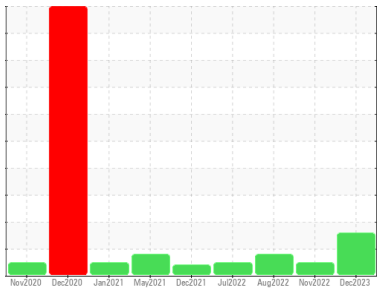
OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Area
2
Machine Id
Timm Machine A Barrel
Component
Bearing
Fluid
SHELL OMALA 68 (--- GAL)

DIAGNOSIS

Recommendation

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

Wear

Iron ppm levels are noted. The low ferrous density (PQ) index indicates the wear metal levels are due to corrosion. All other component wear rates are normal. The ferrography results are normal indicating no abnormal wear in the system.

Contaminants

There were numerous non-ferrous spheres, present on the slide. They do not appear to be associated with wear and look more like glass-type beads.

Oil Condition

The AN level is acceptable for this fluid.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**CB0031412**	CB0031025	CB0030792
Sample Date		Client Info		**29 Dec 2023**	17 Nov 2022	21 Aug 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				**ABNORMAL**	NORMAL	ATTENTION

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>2	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		**0**	0	0
Iron	ppm	ASTM D5185(m)	>20	▲ **60**	42	▲ 58
Chromium	ppm	ASTM D5185(m)	>20	**<1**	<1	2
Nickel	ppm	ASTM D5185(m)	>20	**0**	<1	<1
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)		**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>20	**<1**	<1	0
Lead	ppm	ASTM D5185(m)	>20	**<1**	0	<1
Copper	ppm	ASTM D5185(m)	>20	**<1**	0	<1
Tin	ppm	ASTM D5185(m)	>20	**0**	0	0
Antimony	ppm	ASTM D5185(m)		**0**	0	<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
Boron	ppm	ASTM D5185(m)		**<1**	<1	1
Barium	ppm	ASTM D5185(m)		**0**	0	0
Molybdenum	ppm	ASTM D5185(m)		**0**	0	0
Manganese	ppm	ASTM D5185(m)		**0**	<1	1
Magnesium	ppm	ASTM D5185(m)		**<1**	0	<1
Calcium	ppm	ASTM D5185(m)		**<1**	<1	2
Phosphorus	ppm	ASTM D5185(m)		**297**	332	297
Zinc	ppm	ASTM D5185(m)		**8**	16	68
Sulfur	ppm	ASTM D5185(m)		**7119**	7561	8117
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

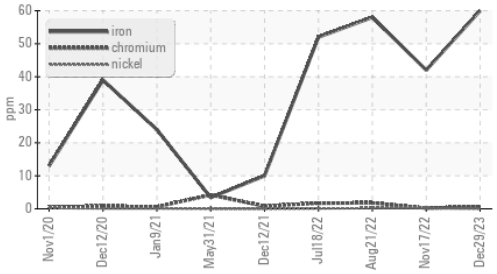
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	**2**	1	2
Sodium	ppm	ASTM D5185(m)		**0**	<1	2
Potassium	ppm	ASTM D5185(m)	>20	**<1**	<1	0

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*		**0.55**	0.47	0.52

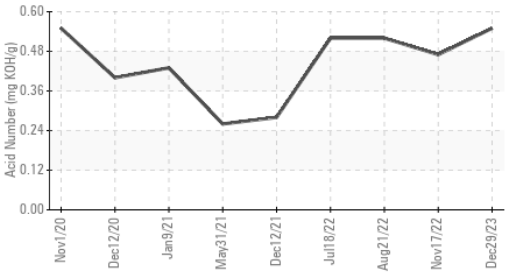
OIL ANALYSIS REPORT

Safety Reliability Efficiency Sustainability for Industry.

