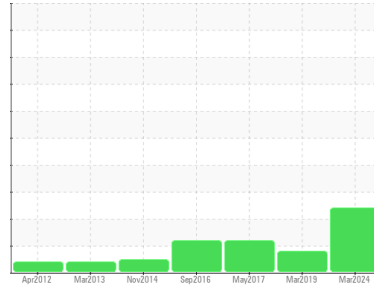




# OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Area  
**SOUTH PAINT**  
Machine Id  
**LOW VISC HYDRAULIC UNIT**  
Component  
**Hydraulic System**  
Fluid  
**SHELL TELLUS 32 (--- GAL)**

## DIAGNOSIS

### Recommendation

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

### Wear

All component wear rates are normal. The ferrography results are normal indicating no abnormal wear in the system.

### Contaminants

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

### Oil 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 INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>WC</b>	CB0028685	WC944026
Sample Date	Client Info		<b>23 Mar 2024</b>	11 Mar 2019	14 May 2017
Machine Age	mths	Client Info	<b>0</b>	0	0
Oil Age	mths	Client Info	<b>0</b>	0	0
Oil Changed	Client Info		<b>N/A</b>	N/A	N/A
Sample Status			<b>ABNORMAL</b>	ATTENTION	ATTENTION

## CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.05	<b>NEG</b>	NEG	NEG

## WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184*		<b>0</b>	13	13
Iron	ppm	ASTM D5185(m) >20	<b>1</b>	4	3
Chromium	ppm	ASTM D5185(m) >20	<b>0</b>	0	<1
Nickel	ppm	ASTM D5185(m) >20	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185(m) >20	<b>0</b>	<1	<1
Lead	ppm	ASTM D5185(m) >20	<b>0</b>	<1	<1
Copper	ppm	ASTM D5185(m) >20	<b>3</b>	11	12
Tin	ppm	ASTM D5185(m) >20	<b>0</b>	0	0
Antimony	ppm	ASTM D5185(m)	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Beryllium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Cadmium	ppm	ASTM D5185(m)	<b>0</b>	0	0

## ADDITIVES

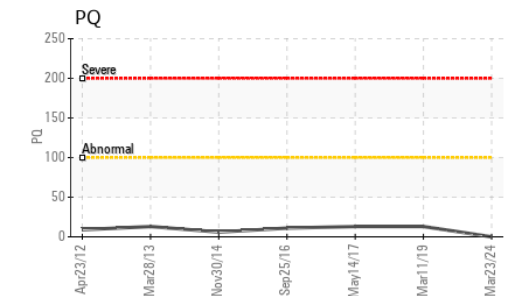
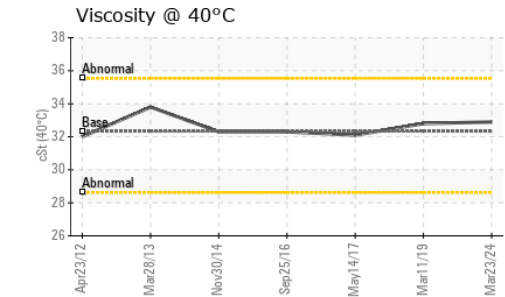
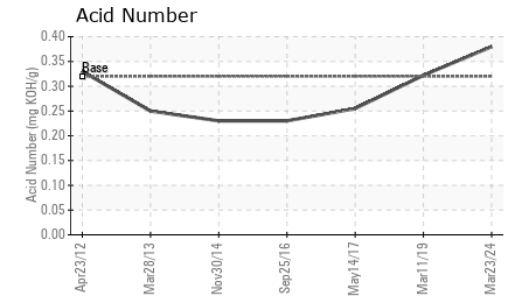
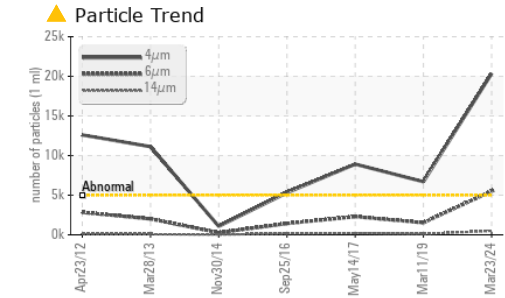
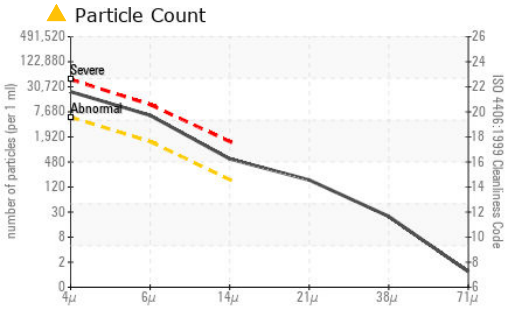
	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	<b>&lt;1</b>	0	<1
Barium	ppm	ASTM D5185(m)	<b>0</b>	0	<1
Molybdenum	ppm	ASTM D5185(m)	<b>0</b>	0	0
Manganese	ppm	ASTM D5185(m)	<b>0</b>	<1	0
Magnesium	ppm	ASTM D5185(m) 11	<b>33</b>	6	6
Calcium	ppm	ASTM D5185(m) 35	<b>15</b>	30	32
Phosphorus	ppm	ASTM D5185(m) 259	<b>278</b>	270	280
Zinc	ppm	ASTM D5185(m) 277	<b>296</b>	252	258
Sulfur	ppm	ASTM D5185(m) 1865	<b>1066</b>	3000	2967
Lithium	ppm	ASTM D5185(m)	<b>&lt;1</b>	0	<1

## CONTAMINANTS

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



# OIL ANALYSIS REPORT



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC  
**Lab Number** : 02627121  
**Unique Number** : 5760253  
**Test Package** : IND 3 ( Additional Tests: TAN Man )  
**Received** : 05 Apr 2024  
**Tested** : 09 Apr 2024  
**Diagnosed** : 11 Apr 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.

