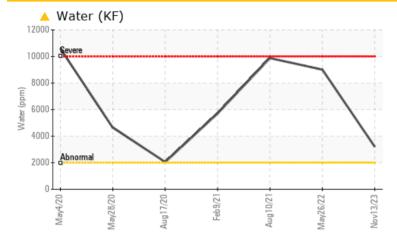
PROBLEM SUMMARY



Sample Rating Trend WATER

Machine Id RAL-112A Component Gearbox Fluid SYNGEAR PG460 (--- GAL)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

We advise that you check for the source of water entry. Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS								
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL		
Water	%	ASTM D6304	>0.2	A 0.320	0.901	▲ 0.988		
ppm Water	ppm	ASTM D6304	>2000	A 3206.4	4 9010	4 9880		

Customer Id: HOLCOR Sample No.: RP0027940 Lab Number: 06007038 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data: Doug Bogart +1 (800)237-1369 x4016 <u>dougb@wearcheckusa.com</u>

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

RECOMMENDED AC	CTIONS			
Action	Status	Date	Done By	Description
Check Water Access			?	We advise that you check for the source of water entry.

HISTORICAL DIAGNOSIS

26 May 2022 Diag: Jonathan Hester



We advise that you check for the source of water entry. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.All component wear rates are normal. There is a high concentration of water present in the oil. The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.

view report

view report

10 Aug 2021 Diag: Don Baldridge



We advise that you check for the source of water entry. The oil change at the time of sampling has been noted. Resample at the next service interval to monitor.All component wear rates are normal. There is a high concentration of water present in the oil. The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.

09 Feb 2021 Diag: Don Baldridge

We advise that you check for the source of water entry. The oil change at the time of sampling has been noted. Resample at the next service interval to monitor.All component wear rates are normal. There is a moderate concentration of water present in the oil. Moderate concentration of visible dirt/debris 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

SAMPLE INCODMATION

Sample Rating Trend



Machine Id RAL-112A Component Gearbox Fluid SYNGEAR PG460 (--- GAL)

DIAGNOSIS

A Recommendation

We advise that you check for the source of water entry. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is a light concentration of water present in the oil.

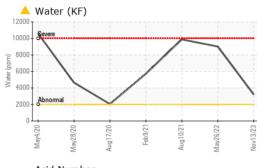
Fluid Condition

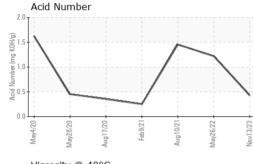
The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.

