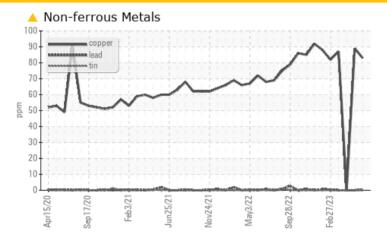


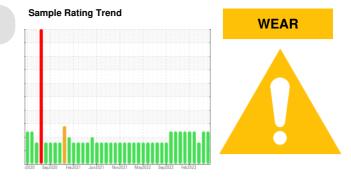
## **PROBLEM SUMMARY**

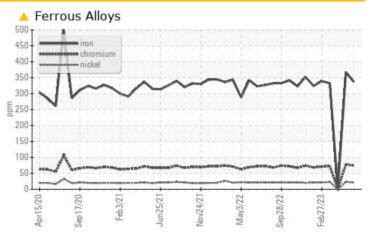
## CRM54 Machine Id CRM 54 DIRTY OIL TANK (S/N 16-2200-1025) Component Tank Oil

Fluid W8 BACH RSA 4 (54000 GAL)

## COMPONENT CONDITION SUMMARY







#### RECOMMENDATION

No corrective action is recommended at this time. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS								
Sample Status				ATTENTION	ATTENTION	ABNORMAL		
Iron	ppm	ASTM D5185m	>20	<b>A</b> 337	<b>A</b> 367	0		
Chromium	ppm	ASTM D5185m	>20	<b>4</b> 74	<b>1</b> 78	0		
Copper	ppm	ASTM D5185m	>20	<u> </u>	<u> </u>	0		

Customer Id: OUTCALAL Sample No.: RP0035135 Lab Number: 05861132 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 <u>jhester@wearcheckusa.com</u>

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

RECOMMENDED A	ECOMMENDED ACTIONS				
Action	Status	Date	Done By	Description	
Resample	MISSED	Jul 06 2023	?	We recommend an early resample to monitor this condition.	

## HISTORICAL DIAGNOSIS

### 28 Apr 2023 Diag: Jonathan Hester



No corrective action is recommended at this time. We recommend an early resample to monitor this condition.Bearing and/or gear wear is indicated. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.



view report

## 21 Apr 2023 Diag: Doug Bogart

WATER



# We advise that you follow the water drain-off procedure for this component. Resample at the next service interval to monitor.All component wear rates are normal. Free water present. The oil viscosity is lower than normal. This plus the additive levels indicates the addition of a different brand, or type of oil than histories. The AN level is acceptable for this fluid.

30 Mar 2023 Diag: Angela Borella

We recommend you service the filters on this component if applicable. We recommend an early resample to monitor this condition.Bearing and/or gear wear is indicated. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.







## **OIL ANALYSIS REPORT**

## CRM54 Machine Id CRM 54 DIRTY OIL TANK (S/N 16-2200-1025)

Tank Oil

## W8 BACH RSA 4 (54000 GAL)

## DIAGNOSIS

#### A Recommendation

No corrective action is recommended at this time. We recommend an early resample to monitor this condition.

## 🔺 Wear

Bearing and/or gear wear is indicated.

#### Contamination

There is no indication of any contamination in the oil.

