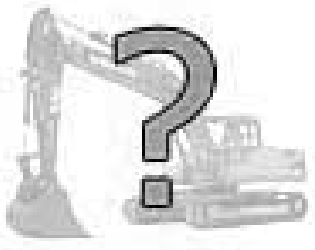
LIEBHERR
CONSTRUCTION EQUIPMENT

MS18 - Hydraulic System

Sample No: LH0244833

Oil Type: {unknown}



OSCAR WINSKI CO. INC
2407 N. 9TH STREET
LAFAYETTE, IN
US 47904
Contact: JAYSON FRAZIER
frazierj@oscarwinski.com
T: (765)376-1230
F: x:

SAMPLE INFORMATION

Sample Number		**LH0244833**	LHMC100213	LHMC122794	LHMC119673
Sample Date		**21 Mar 2024**	01 Dec 2023	03 Aug 2023	13 May 2023
Machine Hours		**6118**	5393	4388	3734
Oil Hours		**0**	0	0	0
Oil Changed		**Not Changd**	Not Changd	Not Changd	Not Changd
Sample Status		**NORMAL**	ABNORMAL	NORMAL	NORMAL

OIL CONDITION

Visc @ 40°C	cSt	**39.1**	39.0	39.2	38.6
Acid Number (AN)	mg KOH/g	**0.66**	0.63	0.66	0.75

CONTAMINATION

Water	%	**NEG**	NEG	NEG	NEG
Particles >4µm		**4176**	12699	3090	3481
Particles >6µm		**718**	2553	598	505
Particles >14µm		**37**	107	30	25
ISO 4406:1999 (c)		**19/17/12**	21/19/14	19/16/12	19/16/12
Silicon	ppm	**2**	2	2	2
Sodium	ppm	**6**	2	4	2
Potassium	ppm	**2**	1	0	1

WEAR METALS

Iron	ppm	**8**	7	6	5
Copper	ppm	**4**	3	2	2
Lead	ppm	**3**	<1	<1	1
Tin	ppm	**3**	0	0	0
Aluminum	ppm	**<1**	2	0	0
Chromium	ppm	**2**	1	<1	<1
Molybdenum	ppm	**2**	1	0	2
Nickel	ppm	**1**	0	0	0
Titanium	ppm	**<1**	<1	0	0
Silver	ppm	**0**	0	0	0
Manganese	ppm	**<1**	0	<1	0
Vanadium	ppm	**<1**	0	0	0

ADDITIVES

Calcium	ppm	**571**	608	650	625
Magnesium	ppm	**9**	28	18	15
Zinc	ppm	**448**	520	512	478
Phosphorus	ppm	**360**	471	320	371
Barium	ppm	**<1**	6	0	0
Boron	ppm	**2**	2	<1	<1

Diagnosis

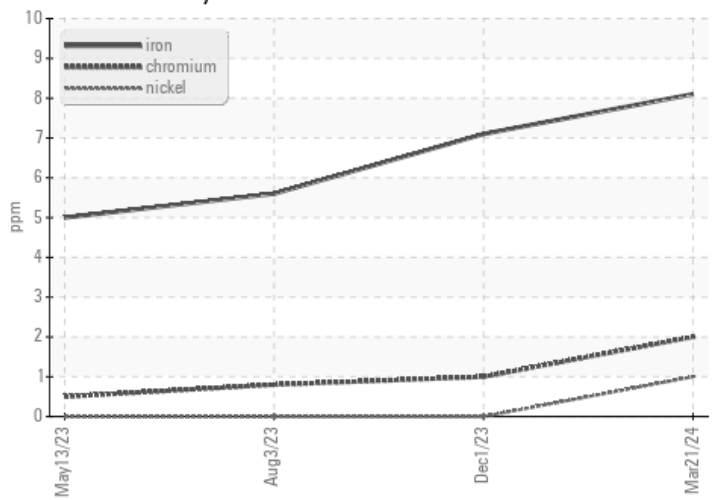
Resample at the next service interval to monitor. Please specify the component make and model with your next sample. Please specify the brand, type, and viscosity of the oil on your next sample.All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Depot: OSCLAF
Unique No: 10940518
Signed: Wes Davis
Report Date: 25 Mar 2024

