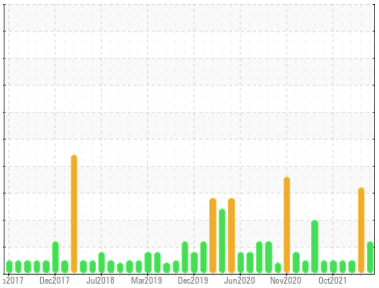
PROBLEM SUMMARY

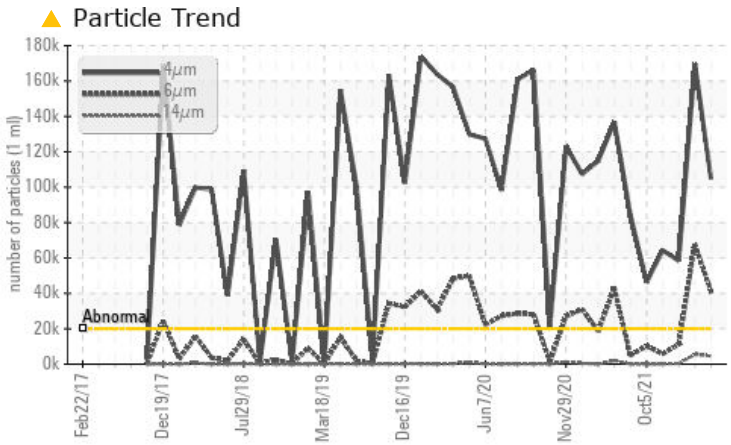
Sample Rating Trend



ISO

Area
Cranes [450185704]
Machine Id
Crane - Fwd Slewing Gearbox #2 (S/N Sample Tag MA-04003-S8)
Component
Gearbox
Fluid
PETRO CANADA GEARLUBE TOS 80W90 (33 LTR)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				ABNORMAL	SEVERE	NORMAL
Particles >14µm		ASTM D7647	>640	▲ **4555**	⬢ 5458	402
Particles >21µm		ASTM D7647	>160	▲ **939**	▲ 979	45
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ **24/23/19**	⬢ 25/23/20	23/21/16

Customer Id: TERHAM
Sample No.: PC
Lab Number: 02582284
Test Package: MAR 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
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Kevin.Marson@wearcheck.com

To change component or sample information:
Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	---	---	?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Filter Fluid	---	---	?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.

HISTORICAL DIAGNOSIS

ISO

02 May 2023 Diag: Kevin Marson

We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Confirm the source of the lubricant being utilized for top-up/fill. Resample in 30-45 days to monitor this situation.All component wear rates are normal. There is a high amount of particulates (2 to 100 microns in size) present in the oil. Additive levels indicate the addition of a different brand, or type of oil. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report

NORMAL

29 Nov 2021 Diag: Kevin Marson

Resample at the next service interval to monitor.All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

NORMAL

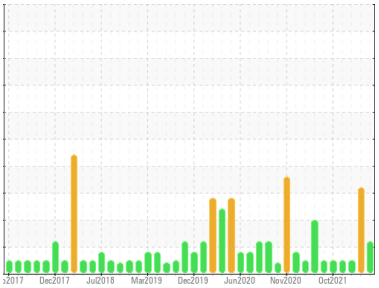
27 Nov 2021 Diag: Kevin Marson

Resample at the next service interval to monitor.All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Area
Cranes [450185704]
Machine Id
Crane - Fwd Slewing Gearbox #2 (S/N Sample Tag MA-04003-S8)
Component
Gearbox
Fluid
PETRO CANADA GEARLUBE TOS 80W90 (33 LTR)

DIAGNOSIS

Recommendation

We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

There is a moderate amount of particulates (2 to 100 microns in size) present in the oil.

Fluid Condition

The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PC**	PC0053014	PC0040128
Sample Date		Client Info		**13 Aug 2023**	02 May 2023	29 Nov 2021
Machine Age	hrs	Client Info		**0**	0	0
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ABNORMAL**	SEVERE	NORMAL

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		**0**	0	0
Iron	ppm	ASTM D5185(m)	>150	**13**	10	10
Chromium	ppm	ASTM D5185(m)	>10	**<1**	0	<1
Nickel	ppm	ASTM D5185(m)	>10	**0**	<1	0
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)		**0**	0	<1
Aluminum	ppm	ASTM D5185(m)	>5	**0**	0	0
Lead	ppm	ASTM D5185(m)	>65	**0**	<1	0
Copper	ppm	ASTM D5185(m)	>80	**<1**	<1	<1
Tin	ppm	ASTM D5185(m)	>8	**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	0

