample Tag MA-04002-S8)
Component
Gearbox
Fluid
PETRO CANADA GEARLUBE TOS 80W90 (33 LTR)



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	PC0052195	PC0052671	PC416833
Sample Date	Client Info	14 Jun 2023	02 May 2023	05 Oct 2021
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

WEAR METALS method limit/base current history 1 history 2

PQ	ASTM D8184*		0	0	0
Iron	ppm	ASTM D5185(m) >150	5	3	<1
Chromium	ppm	ASTM D5185(m) >10	0	0	0
Nickel	ppm	ASTM D5185(m) >10	0	<1	<1
Titanium	ppm	ASTM D5185(m)	0	0	0
Silver	ppm	ASTM D5185(m)	<1	0	0
Aluminum	ppm	ASTM D5185(m) >5	0	<1	0
Lead	ppm	ASTM D5185(m) >65	0	<1	0
Copper	ppm	ASTM D5185(m) >80	<1	0	<1
Tin	ppm	ASTM D5185(m) >8	0	0	0
Antimony	ppm	ASTM D5185(m) >5	0	<1	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 history 1 history 2

Boron	ppm	ASTM D5185(m) 240	237	228	244
Barium	ppm	ASTM D5185(m) 1	0	0	0
Molybdenum	ppm	ASTM D5185(m) 0.0	0	0	0
Manganese	ppm	ASTM D5185(m)	0	<1	0
Magnesium	ppm	ASTM D5185(m) 2	2	1	1
Calcium	ppm	ASTM D5185(m) 6	5	12	13
Phosphorus	ppm	ASTM D5185(m) 1000	978	1062	978
Zinc	ppm	ASTM D5185(m) 3	13	74	9
Sulfur	ppm	ASTM D5185(m) 19400	19589	24058	18730
Lithium	ppm	ASTM D5185(m)	<1	<1	<1

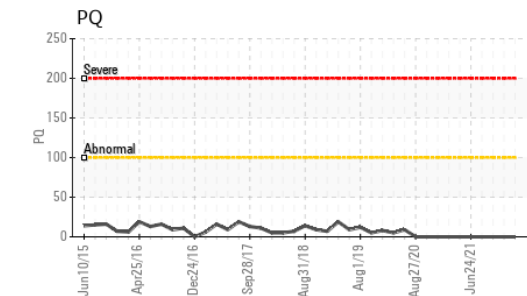
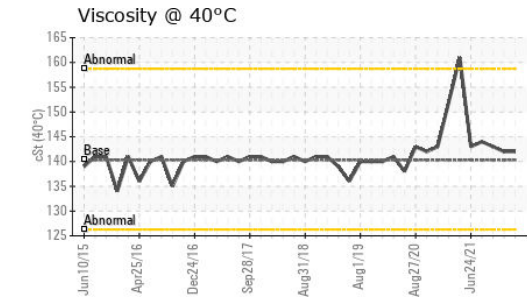
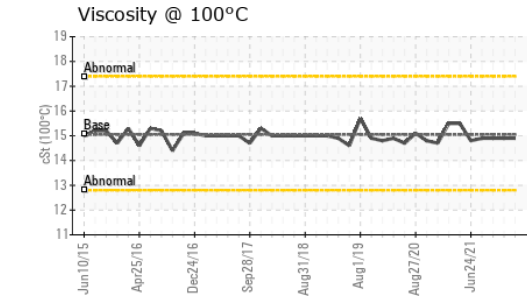
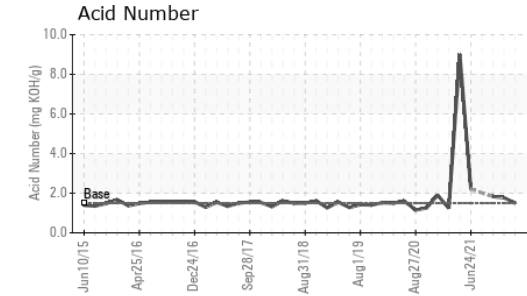
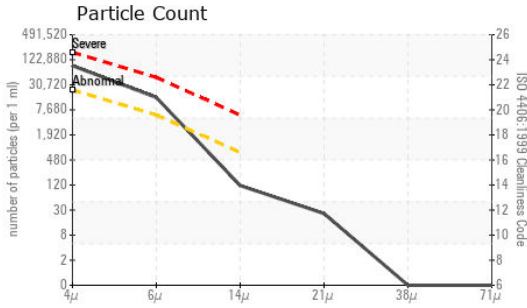
CONTAMINANTS method limit/base current history 1 history 2

Silicon	ppm	ASTM D5185(m) >20	4	2	4
Sodium	ppm	ASTM D5185(m)	<1	<1	<1
Potassium	ppm	ASTM D5185(m) >20	<1	<1	<1

FLUID CLEANLINESS method limit/base current history 1 history 2

Particles >4µm	ASTM D7647	>20000	76575	3338	80915
Particles >6µm	ASTM D7647	>5000	13214	716	21177
Particles >14µm	ASTM D7647	>640	103	24	44
Particles >21µm	ASTM D7647	>160	22	5	8
Particles >38µm	ASTM D7647	>40	0	0	0
Particles >71µm	ASTM D7647	>10	0	0	0
Oil Cleanliness	ISO 4406 (c)	>21/19/16	23/21/14	19/17/12	24/22/13

OIL ANALYSIS REPORT



FLUID DEGRADATION

method	limit/base	current	history 1	history 2	
Acid Number (AN) mg KOH/g	ASTM D974*	1.5	1.50	1.77	1.83

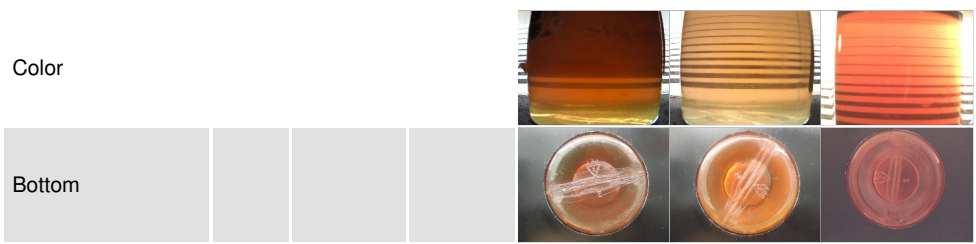
VISUAL

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	142	143
Visc @ 100°C	cSt ASTM D7279(m)	15.05	14.9	14.9	14.9
Viscosity Index (VI)	Scale ASTM D2270*	109	105	105	104

SAMPLE IMAGES



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0052195 **Received** : 06 Jul 2023
Lab Number : **02568332** **Diagnosed** : 07 Jul 2023
Unique Number : 5605378 **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.

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