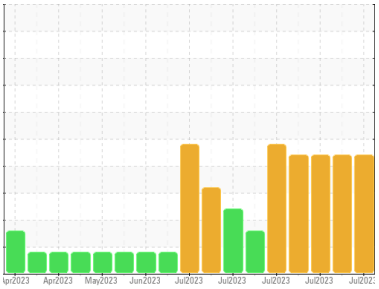
OIL ANALYSIS REPORT

Sample Rating Trend



WATER

Area
RIG 879
Machine Id
R879-P-03
Component
Pump Drive
Fluid
BRENNTAG COASTAL CHEMICAL HBC GEAR OIL 320 (--- GAL)

DIAGNOSIS

Recommendation
We advise that you check for the source of water entry. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. There is too much water present in this sample to perform a particle count.

Wear
All component wear rates are normal.

Contamination
Appearance is milky. There is a high concentration of water present in the oil.

Fluid Condition
The oil viscosity is higher than normal. The AN level is acceptable for this fluid. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**KL0012130**	KL0012128	KL0012132
Sample Date		Client Info		**19 Jul 2023**	17 Jul 2023	16 Jul 2023
Machine Age	days	Client Info		**45126**	45124	45123
Oil Age	days	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**SEVERE**	SEVERE	SEVERE

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>500	**126**	114	124
Chromium	ppm	ASTM D5185m	>15	**1**	<1	1
Nickel	ppm	ASTM D5185m	>10	**0**	0	0
Titanium	ppm	ASTM D5185m		**<1**	<1	<1
Silver	ppm	ASTM D5185m		**0**	1	0
Aluminum	ppm	ASTM D5185m	>20	**2**	2	2
Lead	ppm	ASTM D5185m		**0**	0	0
Copper	ppm	ASTM D5185m	>35	**2**	2	2
Tin	ppm	ASTM D5185m	>4	**2**	2	2
Vanadium	ppm	ASTM D5185m		**<1**	<1	<1
Cadmium	ppm	ASTM D5185m		**0**	<1	0

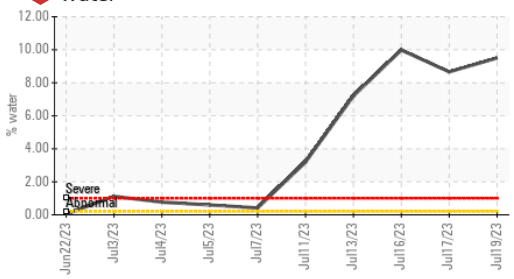
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**14**	20	15
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**3**	3	3
Manganese	ppm	ASTM D5185m		**<1**	<1	<1
Magnesium	ppm	ASTM D5185m		**28**	27	28
Calcium	ppm	ASTM D5185m		**125**	123	128
Phosphorus	ppm	ASTM D5185m		**94**	86	99
Zinc	ppm	ASTM D5185m		**30**	28	33
Sulfur	ppm	ASTM D5185m		**11177**	10647	11261

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>75	**15**	13	17
Sodium	ppm	ASTM D5185m		**334**	337	358
Potassium	ppm	ASTM D5185m	>20	**4**	4	4
Water	%	ASTM D6304	>0.2	**9.50**	8.66	9.98
ppm Water	ppm	ASTM D6304	>2000	**95000**	86600	99800

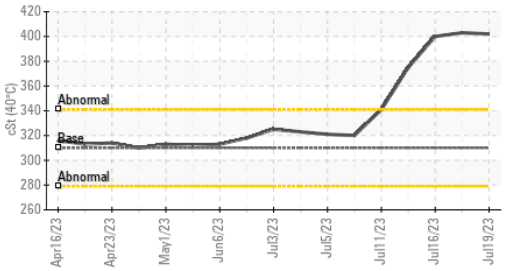
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		**0.43**	0.38	0.44

OIL ANALYSIS REPORT

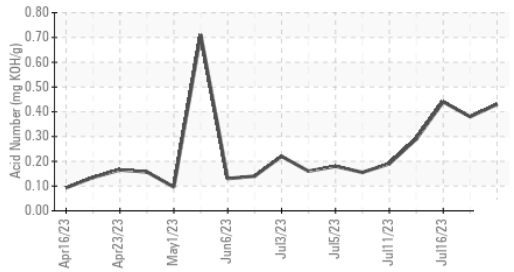
Water



Viscosity @ 40°C

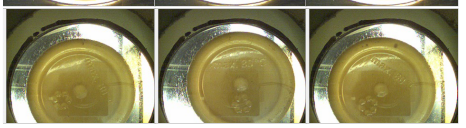


Acid Number



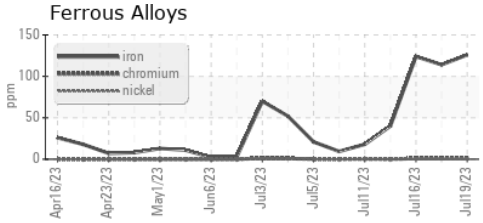
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	▲ **MILKY**	▲ MILKY	▲ MILKY
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	⬢ **0.2%**	⬢ 0.2%	⬢ 0.2%
Free Water	scalar	*Visual		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	310	▲ **402**	▲ 403	▲ 400

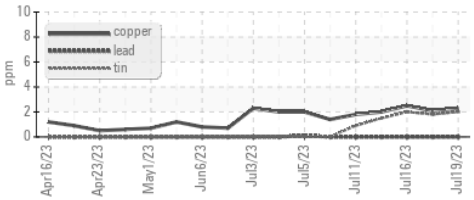
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

GRAPHS

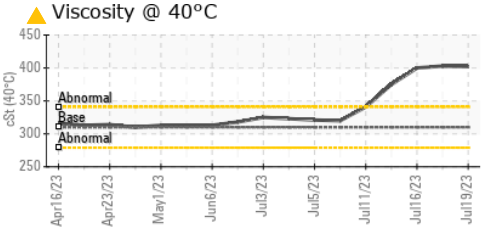
Ferrous Alloys



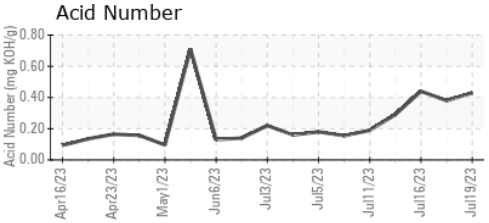
Non-ferrous Metals



Viscosity @ 40°C



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0012130 **Received** : 21 Jul 2023
Lab Number : 05904322 **Diagnosed** : 26 Jul 2023
Unique Number : 10565678 **Diagnostician** : Don Baldridge
Test Package : MOB 2 (Additional Tests: KF, PrtCount)

To discuss this sample report, contact Customer Service at 1-800-237-1369.
** - Denotes test methods that are outside of the ISO 17025 scope of accreditation.*
Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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