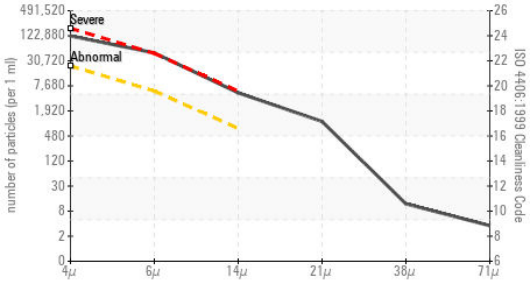
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	240	**188**	35	175
Barium	ppm	ASTM D5185(m)	1	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	0.0	**0**	0	0
Manganese	ppm	ASTM D5185(m)		**0**	<1	0
Magnesium	ppm	ASTM D5185(m)	2	**<1**	<1	<1
Calcium	ppm	ASTM D5185(m)	6	**17**	12	15
Phosphorus	ppm	ASTM D5185(m)	1000	**912**	415	828
Zinc	ppm	ASTM D5185(m)	3	**15**	22	11
Sulfur	ppm	ASTM D5185(m)	19400	**20996**	11298	19780
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>20	**3**	2	2
Sodium	ppm	ASTM D5185(m)		**2**	1	2
Potassium	ppm	ASTM D5185(m)	>20	**2**	<1	2

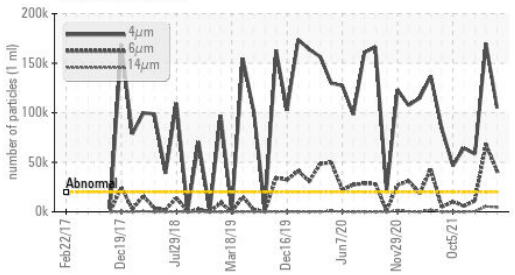
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>20000	**104877**	169718	58450
Particles >6µm		ASTM D7647	>5000	**41174**	67987	11216
Particles >14µm		ASTM D7647	>640	▲ **4555**	⬢ 5458	402
Particles >21µm		ASTM D7647	>160	▲ **939**	▲ 979	45
Particles >38µm		ASTM D7647	>40	**10**	3	0
Particles >71µm		ASTM D7647	>10	**3**	1	0
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ **24/23/19**	⬢ 25/23/20	23/21/16

OIL ANALYSIS REPORT

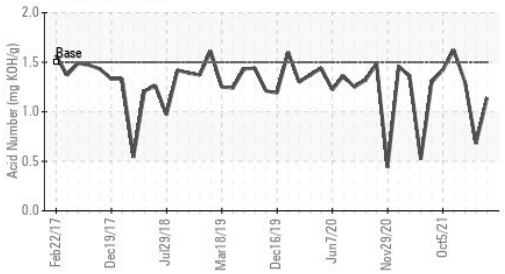
Particle Count



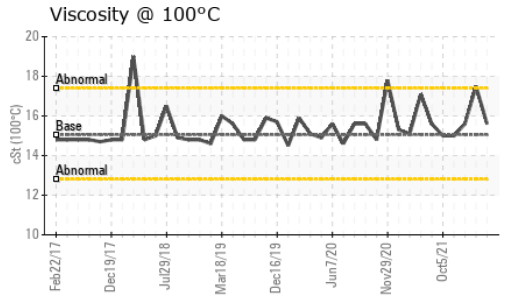
Particle Trend



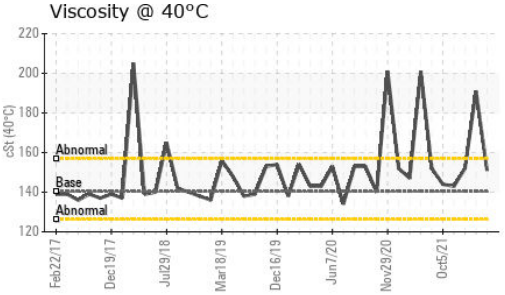
Acid Number



Viscosity @ 100°C



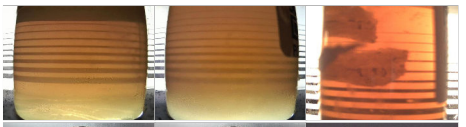
Viscosity @ 40°C



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	1.5	**1.14**	0.68	1.30

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	**VLITE**	NONE	NONE
Debris	scalar	Visual*	NONE	**VLITE**	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*	>0.2	**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	**151**	191	152
Visc @ 100°C	cSt	ASTM D7279(m)	15.05	**15.6**	17.5	15.6
Viscosity Index (VI)	Scale	ASTM D2270*	109	**105**	98	105

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC
Lab Number : 02582284
Unique Number : 5643349
Test Package : MAR 2 (Additional Tests: KV100, PQ, PrtCount, VI)
Received : 13 Sep 2023
Diagnosed : 15 Sep 2023
Diagnostician : Kevin Marson

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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