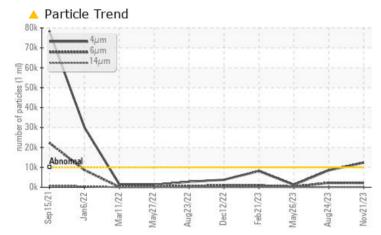


## **PROBLEM SUMMARY**

### Machine Id B44740 (S/N 2013424) Component

Refrigeration Compressor Fluid CAMCO 717-SC (60 GAL)

### COMPONENT CONDITION SUMMARY



### RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

PROBLEMATIC TES	ST RESULTS			
Sample Status		ATTENTION	NORMAL	NORMAL
Particles >4µm	ASTM D7647 >10000	) 🔺 12327	8549	1182
Oil Cleanliness	ISO 4406 (c) >20/18/	/15 🔺 <b>21/18/12</b>	20/18/14	17/15/11

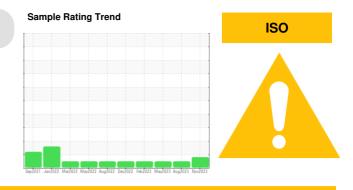
Customer Id: LLOSAIMN Sample No.: WC0878223 Lab Number: 06017457 Test Package: IND 2



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 <u>customerservice@wearcheck.com</u>



### **RECOMMENDED ACTIONS**

There are no recommended actions for this sample.

### HISTORICAL DIAGNOSIS

### 24 Aug 2023 Diag: Angela Borella



Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the component. The amount and size of particulates present in the system is acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.



### 26 May 2023 Diag: Doug Bogart

21 Feb 2023 Diag: Don Baldridge



Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the component. The amount and size of particulates present in the system is acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.



#### NORMAL



Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the component. The amount and size of particulates present in the system is acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.





