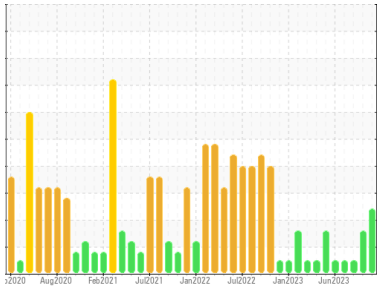
OIL ANALYSIS REPORT

Sample Rating Trend



WATER

Area
Direct Strip Mill/Finishing
Machine Id
PL4-F5/F6 MORGOIL SYSTEM (DSC019) (S/N 1000017099)
Component
Gear Lube System
Fluid
SHELL OMALA S2 G 320 (25000 LTR)

DIAGNOSIS

Recommendation

We advise that you check for the source of water entry. Check seals and/or filters for points of contaminant entry. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We advise that you use off-line filtration with water adsorbent filters to attempt to remove the water from this oil. We recommend an early resample to monitor this condition. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using IND 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid.

Wear

Component wear rates appear to be normal (unconfirmed).

Contamination

There is a moderate concentration of water present in the oil. The system cleanliness is acceptable for your target ISO 4406 cleanliness code.

Fluid Condition

The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0837578**	WC0837424	WC0837463
Sample Date		Client Info		**18 Jan 2024**	14 Nov 2023	26 Sep 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				**ABNORMAL**	ABNORMAL	NORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>150	**72**	76	72
Chromium	ppm	ASTM D5185(m)	>10	**<1**	<1	<1
Nickel	ppm	ASTM D5185(m)	>10	**<1**	<1	<1
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)		**0**	<1	<1
Aluminum	ppm	ASTM D5185(m)	>25	**<1**	<1	<1
Lead	ppm	ASTM D5185(m)	>100	**<1**	<1	<1
Copper	ppm	ASTM D5185(m)	>50	**1**	1	1
Tin	ppm	ASTM D5185(m)	>10	**6**	6	6
Antimony	ppm	ASTM D5185(m)	>5	**<1**	0	0
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	5.5	**<1**	2	<1
Barium	ppm	ASTM D5185(m)	0.4	**0**	<1	<1
Molybdenum	ppm	ASTM D5185(m)	0.5	**0**	0	0
Manganese	ppm	ASTM D5185(m)		**0**	0	<1
Magnesium	ppm	ASTM D5185(m)	23	**<1**	<1	0
Calcium	ppm	ASTM D5185(m)	13	**3**	3	2
Phosphorus	ppm	ASTM D5185(m)	450	**177**	170	168
Zinc	ppm	ASTM D5185(m)	9.9	**8**	7	7
Sulfur	ppm	ASTM D5185(m)	8181	**8477**	8083	7983
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>50	**2**	2	2
Sodium	ppm	ASTM D5185(m)		**4**	3	4
Potassium	ppm	ASTM D5185(m)	>20	**2**	<1	<1
Water	%	ASTM D6304*	>0.1	▲ **0.121**	▲ 0.116	---
ppm Water	ppm	ASTM D6304*	>1000	▲ **1215**	▲ 1162.8	---

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>1280000	**302874**	354941	240774
Particles >6µm		ASTM D7647	>640000	**104467**	123299	108523
Particles >14µm		ASTM D7647	>20000	**948**	1321	1351
Particles >21µm		ASTM D7647	>5000	**90**	109	101
Particles >38µm		ASTM D7647	>1300	**2**	2	2
Particles >71µm		ASTM D7647	>320	**0**	0	0
Oil Cleanliness		ISO 4406 (c)	>27/26/21	**25/24/17**	26/24/18	25/24/18

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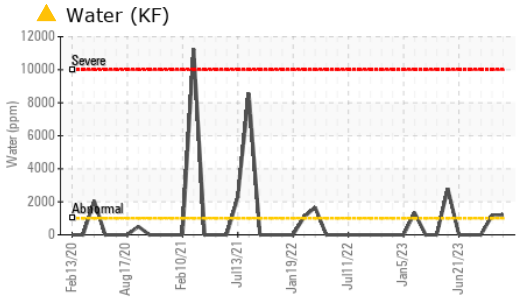
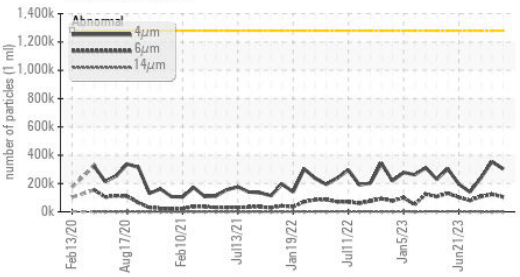
Water (KF)