## Fluid Condition

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



Sample Date     Client Info     30 May 2023     28 Apr 2023     21 Apr 2023       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     N/A       Sample Status     method     limit/base     current     history1     ABNORMAN       WEAR METALS     method     limit/base     current     history1     ABNORMAN       PQ     ASTM D5185m     20     A 337     A 367     0       Chromium     ppm     ASTM D5185m     20     A 74     A 78     0       Nickel     ppm     ASTM D5185m     20     Q     -1     -1     1       Lead     ppm     ASTM D5185m     20     Q     -1     -1     1<	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age     hrs     Client Info     0     0     0     0       Oil Age     hrs     Client Info     0     0     0     0       Oil Changed     Client Info     N/A     N/A     N/A     N/A       Sample Status     method     Imit/base     current     history1     history2       PQ     ASTM D8184     13     17     12     7     12       from     ppm     ASTM D5185n     >20     A     367     0       Nickel     ppm     ASTM D5185n     >20     A     74     A     78     0       Silver     ppm     ASTM D5185n     >20     A     1	Sample Number		Client Info		RP0035135	RP0034558	RP0031254
Oil Age     hrs     Client Info     0     0     0       Oil Changed     Client Info     N/A     N/A     N/A     N/A       Sample Status     method     limit/base     current     history1     ABNORMAI       WEAR METALS     method     limit/base     current     history1     history2       PQ     ASTM D8184     13     17     12       Iron     ppm     ASTM D8185m     >20     A 337     A 367     0       Chromium     ppm     ASTM D5185m     >20     A 74     A 78     0       Nickel     ppm     ASTM D5185m     >20     Q     1     -1       Lead     ppm     ASTM D5185m     >20     Q     -1     -1       Lead     ppm     ASTM D5185m     >20     Q     0     0     0       Vanadium     ppm     ASTM D5185m     >20     Q     0     0     0       ASTM D5185m     >20     Q     Q     Q     Q     Q     Q </th <th>Sample Date</th> <th></th> <th>Client Info</th> <th></th> <th>30 May 2023</th> <th>28 Apr 2023</th> <th>21 Apr 2023</th>	Sample Date		Client Info		30 May 2023	28 Apr 2023	21 Apr 2023
Oil Changed Sample Status     Client Info     N/A     N/A     N/A     N/A       WEAR METALS     method     limit/base     current     history1     history2       PQ     ASTM D8184     13     17     12       Iron     ppm     ASTM D8185m     >20     A 337     A 367     0       Chromium     ppm     ASTM D5185m     >20     A 74     A 78     0       Nickel     ppm     ASTM D5185m     >20     A 74     A 78     0       Silver     ppm     ASTM D5185m     >20     C1     23     0       Copper     ppm     ASTM D5185m     >20     C1     0     0       Copper     ppm     ASTM D5185m     >20     C1     0     0       Cadmium     ppm     ASTM D5185m     >20     C1     0     0     0       Cadmium     ppm     ASTM D5185m     20     C1     0     0     0       Cadmium     ppm     ASTM D5185m     21     1	Machine Age	hrs	Client Info		0	0	0
Sample Status     Image: Status     ATTENTION     ATTENTION     ABNORMAL       WEAR METALS     method     limit/base     current     history1     history2       PQ     ASTM D8184     13     17     12       Iron     ppm     ASTM D5185m     >20     337     367     0       Chromium     ppm     ASTM D5185m     >20     21     23     0       Nickel     ppm     ASTM D5185m     >20     21     23     0       Silver     ppm     ASTM D5185m     >20     0     -1     -1       Lead     ppm     ASTM D5185m     >20     0     -1     0       Copper     ppm     ASTM D5185m     >20     0     0     0       Cadmium     ppm     ASTM D5185m     >20     0     0     0     0       Cadmium     ppm     ASTM D5185m     >20     0     0     0     0       ADDITVES     method     limit/base     current     history1     history2 <td>Oil Age</td> <td>hrs</td> <td>Client Info</td> <td></td> <th>0</th> <td>0</td> <td>0</td>	Oil Age	hrs	Client Info		0	0	0
WEAR METALS     method     limit/base     current     history1     history2       PQ     ASTM D8184     13     17     12       Iron     ppm     ASTM D5185m     >20     ▲     337     ▲     367     0       Chromium     ppm     ASTM D5185m     >20     ▲     74     ▲     78     0       Nickel     ppm     ASTM D5185m     >20     ▲     74     ▲     78     0       Nickel     ppm     ASTM D5185m     >20     ▲     74     ▲     78     0       Aluminum     ppm     ASTM D5185m     >20     <1	Oil Changed		Client Info		N/A	N/A	N/A
