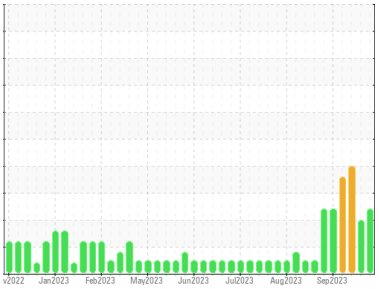
PROBLEM SUMMARY

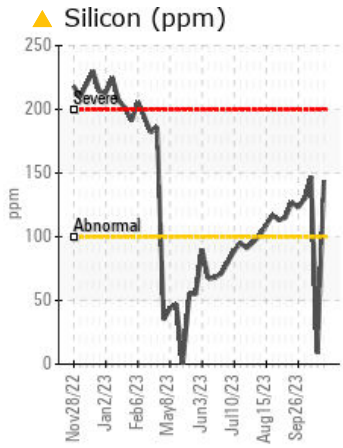
Sample Rating Trend

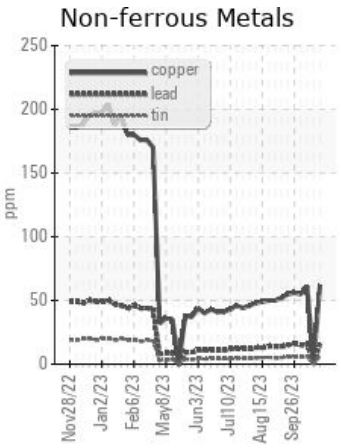


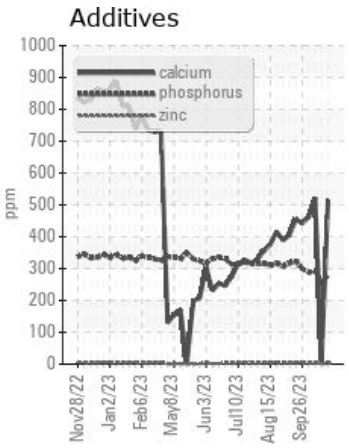
DIRT

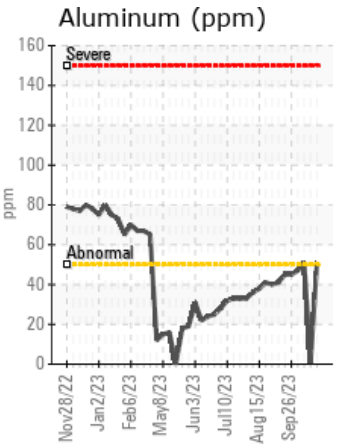
Area
3
Machine Id
3-101-MG Primary
Component
Crusher
Fluid
MOBIL MOBILGEAR 600 XP 320 (2900 LTR)

COMPONENT CONDITION SUMMARY









RECOMMENDATION

We advise that you check all areas where dirt 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. Confirm the source of the lubricant being utilized for top-up/fill. 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.

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL
Silicon	ppm	ASTM D5185(m)	>100	▲ **144**	9	▲ 147
Appearance	scalar	Visual*	NORML	▲ **WGOIL**	NORML	NORML

Customer Id: STMBOW
Sample No.: WC0842649
Lab Number: 02590137
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
Change Filter	---	---	?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Contact Required	---	---	?	Please contact your representative for information regarding the proper sampling kits for your service.
Alert	---	---	?	NOTE: We recommend using IND 3 test kits,
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 dirt can enter the system.
Check Fluid Source	---	---	?	Confirm the source of the lubricant being utilized for top-up/fill.
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

DIRT

11 Oct 2023 Diag: Kevin Marson

We advise that you check all areas where contaminants can enter the system. 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. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition. We suspect that the abnormal contaminant(s) is the result of incorrect sampling technique. DISCLAIMER: Interpretation of results is based on the sample as received from the customer. The condition of the sample and the method of sampling cannot be verified.All component wear rates are normal. Moderate concentration of visible dirt/debris present in the oil. Viscosity of sample indicates oil is within ISO 220 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report

