



# OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	NORMAL

Area  
**#7 Blast Furnace**  
 Machine Id  
**TUYERE MACHINE HYD (IRN050) (S/N 1000033154)**  
 Component  
**Hydraulic System**  
 Fluid  
**HOUGHTON HOUGHTO-SAFE 620 (--- GAL)**

## 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. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

## WEAR

All component wear rates are normal.

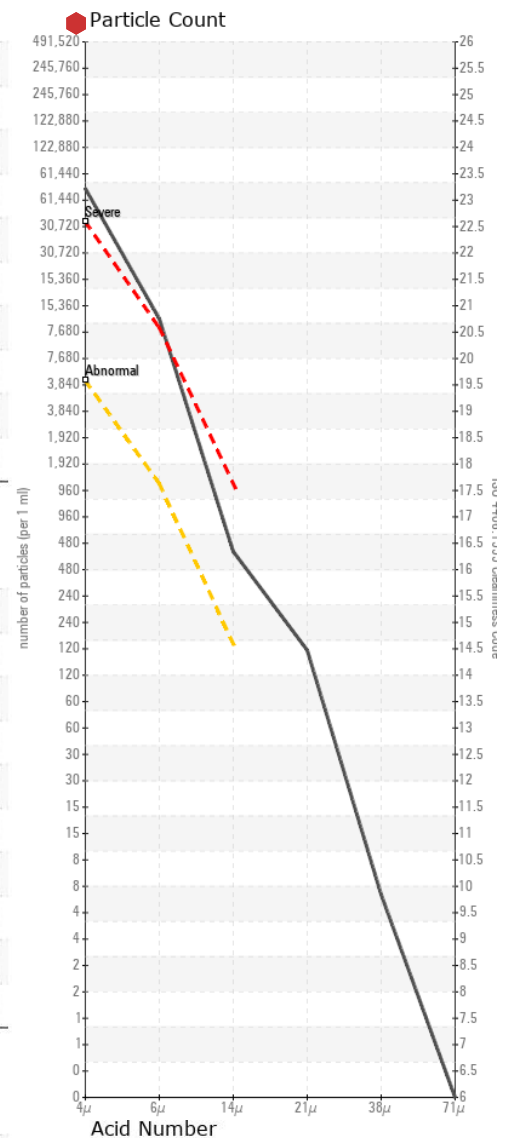
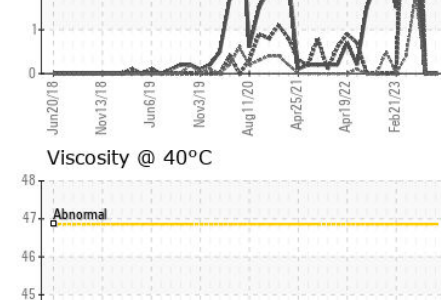
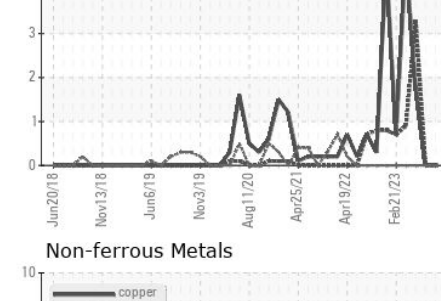
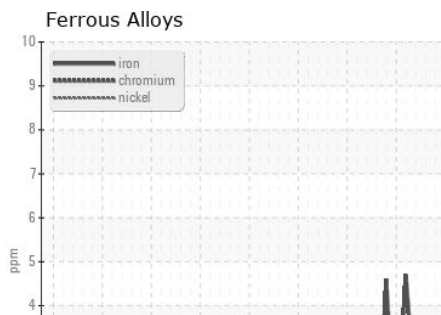
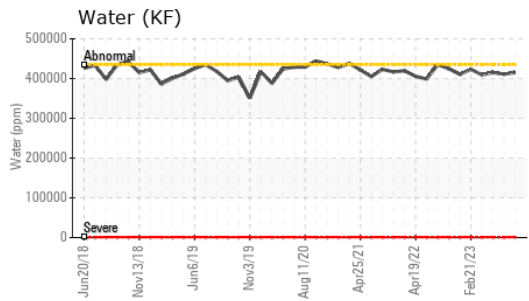
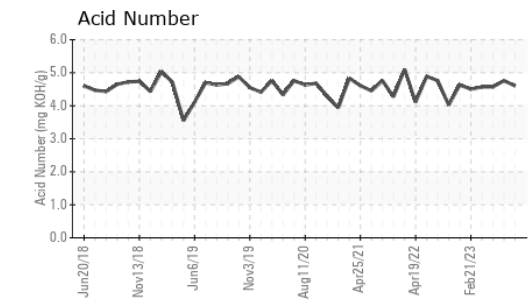
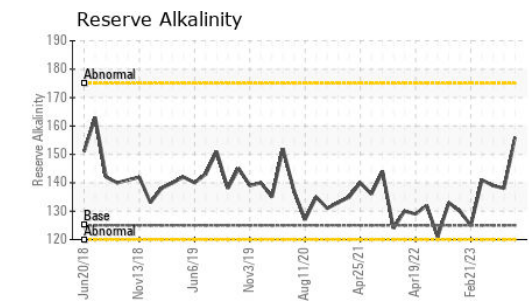
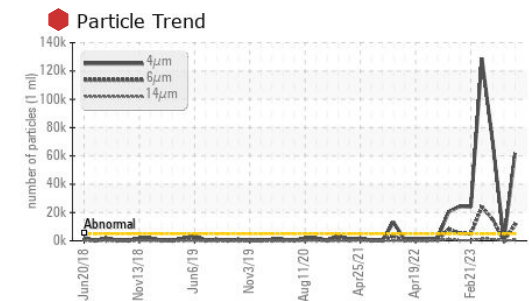
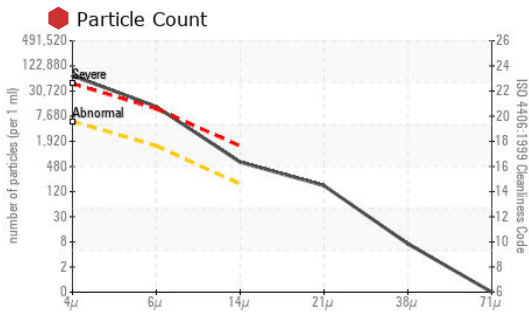
## CONTAMINATION

