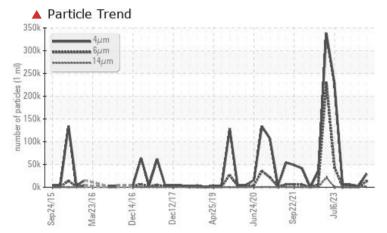


PROBLEM SUMMARY

Area **3 Calender Line 42-0219 Calender Brgs.** Component Bearing Fluid

DOW CHEMICAL UCON CALENDAR OIL 51 (200 GAL)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

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. Resample in 30-45 days to monitor this situation.

PROBLEMATIC TEST RESULTS Sample Status SEVERE NORMAL NORMAL A 13255 Particles >6µm ASTM D7647 >2500 365 966 Particles >14µm ASTM D7647 >160 **2488** 40 86 27 Particles >21µm ASTM D7647 >40 969 15 Particles >38µm ASTM D7647 >10 🔺 99 2 4 2 Particles >71µm ASTM D7647 >3 **1**0 1 **Oil Cleanliness** ISO 4406 (c) >--/18/14 **22/21/18** 19/16/12 20/17/14

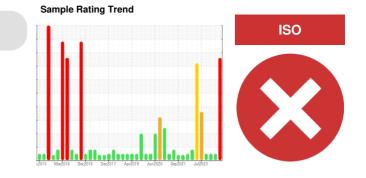
Customer Id: CAN52CAM Sample No.: WC0892239 Lab Number: 02644909 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data: Wes Davis +1 905-569-8600 x223 wesd@wearcheck.ca

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



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			?	Resample in 30-45 days to monitor this situation.		
Check Breathers			?	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.		
Check Dirt Access			?	We advise that you check all areas where contaminants can enter the system.		
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



20 Mar 2024 Diag: Wes Davis

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.



03 Jan 2024 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.



\checkmark

NORMAL

NORMAL

03 Oct 2023 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.





OIL ANALYSIS REPORT

Area **3 Calender Line 42-0219 Calender Brgs.** Component

Bearing

Fluid OOW CHEMICAL UCON CALENDAR OIL 51 (200 GAL)

DIAGNOSIS

Recommendation

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. Resample in 30-45 days to monitor this situation.

Wear

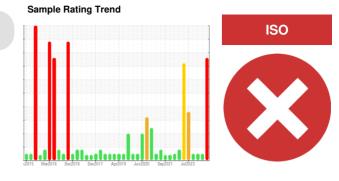
All component wear rates are normal.

Contamination

There is a high amount of particulates (2 to 100 microns in size) present in the oil. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code.