## **OIL ANALYSIS REPORT**

Sample Rating Trend



1 Jan2022 Mar2022 Mar2022 Aug2022 Dec2022 Feb2023 Mar2023 Aug2023 Nov

Sample Date     Client Info     21 Nov 2023     24 Aug 2023     26 May 20       Machine Age     hrs     Client Info     0     0     108147       Oil Age     hrs     Client Info     0     0     17552       Oil Changed     Client Info     N/A     N/A     Not Change       Sample Status     Imit/base     current     history1     history1       WEAR METALS     method     imit/base     current     history1     history1       Iron     ppm     ASTM D5185m     >2     <1     0     0       Nickel     ppm     ASTM D5185m     >2     0     0     0       Sliver     ppm     ASTM D5185m     >2     0     0     0       Cadmium     ppm     ASTM D5185m     >2     0     0     0       Cadmium     ppm     ASTM D5185m     >4     0     0     0       Boron     ppm     ASTM D5185m     0     0     0     0       ASTM D5185m     0     0<	SAMPLE INFORM	NATION	method	limit/base	current	history1	history
Machine Age     hrs     Client Info     0     0     108147       Oil Age     hrs     Client Info     0     0     17552       Oil Changed     Client Info     N/A     N/A     N/A     Not Anternational Actional Actionactional Actional Actionactional Actional Actionac	Sample Number		Client Info		WC0878223	WC0846269	WC079480
Oil Age     hrs     Client Info     0     0     17552       Oil Changed     Client Info     N/A     N/A     N/A     Not Chang       Sample Status     method     limit/base     current     history1     NoRMAL     NORMAL       WEAR METALS     method     limit/base     current     history1     history1       from     ppm     ASTM 05185m     >2     1     0     0       Chromium     ppm     ASTM 05185m     >2     1     0     0       Silver     ppm     ASTM 05185m     >2     0     0     0       Silver     ppm     ASTM 05185m     >2     0     0     0       Capper     ppm     ASTM 05185m     >2     0     0     0       Cadmium     ppm     ASTM 05185m     >4     0     0     0       ADDITIVES     method     limit/base     current     history1     history1       Barium     ppm     ASTM 05185m     0     0     0	Sample Date		Client Info		21 Nov 2023	24 Aug 2023	26 May 202
Oil Changed Sample Status     Client Info     N/A     N/A     N/A     Not Chang NORMAL       WEAR METALS     method     limit/base     current     history1     history1       Iron     ppm     ASTM D5185m     >8     0     0     0       Chromium     ppm     ASTM D5185m     >2     <1	Machine Age	hrs	Client Info		0	0	108147
Sample Status     Image: Market Mar	Oil Age	hrs	Client Info		0	0	17552
WEAR METALS     method     limit/base     current     history1     history1       Iron     ppm     ASTM D5185m     >8     0     0     0       Nickel     ppm     ASTM D5185m     <1	Oil Changed		Client Info		N/A	N/A	Not Chang
ron     ppm     ASTM D5185m     >8     0     0       Nickel     ppm     ASTM D5185m     >2     <1	Sample Status				ATTENTION	NORMAL	NORMAL
ppm     ASTM D5185m     >2     <1     0     0       Nickel     ppm     ASTM D5185m     <1	WEAR METALS		method	limit/base	current	history1	history
Nickel     ppm     ASTM D5185m     <1     0     0       Titanium     ppm     ASTM D5185m     >2     0     0     0       Silver     ppm     ASTM D5185m     >2     0     0     0       Aluminum     ppm     ASTM D5185m     >2     0     0     0       Copper     ppm     ASTM D5185m     >8     <1	Iron	ppm	ASTM D5185m	>8	0	0	0
Titanium     ppm     ASTM D5185m     <1     0     0       Silver     ppm     ASTM D5185m     >2     0     0     0       Aluminum     ppm     ASTM D5185m     >3     2     2     0     0       Lead     ppm     ASTM D5185m     >2     0     0     0     0       Copper     ppm     ASTM D5185m     >2     0	Chromium	ppm	ASTM D5185m	>2	<1	0	0
Titanium     ppm     ASTM D5185m     <1     0     0       Silver     ppm     ASTM D5185m     >2     0     0     0       Aluminum     ppm     ASTM D5185m     >3     2     2     0     0       Lead     ppm     ASTM D5185m     >3     2     0     0     0       Copper     ppm     ASTM D5185m     >2     0     0     0     0       Vanadium     ppm     ASTM D5185m     >2     0	Nickel		ASTM D5185m		<1	0	0
Silver     ppm     ASTM D5185m     >2     0     0     0       Aluminum     ppm     ASTM D5185m     >3     2     2     0       Lead     ppm     ASTM D5185m     >2     0     0     0       Copper     ppm     ASTM D5185m     >8     <1	Titanium		ASTM D5185m		<1	0	0
Aluminum     ppm     ASTM D5185m     >3     2     2     0       Lead     ppm     ASTM D5185m     >2     0     0     0       Copper     ppm     ASTM D5185m     >8     <1	Silver		ASTM D5185m	>2	0	0	
Lead     ppm     ASTM D5185m     >2     0     0     0       Copper     ppm     ASTM D5185m     >8     <1	Aluminum		ASTM D5185m	>3	2	2	0
Copper     ppm     ASTM D5185m     >8     <1     0     <1       Tin     ppm     ASTM D5185m     >4     0     0     0       Vanadium     ppm     ASTM D5185m     <1	Lead						
Tin     ppm     ASTM D5185m     >4     0     0     0       Vanadium     ppm     ASTM D5185m     <1					-	-	
