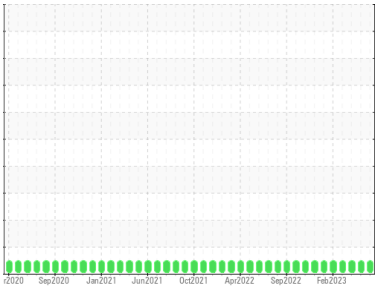
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Area
HAPL - HYDRAULIC
Machine Id
HAPL SCALE BREAKER HYDRAULIC UNIT (S/N 16-1100-1310)
Component
Hydraulic System
Fluid
SAE 10W (--- QTS)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

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

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**RP0035048**	RP0034516	RP0029642
Sample Date		Client Info		**30 May 2023**	02 May 2023	30 Mar 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
Sample Status				**NORMAL**	NORMAL	NORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	**<1**	0	<1
Chromium	ppm	ASTM D5185m	>20	**<1**	0	<1
Nickel	ppm	ASTM D5185m	>20	**0**	0	0
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m		**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**0**	6	0
Lead	ppm	ASTM D5185m	>20	**<1**	0	0
Copper	ppm	ASTM D5185m	>20	**<1**	0	<1
Tin	ppm	ASTM D5185m	>20	**0**	0	<1
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**0**	0	0
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**<1**	0	<1
Manganese	ppm	ASTM D5185m		**0**	0	0
Magnesium	ppm	ASTM D5185m		**1**	4	<1
Calcium	ppm	ASTM D5185m		**38**	35	41
Phosphorus	ppm	ASTM D5185m		**310**	335	361
Zinc	ppm	ASTM D5185m		**356**	377	382

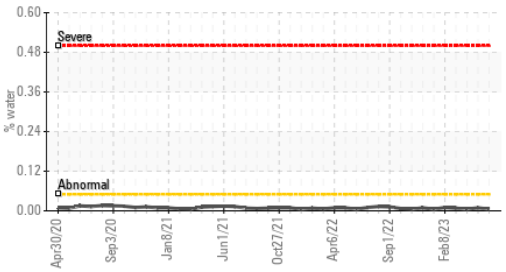
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>15	**<1**	0	4
Sodium	ppm	ASTM D5185m		**0**	0	1
Potassium	ppm	ASTM D5185m	>20	**<1**	0	0
Water	%	ASTM D6304	>0.05	**0.005**	0.009	0.005
ppm Water	ppm	ASTM D6304	>500	**57.1**	90.3	53.3

FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000	**199**	179	228
Particles >6µm	ASTM D7647	>1300	**99**	61	38
Particles >14µm	ASTM D7647	>160	**26**	5	10
Particles >21µm	ASTM D7647	>40	**10**	2	4
Particles >38µm	ASTM D7647	>10	**1**	0	0
Particles >71µm	ASTM D7647	>3	**0**	0	0
Oil Cleanliness	ISO 4406 (c)	>19/17/14	**15/14/12**	15/13/10	15/12/10

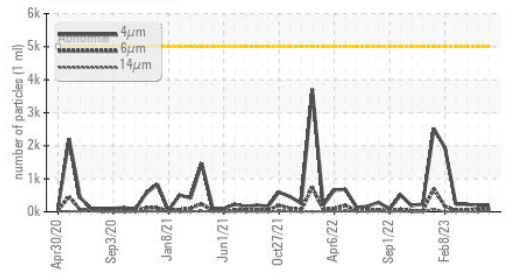
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		**0.30**	0.32	0.35

OIL ANALYSIS REPORT

Water



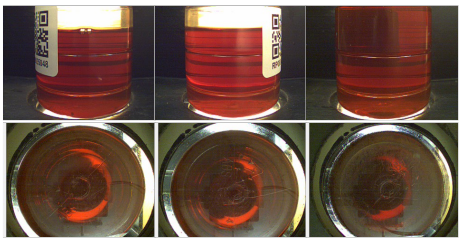
Particle Trend



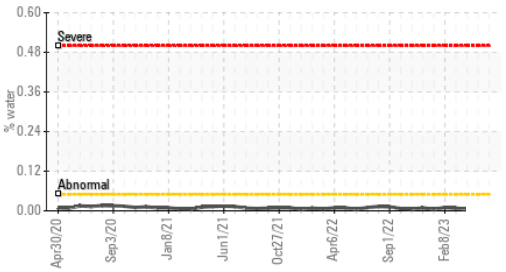
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	NORML	NORML
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>0.05	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	35.0	**44.1**	43.7	44.1