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 INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0892239	WC0892254	WC0744102
Sample Date		Client Info		06 Jun 2024	20 Mar 2024	03 Jan 2024
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				SEVERE	NORMAL	NORMAL
CONTAMINATIC	N	method	limit/base	current	history1	history2
Water		WC Method	>2	NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	0	0	0
Chromium	ppm	ASTM D5185(m)	>20	0	0	0
Nickel	ppm	ASTM D5185(m)	>20	<1	0	0
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)		0	0	0
Aluminum	ppm	ASTM D5185(m)	>20	<1	0	<1
Lead	ppm	ASTM D5185(m)	>20	0	0	<1
Copper	ppm	ASTM D5185(m)		0	<1	<1
Tin	ppm	ASTM D5185(m)	>20	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
	ppm	method ASTM D5185(m)	limit/base	current 0	history1 0	history2 0
Boron	ppm ppm		limit/base			
Boron Barium		ASTM D5185(m)	limit/base	0	0	0
Boron Barium Molybdenum	ppm	ASTM D5185(m) ASTM D5185(m)	limit/base	0 0	0 0	0
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	0 0 0	0 0 0	0 0 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	0 0 0 0	0 0 0 0	0 0 0 0
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	0 0 0 <1	0 0 0 0 0	0 0 0 0 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	0 0 0 <1 0	0 0 0 0 0 0	0 0 0 0 0 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	0 0 0 <1 0 0	0 0 0 0 0 <1	0 0 0 0 0 0 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	0 0 0 <1 0 0 <1	0 0 0 0 0 0 <1 <1	0 0 0 0 0 0 0 0 0 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	0 0 0 <1 0 0 0 <1 <1	0 0 0 0 0 <1 <1 4	0 0 0 0 0 0 0 0 0 4 1 37
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)		0 0 0 <1 0 0 <1 <1 <1 <1 <1 <1	0 0 0 0 0 <1 <1 <1 4 <1	0 0 0 0 0 0 0 <1 37 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm S	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) method ASTM D5185(m)	limit/base	0 0 0 <1 0 0 <1 <1 <1 <1 <1 <1 current 0	0 0 0 0 0 <1 <1 <1 4 <1 4 5 1 0	0 0 0 0 0 0 0 0 4 1 37 <1 8 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base >15	0 0 0 <1 0 0 <1 <1 <1 <1 <1 <1	0 0 0 0 0 <1 <1 4 <1 4 1 history1	0 0 0 0 0 0 0 0 0 0 37 <1 37 <1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m)	limit/base >15	0 0 0 <1 0 0 <1 <1 <1 <1 <1 <1 0 0 3	0 0 0 0 0 <1 <1 4 <1 4 <1 history1 0 <1	0 0 0 0 0 0 0 <1 37 <1 37 <1 history2 1 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	limit/base >15 >20	0 0 0 <1 0 0 <1 <1 <1 <1 <1 <1 0 0 3 3 3	0 0 0 0 0 <1 <1 4 <1 4 <1 history1 0 <1 0	0 0 0 0 0 0 0 0 0 0 0 1 37 <1 37 <1 history2 1 <1 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon Sodium Potassium FLUID CLEANLI Particles >4µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	limit/base >15 >20 limit/base	0 0 0 (0 <1 0 (1) <1 <1 <1 <1 <1 (1) 0 3 3 3 2 0 29498	0 0 0 0 0 0 <1 <1 <1 4 <1 4 <1 history1 0 <1 0 0 history1 2514	0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 37 1 37 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon Sodium Potassium FLUID CLEANLII Particles >4µm Particles >6µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	limit/base >15 >20 limit/base	0 0 0 10 <1 0 0 <1 <1 <1 <1 <1 <1 0 0 3 3 3 2 29498 ▲ 13255	0 0 0 0 0 0 <1 <1 4 <1 4 <1 history1 0 <1 0 0 <1 0 0 history1 2514 365	0 0 0 0 0 0 0 0 1 37 4 1 37 4 1 37 4 1 37 4 1 37 4 1 37 4 1 0 0 1 1 5737 966
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon Sodium Potassium FLUID CLEANLII Particles >4µm Particles >4µm Particles >14µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	limit/base >15 >20 limit/base >2500 >160	0 0 0 (0 <1 0 0 <1 <1 <1 <1 <1 0 3 3 3 2 29498 ▲ 13255 ▲ 2488	0 0 0 0 0 0 1 0 <1 4 <1 4 <1 history1 0 <1 0 0 <1 0 0 history1 2514 365 40	0 0 0 0 0 0 0 0 0 1 37 4 1 37 4 1 37 4 1 37 4 1 37 4 1 37 4 1 0 0 1 1 0 0 1 1 0 1 1 0 1 1 0 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon Sodium Potassium FLUID CLEANLII Particles >4µm Particles >6µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	limit/base >15 >20 limit/base >2500 >160 >40	0 0 0 0 <1 0 0 <1 <1 <1 <1 <1 <1 0 0 3 3 3	0 0 0 0 0 0 1 1 1 1 4 3 1 history1 0 2 5 1 4 0 history1 2 5 1 4 0 1 5	0 0 0 0 0 0 0 0 1 37 <1 37 <1 37 <1 37 <1 37 57 37 9 6 6 8 6 8 6 27
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon Sodium Potassium FLUID CLEANLI Particles >4µm Particles >4µm Particles >21µm Particles >38µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	limit/base >15 >20 limit/base >2500 >160 >40 >10	0 0 0 0 3 4 1 0 0 4 1 4 1 4 1 0 0 3 3 3 2 4 8 4 13255 4 2488 4 969 4 99	0 0 0 0 0 0 1 4 4 1 4 4 1 1 history1 0 4 0 history1 2514 365 40 15 2	0 0 0 0 0 0 0 37 4 1 37 4 1 37 4 1 37 4 37 5 1 37 5 1 5 37 5 7 37 9 6 6 8 6 8 6 8 6 2 7 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	limit/base >15 >20 limit/base >2500 >160 >40 >10	0 0 0 0 <1 0 0 <1 <1 <1 <1 <1 <1 0 0 3 3 3	0 0 0 0 0 0 1 1 1 1 4 3 1 history1 0 2 5 1 4 0 history1 2 5 1 4 0 1 5	0 0 0 0 0 0 0 0 1 37 <1 37 <1 37 <1 37 <1 37 57 37 9 6 6 86 86 27



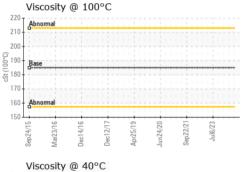
OIL ANALYSIS REPORT

cle Count				T ²⁶
				-24
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1. 1.				-18 199
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			-	12 8
				-8
6µ 14	μ 21μ	38	u.	-6 71μ
M	L 6	A		
Mar23/16 Dec14/16	Dec12/17 Apr25/19	Jun24/20	Sep 22/21	
Mar23/16 Dec14/16	Dec12/1 Apr25/1	Jun24/20 -	Sep 22/21.	
	6μ 14 cle Trend 4μm 14μm	6μ 14μ 21μ cle Trend 4μm 6μm	6μ 14μ 21μ 36j cle Trend ^{4μm}	6μ 14μ 21μ 38μ cle Trend

FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*		4.26	2.95	3.64
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	VLITE	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*	>2	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	1150	1070	1001	1152
Visc @ 100°C	cSt	ASTM D7279(m)	185	186		
Viscosity Index (VI)	Scale	ASTM D2270*	287	298		
SAMPLE IMAGES	6	method	limit/base	current	history1	history2

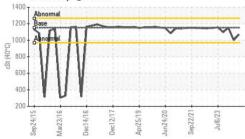
Color

Bottom



Dec12/17 vpr25/19 sep22/21

ul6/23





P 1.0-

0.0

Sep24/15

lar23/16

lec14/16

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 CANADIAN GENERAL TOWER LTD. Laboratory CALA : WC0892239 Received : 02 Jul 2024 Sample No. Lab Number : 02644909 Tested : 04 Jul 2024 ISO 17025:2017 Accredited Laboratory Unique Number : 5802448 Diagnosed : 04 Jul 2024 - Wes Davis Test Package : IND 2 (Additional Tests: KV100, 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.

52 MIDDLETON STREET, P.O. BOX 160 CAMBRIDGE, ON CA N1S 2R4 Contact: Bob Abell bob.abell@cgtower.com T: (519)623-1630 F: (519)623-7018

Report Id: CAN52CAM [WCAMIS] 02644909 (Generated: 07/04/2024 09:07:18) Rev: 1

Contact/Location: Bob Abell - CAN52CAM