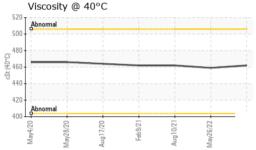
Sample Date Client Info 13 Nov 2023 26 May 2022 10 Aug 202 Machine Age hrs Client Info 0 0 0 Oil Age hrs Client Info 0 0 0 Oil Changed Client Info N/A Changed Changed Sample Status method limit/base current history1 history2 Iron ppm ASTM D5185m >200 2 <1 <1 Chromium ppm ASTM D5185m >15 <1 0 0 Nickel ppm ASTM D5185m >15 <1 0 0 Nickel ppm ASTM D5185m >15 <1 0 0 Silver ppm ASTM D5185m >20 5 5 2 1 Lead ppm ASTM D5185m >20 5 5 2 1 Antimony ppm ASTM D5185m >5 0 0 </th <th>SAMPLE INFORM</th> <th>MATION</th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 0 0 0 Oil Age hrs Client Info 0 0 0 Oil Changed Client Info N/A Changed Changed Sample Status Imat/December ABNORMAL ABNORMAL ABNORMAL WEAR METALS method Imit/base current history1 history2 Iron ppm ASTM D5185m >15 <1 0 0 Nickel ppm ASTM D5185m >15 <1 0 0 Nickel ppm ASTM D5185m >15 <1 0 0 Silver ppm ASTM D5185m >20 3 <1 1 1 Lead ppm ASTM D5185m >200 5 5 2 1 0 0 Cadmium ppm ASTM D5185m >20 5 1 0 0 Cadmium ppm ASTM D5185m >20 5	Sample Number		Client Info		RP0027940	RP0021721	RP0011898
Oil Age hrs Client Info 0 0 0 Oil Changed Client Info N/A Changed Changed Sample Status method limit/base current history1 ABNORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >200 2 <1 <1 Ono 0 0 0 0 0 0 Nickel ppm ASTM D5185m >15 <1 0 0 0 Silver ppm ASTM D5185m >100 0 3 <1 <1 0	Sample Date		Client Info		13 Nov 2023	26 May 2022	10 Aug 2021
Oil Changed Client Info N/A Changed Changed Sample Status method limit/base current history1 ABNORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >200 2 <1 <1 Chromium ppm ASTM D5185m >15 <1 0 0 Nickel ppm ASTM D5185m >15 <1 0 0 Silver ppm ASTM D5185m >25 3 <1 <1 <1 Lead ppm ASTM D5185m >200 5 5 2 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 1 <1 <1 <t< th=""><th>Machine Age</th><th>hrs</th><th>Client Info</th><th></th><th>0</th><th>0</th><th>0</th></t<>	Machine Age	hrs	Client Info		0	0	0
Sample Status Image: content of the story o	Oil Age	hrs	Client Info		0	0	0
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m<>200 2 <1 <1 Chromium ppm ASTM D5185m<>15 <1 0 0 Nickel ppm ASTM D5185m >15 <1 0 0 Silver ppm ASTM D5185m >25 3 <1 <1 0 Aluminum ppm ASTM D5185m >25 3 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 1 <1	Oil Changed		Client Info		N/A	Changed	Changed
Iron ppm ASTM D5185m >200 2 <1 <1 Chromium ppm ASTM D5185m >15 <1	Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
Chromium ppm ASTM D5185m >15 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m >15 <1 0 0 Titanium ppm ASTM D5185m 0 0 0 0 Silver ppm ASTM D5185m 0 0 0 0 Aluminum ppm ASTM D5185m >25 3 <1	Iron	ppm	ASTM D5185m	>200	2	<1	<1
Titanium ppm ASTM D5185m <1 0 0 Silver ppm ASTM D5185m 0 0 0 0 Auminum ppm ASTM D5185m >25 3 <1 <1 Lead ppm ASTM D5185m >100 0 3 <1	Chromium	ppm	ASTM D5185m	>15	<1	0	0
Silver ppm ASTM D5185m 0 0 0 Aluminum ppm ASTM D5185m >25 3 <1	Nickel	ppm	ASTM D5185m	>15	<1	0	0
Aluminum ppm ASTM D5185m >25 3 <1	Titanium	ppm	ASTM D5185m		<1	0	0
Lead ppm ASTM D5185m >100 0 3 <1 Copper ppm ASTM D5185m >200 5 5 2 Tin ppm ASTM D5185m >25 0 2 <1	Silver	ppm	ASTM D5185m		0	0	0
Copper ppm ASTM D5185m >200 5 5 2 Tin ppm ASTM D5185m >25 0 2 <1	Aluminum	ppm	ASTM D5185m	>25	3	<1	<1
Tin ppm ASTM D5185m >25 0 2 <1 Antimony ppm ASTM D5185m >5 0 Vanadium ppm ASTM D5185m >5 0 Vanadium ppm ASTM D5185m < <1 0 0 Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 8 4 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 <1 0 0 Manganese ppm ASTM D5185m < 738 918 658 Zinc ppm ASTM D5185m >50 1 4 1 Sodium ppm ASTM D5185m >50 1 4 1 Sodium ppm ASTM D5185m >20 1 0 0	Lead	ppm	ASTM D5185m	>100	0	3	<1
Antimony ppm ASTM D5185m >5 0 Vanadium ppm ASTM D5185m <1	Copper	ppm	ASTM D5185m	>200	5	5	2
VanadiumppmASTM D5185m<100CadmiumppmASTM D5185m<1	Tin	ppm	ASTM D5185m	>25	0	2	<1
CadmiumppmASTM D5185m<100ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185m084BariumppmASTM D5185m000MolybdenumppmASTM D5185m0<1	Antimony	ppm	ASTM D5185m	>5			0
ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185m084BariumppmASTM D5185m000MolybdenumppmASTM D5185m0<1	Vanadium	ppm	ASTM D5185m		<1	0	0