DIRT

10 Oct 2023 Diag: Kevin Marson

We advise that you check all areas where contaminants can enter the system. 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 perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. 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.Aluminum ppm levels are noted. All other component wear rates are normal. There is a light amount of silt (particulates < 14 microns in size) present in the oil. Calcium and/or magnesium levels higher than normal indicating possible contamination with cement dust, advise investigate. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report

DIRT

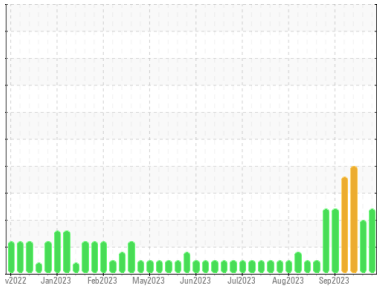
03 Oct 2023 Diag: Kevin Marson

We advise that you check all areas where contaminants can enter the system. 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 perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. 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.Aluminum ppm levels are noted. All other component wear rates are normal. There is a light amount of silt (particulates < 14 microns in size) present in the oil. Calcium and/or magnesium levels higher than normal indicating possible contamination with cement dust, advise investigate. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



DIRT

Area
3
Machine Id
3-101-MG Primary
Component
Crusher
Fluid
MOBIL MOBILGEAR 600 XP 320 (2900 LTR)

DIAGNOSIS

Recommendation

We advise that you check all areas where dirt 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. Confirm the source of the lubricant being utilized for top-up/fill. 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

Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. The water content is negligible.

Fluid Condition

Additive levels indicate the addition of a different brand, or type of oil. 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		**WC0842649**	WC0851468	WC0842650
Sample Date		Client Info		**16 Oct 2023**	11 Oct 2023	10 Oct 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	ABNORMAL

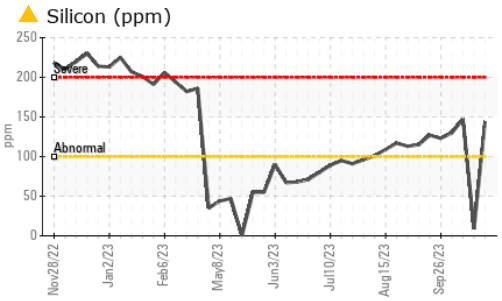
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>200	**86**	7	83
Chromium	ppm	ASTM D5185(m)	>15	**<1**	0	<1
Nickel	ppm	ASTM D5185(m)	>15	**1**	0	1
Titanium	ppm	ASTM D5185(m)		**2**	0	2
Silver	ppm	ASTM D5185(m)		**<1**	<1	<1
Aluminum	ppm	ASTM D5185(m)	>50	**51**	<1	▲ 51
Lead	ppm	ASTM D5185(m)	>100	**16**	<1	16
Copper	ppm	ASTM D5185(m)	>200	**62**	2	61
Tin	ppm	ASTM D5185(m)	>15	**7**	0	6
Antimony	ppm	ASTM D5185(m)	>5	**0**	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

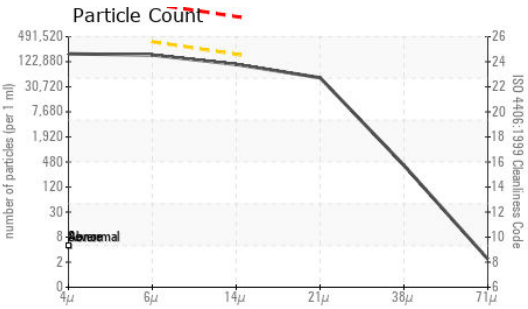
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	57	**11**	1	11
Barium	ppm	ASTM D5185(m)	0.0	**<1**	<1	<1
Molybdenum	ppm	ASTM D5185(m)	2.0	**0**	0	0
Manganese	ppm	ASTM D5185(m)	0.0	**<1**	0	<1
Magnesium	ppm	ASTM D5185(m)	0.0	**24**	0	24
Calcium	ppm	ASTM D5185(m)	42	**515**	10	▲ 522
Phosphorus	ppm	ASTM D5185(m)	399	**278**	255	292
Zinc	ppm	ASTM D5185(m)	13	**3**	2	3
Sulfur	ppm	ASTM D5185(m)	13649	**10193**	1661	10575
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

