

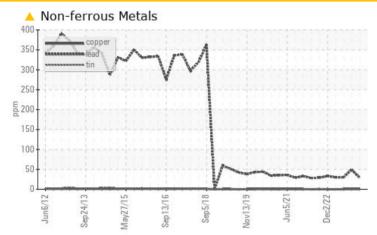
PROBLEM SUMMARY

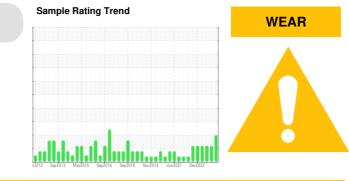
Area Cochrane Machine Id CCH01 Governor Oil (S/N 448528) Component

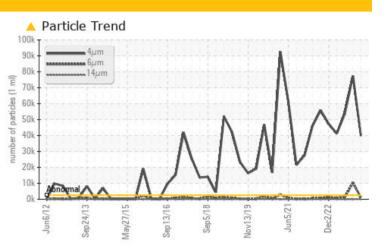
Reservoir Hydraulic System

CONOCO MULTIPURPOSE R&O OIL ISO 68 (100 GAL)

COMPONENT CONDITION SUMMARY







RECOMMENDATION

We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS								
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL		
Lead	ppm	ASTM D5185m	>20	<u> </u>	29	30		
Particles >4µm		ASTM D7647	>2500	🔺 77484	4 39817	5 3763		
Particles >6µm		ASTM D7647	>640	<u> </u>	1 006	1 316		
Oil Cleanliness		ISO 4406 (c)	>18/16/13	A 23/21/13	🔺 22/17/11	2 3/18/10		

Customer Id: PPLBUT Sample No.: WC0757847 Lab Number: 05933486 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data: Jonathan Hester +1 919-379-4092 x4092 jhester@wearcheckusa.com

To change component or sample information: Customer Service +1 1-800-237-1369 customerservice@wearcheck.com

RECOMMENDED AC	TIONS			
Action	Status	Date	Done By	Description
Change Filter			?	We recommend you service the filters on this component if applicable.

HISTORICAL DIAGNOSIS



12 Aug 2023 Diag: Jonathan Hester

No corrective action is recommended at this time. Resample at the next service interval to monitor.All component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.



view report

28 Apr 2023 Diag: Don Baldridge



We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor.All component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

08 Mar 2023 Diag: Jonathan Hester

No corrective action is recommended at this time. Resample at the next service interval to monitor.All component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.









OIL ANALYSIS REPORT

Area Cochrane Machine Id CCH01 Governor Oil (S/N 448528)

Reservoir Hydraulic System

CONOCO MULTIPURPOSE R&O OIL ISO 68 (100 GAL)

DIAGNOSIS

Recommendation

We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor.

🔺 Wear

The lead level is abnormal. All other component wear rates are normal.

Contamination

There is a high amount of silt (particulates < 14 microns in size) present in the oil.

Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

1012 Sep-2013 Meg/2015 Sep-2016 Sep-2018 Jour/2021 Dec/2022

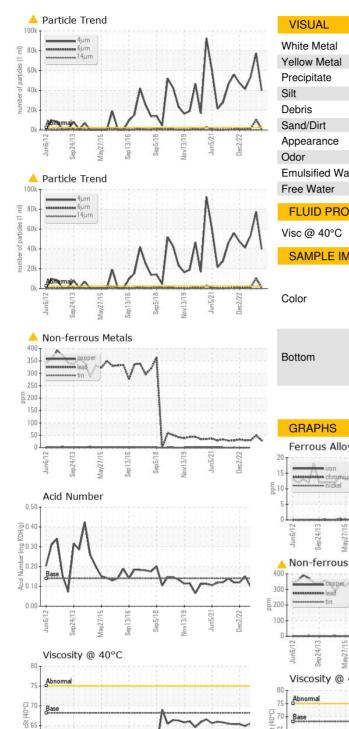
WEAR

Sample Rating Trend

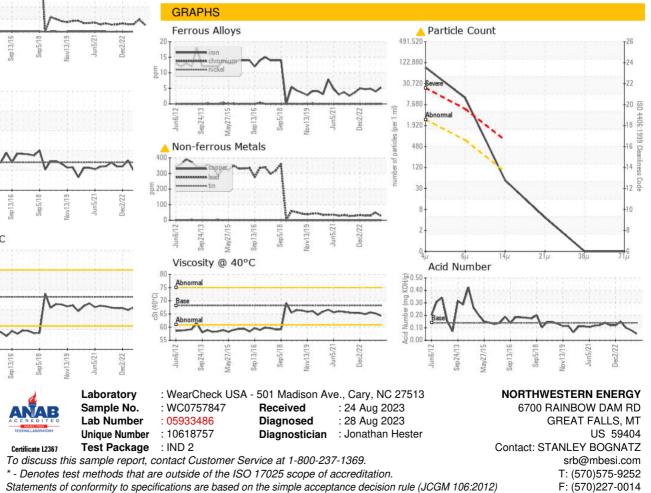
Oil ChangedClient InfoN/AN/ASample StatusImit InfoABNORMALABNORMALABNORMALWEAR METALSmethodlimit/basecurrenthistory1history2IronppmASTM D5185m>20455ChromiumppmASTM D5185m>20000NickelppmASTM D5185m>20000TitaniumppmASTM D5185m20000SilverppmASTM D5185m20000	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 0 0 0 Oil Age hrs Client Info N/A N/A N/A Sample Status Client Info N/A ABNORMAL ABNORMAL ABNORMAL WEAR METALS method Imil/bas current history1 history2 Iron ppm ASTM D5185m >20 4 5 5 Chromium ppm ASTM D5185m >20 0 0 0 Nickel ppm ASTM D5185m >20 0 0 0 Silver ppm ASTM D5185m >20 0 0 0 Silver ppm ASTM D5185m >20 4 0 0 0 Auminum ppm ASTM D5185m >20 4 1 -1 -1 Lead ppm ASTM D5185m >20 -1 -1 -1 -1 Nadadium ppm ASTM D5185m >20 -1 -1< -1 Vanadium ppm ASTM D5185m 20 -1 -1< -1 Vanadium ppm ASTM D5185m 20 -1 -1< -1 Nolybdenum	Sample Number		Client Info		WC0757847	WC0757848	WC0757785
Oil Age hrs Client Info 0 0 0 Oil Changed Client Info N/A ABNORMAL ABNORMAL ABNORMAL Sample Status method limit/base current history1 history2 Iron ppm ASTM D5185m >20 4 5 5 Chromium ppm ASTM D5185m >20 0 0 0 Nickel ppm ASTM D5185m >20 0 0 0 Aluminum ppm ASTM D5185m >20 0 0 0 Aluminum ppm ASTM D5185m >20 4 1 -1 -1 Lead ppm ASTM D5185m >20 <1 <1 -1 -1 -1 Vanadium ppm ASTM D5185m >20 <1 <1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	Sample Date		Client Info		12 Aug 2023	12 Aug 2023	28 Apr 2023
Oil ChangedClient InfoN/AN/AN/AAABNORMAL<	Machine Age	hrs	Client Info		0	0	0
Sample Status method limit/base current history1 ABNORMAL ABNORMAL ABNORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 0 0 0 Nickel ppm ASTM D5185m >20 0 0 0 Silver ppm ASTM D5185m >20 0 0 0 Aluminum ppm ASTM D5185m >20 0 0 -11 Lead ppm ASTM D5185m >20 <1 <1 <1 -11 Tin ppm ASTM D5185m >20 <1 <1 <1 <1 Vanadium ppm ASTM D5185m >20 <1 <1 <1 <1 Vanadium ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Molybden	Oil Age	hrs	Client Info		0	0	0
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 4 5 5 Chromium ppm ASTM D5185m >20 0 0 0 Nickel ppm ASTM D5185m >20 0 0 0 Silver ppm ASTM D5185m >20 0 0 -1 Lead ppm ASTM D5185m >20 < 1 -1 -1 Lead ppm ASTM D5185m >20 <1 -1 -1 -1 Lead ppm ASTM D5185m >20 <1 -1 -1 -1 Vanadium ppm ASTM D5185m >20 <1 0 0 0 Vanadium ppm ASTM D5185m >20 <1 -1 -1 1 1 0 0 0 0 0 0 0 0 0 0 0	Oil Changed		Client Info		N/A	N/A	N/A
Iron ppm ASTM D5185m >20 4 5 5 Chromium ppm ASTM D5185m >20 0 0 0 Nickel ppm ASTM D5185m >20 0 0 0 Silver ppm ASTM D5185m 0 0 0 0 Astm D5185m >20 0 0 0 -1 Lead ppm ASTM D5185m >20 <1 -1 -1 Lead ppm ASTM D5185m >20 <1 -1 -1 -1 Lead ppm ASTM D5185m >20 <1 -1 -1 -1 Cadmium ppm ASTM D5185m >20 <1 -1 -1 0	Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
Chromium ppm ASTM D5185m >20 0 0 0 Nickel ppm ASTM D5185m >20 0 0 0 Silver ppm ASTM D5185m 0 0 0 0 Silver ppm ASTM D5185m 20 0 0 0 0 Auminum ppm ASTM D5185m >20 499 29 30 Copper ppm ASTM D5185m >20 <1 <1 <1 Tin ppm ASTM D5185m >20 <1 <1 <1 <1 Cadmium ppm ASTM D5185m 0 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 0 Boron ppm ASTM D5185m 0 0 0 0 0 Maganese ppm ASTM D5185m 1 0 0 0 Phosphorus ppm	WEAR METALS		method	limit/base	current	history1	history2
