IND II WEAR CHECK

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	NORMAL

Area
#7 Blast Furnace
Machine Id
TAP HOLE DRILL HYD (IRN039) (S/N 1000033155)
Component
Hydraulic System
Fluid
HOUGHTON HOUGHTO-SAFE 620 (800 LTR)

RECOMMENDATION

We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. 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. Resample in 30-45 days to monitor this situation.

WEAR

All component wear rates are normal.

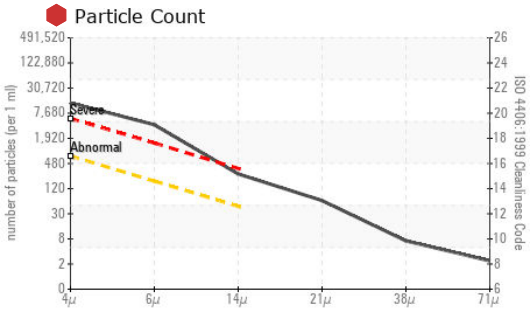
CONTAMINATION

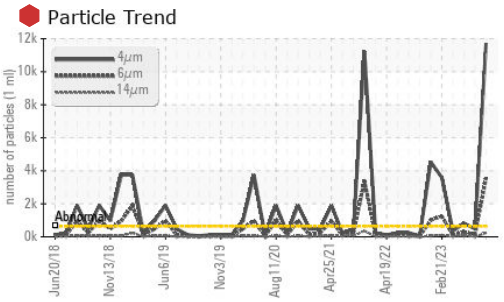
There is a high amount of particulates (2 to 100 microns in size) present in the oil. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code.

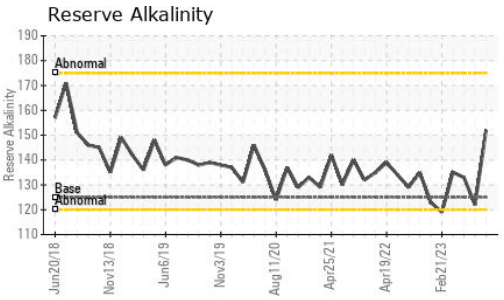
FLUID CONDITION

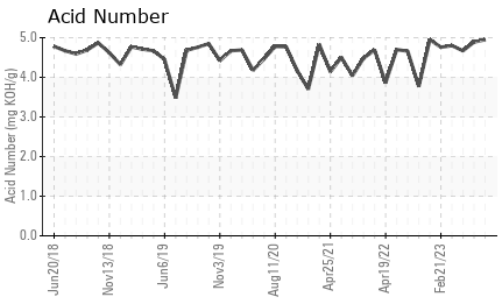
The AN level is acceptable for this fluid. The pH level of this fluid is within the acceptable limits. The reserve alkalinity of this fluid is acceptable. The water concentration level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