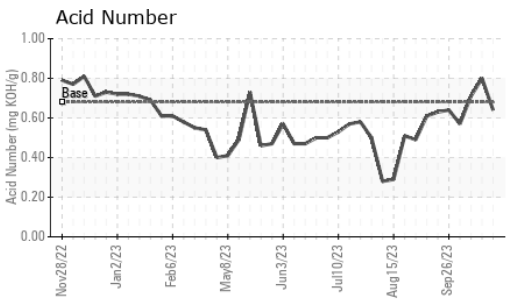
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>100	▲ **144**	9	▲ 147
Sodium	ppm	ASTM D5185(m)		**4**	1	3
Potassium	ppm	ASTM D5185(m)	>20	**21**	0	21
Water	%	ASTM D6304*	>0.1	**0.010**	---	---
ppm Water	ppm	ASTM D6304*	>1000	**100.1**	---	---

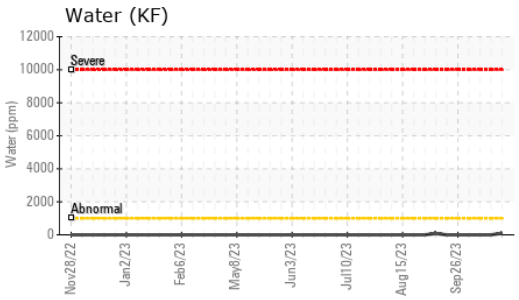
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**164035**	334549	520075
Particles >6µm		ASTM D7647	>320000	**154120**	195777	▲ 458761
Particles >14µm		ASTM D7647	>160000	**91576**	20769	▲ 160064
Particles >21µm		ASTM D7647	>40000	**43899**	3995	25284
Particles >38µm		ASTM D7647	>10000	**351**	93	14
Particles >71µm		ASTM D7647	>2500	**2**	2	0
Oil Cleanliness		ISO 4406 (c)	>25/24	**24/24**	25/22	▲ 26/25

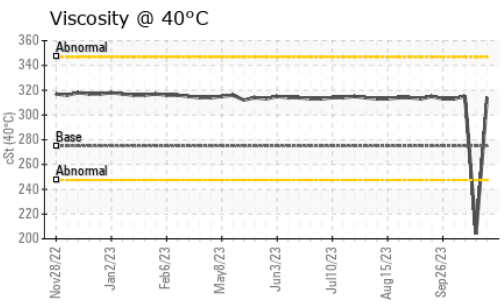
OIL ANALYSIS REPORT









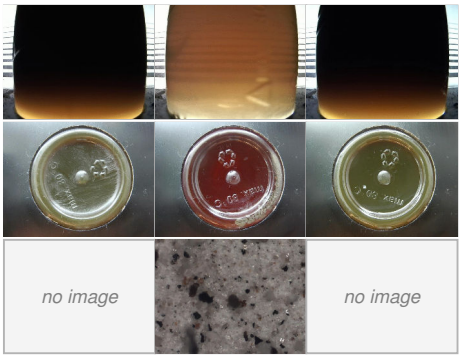


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.68	**0.64**	0.80	0.71

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**	▲ LTMOD	NONE
Appearance	scalar	Visual*	NORML	▲ **WGOIL**	NORML	NORML
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	**.2%**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	275	**314**	▲ 204	315

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



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0842649 **Received** : 18 Oct 2023
Lab Number : 02590137 **Diagnosed** : 19 Oct 2023
Unique Number : 5659203 **Diagnostician** : Kevin Marson
Test Package : IND 2 (Additional Tests: KF, 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.

ST. MARYS CEMENT CO.
400 BOWMANVILLE AVENUE
BOWMANVILLE, ON
CA L1C 7B5
Contact: Lou Traiforos
lou.traiforos@vcimentos.com
T: (905)440-5874
F: (905)623-4695