Chromium ppm ASTM D5185m >20 0 0 0 Nickel ppm ASTM D5185m >20 0 0 0 Titanium ppm ASTM D5185m >20 0 0 0 Silver ppm ASTM D5185m >20 0 0 0 Aluminum ppm ASTM D5185m >20 1 <1	Iron	ppm	ASTM D5185m	>20	4	5	5
Nickel ppm ASTM D5185m >20 0 0 0 Titanium ppm ASTM D5185m 0 0 0 Silver ppm ASTM D5185m 0 0 0 Atuminum ppm ASTM D5185m >20 4 99 29 30 Copper ppm ASTM D5185m >20 <1	Chromium	ppm	ASTM D5185m	>20	0	0	0
Titanium ppm ASTM D5185m 0 0 0 Silver ppm ASTM D5185m >20 0 0 <1	Nickel		ASTM D5185m	>20	0	0	0
Silver ppm ASTM D5185m 0 0 0 Aluminum ppm ASTM D5185m >20 4 49 29 30 Copper ppm ASTM D5185m >20 <1	Titanium		ASTM D5185m		0	0	0
Aluminum ppm ASTM D5185m >20 0 0 <1 Lead ppm ASTM D5185m >20 <1	Silver		ASTM D5185m		0	0	0
Lead ppm ASTM D5185m >20 ▲ 49 29 30 Copper ppm ASTM D5185m >20 <1	Aluminum		ASTM D5185m	>20	0	0	<1
Copper ppm ASTM D5185m >20 <1 <1 <1 Tin ppm ASTM D5185m >20 <1	Lead				49	29	30
Tin ppm ASTM D5185m >20 <1 <1 <1 Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 Magnese ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 1 0 0 0 Calcium ppm ASTM D5185m 17 11 15 Zinc ppm ASTM D5185m 2 0 0 2 Sulfur ppm ASTM D5185m 2 6 0 0 Sulfur ppm ASTM D5185m 2 6 0 0 Soliton ppm ASTM D5185m 2					-		
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Barium ppm ASTM D5185m 2 2 0 Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m 0 0 0 Magnesium ppm ASTM D5185m 1 0 0 Calcium ppm ASTM D5185m 17 11 15 Zinc ppm ASTM D5185m 17 11 0 0 Sulfur ppm ASTM D5185m 17 11 15 0 Sulfur ppm ASTM D5185m 17 11 0 0 Sulfur ppm ASTM D5185m 0 49 125 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 2 <1 0 Potassium ppm ASTM D7647 >20 4 39817 53763 Particles >4µm ASTM D7647				IIIIII/Dase			
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Manganese ppm ASTM D5185m 0 0 0 Magnesium ppm ASTM D5185m 1 0 0 Calcium ppm ASTM D5185m 2 0 0 Phosphorus ppm ASTM D5185m 17 11 15 Zinc ppm ASTM D5185m 17 11 15 Sulfur ppm ASTM D5185m <1 <1 0 0 Sulfur ppm ASTM D5185m <17 11 15 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m<>15 6 0 0 0 Potassium ppm ASTM D5185m >20 2 <1 0 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >2500 77484 39817 53763 Particles >4µm ASTM D7647 >200 1006 1316 Particles >14µm ASTM D7647 2		ppm					
Magnesium ppm ASTM D5185m 1 0 0 Calcium ppm ASTM D5185m 2 0 0 Phosphorus ppm ASTM D5185m 17 11 15 Zinc ppm ASTM D5185m <1	-				-		
Calcium ppm ASTM D5185m 2 0 0 Phosphorus ppm ASTM D5185m 17 11 15 Zinc ppm ASTM D5185m <1	-	ppm			-		
Phosphorus ppm ASTM D5185m 17 11 15 Zinc ppm ASTM D5185m <1	•						
Zinc ppm ASTM D5185m <1 <1 0 Sulfur ppm ASTM D5185m 0 49 125 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 6 0 0 Sodium ppm ASTM D5185m >15 6 0 0 Sodium ppm ASTM D5185m >20 2 <1		ppm					
SulfurppmASTM D5185m049125CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>15600SodiumppmASTM D5185m>15600PotassiumppmASTM D5185m>202<1	•	ppm					
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Sodium ppm ASTM D5185m 0 0 0 Potassium ppm ASTM D5185m >20 2 <1	CONTAMINANTS	5	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 2 <1 0 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >2500 77484 39817 53763 Particles >6µm ASTM D7647 >640 10370 1006 1316 Particles >14µm ASTM D7647 >80 46 14 6 Particles >21µm ASTM D7647 >20 4 2 2 Particles >38µm ASTM D7647 >30 0 0 0 Particles >71µm ASTM D7647 >3 0 22/17/11 23/18/10 FLUID DEGRADATION method limit/base current history1 history2	Silicon	ppm	ASTM D5185m	>15	6	0	0
FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >2500 ▲ 77484 ▲ 39817 ▲ 53763 Particles >6µm ASTM D7647 >640 ▲ 10370 ▲ 1006 ▲ 1316 Particles >6µm ASTM D7647 >80 46 14 6 Particles >14µm ASTM D7647 >20 4 2 2 Particles >21µm ASTM D7647 >20 4 2 2 Particles >38µm ASTM D7647 >4 0 0 0 Particles >71µm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >18/16/13 23/21/13 22/17/11 23/18/10 FLUID DEGRADATION method limit/base current history1 history2	Sodium	ppm	ASTM D5185m		0	0	0
Particles >4μm ASTM D7647 >2500 77484 39817 53763 Particles >6μm ASTM D7647 >640 10370 1006 1316 Particles >14μm ASTM D7647 >80 46 14 6 Particles >21μm ASTM D7647 >20 4 2 2 Particles >21μm ASTM D7647 >20 4 2 2 Particles >38μm ASTM D7647 >4 0 0 0 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >18/16/13 23/21/13 22/17/11 23/18/10 FLUID DEGRADATION method limit/base current history1 history2	Potassium	ppm	ASTM D5185m	>20	2	<1	0
Particles >6µm ASTM D7647 >640 ▲ 10370 ▲ 1006 ▲ 1316 Particles >14µm ASTM D7647 >80 46 14 6 Particles >21µm ASTM D7647 >20 4 2 2 Particles >38µm ASTM D7647 >4 0 0 0 Particles >38µm ASTM D7647 >4 0 0 0 Particles >71µm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >18/16/13 23/21/13 22/17/11 23/18/10	FLUID CLEANLIN	IESS	method	limit/base	current	history1	history2
Particles >14µm ASTM D7647 >80 46 14 6 Particles >21µm ASTM D7647 >20 4 2 2 Particles >38µm ASTM D7647 >4 0 0 0 Particles >38µm ASTM D7647 >4 0 0 0 Particles >71µm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >18/16/13 23/21/13 22/17/11 23/18/10 FLUID DEGRADATION method limit/base current history1 history2	Particles >4µm		ASTM D7647	>2500	A 77484	▲ 39817	▲ 53763
Particles >21μm ASTM D7647 >20 4 2 2 Particles >38μm ASTM D7647 >4 0 0 0 Particles >38μm ASTM D7647 >4 0 0 0 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >18/16/13 23/21/13 22/17/11 23/18/10 FLUID DEGRADATION method limit/base current history1 history2	Particles >6µm		ASTM D7647	>640	<u> </u>	1 006	1 316
Particles >38μm ASTM D7647 >4 0 0 0 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >18/16/13 23/21/13 22/17/11 23/18/10 FLUID DEGRADATION method limit/base current history1 history2	Particles >14µm		ASTM D7647	>80	46	14	6
Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >18/16/13 23/21/13 22/17/11 23/18/10 FLUID DEGRADATION method limit/base current history1 history2	Particles >21µm		ASTM D7647	>20	4	2	2
Oil Cleanliness ISO 4406 (c) >18/16/13 23/21/13 22/17/11 23/18/10 FLUID DEGRADATION method limit/base current history1 history2	Particles >38µm		ASTM D7647	>4	0	0	0
FLUID DEGRADATION method limit/base current history1 history2	Particles >71µm		ASTM D7647	>3	0	0	0
	Oil Cleanliness		ISO 4406 (c)	>18/16/13	A 23/21/13	▲ 22/17/11	▲ 23/18/10
Acid Number (AN) mg KOH/g ASTM D8045 0.14 0.053 0.08 0.10	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
	Acid Number (AN)	mg KOH/g	ASTM D8045	0.14	0.053	0.08	0.10



OIL ANALYSIS REPORT



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	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	>0.05	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	68.2	64.3	65.2	65.6
SAMPLE IMAGES	6	method	limit/base	current	history1	history2
Color						
Bottom			1			



Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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Contact/Location: STANLEY BOGNATZ - PPLBUT