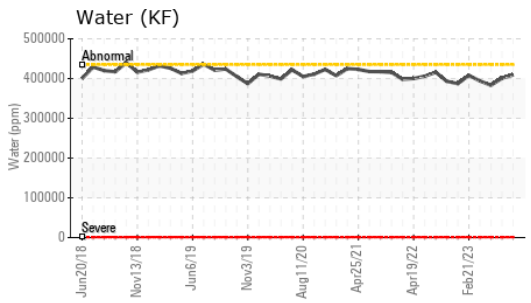
Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0780654	WC0689831	WC0689958
Sample Date		Client Info		14 Jan 2024	23 Oct 2023	27 Jun 2023
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				SEVERE	NORMAL	ABNORMAL
Iron	ppm	ASTM D5185(m)	>20	0	0	2
Chromium	ppm	ASTM D5185(m)	>20	0	0	3
Nickel	ppm	ASTM D5185(m)	>20	0	0	0
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)		<1	<1	0
Aluminum	ppm	ASTM D5185(m)	>20	0	0	0
Lead	ppm	ASTM D5185(m)	>20	0	0	6
Copper	ppm	ASTM D5185(m)	>20	0	0	3
Tin	ppm	ASTM D5185(m)	>20	0	0	2
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185(m)	>15	0	<1	0
Potassium	ppm	ASTM D5185(m)	>20	32	30	0
Water	%	ASTM D6304*	>43.5	40.9	40.1	38.3
ppm Water	ppm	ASTM D6304*	>435000	409000	401000	383000
Particles >4µm		ASTM D7647	>640	11707	480	816
Particles >6µm		ASTM D7647	>160	3546	120	308
Particles >14µm		ASTM D7647	>40	237	15	69
Particles >21µm		ASTM D7647	>10	55	2	27
Particles >38µm		ASTM D7647	>3	6	0	0
Particles >71µm		ASTM D7647	>3	2	0	0
Oil Cleanliness		ISO 4406 (c)	>16/14/12	21/19/15	16/14/11	17/15/13
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%
Sodium	ppm	ASTM D5185(m)		26	25	10
Boron	ppm	ASTM D5185(m)		<1	<1	0
Barium	ppm	ASTM D5185(m)		<1	<1	2
Molybdenum	ppm	ASTM D5185(m)		0	0	3
Manganese	ppm	ASTM D5185(m)		0	0	0
Magnesium	ppm	ASTM D5185(m)		<1	<1	0
Calcium	ppm	ASTM D5185(m)		<1	<1	2
Phosphorus	ppm	ASTM D5185(m)		1	2	0
Zinc	ppm	ASTM D5185(m)		0	0	0
Sulfur	ppm	ASTM D5185(m)		58	57	0
Acid Number (AN)	mg KOH/g	ASTM D974*		4.95	4.89	4.67
pH	Scale 0-14	ASTM D1287*		9.61	9.45	9.39
Visc @ 40°C	cSt	ASTM D7279(m)		42.1	42.7	43.3
Alkiline Reserve (Oils)	ml KOH/g	ASTM D1121*	125	152	122	133