Boron ppm ASTM D5185m 0 8 4 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 <1 0 Manganese ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 0 0 0 0 0 Calcium ppm ASTM D5185m <1 0 0 0 0 0 0 Phosphorus ppm ASTM D5185m <738 918 658 0 0 0 0 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 1 4 1 0 Sodium ppm ASTM D5185m >20 1 0 0 0 Vater % ASTM D5185m >20 1 0 0 0 Water % ASTM D6304 >0.2 3206.4 9010 9880 9880 </td <th>Cadmium</th> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <th><1</th> <td>0</td> <td>0</td>	Cadmium	ppm	ASTM D5185m		<1	0	0
Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 0 <1 0 Manganese ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m <1	Boron	ppm	ASTM D5185m		0	8	4
Manganese ppm ASTM D5185m 0 0 0 Magnesium ppm ASTM D5185m <1 0 0 Calcium ppm ASTM D5185m 1 0 0 Phosphorus ppm ASTM D5185m 738 918 658 Zinc ppm ASTM D5185m 738 918 658 Zinc ppm ASTM D5185m 0 0 0 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 1 4 1 Sodium ppm ASTM D5185m >50 1 4 1 Sodium ppm ASTM D5185m >20 1 0 0 Vater % ASTM D6304 >0.2 0.320 0.901 0.988 ppm Water ppm ASTM D6304 >2000 3206.4 9010 9880	Barium	ppm	ASTM D5185m		0	0	0
Magnesium ppm ASTM D5185m <1 0 0 Calcium ppm ASTM D5185m 1 0 0 Phosphorus ppm ASTM D5185m 738 918 658 Zinc ppm ASTM D5185m 738 918 658 Zinc ppm ASTM D5185m 0 0 0 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 1 4 1 Sodium ppm ASTM D5185m >50 1 4 1 Sodium ppm ASTM D5185m >20 1 0 0 Vater % ASTM D6304 >0.2 0.320 0.901 0.988 ppm Water ppm ASTM D6304 >2000 3206.4 9010 9880	Molybdenum	ppm	ASTM D5185m		0	<1	0
Calcium ppm ASTM D5185m 1 0 0 Phosphorus ppm ASTM D5185m 738 918 658 Zinc ppm ASTM D5185m 0 0 0 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 1 4 1 Sodium ppm ASTM D5185m >50 1 4 1 Sodium ppm ASTM D5185m >50 1 0 0 Potassium ppm ASTM D5185m >20 1 0 0 Water % ASTM D6304 >0.2 0.320 0.9011 0.988 ppm Water ppm ASTM D6304 >2000 3206.4 9010 9880	Manganese	ppm	ASTM D5185m		0	0	0
Phosphorus ppm ASTM D5185m 738 918 658 Zinc ppm ASTM D5185m 0 0 0 0 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 1 4 1 0 Sodium ppm ASTM D5185m >50 1 0 0 0 Potassium ppm ASTM D5185m >20 1 0 0 Water % ASTM D6304 >0.2 0.320 0.901 0.988 ppm Water ppm ASTM D6304 >2000 3206.4 9010 9880	Magnesium	ppm	ASTM D5185m		<1	0	0
ZincppmASTM D5185m000CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>50141SodiumppmASTM D5185m810PotassiumppmASTM D5185m>20100Water%ASTM D6304>0.2▲ 0.320▲ 0.901▲ 0.988ppm WaterppmASTM D6304>2000▲ 3206.49010▲ 9880FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2	Calcium	ppm	ASTM D5185m		1	0	0
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 1 4 1 Sodium ppm ASTM D5185m >50 1 4 1 Sodium ppm ASTM D5185m >20 1 0 0 Potassium ppm ASTM D6304 >0.2 ▲ 0.320 ▲ 0.901 ▲ 0.988 ppm Water ppm ASTM D6304 >2000 ▲ 3206.4 ●9010 ▲ 9880 FLUID DEGRADATION method limit/base current history1 history2	Phosphorus	ppm	ASTM D5185m		738	918	658
Silicon ppm ASTM D5185m >50 1 4 1 Sodium ppm ASTM D5185m Sodium 8 1 0 Potassium ppm ASTM D5185m >20 1 0 0 Water % ASTM D6304 >0.2 ▲ 0.320 ▲ 0.901 ▲ 0.988 ppm Water ppm ASTM D6304 >2000 ▲ 3206.4 9010 ▲ 9880 FLUID DEGRADATION method limit/base current history1 history2	Zinc	ppm	ASTM D5185m		0	0	0
Sodium ppm ASTM D5185m 8 1 0 Potassium ppm ASTM D5185m<>20 1 0 0 Water % ASTM D6304<>0.2 ▲ 0.320 ▲ 0.901 ▲ 0.988 ppm Water ppm ASTM D6304 >2000 ▲ 3206.4 ④ 9010 ▲ 9880 FLUID DEGRADATION method limit/base current history1 history2	CONTAMINANTS	5	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 1 0 0 Water % ASTM D6304 >0.2 0.320 0.901 0.988 ppm Water ppm ASTM D6304 >2000 3206.4 9010 9880 FLUID DEGRADATION method limit/base current history1 history2	Silicon	ppm	ASTM D5185m	>50			
Water % ASTM D6304 >0.2 0.320 0.901 0.988 ppm Water ppm ASTM D6304 >2000 3206.4 9010 9880 FLUID DEGRADATION method limit/base current history1 history2	Sodium	ppm	ASTM D5185m		8	1	
ppm WaterppmASTM D6304>2000 3206.4 90109880FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2	Potassium	ppm	ASTM D5185m	>20	1	0	0
FLUID DEGRADATION method limit/base current history1 history2	Water	%	ASTM D6304	>0.2	0.320	▲ 0.901	▲ 0.988
	ppm Water	ppm	ASTM D6304	>2000	A 3206.4	4 9010	▲ 9880
Acid Number (AN) mg KOH/g ASTM D8045 0.43 1.22 1.454	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
	Acid Number (AN)	mg KOH/g	ASTM D8045		0.43	1.22	1.454



