

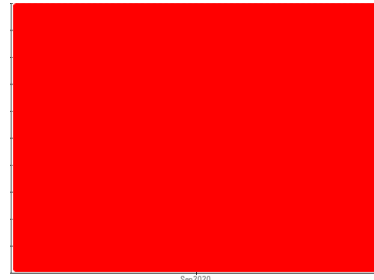


# PROBLEM SUMMARY

Sample Rating Trend

WEAR PARTICLES

Machine Id  
**ACURA 19UUB3F76HA801640**  
 Component  
**Gasoline Engine**  
 Fluid  
**SAE 0W20 (4 LTR)**



## COMPONENT CONDITION SUMMARY



## RECOMMENDATION

We understand that this sample is for warranty/insurance purposes. We understand that corrective action has already been taken. Diagnostician's Note: The oil is in good condition considering the failure. The ppm wear metals are low and the wear particles from the filter analysis are large, chunky and show signs of tempering. All this indicates a rapid onset catastrophic failure, most likely involving the crankshaft and main bearings. It does not appear that sabotage or poor maintenance contributed to the failure. Looks like a standard mechanical failure.

## PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	---	---
Ferrous Sliding	Scale 0-10	ASTM D7684	5			
Nonferrous Sliding	Scale 0-10	ASTM D7684	6			
Fuel	%	ASTM D3524(m)	>4.0	▲ 2.9	---	---
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Filter Image 2					no image	no image

Customer Id: CUSANY  
 Sample No.: WC1234567  
 Lab Number: 01234567  
 Test Package: FLTR



To manage this report scan the QR code

To discuss the diagnosis or test data:  
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[Bill.Quesnel@wearcheck.com](mailto:Bill.Quesnel@wearcheck.com)

To change component or sample information:  
 Gloria Gonzalez +1 (905)569-8600 x4643  
[gloria.gonzalez@wearcheck.com](mailto:gloria.gonzalez@wearcheck.com)

RECOMMENDED ACTIONS

*There are no recommended actions for this sample.*

HISTORICAL DIAGNOSIS



# OIL ANALYSIS REPORT

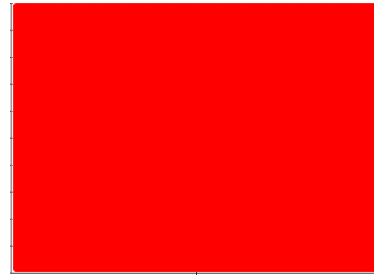
Sample Rating Trend

WEAR PARTICLES



Machine Id  
**ACURA 19UUB3F76HA801640**

Component  
**Gasoline Engine**  
Fluid  
**SAE 0W20 (4 LTR)**



## DIAGNOSIS

### Recommendation

We understand that this sample is for warranty/insurance purposes. We understand that corrective action has already been taken. Diagnostician's Note: The oil is in good condition considering the failure. The ppm wear metals are low and the wear particles from the filter analysis are large, chunky and show signs of tempering. All this indicates a rapid onset catastrophic failure, most likely involving the crankshaft and main bearings. It does not appear that sabotage or poor maintenance contributed to the failure. Looks like a standard mechanical failure.

### Wear

Wear particle analysis indicates that the ferrous sliding and nonferrous sliding particles are severe.

### Contamination

Light fuel dilution occurring. No other contaminants were detected in the oil.

### Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

## SAMPLE INFORMATION

	method	limit/base	current	history 1	history 2
Sample Number			<b>PP</b>	---	---
Sample Date			<b>10 Sep 2020</b>	---	---
Machine Age	kms		<b>72000</b>	---	---
Oil Age	kms		<b>15000</b>	---	---
Oil Changed			<b>Not Changed</b>	---	---
Sample Status			<b>SEVERE</b>	---	---