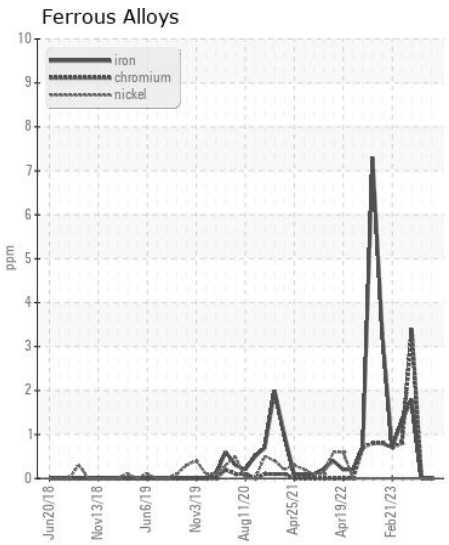


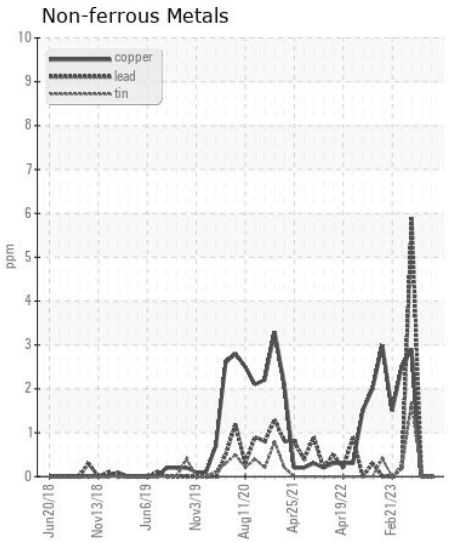


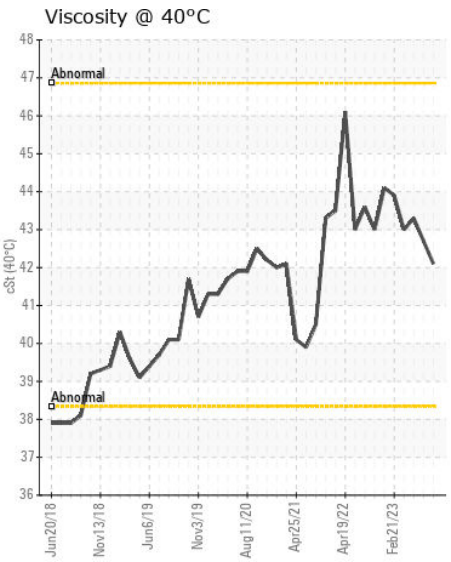


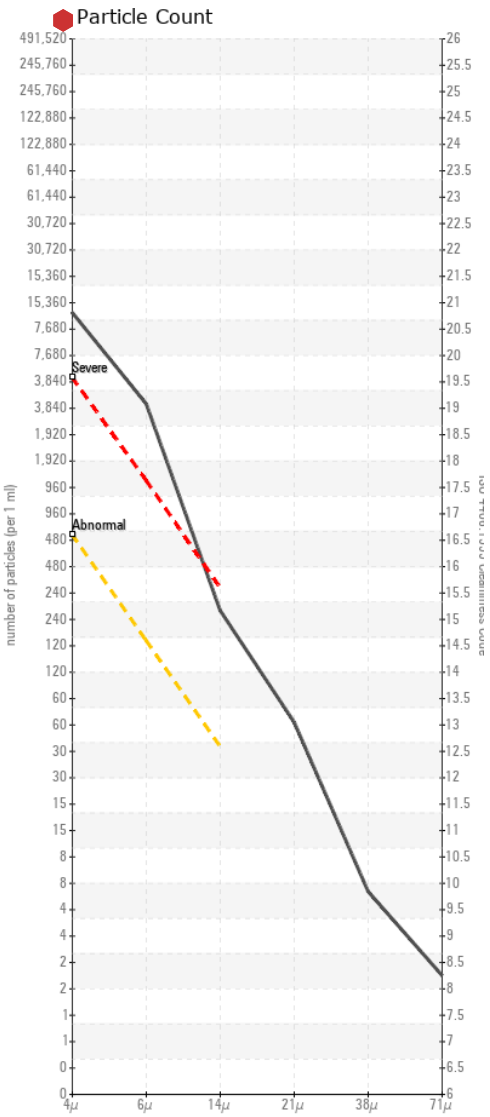


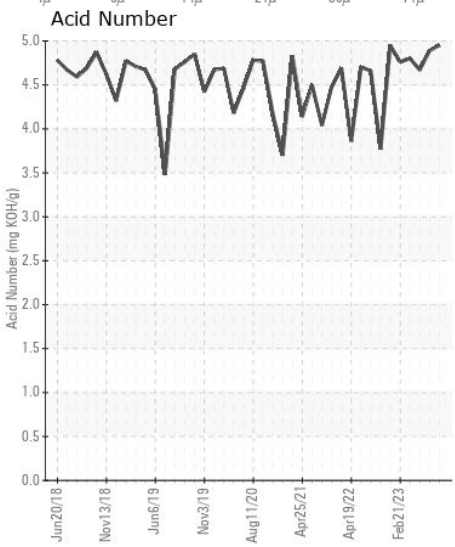












CALA
ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **ALGOMA STEEL INC. - STORES DEPT.**
Sample No. : WC0780654 **Recieved** : 15 Jan 2024 301 WALLACE TERRACE
Lab Number : 02608822 **Diagnosed** : 17 Jan 2024 SAULT STE MARIE, ON
Unique Number : 5709908 **Diagnostician** : Kevin Marson CA P6C 1K8
Test Package : IND 2 (Additional Tests: KF, pH, ReserveAlk, 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