

PROBLEM SUMMARY

Area OPF2/BD08 Machine Id 109550 KM Extruder Component

Gearbox Fluid

MOBIL MOBILGEAR 600 XP 320 (300 LTR)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

Check seals and/or filters for points of contaminant entry. 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 recommend you service the filters on this component. Resample in 30-45 days to monitor this situation.

PROBLEMATIC TEST RESULTS								
Sample Status			SEVERE	SEVERE	SEVERE			
Particles >4µm	ASTM D7647	>20000	e 187793	9331923	• 380865			
Particles >6µm	ASTM D7647	>5000	• 74271	214611	217003			
Oil Cleanliness	ISO 4406 (c)	>21/19/16	• 25/23/16	• 26/25/19	• 26/25/18			

Customer Id: MITWAT Sample No.: WC0855098 Lab Number: 02601991 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data: Wes Davis +1 905-569-8600 x223 wesd@wearcheck.ca

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 recommend you service the filters on this component.				
Resample			?	Resample in 30-45 days to monitor this situation.				
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 Seals			?	Check seals and/or filters for points of contaminant entry.				

HISTORICAL DIAGNOSIS



30 May 2023 Diag: Kevin Marson

Check seals and/or filters for points of contaminant entry. 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 recommend you service the filters on this component. Resample in 30-45 days to monitor this situation.All component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the 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.



06 Dec 2022 Diag: Kevin Marson

Check seals and/or filters for points of contaminant entry. 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 recommend you service the filters on this component. Resample in 30-45 days to monitor this situation.All component wear rates are normal. Particles >6 μ m are severely high. Particles >4 μ m are severely high. Oil Cleanliness are severely high. Particles >14 μ m are abnormally high. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.



25 May 2022 Diag: Wes Davis



Check seals and/or filters for points of contaminant entry. 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 recommend you service the filters on this component. Resample in 30-45 days to monitor this situation.All component wear rates are normal. Particles $>6\mu$ m are severely high. Particles $>4\mu$ m are severely high. Oil Cleanliness are severely high. Particles $>14\mu$ m are abnormally high. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.





OIL ANALYSIS REPORT

Area OPF2/BD08 Machine Id 109550 KM Extruder Component

Gearbox Filuid MOBIL MOBILGEAR 600 XP 320 (300 LTR)

DIAGNOSIS

Recommendation

Check seals and/or filters for points of contaminant entry. 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 recommend you service the filters on this component. Resample in 30-45 days to monitor this situation.

Wear

All component wear rates are normal.

Contamination

There is a high amount of silt (particulates < 14 microns in size) present in the oil.