Vanadium     ppm     ASTM D5185m     0     0     0       Cadmium     ppm     ASTM D5185m     <1	Tin						
Cadmium     ppm     ASTM D5185m     <1     0     0       ADDITIVES     method     limit/base     current     history1     history1       Boron     ppm     ASTM D5185m     0     0     0     0       Barium     ppm     ASTM D5185m     0     0     0     0       Molybdenum     ppm     ASTM D5185m     0     0     0     0       Manganese     ppm     ASTM D5185m     0     0     0     0       Calcium     ppm     ASTM D5185m     0     0     0     0       Calcium     ppm     ASTM D5185m     0     <1     0     0       Zinc     ppm     ASTM D5185m     0     <1     0     0       Silicon     ppm     ASTM D5185m     0     0     0     0       Sodium     ppm     ASTM D5185m     20     <1     <1     <1       Sodium     ppm     ASTM D5185m     20     <1     0     <1					-	0	
Boron     ppm     ASTM D5185m     0     0     0       Barium     ppm     ASTM D5185m     <1	Cadmium				-		
Barium     ppm     ASTM D5185m     0     0     0     0       Molybdenum     ppm     ASTM D5185m     <1	ADDITIVES		method	limit/base	current	history1	history
Barium     ppm     ASTM D5185m     0     0     0     0       Molybdenum     ppm     ASTM D5185m     <1	Boron	ppm	ASTM D5185m		0	0	0
Molybdenum     ppm     ASTM D5185m     <1     0     0       Manganese     ppm     ASTM D5185m     0     0     0     0       Magnesium     ppm     ASTM D5185m     0     0     0     0       Calcium     ppm     ASTM D5185m     0     -<1	Barium		ASTM D5185m		0	0	0
Manganese     ppm     ASTM D5185m     0     0     0     0       Magnesium     ppm     ASTM D5185m     0     0     0     0       Calcium     ppm     ASTM D5185m     0     <1	Molvbdenum		ASTM D5185m		<1	0	0
Magnesium     ppm     ASTM D5185m     0     0     0       Calcium     ppm     ASTM D5185m     <1	-		ASTM D5185m		0	0	0
Calcium     ppm     ASTM D5185m     <1     0     0       Phosphorus     ppm     ASTM D5185m     0     <1	•				0	0	0
Phosphorus     ppm     ASTM D5185m     0     <1     0       Zinc     ppm     ASTM D5185m     0     0     0     0       Sulfur     ppm     ASTM D5185m     0     4     45       CONTAMINANTS     method     limit/base     current     history1     history1       Silicon     ppm     ASTM D5185m<>15     <1     <1     <1     <1       Sodium     ppm     ASTM D5185m<>15     <1     <1     <1     <1       Sodium     ppm     ASTM D5185m<>20     <1     0     0     0       Potassium     ppm     ASTM D5185m     >20     <1     0     <1       Water     %     ASTM D5040     >0.01     0.002     0.001     0.00       ppm     ASTM D6304     >100     24     11.5     0.00       FLUID CLEANLINESS     method     limit/base     current     history1     history1       Particles >4µm     ASTM D7647     >200     2159     22111     277	-		ASTM D5185m		-	0	0
Zinc     ppm     ASTM D5185m     0     0     0       Sulfur     ppm     ASTM D5185m     0     4     45       CONTAMINANTS     method     limit/base     current     history1     history       Silicon     ppm     ASTM D5185m     >15     <1							
Sulfur     ppm     ASTM D5185m     0     4     45       CONTAMINANTS     method     limit/base     current     history1     history1       Silicon     ppm     ASTM D5185m     >15     <1     <1     <1       Sodium     ppm     ASTM D5185m     >15     <1     <1     <1     <1       Sodium     ppm     ASTM D5185m     >20     <1     0     0     0       Potassium     ppm     ASTM D5185m     >20     <1     0     <1       Water     %     ASTM D6304     >0.01     0.002     0.001     0.00       Ppm Water     ppm     ASTM D6304     >100     24     11.5     0.00       FLUID CLEANLINESS     method     limit/base     current     history1     history1       Particles >4µm     ASTM D7647     >10000     12327     8549     1182       Particles >6µm     ASTM D7647     >2500     2159     2211     277       Particles >1µm     ASTM D7647     >20					-		
CONTAMINANTS     method     limit/base     current     history1     history       Silicon     ppm     ASTM D5185m     >15     <1	-						
Silicon   ppm   ASTM D5185m   >15   <1				limit/baco	-		
Sodium     ppm     ASTM D5185m     0     0     0     0       Potassium     ppm     ASTM D5185m     >20     <1							
Potassium     ppm     ASTM D5185m     >20     <1     0     <1       Water     %     ASTM D6304     >0.01     0.002     0.001     0.00       ppm     ASTM D6304     >100     24     11.5     0.00       FLUID CLEANLINESS     method     limit/base     current     history1     history       Particles >4µm     ASTM D7647     >10000     ▲ 12327     8549     1182       Particles >6µm     ASTM D7647     >2500     2159     2211     277       Particles >14µm     ASTM D7647     >320     39     83     15       Particles >21µm     ASTM D7647     >20     4     0     0       Particles >38µm     ASTM D7647     >20     4     0     0       Oli Cleanliness     ISO 4406 (c)     >20/18/15     21/18/12     20/18/14     17/15/1       FLUID DEGRADATION     method     limit/base     current     history1     history1				>15			
