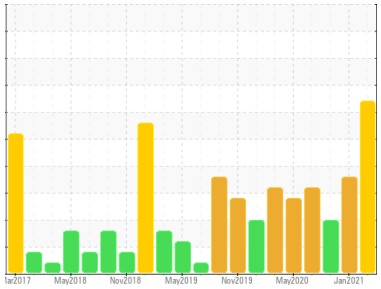
PROBLEM SUMMARY

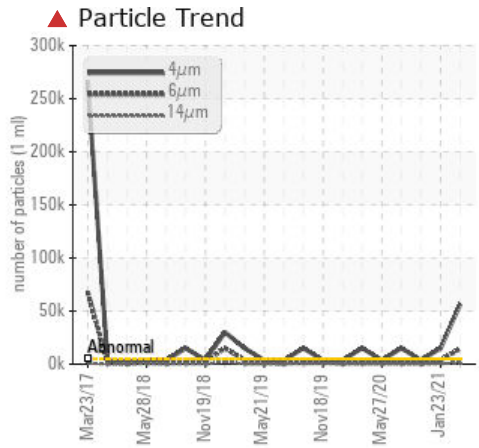
Sample Rating Trend

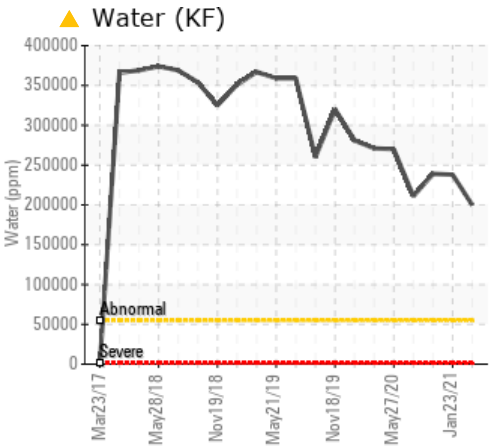


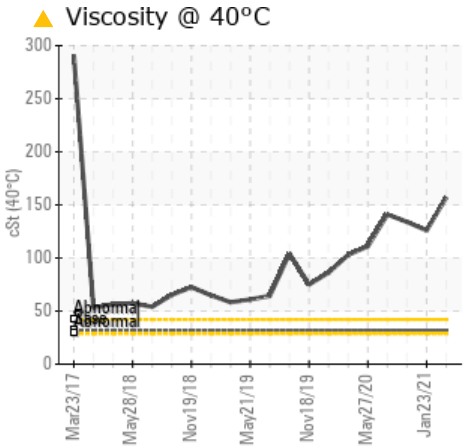
ISO

Area
Plate Mill/166 Hot Mill
Machine Id
#5 FURNACE HYDRAULICS (PLS003) (S/N 1000001515)
Component
Hydraulic System
Fluid
FIRE-RESISTANT FLUID ISO 32 (--- GAL)

COMPONENT CONDITION SUMMARY







RECOMMENDATION

Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. We advise that you check all areas where contaminants can enter the system. We advise that you add water to increase the water concentration level to 40%. Ensure that only distilled water or boiler feed water condensate are used for make-up. 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. Please specify the brand, type, and viscosity of the oil on your next sample.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	ABNORMAL	ABNORMAL
Water	%	ASTM D6304*	>55	▲ **20.0**	▲ 23.8	▲ 23.9
ppm Water	ppm	ASTM D6304*	>55000	▲ **200000**	▲ 238000	▲ 239000
Particles >4µm		ASTM D7647	>5000	▲ **56567**	▲ 15000	3750
Particles >6µm		ASTM D7647	>1300	▲ **14499**	▲ 3750	970
Particles >14µm		ASTM D7647	>160	▲ **916**	▲ 480	60
Particles >21µm		ASTM D7647	>40	▲ **172**	● 60	7
Oil Cleanliness		ISO 4406 (c)	>19/17/14	▲ **23/21/17**	▲ 21/19/16	19/17/13
Visc @ 40°C	cSt	ASTM D7279(m)	32	▲ **157**	▲ 126	▲ 134

Customer Id: ALGSSM
Sample No.: WC0813610
Lab Number: 02621606
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Kevin Marson +1 (289)291-4644 x4644
Kevin.Marson@wearcheck.com

To change component or sample information:
Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Service/change Fluid	---	---	?	We advise that you add water to increase the water concentration level to 40%. Ensure that only distilled water or boiler feed water condensate are used for make-up.
Change Filter	---	---	?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.
Resample	---	---	?	Resample in 30-45 days to monitor this situation.
Alert	---	---	?	Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment.
Information Required	---	---	?	Please specify the brand, type, and viscosity of the oil on your next sample. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.
Check Breathers	---	---	?	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.
Check Dirt Access	---	---	?	We advise that you check all areas where contaminants can enter the system.
Filter Fluid	---	---	?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.