Fluid Condition

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 INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0855098	WC0799474	WC0718905
Sample Date		Client Info		29 Nov 2023	30 May 2023	06 Dec 2022
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	SEVERE	SEVERE
CONTAMINATIO	N	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>200	16	82	71
Chromium	ppm	ASTM D5185(m)	>15	0	0	0
Nickel	ppm	ASTM D5185(m)	>15	<1	<1	0
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)		<1	0	0
Aluminum	ppm	ASTM D5185(m)	>25	<1	<1	<1
Lead	ppm	ASTM D5185(m)	>100	<1	<1	0
Copper	ppm	ASTM D5185(m)	>200	<1	<1	<1
Tin	ppm	ASTM D5185(m)	>25	0	0	0
Antimony	ppm	ASTM D5185(m)	>5	0	<1	<1
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
ADDITIVES Boron	ppm	method ASTM D5185(m)	limit/base	current 32	history1 20	history2 20
ADDITIVES Boron Barium	ppm ppm	Method ASTM D5185(m) ASTM D5185(m)	limit/base	current 32 <1	history1 20 0	history2 20 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	Method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	current 32 <1 4	history1 20 0 31	history2 20 0 22
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	Method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	32 <1 4 0	history1 20 0 31 1	history2 20 0 22 1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	32 <1 4 0 0	history1 20 0 31 1 <1	history2 20 0 22 1 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185(m)	limit/base	32 <1 4 0 0 4	history1 20 0 31 1 <1 24	history2 20 0 22 1 <1 <1 19
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	current 32 <1 4 0 0 4 316	history1 20 0 31 1 <1 24 363	history2 20 0 22 1 <1 19 348
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	limit/base	current 32 <1 4 0 0 4 316 4	history1 20 0 31 1 <1 24 363 17	history2 20 0 22 1 <1 19 348 15
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	limit/base	current 32 <1 4 0 0 4 316 4 9959	history1 20 0 31 1 <1 24 363 17 15576	history2 20 0 22 1 <1 19 348 15 14963
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)		32 <1 4 0 0 4 316 4 9959 <1	history1 20 0 31 1 <1 24 363 17 15576 3	history2 20 0 22 1 <1 19 348 15 14963 2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	limit/base	32 <1 4 0 0 4 316 4 9959 <1 current	history1 20 0 31 1 <1 24 363 17 15576 3 history1	history2 20 0 22 1 <1 19 348 15 14963 2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	limit/base	current 32 <1 4 0 0 4 316 4 9959 <1 current 4	history1 20 0 31 1 <1 24 363 17 15576 3 history1 5	history2 20 0 22 1 1 348 15 14963 2 kistory2 3
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Chosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	limit/base	32 <1 4 0 0 4 316 4 9959 <1 current 4 4 4 4	history1 20 0 31 1 <1 24 363 17 15576 3 history1 5 <1	history2 20 0 22 1 <1 19 348 15 14963 2 history2 3 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	limit/base	32 <1 4 0 0 4 316 4 9959 <1 current 4 0 0	history1 20 0 31 1 <1 24 363 17 15576 3 history1 5 <1 0	history2 20 0 22 1 <1 19 348 15 14963 2 history2 3 0 0 0 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	limit/base limit/base >50 >20 limit/base	32 <1 4 0 0 4 316 4 9959 <1 current 4 0 0 current 0 current 0 current	history1 20 0 31 1 <1 24 363 17 15576 3 history1 5 <1 0 history1	history2 20 0 22 1 <1 19 348 15 14963 2 history2 3 0 0 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	Iimit/base Iimit/base Iimit/base S50 S20 Iimit/base S20000	32 <1 4 0 0 4 9959 <1 current 4 <1 0 current 4 <1 0 current 1 187793	history1 20 0 31 1 <1 24 363 17 15576 3 history1 5 <1 0 history1 \$331923	history2 20 0 22 1 <1 19 348 15 14963 2 history2 3 0 0 history2 380865
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	limit/base >50 limit/base >20 limit/base >20000 >5000	32 <1 4 0 0 4 316 4 9959 <1 current 4 <1 0 current 4 <1 0 current 187793 74271	history1 20 0 31 1 <1 24 363 17 15576 3 history1 5 <1 0 history1 ↓ 331923 ↓ 214611	history2 20 0 22 1 <1 19 348 15 14963 2 history2 3 0 0 history2 380865 217003
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm Particles >14µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m) ASTM D5185(m)	Iimit/base >50 S20 Iimit/base >20000 >5000 >640	32 <1 4 0 0 4 316 4 9959 <1 current 4 <1 0 current 4 <1 0 current 187793 74271 442	history1 20 0 31 1 <1 24 363 17 15576 3 history1 5 <1 0 history1 0 1331923 ● 214611 ▲ 3032	history2 20 0 22 1 - - 1 - - - - - - - - - - - - -
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	limit/base >50 >20 limit/base >20000 >5000 >640 >160	32 <1 4 0 4 316 4 9959 <1 current 4 9159 <1 current 4 <10 current 187793 74271 442 47	history1 20 0 31 1 <1 24 363 17 15576 3 history1 5 <1 0 history1 0 history1 0 131923 ● 214611 ▲ 3032 149	history2 20 0 22 1 - - 1 - - - - - - - - - - - - -
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >4µm Particles >14µm Particles >38µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	limit/base >50 >20 limit/base >20000 >5000 >640 >160 >40	32 <1 4 0 4 316 4 9959 <1 current 4 <1 0 current 4 <1 0 current 187793 74271 442 47 5	history1 20 0 31 1 <1 24 363 17 15576 3 history1 5 <1 0 history1 0 history1 0 history1 ↓ 331923 ↓ 214611 ↓ 3032 149 2	history2 20 0 22 1 - - - - - - - - - - - - -
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >4µm Particles >14µm Particles >38µm Particles >38µm Particles >71µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m) ASTM D7647	Imit/base >50 >20 Imit/base >20000 >20000 >640 >160 >40 >10	32 <1 4 0 4 316 4 9959 <1 current 4 <1 0 current 4 <1 0 current 4 <187793 74271 442 47 5 3	history1 20 0 31 1 <1 24 363 17 15576 3 history1 5 <100 bistory1 0 149 2 0	history2 20 0 22 1 -1 -1 19 348 15 14963 2 bistory2 3 0 0 0 bistory2 380865 ● 217003 ▲ 1813 115 1 0 0