PQ   ASTM D8184   13   17   12     Iron   ppm   ASTM D5185m   >20   337   367   0     Chromium   ppm   ASTM D5185m   >20   74   78   0     Nickel   ppm   ASTM D5185m   >20   21   23   0     Titanium   ppm   ASTM D5185m   0   0   0     Silver   ppm   ASTM D5185m   >20   21   23   0     Aluminum   ppm   ASTM D5185m   >20   0   <1	Sample Status				ATTENTION	ATTENTION	ABNORMAL
Iron     ppm     ASTM D5185m     >20     ▲ 337     ▲ 367     0       Chromium     ppm     ASTM D5185m     >20     ▲ 74     ▲ 78     0       Nickel     ppm     ASTM D5185m     >20     21     23     0       Titanium     ppm     ASTM D5185m     0     0     0     0       Aluminum     ppm     ASTM D5185m     >20     21     23     0       Aluminum     ppm     ASTM D5185m     >20     0     <11     <1       Lead     ppm     ASTM D5185m     >20     0     <11     <1       Lead     ppm     ASTM D5185m     >20     0     0     0       Copper     ppm     ASTM D5185m     >20     0     0     0       Cadmium     ppm     ASTM D5185m     2     0     0     0       Cadmium     ppm     ASTM D5185m     0     0     0     0       Boron     ppm     ASTM D5185m     2     1     0	WEAR METALS		method	limit/base	current	history1	history2
Chromium     ppm     ASTM D5185m     >20     ▲ 74     ▲ 78     0       Nickel     ppm     ASTM D5185m     >20     21     23     0       Titanium     ppm     ASTM D5185m     0     0     0     0       Silver     ppm     ASTM D5185m     20     0     <1	PQ		ASTM D8184		13	17	12
Nickel     ppm     ASTM D5185m     >20     21     23     0       Titanium     ppm     ASTM D5185m     0     0     0     0       Silver     ppm     ASTM D5185m     >20     0     <1	Iron	ppm	ASTM D5185m	>20	<b>A</b> 337	<b>A</b> 367	0
Titanium   ppm   ASTM D5185m   0   0   0     Silver   ppm   ASTM D5185m   >20   0   <1   <1     Lead   ppm   ASTM D5185m   >20   <1   <1   <1     Lead   ppm   ASTM D5185m   >20   <1   0   0     Copper   ppm   ASTM D5185m   >20   <83   &89   0     Tin   ppm   ASTM D5185m   >20   0   0   0     Cadmium   ppm   ASTM D5185m   >20   0   0   0     Cadmium   ppm   ASTM D5185m   <1   <1   <1   0     Cadmium   ppm   ASTM D5185m   0   0   0   0     ADDITIVES   method   limit/base   current   history1   history2     Boron   ppm   ASTM D5185m   0   0   0   0     Magnesium   ppm   ASTM D5185m   21   21   <1     Magnesium   ppm   ASTM D5185m   7   8   <1     Phosphorus	Chromium	ppm	ASTM D5185m	>20	<u> </u>	<b>A</b> 78	0
Silver     ppm     ASTM D5185m     0     0     0       Aluminum     ppm     ASTM D5185m     >20     <1	Nickel	ppm	ASTM D5185m	>20	21	23	0
Aluminum   ppm   ASTM D5185m   >20   <1	Titanium	ppm	ASTM D5185m		0	0	0
Lead   ppm   ASTM 05185m   >20   <1	Silver	ppm	ASTM D5185m		0	0	0
Copper     ppm     ASTM D5185m     >20     A 83     A 89     0       Tin     ppm     ASTM D5185m     >20     0     0     0     0       Vanadium     ppm     ASTM D5185m     <1	Aluminum	ppm	ASTM D5185m	>20	0	<1	<1
Tin     ppm     ASTM D5185m     >20     0     0     0       Vanadium     ppm     ASTM D5185m     <1	Lead	ppm	ASTM D5185m	>20	<1	0	0
VanadiumppmASTM D5185m<1<10CadmiumppmASTM D5185m0000ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185m0000BariumppmASTM D5185m0000MolybdenumppmASTM D5185m210MaganeseppmASTM D5185m2121<1<1MagnesiumppmASTM D5185m000<1CalciumppmASTM D5185m78<1<1PhosphorusppmASTM D5185m115812921475ZincppmASTM D5185m115812921475SiliconppmASTM D5185m>15440SodiumppmASTM D5185m>20100Water%ASTM D5185m>20100Water%ASTM D63040.0070.0060.017ppm WaterppmASTM D630473.767.2170	Copper	ppm	ASTM D5185m	>20	<u> </u>	<u> </u>	0
VanadiumppmASTM D5185m<1<10CadmiumppmASTM D5185m0000ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185m0000BariumppmASTM D5185m0000MolybdenumppmASTM D5185m210ManganeseppmASTM D5185m2121<1	Tin	ppm	ASTM D5185m	>20	0	0	0
ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185m0000BariumppmASTM D5185m0000MolybdenumppmASTM D5185m210ManganeseppmASTM D5185m2121<1	Vanadium		ASTM D5185m		<1	<1	0
Boron     ppm     ASTM D5185m     0     0     0       Barium     ppm     ASTM D5185m     0     0     0     0       Molybdenum     ppm     ASTM D5185m     2     1     0     0       Manganese     ppm     ASTM D5185m     21     21     <1	Cadmium	ppm	ASTM D5185m		0	0	0