OIL ANALYSIS REPORT

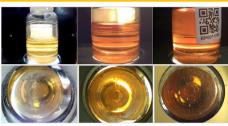




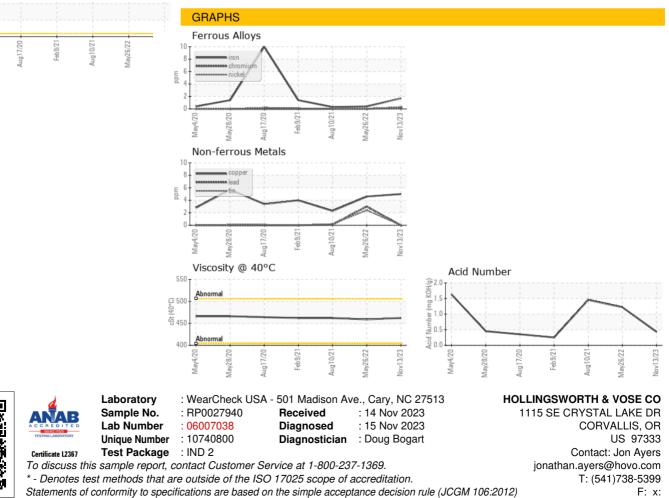


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	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		462	459	462
SAMPLE IMAGES		method	limit/base	current	history1	history2

Color



Bottom



Contact/Location: Jon Ayers - HOLCOR