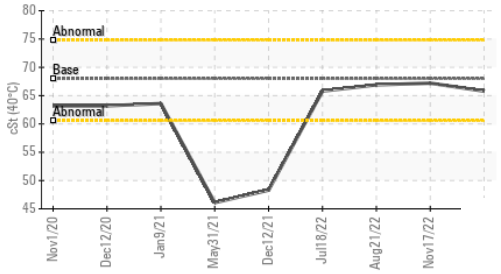
Ferrous Alloys



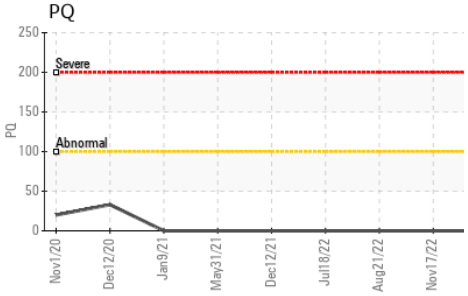
Acid Number



Viscosity @ 40°C

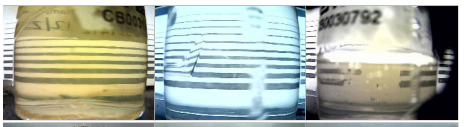


PQ



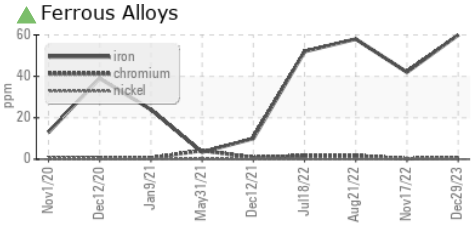
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Precipitate	scalar	Visual*	NONE	**NONE**	NONE	NONE
Silt	scalar	Visual*	NONE	**NONE**	NONE	NONE
Debris	scalar	Visual*	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	**NONE**	NONE	NONE
Appearance	scalar	Visual*	NORML	**NORML**	NORML	NORML
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>2	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	68.0	**65.8**	67.2	66.9

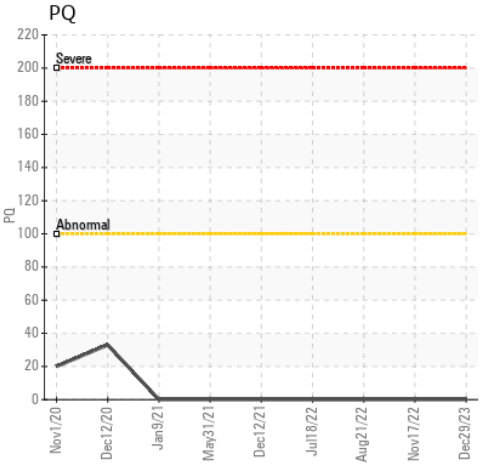
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

GRAPHS

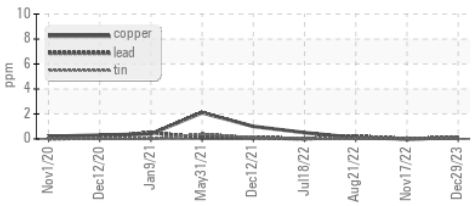
Ferrous Alloys



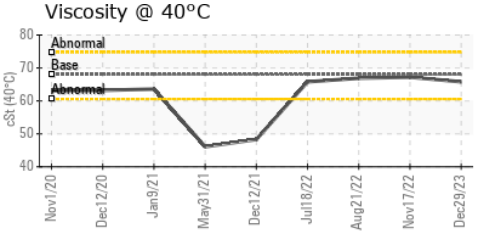
PQ



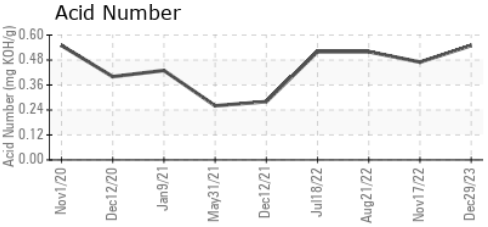
Non-ferrous Metals



Viscosity @ 40°C



Acid Number



CALA Testing Accreditation No. 1005078
ISO 17025:2017 Accredited Laboratory

Laboratory	: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9		
Sample No.	: CB0031412	**Recieved**	: 10 Jan 2024
Lab Number	: 02607845	**Diagnosed**	: 17 Jan 2024
Unique Number	: 5708931	**Diagnostician**	: Kevin Marson
Test Package	: IND 3		

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.