Barium     ppm     ASTM D5185m     0     0     0       Molybdenum     ppm     ASTM D5185m     2     1     0       Manganese     ppm     ASTM D5185m     21     21     <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum     ppm     ASTM D5185m     2     1     0       Manganese     ppm     ASTM D5185m     21     21     <1	Boron	ppm	ASTM D5185m		0	0	0
Manganese     ppm     ASTM D5185m     21     21     <1       Magnesium     ppm     ASTM D5185m     0     0     <1	Barium	ppm	ASTM D5185m		0	0	0
Magnesium     ppm     ASTM D5185m     0     <1       Calcium     ppm     ASTM D5185m     7     8     <1       Phosphorus     ppm     ASTM D5185m     1158     1292     1475       Zinc     ppm     ASTM D5185m     34     22     0       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >15     4     4     0       Sodium     ppm     ASTM D5185m     >20     1     0     0       Water     %     ASTM D5185m     >20     1     0     0.017       ppm Water     ppm     ASTM D6304     0.007     0.006     0.017       ppm Water     ppm     ASTM D6304     73.7     67.2     170	Molybdenum	ppm	ASTM D5185m		2	1	0
Calcium     ppm     ASTM D5185m     7     8     <1       Phosphorus     ppm     ASTM D5185m     1158     1292     1475       Zinc     ppm     ASTM D5185m     34     22     0       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >15     4     4     0       Sodium     ppm     ASTM D5185m     >15     4     4     0       Sodium     ppm     ASTM D5185m     >20     1     0     0       Water     %     ASTM D5185m     >20     1     0     0       Water     %     ASTM D6304     0.0007     0.006     0.017       ppm Water     ppm     ASTM D6304     73.7     67.2     170	Manganese	ppm	ASTM D5185m		21	21	<1
Phosphorus     ppm     ASTM D5185m     1158     1292     1475       Zinc     ppm     ASTM D5185m     34     22     0       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >15     4     4     0       Sodium     ppm     ASTM D5185m     >15     4     4     0       Sodium     ppm     ASTM D5185m     >15     4     4     0       Sodium     ppm     ASTM D5185m     >20     1     0     0       Water     %     ASTM D6304     0.007     0.006     0.017       ppm Water     ppm     ASTM D6304     73.7     67.2     170       FLUID DEGRADATION     method     limit/base     current     history1     history2	Magnesium	ppm	ASTM D5185m		0	0	<1
ZincppmASTM D5185m34220CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>15440SodiumppmASTM D5185m<1	Calcium	ppm	ASTM D5185m		7	8	<1
CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m<>15440SodiumppmASTM D5185m<1	Phosphorus	ppm	ASTM D5185m		1158	1292	1475
Silicon     ppm     ASTM D5185m     >15     4     4     0       Sodium     ppm     ASTM D5185m     <15     4     4     0       Sodium     ppm     ASTM D5185m     <16     <1     <1     <1     <1       Potassium     ppm     ASTM D5185m     >20     1     0     0     0       Water     %     ASTM D6304     0.007     0.006     0.017       ppm Water     ppm     ASTM D6304     73.7     67.2     170       FLUID DEGRADATION     method     limit/base     current     history1     history2	Zinc	ppm	ASTM D5185m		34	22	0
Sodium     ppm     ASTM D5185m     <1	CONTAMINANTS	S	method	limit/base	current	history1	history2
Potassium     ppm     ASTM D5185m     >20     1     0     0       Water     %     ASTM D6304     0.007     0.006     0.017       ppm Water     ppm     ASTM D6304     73.7     67.2     170       FLUID DEGRADATION     method     limit/base     current     history1     history2	Silicon	ppm	ASTM D5185m	>15	4	4	0
Water     %     ASTM D6304     0.007     0.006     0.017       ppm Water     ppm     ASTM D6304     73.7     67.2     170       FLUID DEGRADATION     method     limit/base     current     history1     history2	Sodium	ppm	ASTM D5185m		<1	<1	<1
ppm Water     ppm     ASTM D6304 <b>73.7</b> 67.2     170       FLUID DEGRADATION     method     limit/base     current     history1     history2	Potassium	ppm	ASTM D5185m	>20	1	0	0
FLUID DEGRADATION method limit/base current history1 history2	Water	%	ASTM D6304		0.007	0.006	0.017
	ppm Water	ppm	ASTM D6304		73.7	67.2	170
Acid Number (AN)     mg KOH/g     ASTM D8045     0.135     0.245     0.046	FLUID DEGRAD	ATION	method	limit/base	current	history1	history2
	Acid Number (AN)	mg KOH/g	ASTM D8045		0.135	0.245	0.046