Contact/Location: Alan Davies - MITWAT



OIL ANALYSIS REPORT

Color

Bottom





	Acid	Numb	ber						
1.00	T i i i i		1910	1911		1111	1111		
₽0.80							-	~	
b Ro				\sum		Λ /			
E 0.00			/	V	V	V			
g 0.40									
0.20									
0.00	8	E	12	5	16	2	20-	22	-
	Apr6/	eb 14/	sc13/	ay12/	v14/	m15/	in10/	ay25//	
		LE.	Ď	M	Nc	٦Ľ	٦Ľ	Ma	
	Visco	sitv @	ስ 40°	C C					

FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*		0.76	0.82	0.84
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	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG
	IFS	method	limit/base	current	history1	history2
	20			ounone		
Visc @ 40°C	cSt	ASTM D7279(m)	320	330	314	315
SAMPLE IMAGES	;	method	limit/base	current	history1	history2
				No.		





Ferrous Alloys				Particle Count	-26
iron iron	h		1	122,880	+24
a so nickel	L	~	1	30,720 Abnormal	-22
6/09	4/16	5/18	5/22	Ē 7,680-	-20 44
Ap Feb	May1 Nov1	luul	May2	1.920- 18	-18
Non-ferrous Met	als			480 -	-16 Cean
copper				120-	-14 Iness
E. 5-				ā 30-	-12 6
		· ·	2	8-	
Apr6/C Feb14/	lay 1 2/1	un15/1 un10/2	lay25/2	2	-8
Viscosity @ 40°C	2 2	~ ~	2	$\mathfrak{S}_{4\mu}^{04\mu}$ $\mathfrak{S}_{4\mu}^{0}$ $\mathfrak{S}_{4\mu}^$	71µ
340					~
Abnormal				Aumber of the second seco	
280 4 60/9	4/16 +	5/18 -	5/22	Acid 6,09 1 000 2,115	5/22 -
Apr Feb1	May 1 Nov1	Jun1 Jun1	May2	Apr Feb1 May1 Nov1 Jun1	May2
: WearCheck - C8-1	175 Apple	eby Line, I	Burlingto	n, ON L7L 5H9 MICH	ELIN TIRE
: WC0855098	Receive	d : (08 Dec 2	023 866 RANE	

CALA Sample No. Lab Number : 02601991 Diagnosed : 11 Dec 2023 ISO 17025:2017 Accredited Laboratory Unique Number : 5695076 Diagnostician : Wes Davis Test Package : IND 2 (Additional Tests: TAN Man) Contact: Alan Davies alan.davies@michelin.com 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.

Report Id: MITWAT [WCAMIS] 02601991 (Generated: 12/11/2023 10:31:50) Rev: 1

Laboratory

Contact/Location: Alan Davies - MITWAT

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CA B0P 1V0

T: (902)534-3590