TOYOTA MOTOR MANUFACTURING CANADA
PLASTICS DEPARTMENT, 1717 DUNDAS ST
WOODSTOCK, ON
CA N4S 0A4
Contact: Jeff Lafleur
jeff.lafleur@toyota.com
T: (519)653-1111
F:

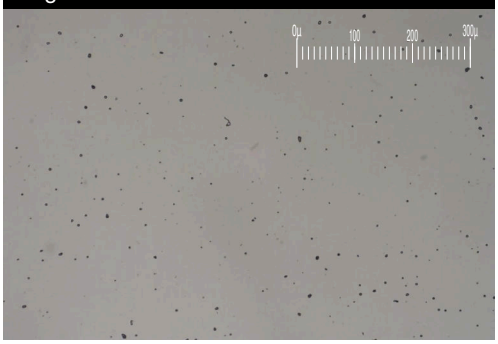
FERROGRAPHY REPORT

Area
2
Machine Id
Timm Machine A Barrel
Component
Bearing
Fluid
SHELL OMALA 68 (--- GAL)

Magn: 200x Illum: BC

Magn: 50x Illum: RW

Magn: 100x Illum: RW

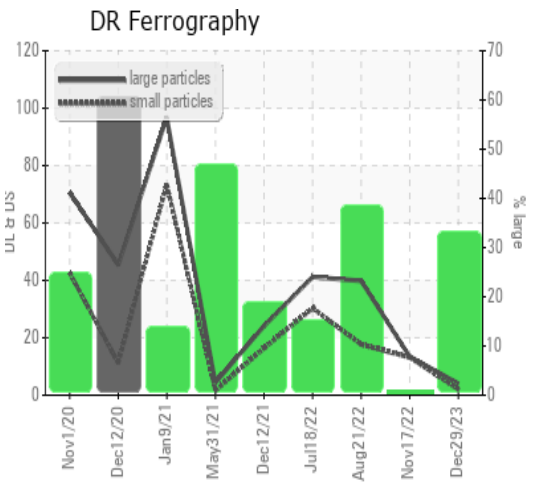


DR-FERROGRAPHY		method	limit/base	current	history1	history2
Large Particles		DR-Ferr*		**4.0**	13.4	39.8
Small Particles		DR-Ferr*		**2.0**	13.2	17.7
Total Particles		DR-Ferr*	>---	**6**	26.6	57.5
Large Particles Percentage	%	DR-Ferr*		**33.3**	0.8	38.4
Severity Index		DR-Ferr*		**8**	3	880

FERROGRAPHY		method	limit/base	current	history1	history2
Ferrous Rubbing	Scale 0-10	ASTM D7684*		**1**	1	2
Ferrous Sliding	Scale 0-10	ASTM D7684*				
Ferrous Cutting	Scale 0-10	ASTM D7684*				
Ferrous Rolling	Scale 0-10	ASTM D7684*		**1**	1	1
Ferrous Break-in	Scale 0-10	ASTM D7684*				
Ferrous Spheres	Scale 0-10	ASTM D7684*				
Ferrous Black Oxides	Scale 0-10	ASTM D7684*				
Ferrous Red Oxides	Scale 0-10	ASTM D7684*				
Ferrous Corrosive	Scale 0-10	ASTM D7684*			1	
Ferrous Other	Scale 0-10	ASTM D7684*				
Nonferrous Rubbing	Scale 0-10	ASTM D7684*				
Nonferrous Sliding	Scale 0-10	ASTM D7684*				
Nonferrous Cutting	Scale 0-10	ASTM D7684*				
Nonferrous Rolling	Scale 0-10	ASTM D7684*				
Nonferrous Other	Scale 0-10	ASTM D7684*				
Carbonaceous Material	Scale 0-10	ASTM D7684*				
Lubricant Degradation	Scale 0-10	ASTM D7684*				
Sand/Dirt	Scale 0-10	ASTM D7684*		**1**	1	1
Fibres	Scale 0-10	ASTM D7684*				
Spheres	Scale 0-10	ASTM D7684*		**2**		
Other	Scale 0-10	ASTM D7684*			1	1

WEAR

Iron ppm levels are noted. The low ferrous density (PQ) index indicates the wear metal levels are due to corrosion. All other component wear rates are normal. The ferrography results are normal indicating no abnormal wear in the system.



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