Water     %     ASTM D6304     >0.01     0.002     0.001     0.00       ppm Water     ppm     ASTM D6304     >100     24     11.5     0.00       FLUID CLEANLINESS     method     limit/base     current     history1     history       Particles >4µm     ASTM D7647     >10000     12327     8549     1182       Particles >6µm     ASTM D7647     >2500     2159     2211     277       Particles >14µm     ASTM D7647     >320     39     83     15       Particles >21µm     ASTM D7647     >20     4     0     0       Particles >38µm     ASTM D7647     >20     4     0     0       Oli Cleanliness     ISO 4406 (c)     >20/18/15     21/18/12     20/18/14     17/15/1       FLUID DEGRADATION     method     limit/base     current     history1     history1					-		
ppm Water     ppm     ASTM D6304     >100     24     11.5     0.00       FLUID CLEANLINESS     method     limit/base     current     history1     history1       Particles >4µm     ASTM D7647     >10000     ▲ 12327     8549     1182       Particles >6µm     ASTM D7647     >2500     2159     2211     277       Particles >14µm     ASTM D7647     >320     39     83     15       Particles >14µm     ASTM D7647     >80     10     13     3       Particles >21µm     ASTM D7647     >20     4     0     0       Particles >38µm     ASTM D7647     >4     0     0     0       Oil Cleanliness     ISO 4406 (c)     >20/18/15     21/18/12     20/18/14     17/15/1       FLUID DEGRADATION     method     limit/base     current     history1     history1							
FLUID CLEANLINESS   method   limit/base   current   history1   history1     Particles >4µm   ASTM D7647   >10000   ▲ 12327   8549   1182     Particles >6µm   ASTM D7647   >2500   2159   2211   277     Particles >6µm   ASTM D7647   >320   39   83   15     Particles >14µm   ASTM D7647   >80   10   13   3     Particles >21µm   ASTM D7647   >80   10   13   3     Particles >38µm   ASTM D7647   >20   4   0   0     Particles >71µm   ASTM D7647   >4   0   0   0     Oil Cleanliness   ISO 4406 (c)   >20/18/15   21/18/12   20/18/14   17/15/1     FLUID DEGRADATION   method   limit/base   current   history1   history1							
Particles >4μm   ASTM D7647   >10000   12327   8549   1182     Particles >6μm   ASTM D7647   >2500   2159   2211   277     Particles >14μm   ASTM D7647   >320   39   83   15     Particles >21μm   ASTM D7647   >80   10   13   3     Particles >21μm   ASTM D7647   >20   4   0   0     Particles >38μm   ASTM D7647   >20   4   0   0     Particles >71μm   ASTM D7647   >4   0   0   0     Oil Cleanliness   ISO 4406 (c)   >20/18/15   21/18/12   20/18/14   17/15/1     FLUID DEGRADATION   method   limit/base   current   history1   history1					24		
Particles >6µm     ASTM D7647     >2500     2159     2211     277       Particles >14µm     ASTM D7647     >320     39     83     15       Particles >21µm     ASTM D7647     >80     10     13     3       Particles >38µm     ASTM D7647     >20     4     0     0       Particles >38µm     ASTM D7647     >20     4     0     0       Particles >71µm     ASTM D7647     >4     0     0     0       Oil Cleanliness     ISO 4406 (c)     >20/18/15     21/18/12     20/18/14     17/15/1       FLUID DEGRADATION     method     limit/base     current     history1     history		IESS					history
Particles >14μm     ASTM D7647     >320 <b>39</b> 83     15       Particles >21μm     ASTM D7647     >80 <b>10</b> 13     3       Particles >21μm     ASTM D7647     >20 <b>4</b> 0     0       Particles >38μm     ASTM D7647     >20 <b>4</b> 0     0       Particles >71μm     ASTM D7647     >4 <b>0</b> 0     0       Oil Cleanliness     ISO 4406 (c)     >20/18/15 <b>21/18/12</b> 20/18/14     17/15/1       FLUID DEGRADATION     method     limit/base     current     history1     history	Particles >4µm						
Particles >21μm     ASTM D7647     >80     10     13     3       Particles >38μm     ASTM D7647     >20     4     0     0       Particles >37μm     ASTM D7647     >4     0     0     0       Particles >71μm     ASTM D7647     >4     0     0     0       Oil Cleanliness     ISO 4406 (c)     >20/18/15     21/18/12     20/18/14     17/15/1       FLUID DEGRADATION     method     limit/base     current     history1     history1	•						
Particles >38μm     ASTM D7647     >20     4     0     0       Particles >71μm     ASTM D7647     >4     0     0     0       Oil Cleanliness     ISO 4406 (c)     >20/18/15     21/18/12     20/18/14     17/15/1       FLUID DEGRADATION     method     limit/base     current     history1     history	•						
Particles >71μm     ASTM D7647     >4     0     0     0       Oil Cleanliness     ISO 4406 (c)     >20/18/15     21/18/12     20/18/14     17/15/1       FLUID DEGRADATION     method     limit/base     current     history1     history							
Oil CleanlinessISO 4406 (c) >20/18/15 $\checkmark$ 21/18/1220/18/1417/15/1FLUID DEGRADATIONmethodlimit/basecurrenthistory1history	•						
FLUID DEGRADATION method limit/base current history1 history	Particles >71µm						
· · · · · · · · · · · · · · · · · · ·	Oil Cleanliness		ISO 4406 (c)	>20/18/15	<b>A</b> 21/18/12	20/18/14	17/15/1
Acid Number (AN)     mg KOH/g     ASTM D974     0.014     0.015							
		ATION	method	limit/base	current	history1	history