HISTORICAL DIAGNOSIS

WATER

23 Jan 2021 Diag: Kevin Marson

Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. We advise that you add water to increase the water concentration level to 40%. Ensure that only distilled water or boiler feed water condensate are used for make-up. We recommend you service the filters on this component. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the brand, type, and viscosity of the oil on your next sample.All component wear rates are normal. Water contamination levels are abnormally low. ppm Water contamination levels are abnormally low. Particles >14µm are abnormally high. Particles >4µm are abnormally high. Particles >6µm are abnormally high. Particles >21µm are notably high. The water concentration level is lower than acceptable for this fluid. Viscosity of sample indicates oil is within ISO 150 range, advise investigate. 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 oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report

WATER

25 Sep 2020 Diag: Kevin Marson

Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. We advise that you add water to increase the water concentration level to 40%. Ensure that only distilled water or boiler feed water condensate are used for make-up. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with 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 water concentration level is lower than acceptable for this fluid. Viscosity of sample indicates oil is within ISO 150 range, advise investigate. 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.

view report

WATER

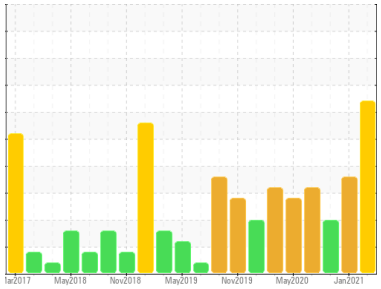
31 Jul 2020 Diag: Kevin Marson

Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. We advise that you add water to increase the water concentration level to 40%. Ensure that only distilled water or boiler feed water condensate are used for make-up. We recommend you service the filters on this component. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the brand, type, and viscosity of the oil on your next sample.All component wear rates are normal. Water contamination levels are abnormally low. ppm Water contamination levels are abnormally low. Particles >4µm are abnormally high. Particles >6µm are abnormally high. Particles >14µm are notably high. The water concentration level is lower than acceptable for this fluid. Viscosity of sample indicates oil is within ISO 150 range, advise investigate. 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 oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Area
Plate Mill/166 Hot Mill
Machine Id
#5 FURNACE HYDRAULICS (PLS003) (S/N 1000001515)
Component
Hydraulic System
Fluid
FIRE-RESISTANT FLUID ISO 32 (--- GAL)

DIAGNOSIS

Recommendation

Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. We advise that you check all areas where contaminants can enter the system. We advise that you add water to increase the water concentration level to 40%. Ensure that only distilled water or boiler feed water condensate are used for make-up. 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. Please specify the brand, type, and viscosity of the oil on your 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 water concentration level is lower than acceptable for this fluid. Viscosity of sample indicates oil is within ISO 150 range, advise investigate. 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 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		**WC0813610**	WC0496422	WC0494791
Sample Date		Client Info		**08 Mar 2024**	23 Jan 2021	25 Sep 2020
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				**SEVERE**	ABNORMAL	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	**0**	1	<1
Chromium	ppm	ASTM D5185(m)	>20	**0**	<1	<1
Nickel	ppm	ASTM D5185(m)	>20	**0**	<1	<1
Titanium	ppm	ASTM D5185(m)		**0**	<1	<1
Silver	ppm	ASTM D5185(m)		**<1**	1	0
Aluminum	ppm	ASTM D5185(m)	>20	**0**	0	0
Lead	ppm	ASTM D5185(m)	>20	**0**	4	2
Copper	ppm	ASTM D5185(m)	>20	**0**	1	1
Tin	ppm	ASTM D5185(m)	>20	**0**	<1	<1
Antimony	ppm	ASTM D5185(m)		**0**	<1	2
Vanadium	ppm	ASTM D5185(m)		**0**	<1	<1
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	<1	<1

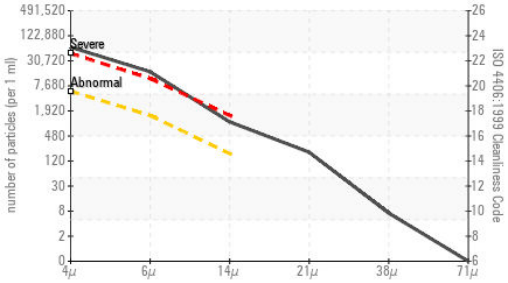
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	5	**<1**	3	<1
Barium	ppm	ASTM D5185(m)	5	**<1**	0	<1
Molybdenum	ppm	ASTM D5185(m)	5	**0**	5	<1
Manganese	ppm	ASTM D5185(m)		**0**	<1	<1
Magnesium	ppm	ASTM D5185(m)	5	**0**	<1	1
Calcium	ppm	ASTM D5185(m)	50	**0**	3	<1
Phosphorus	ppm	ASTM D5185(m)	175	**2**	21	0
Zinc	ppm	ASTM D5185(m)	62	**0**	<1	<1
Sulfur	ppm	ASTM D5185(m)	500	**56**	30	33
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	**0**	<1	<1
Sodium	ppm	ASTM D5185(m)		**29**	60	39
Potassium	ppm	ASTM D5185(m)	>20	**16**	90	21
Water	%	ASTM D6304*	>55	▲ **20.0**	▲ 23.8	▲ 23.9
ppm Water	ppm	ASTM D6304*	>55000	▲ **200000**	▲ 238000	▲ 239000

