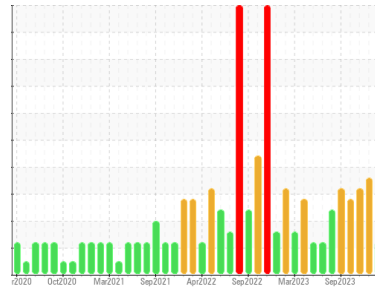




OIL ANALYSIS REPORT

Sample Rating Trend



DEGRADATION



Area

Direct Strip Mill/Caster

Machine Id
CH2.4 HYDRAULIC SYSTEM (DSC193) (S/N 1000024515)

Component

Hydraulic System

Fluid

HOUGHTON HOUGHTO-SAFE 620 (2730 LTR)

DIAGNOSIS

Recommendation

Due to the low reserve alkalinity it is advised that you contact HOUGHTON to assist in restoring the proper amine concentration. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Fluid Condition

The reserve alkalinity of this fluid is lower than acceptable. The oil viscosity is lower than typical, possibly indicating the addition of lighter grade oil. The AN level is acceptable for this fluid. The pH level of this fluid is within the acceptable limits. The water concentration level is acceptable for this fluid.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0780548	WC0837373	WC0837567
Sample Date	Client Info		16 Apr 2024	29 Feb 2024	18 Jan 2024
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	ABNORMAL

WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185(m)	>20	0	0	0
Chromium	ppm	ASTM D5185(m)	>20	0	0	0
Nickel	ppm	ASTM D5185(m)	>20	0	0	0
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)		0	<1	<1
Aluminum	ppm	ASTM D5185(m)	>20	0	0	0
Lead	ppm	ASTM D5185(m)	>20	0	0	0
Copper	ppm	ASTM D5185(m)	>20	0	8	11
Tin	ppm	ASTM D5185(m)	>20	0	0	0
Antimony	ppm	ASTM D5185(m)		<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)		<1	<1	1
Barium	ppm	ASTM D5185(m)		1	<1	<1
Molybdenum	ppm	ASTM D5185(m)		0	0	0
Manganese	ppm	ASTM D5185(m)		0	0	0
Magnesium	ppm	ASTM D5185(m)		<1	<1	0
Calcium	ppm	ASTM D5185(m)		<1	<1	<1
Phosphorus	ppm	ASTM D5185(m)		<1	1	<1
Zinc	ppm	ASTM D5185(m)		0	0	<1
Sulfur	ppm	ASTM D5185(m)		43	58	59
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m)	>15	<1	<1	<1
Sodium	ppm	ASTM D5185(m)		8	26	28
Potassium	ppm	ASTM D5185(m)	>20	0	22	31
Water	%	ASTM D6304*	>43.5	40.0	35.4	40.2
ppm Water	ppm	ASTM D6304*	>435000	400000	354000	402000

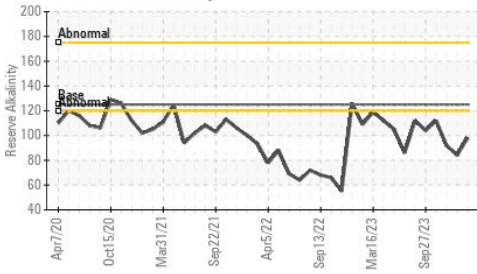
FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>640	238	● 1007	▲ 1399
Particles >6µm	ASTM D7647	>160	113	▲ 332	▲ 433
Particles >14µm	ASTM D7647	>20	17	▲ 55	● 31
Particles >21µm	ASTM D7647	>4	8	▲ 19	● 8
Particles >38µm	ASTM D7647	>3	4	▲ 9	1
Particles >71µm	ASTM D7647	>3	0	2	2
Oil Cleanliness	ISO 4406 (c)	>16/14/11	15/14/11	▲ 17/16/13	▲ 18/16/12

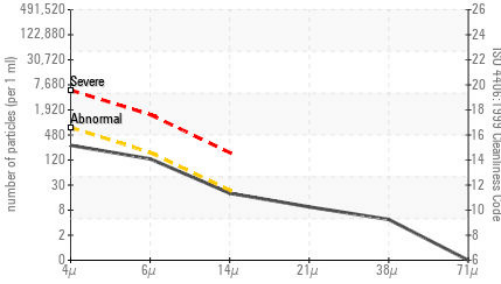


OIL ANALYSIS REPORT

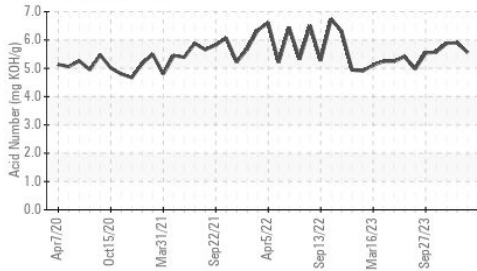
▲ Reserve Alkalinity



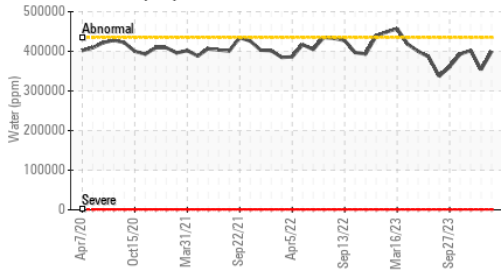
Particle Count



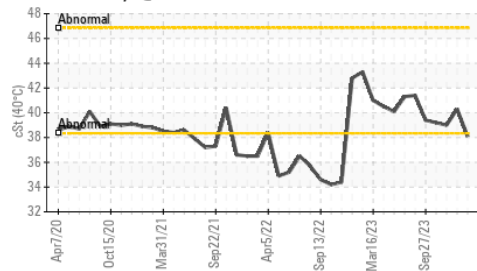
Acid Number



Water (KF)



Viscosity @ 40°C

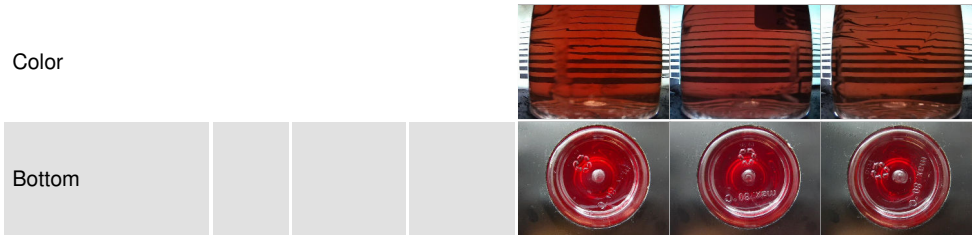


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*		5.56	5.90	5.88
Alkiline Reserve (Oils)	ml KOH/g	ASTM D1121*	125	▲ 98	▲ 84	▲ 92

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	FRGLY	FRGLY	FRGLY
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>43.5	>10%	>10%	>10%
Free Water	scalar	Visual*		NEG	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
pH	Scale 0-14	ASTM D1287*		9.05	9.04	9.03
Visc @ 40°C	cSt	ASTM D7279(m)		38.1	40.3	39.0

SAMPLE IMAGES



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0780548
Lab Number : **02630797**
Unique Number : 5763929
Test Package : IND 2 (Additional Tests: KF, pH, ReserveAlk, TAN Man)

ALGOMA STEEL INC. - STORES DEPT.
 301 WALLACE TERRACE
 SAULT STE MARIE, ON
 CA P6C 1K8

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

Contact: Algoma Reliability
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