### Machine Id **B44740 (S/N 2013424)** Component

Refrigeration Compressor Fluid CAMCO 717-SC (60 GAL)

### DIAGNOSIS

### A Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

There is a moderate amount of silt (particulates < 6 microns in size) present in the oil.

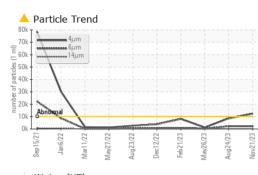
### Fluid Condition

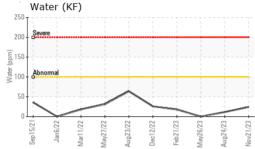
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

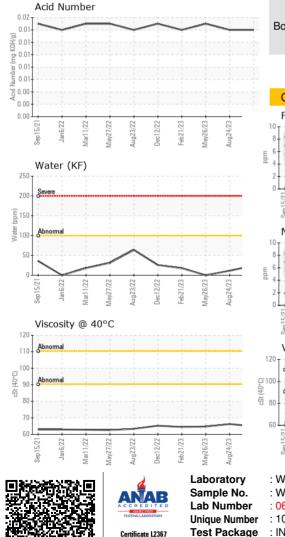
Contact/Location: PAT HUMPHREY - LLOSAIMN



# **OIL ANALYSIS REPORT**

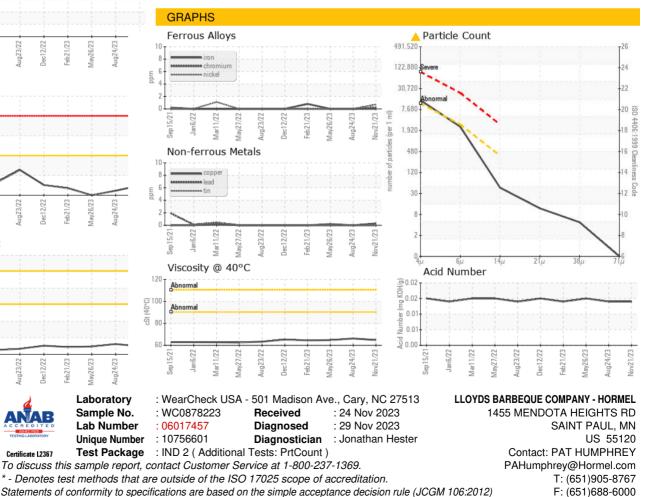






			11 11 11			
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	LIGHT	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.01	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	TIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445		64.8	66.2	64.7
SAMPLE IMAGE	S	method	limit/base	current	history1	history2
Color						

Bottom



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

Contact/Location: PAT HUMPHREY - LLOSAIMN