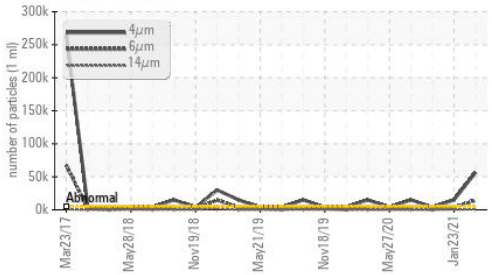
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	▲ **56567**	▲ 15000	3750
Particles >6µm		ASTM D7647	>1300	▲ **14499**	▲ 3750	970
Particles >14µm		ASTM D7647	>160	▲ **916**	▲ 480	60
Particles >21µm		ASTM D7647	>40	▲ **172**	● 60	7
Particles >38µm		ASTM D7647	>10	**6**	7	0
Particles >71µm		ASTM D7647	>3	**0**	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	▲ **23/21/17**	▲ 21/19/16	19/17/13

OIL ANALYSIS REPORT

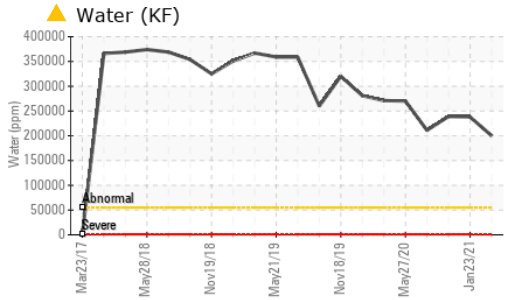
Particle Count



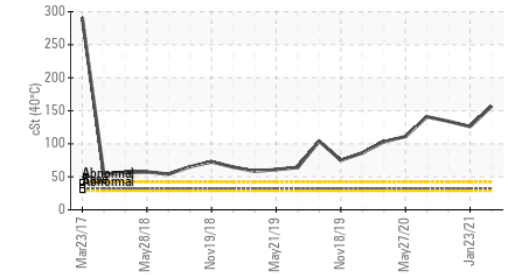
Particle Trend



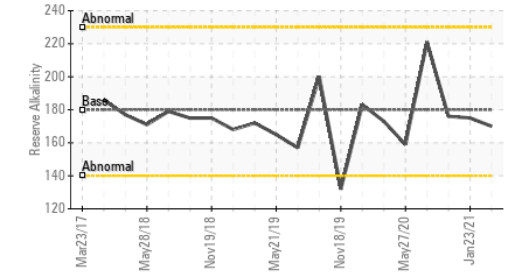
Water (KF)



Viscosity @ 40°C



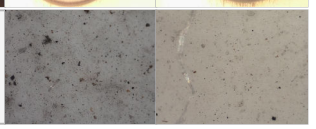
Reserve Alkalinity



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	3.63	**6.90**	5.89	6.09
Alkiline Reserve (Oils)	ml KOH/g	ASTM D1121*		**170**	175	176

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**	VLITE	VLITE
Sand/Dirt	scalar	Visual*	NONE	**NONE**	VLITE	NONE
Appearance	scalar	Visual*	NORML	**FRGLY**	NORML	NORML
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>55	**>10%**	>10%	>10%
Free Water	scalar	Visual*		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
pH	Scale 0-14	ASTM D1287*		**9.08**	9.13	9.10
Visc @ 40°C	cSt	ASTM D7279(m)	32	▲ **157**	▲ 126	▲ 134

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					
PrtFilter			*no image* 		

ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0813610
Lab Number : 02621606
Unique Number : 5746725
Test Package : IND 2 (Additional Tests: KF, pH, ReserveAlk, TAN Man)
Received : 12 Mar 2024
Tested : 14 Mar 2024
Diagnosed : 14 Mar 2024 - Kevin Marson

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.

ALGOMA STEEL INC. - STORES DEPT.
301 WALLACE TERRACE
SAULT STE MARIE, ON
CA P6C 1K8
Contact: Algoma Reliability
algomareliability@algoma.com
T: (705)206-1059
F: (705)945-3585

Report Id: ALGSSM [WCAMIS] 02621606 (Generated: 03/14/2024 08:38:21) Rev: 1

Submitted By: Kris Karthik Rajan