

# LABORATORY ANALYSIS



11525 Rock Island Court, St. Louis, MO 63043  
Tel: 1-800-876-0008 info@englube.com

Department **BRASS MILL MORGOIL/INVOICE**  
 Equipment No. **MILL-RML-21R-MORG 21/22R MORGOIL (00004)**  
 System **Lube System**  
 Oil Type **CONOCO HYDROCLEAR EP GEAR OIL 460 (--- GAL)**

**WIELAND**  
 BRASS ACCOUNTS PAYABLE, GEORGE STREET  
 EAST ALTON, IL  
 US 62024  
 Contact: Bill Quesnel  
 bill.quesnel@wearcheck.com  
 T: (618)259-5002  
 F: (618)259-5002

## DIAGNOSIS

Water contamination went from 2.49% to 3.17% which is an increase from the previous sample. We recommend that you check for sources of the water contamination that are out of the ordinary. We also advise that you continue to perform water drain offs to reduce the water in the reservoir. If there is a filter element we recommend that you service that as well.

Iron (Fe) ppm levels are abnormal. Cylinder or oil pump wear indicated. There is a high concentration of water present in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

## SAMPLE INFORMATION

Lab Number	New	2311-00611	2310-00983	2309-00925
Date of Sample	(Typical)	16 Nov 2023	20 Oct 2023	22 Sep 2023
Oil Added		UNK	UNK	UNK
Last Drain Date		--	--	--
Last Filter Service		--	--	--
Sample Point		---	---	---
Sample Status		SEVERE	SEVERE	SEVERE

## VISCOSITY @ 100F OR 40C (ASTM D-445)

SSU Vis. @ 100F	SSU	2,580.2	2,548.3	2,482.5
cSt Vis. @ 40C	cSt 460	480.1	474.3	462.2

## % WATER - KARL FISCHER (ASTM E203)

% Water (KF)	%	3.17	2.40	1.59

## TOTAL ACID NUMBER (NEUT. NO.)(ASTM D974)

TAN, mg KOH/g	mg KOH/g	0.73	0.19	0.27	0.16

## ICP - OILS (REPORTED IN PARTS PER MILLION)

Element	Unit	2311-00611	2310-00983	2309-00925
Aluminum (Al)	ppm	<5	<5	<5
Antimony (Sb)	ppm	<5	<5	<5
Cadmium (Cd)	ppm	<5	<5	<5
Chromium (Cr)	ppm	<5	<5	<5
Cobalt (Co)	ppm	<5	<5	<5
Copper (Cu)	ppm	9	9	6
Iron (Fe)	ppm	45	37	23
Lead (Pb)	ppm	6	6	<5
Manganese (Mn)	ppm	<5	<5	<5
Molybdenum(Mo)	ppm	<5	<5	<5
Nickel (Ni)	ppm	<5	<5	<5
Silver (Ag)	ppm	<5	<5	<5
Tin (Sn)	ppm	13	7	<5
Titanium (Ti)	ppm	<5	<5	<5
Vanadium (V)	ppm	<5	<5	<5
Barium (Ba)	ppm	<5	<5	<5
Boron (B)	ppm	22	16	17
Calcium (Ca)	ppm	18	15	9
Magnesium (Mg)	ppm	9	8	6
Phosphorus(P)	ppm	23	19	11
Silicon (Si)	ppm	<5	<5	<5
Zinc (Zn)	ppm	9	7	<5
Sulfur (S)	ppm	1,670	1,250	1,240

## DEMULSIBILITY (ASTM D1401)

Oil, ml	ml	34	34	NES
Water, ml	ml	20	22	---
Emulsion, ml	ml	26	24	---
Time, minutes	min	60	60	---

Customer Id: GLOEAS  
 Sample No.: EN23110611  
 Lab Number: 23110611  
 Test Package: TEST



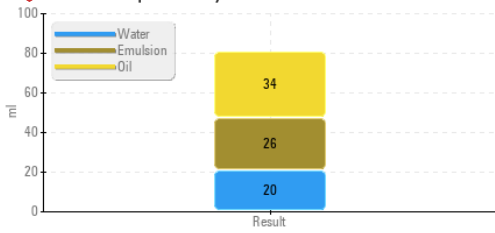
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[bvagniaux@englube.com](mailto:bvuagniaux@englube.com)

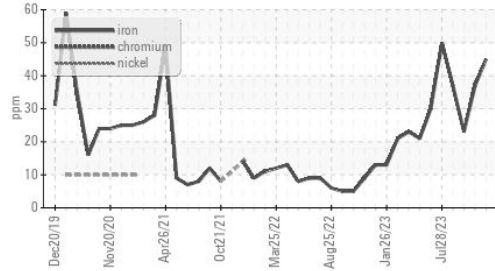
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# OIL ANALYSIS REPORT

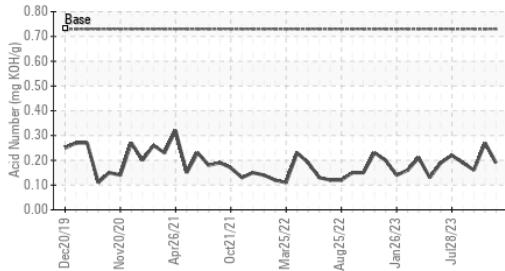
### Water Separability



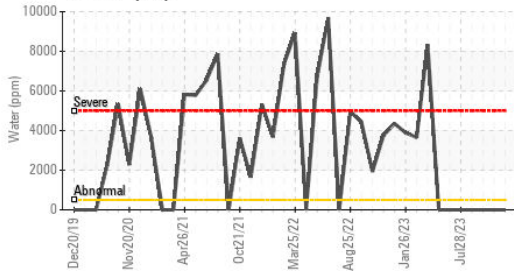
### Ferrous Alloys



### Acid Number



### Water (KF)



### Viscosity @ 40°C