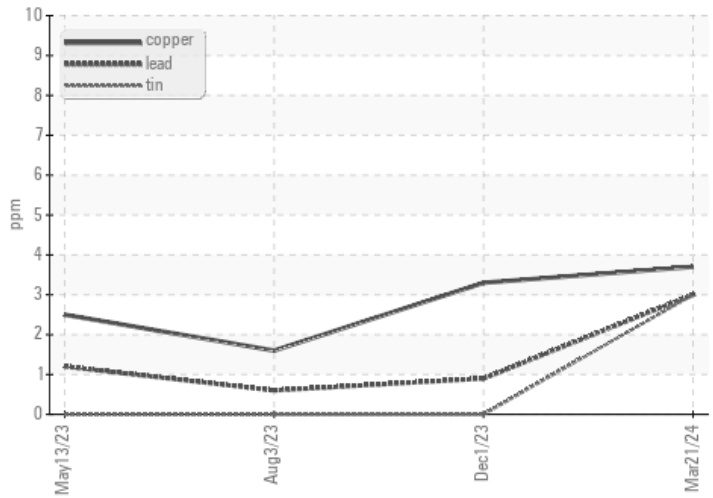
LIEBHERR
CONSTRUCTION EQUIPMENT

GRAPHS

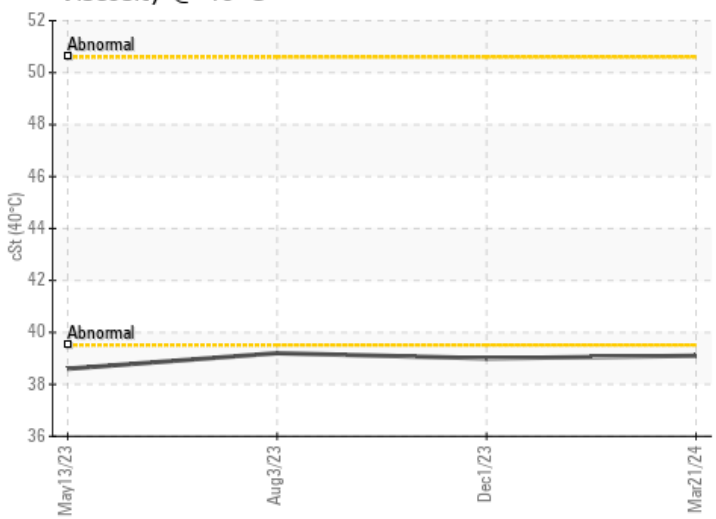
Ferrous Alloys



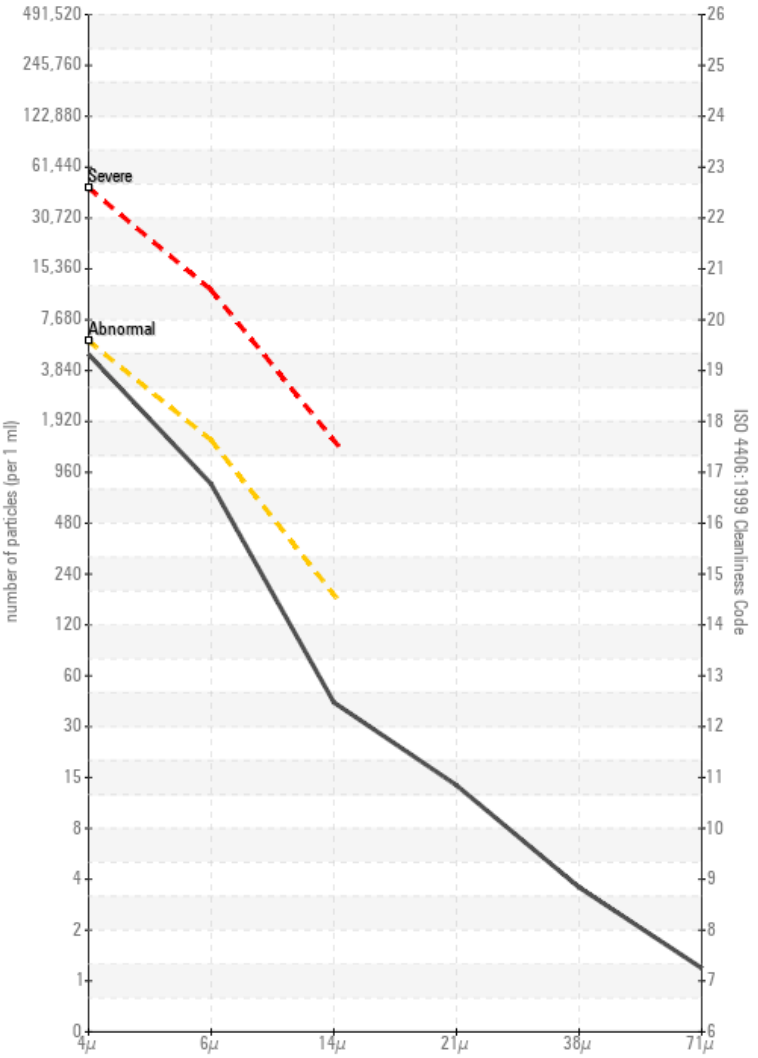
Non-ferrous Metals



Viscosity @ 40°C



Particle Count



Acid Number