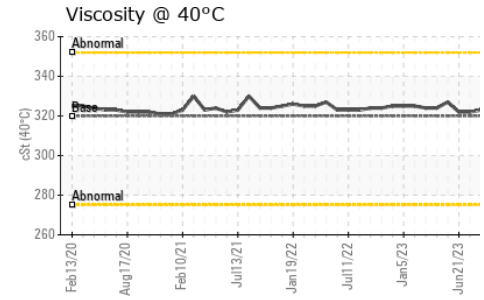


Particle Trend

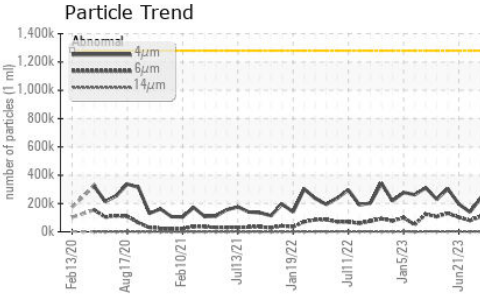


Acid Number

Viscosity @ 40°C



Particle Trend

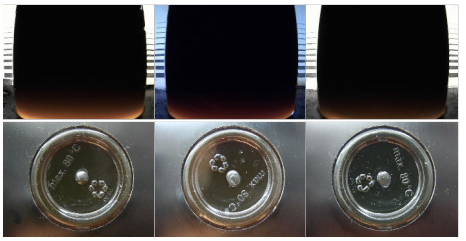


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*		**0.42**	0.30	0.38

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**NONE**	NONE	VLITE
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	▲ **HAZY**	NORML	NORML
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	▲ **.2%**	▲ .2%	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

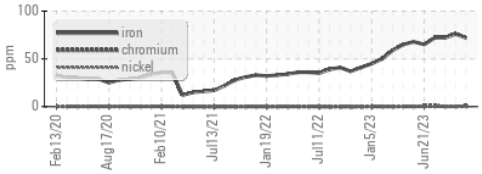
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	320	**323**	323	323

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

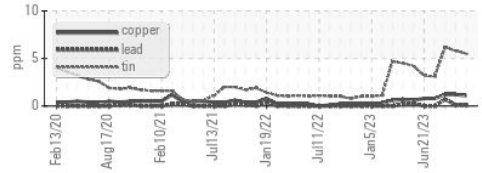


GRAPHS

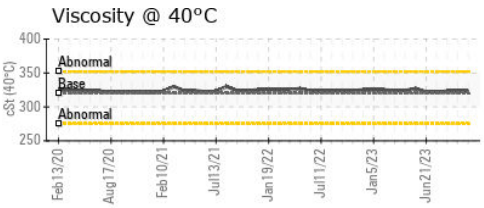
Ferrous Alloys



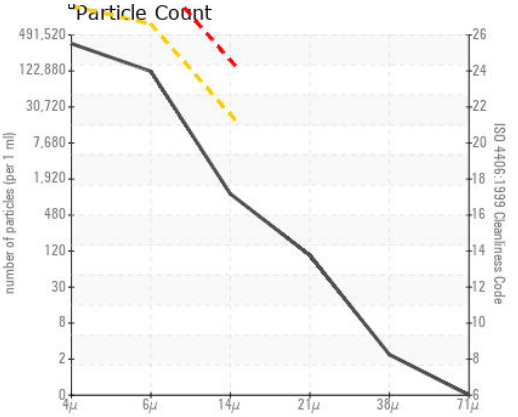
Non-ferrous Metals



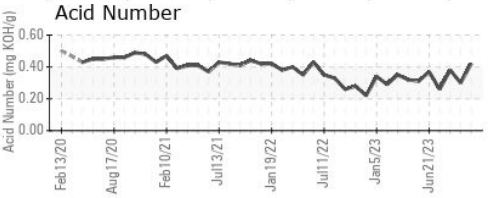
Viscosity @ 40°C



Particle Count



Acid Number



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **ALGOMA STEEL INC. - STORES DEPT.**
Sample No. : WC0837578 **Recieved** : 22 Jan 2024 301 WALLACE TERRACE
Lab Number : 02610441 **Diagnosed** : 23 Jan 2024 SAULT STE MARIE, ON
Unique Number : 5711527 **Diagnostician** : Kevin Marson CA P6C 1K8
Test Package : IND 2 (Additional Tests: KF, TAN Man) Contact: Algoma Reliability

To discuss this sample report, contact Customer Service at 1-800-268-2131. algomareliability@algoma.com
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. T: (705)206-1059
Validity of results and interpretation are based on the sample and information as supplied. F: (705)945-3585