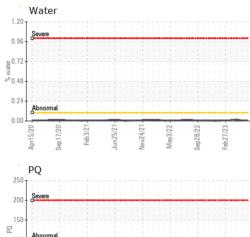


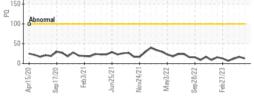
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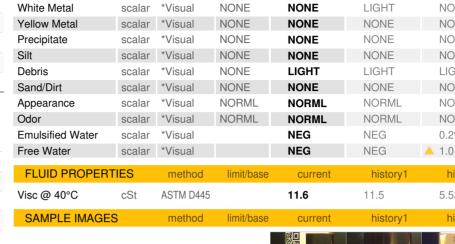
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(B/H0.2 E0.1

## **OIL ANALYSIS REPORT**







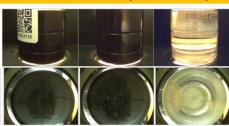
limit/base

current

method

Color

VISUAL



history1

history2

NONE

NONE

NONE

NONE

LIGHT

NONE

NORML

NORML

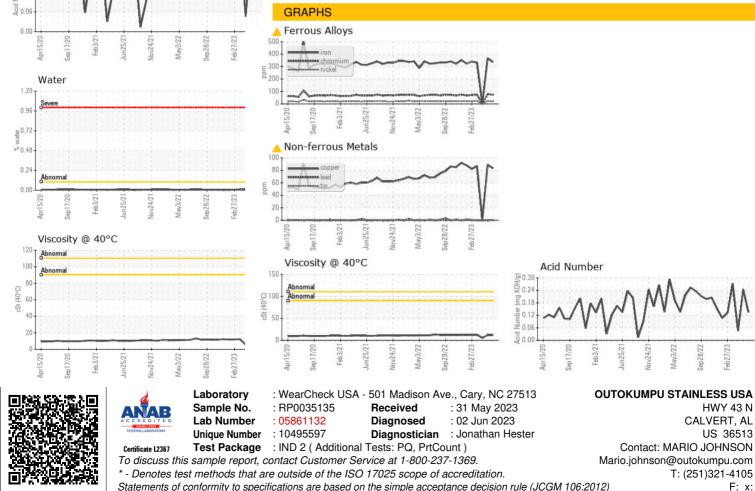
history

history2

0.2%

5.53

Bottom



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