**TOYOTA MOTOR MANUFACT.**  
 1055 FOUNTAIN STREET N.  
 CAMBRIDGE, ON  
 CA N3H 5K2  
 Contact: mike clappison  
 mike.clappison@toyota.com  
 T: (519)212-5023  
 F: (519)653-9638

FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000	▲ 20346	● 6702	● 8918
Particles >6µm	ASTM D7647	>1300	▲ 5507	● 1528	● 2288
Particles >14µm	ASTM D7647	>160	▲ 501	102	● 204
Particles >21µm	ASTM D7647	>40	▲ 156	24	55
Particles >38µm	ASTM D7647	>10	▲ 21	0	4
Particles >71µm	ASTM D7647	>3	1	0	0
Oil Cleanliness	ISO 4406 (c)	>19/17/14	▲ 22/20/16	● 20/18/14	● 20/18/15

FLUID DEGRADATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g ASTM D974*	0.32	0.38	0.322	0.255

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	VLITE	NONE	LIGHT
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*	>0.05	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)	32.32	32.9	32.8	32.1

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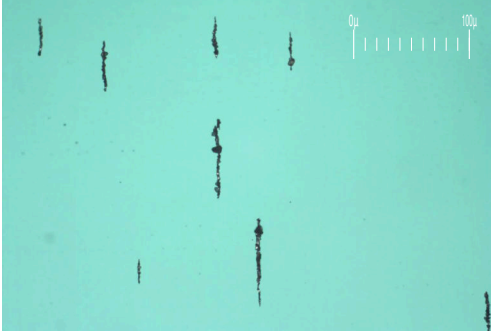
Color			
Bottom			
PrtFilter	no image	no image	no image



# FERROGRAPHY REPORT

Area  
**SOUTH PAINT**  
 Machine Id  
**LOW VISC HYDRAULIC UNIT**  
 Component  
**Hydraulic System**  
 Fluid  
**SHELL TELLUS 32 (--- GAL)**

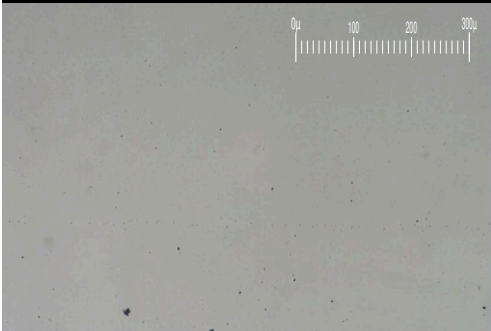
Magn: 200x Illum: BC



Magn: 50x Illum: RW



Magn: 100x Illum: RW

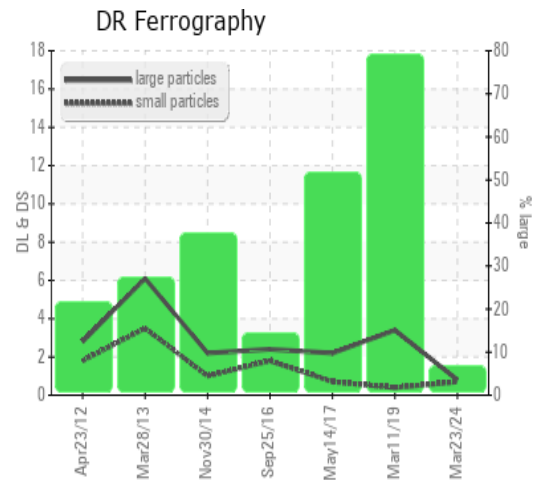


DR-FERROGRAPHY		method	limit/base	current	history1	history2
Large Particles		DR-Ferr*		<b>0.8</b>	3.4	2.2
Small Particles		DR-Ferr*		<b>0.7</b>	0.4	0.7
Total Particles		DR-Ferr*	>---	<b>1.5</b>	3.8	2.9
Large Particles Percentage	%	DR-Ferr*		<b>6.7</b>	78.9	51.7
Severity Index		DR-Ferr*		<b>0</b>	10.2	3.3

FERROGRAPHY		method	limit/base	current	history1	history2
Ferrous Rubbing	Scale 0-10	ASTM D7684*		<b>2</b>	2	2
Ferrous Sliding	Scale 0-10	ASTM D7684*				
Ferrous Cutting	Scale 0-10	ASTM D7684*				
Ferrous Rolling	Scale 0-10	ASTM D7684*		<b>1</b>	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*		<b>1</b>		
Ferrous Red Oxides	Scale 0-10	ASTM D7684*				
Ferrous Corrosive	Scale 0-10	ASTM D7684*				
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*		<b>1</b>		1
Fibres	Scale 0-10	ASTM D7684*				
Spheres	Scale 0-10	ASTM D7684*				
Other	Scale 0-10	ASTM D7684*		<b>1</b>	1	1

## WEAR

All component wear rates are normal.  
 The ferrography results are normal indicating no abnormal wear in the system.



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