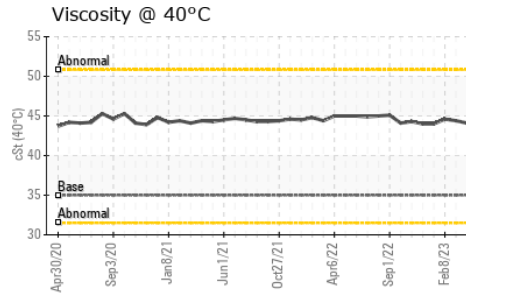
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					



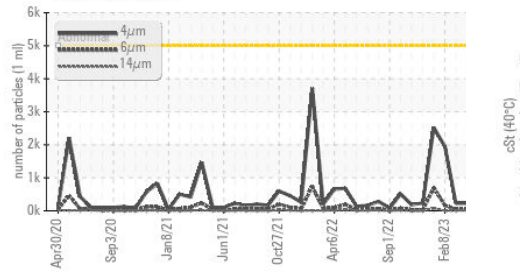
Water



Viscosity @ 40°C

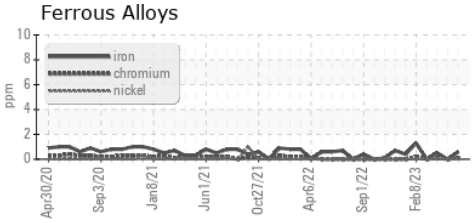


Particle Trend

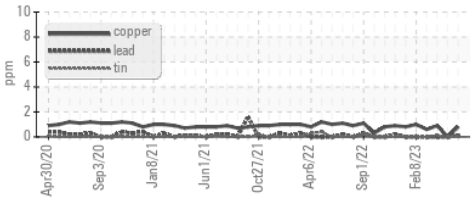


GRAPHS

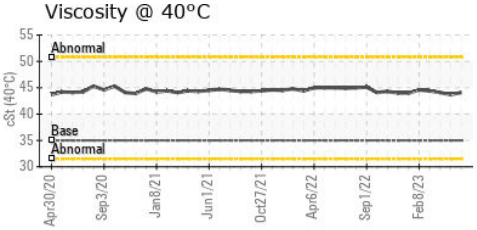
Ferrous Alloys



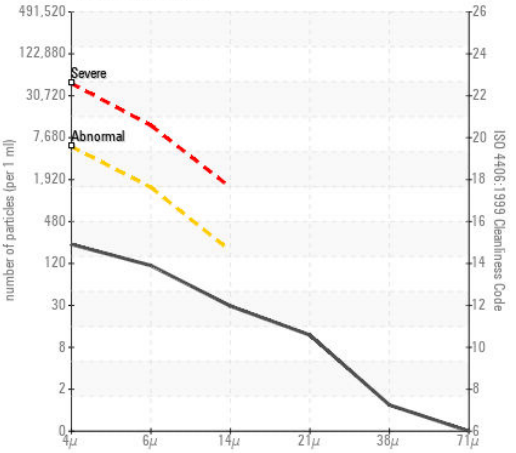
Non-ferrous Metals



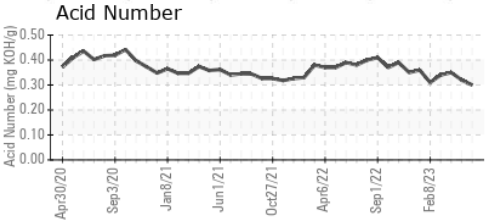
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : RP0035048
Lab Number : 05860763
Unique Number : 10495228
Test Package : IND 2

Received : 31 May 2023
Diagnosed : 02 Jun 2023
Diagnostician : Don Baldridge

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)

OUTOKUMPU STAINLESS USA
HWY 43 N
CALVERT, AL
US 36513
Contact: MARIO JOHNSON
Mario.johnson@outokumpu.com
T: (251)321-4105
F: x:

Report Id: OUTCALAL [WUSCAR] 05860763 (Generated: 07/25/2023 14:34:36) Rev: 1

Submitted By: DALE ROBINSON