There is a high amount of particulates (2 to 100 microns in size) present in the oil.

## 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		<b>WC0780656</b>	WC0714505	WC0689959
Sample Date		Client Info		<b>14 Jan 2024</b>	23 Oct 2023	27 Jun 2023
Machine Age	hrs	Client Info		<b>0</b>	0	0
Oil Age	hrs	Client Info		<b>0</b>	0	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>N/A</b>	N/A	N/A
Filter Changed		Client Info		<b>N/A</b>	N/A	N/A
Sample Status				<b>SEVERE</b>	SEVERE	SEVERE
Iron	ppm	ASTM D5185(m)	>20	<b>0</b>	0	2
Chromium	ppm	ASTM D5185(m)	>20	<b>0</b>	0	3
Nickel	ppm	ASTM D5185(m)	>20	<b>0</b>	0	0
Titanium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	0
Aluminum	ppm	ASTM D5185(m)	>20	<b>0</b>	0	0
Lead	ppm	ASTM D5185(m)	>20	<b>0</b>	0	6
Copper	ppm	ASTM D5185(m)	>20	<b>0</b>	0	3
Tin	ppm	ASTM D5185(m)	>20	<b>0</b>	0	2
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0
White Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	▲ VLITE
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Silicon	ppm	ASTM D5185(m)	>15	<b>&lt;1</b>	<1	0
Potassium	ppm	ASTM D5185(m)	>20	<b>34</b>	35	0
Water	%	ASTM D6304*	>43.5	<b>41.5</b>	41.1	41.5
ppm Water	ppm	ASTM D6304*	>435000	<b>415000</b>	411000	415000
Particles >4µm		ASTM D7647	>5000	<b>61847</b>	63	68034
Particles >6µm		ASTM D7647	>1300	<b>11262</b>	63	14918
Particles >14µm		ASTM D7647	>160	<b>535</b>	63	1193
Particles >21µm		ASTM D7647	>40	<b>147</b>	▲ 63	383
Particles >38µm		ASTM D7647	>10	<b>6</b>	▲ 63	16
Particles >71µm		ASTM D7647	>3	<b>0</b>	63	2
Oil Cleanliness		ISO 4406 (c)	>19/17/14	<b>23/21/16</b>	13/13/13	23/21/17
Silt	scalar	Visual*	NONE	<b>NONE</b>	NONE	VLITE
Debris	scalar	Visual*	NONE	<b>VLITE</b>	VLITE	▲ VLITE
Sand/Dirt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	Visual*	NORML	<b>FRGLY</b>	FRGLY	FRGLY
Odor	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	Visual*	>43.5	<b>&gt;10%</b>	>10%	>10%
Sodium	ppm	ASTM D5185(m)		<b>26</b>	31	18
Boron	ppm	ASTM D5185(m)		<b>&lt;1</b>	3	<1
Barium	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	2
Molybdenum	ppm	ASTM D5185(m)		<b>0</b>	0	3
Manganese	ppm	ASTM D5185(m)		<b>0</b>	0	0
Magnesium	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	<1
Calcium	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	2
Phosphorus	ppm	ASTM D5185(m)		<b>1</b>	2	0
Zinc	ppm	ASTM D5185(m)		<b>0</b>	0	0
Sulfur	ppm	ASTM D5185(m)		<b>58</b>	57	0
Acid Number (AN)	mg KOH/g	ASTM D974*		<b>4.60</b>	4.76	4.57
pH	Scale 0-14	ASTM D1287*		<b>9.63</b>	9.48	9.40
Visc @ 40°C	cSt	ASTM D7279(m)		<b>44.8</b>	42.1	44.5
Alkaline Reserve (Oils)	ml KOH/g	ASTM D1121*	125	<b>156</b>	138	139



ISO 17025:2017  
Accredited  
Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 ALGOMA STEEL INC. - STORES DEPT.  
**Sample No.** : WC0780656 **Received** : 15 Jan 2024  
**Lab Number** : 02608821 **Diagnosed** : 17 Jan 2024  
**Unique Number** : 5709907 **Diagnostician** : Kevin Marson  
**Test Package** : IND 2 ( Additional Tests: KF, pH, ReserveAlk, TAN Man )

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.

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