## WEAR METALS

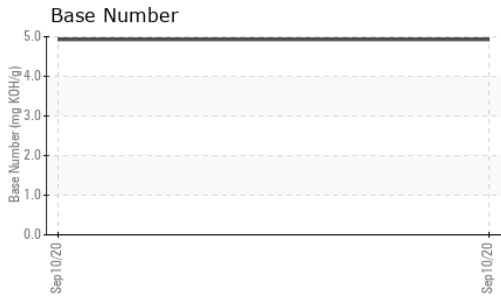
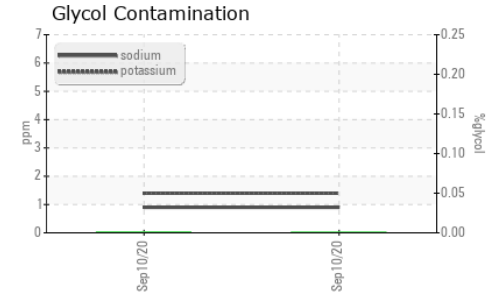
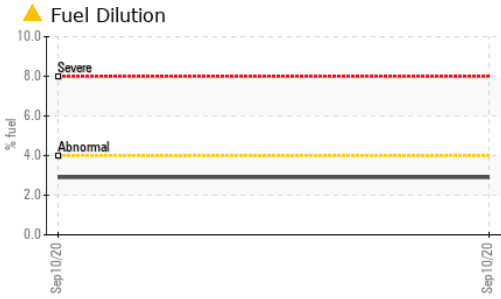
	method	limit/base	current	history 1	history 2
Iron	ppm ASTM D5185(m)	>150	<b>55</b>	---	---
Chromium	ppm ASTM D5185(m)	>20	<b>&lt;1</b>	---	---
Nickel	ppm ASTM D5185(m)	>5	<b>0</b>	---	---
Titanium	ppm ASTM D5185(m)		<b>5</b>	---	---
Silver	ppm ASTM D5185(m)	>2	<b>0</b>	---	---
Aluminum	ppm ASTM D5185(m)	>40	<b>5</b>	---	---
Lead	ppm ASTM D5185(m)	>50	<b>&lt;1</b>	---	---
Copper	ppm ASTM D5185(m)	>155	<b>30</b>	---	---
Tin	ppm ASTM D5185(m)	>10	<b>3</b>	---	---
Antimony	ppm ASTM D5185(m)		<b>&lt;1</b>	---	---
Vanadium	ppm ASTM D5185(m)		<b>&lt;1</b>	---	---
Beryllium	ppm ASTM D5185(m)		<b>0</b>	---	---
Cadmium	ppm ASTM D5185(m)		<b>0</b>	---	---

## FERROGRAPHY

	method	limit/base	current	history 1	history 2
Ferrous Rubbing	Scale 0-10 ASTM D7684		<b>5</b>		
Ferrous Sliding	Scale 0-10 ASTM D7684		<b>5</b>		
Ferrous Cutting	Scale 0-10 ASTM D7684				
Ferrous Rolling	Scale 0-10 ASTM D7684				
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				
Ferrous Other	Scale 0-10 ASTM D7684				
Nonferrous Rubbing	Scale 0-10 ASTM D7684				
Nonferrous Sliding	Scale 0-10 ASTM D7684		<b>6</b>		
Nonferrous Cutting	Scale 0-10 ASTM D7684				
Nonferrous Rolling	Scale 0-10 ASTM D7684				
Nonferrous Other	Scale 0-10 ASTM D7684				
Sand/Dirt	Scale 0-10 ASTM D7684		<b>2</b>		
Fibres	Scale 0-10 ASTM D7684		<b>1</b>		
Spheres	Scale 0-10 ASTM D7684				
Other	Scale 0-10 ASTM D7684				
Patch Weight	mg ASTM D7684		<b>490</b>	---	---



# OIL ANALYSIS REPORT



ADDITIVES	method	limit/base	current	history 1	history 2
Boron	ppm	ASTM D5185(m)	<b>85</b>	---	---
Barium	ppm	ASTM D5185(m)	<b>0</b>	---	---
Molybdenum	ppm	ASTM D5185(m)	<b>69</b>	---	---
Manganese	ppm	ASTM D5185(m)	<b>7</b>	---	---
Magnesium	ppm	ASTM D5185(m)	<b>520</b>	---	---
Calcium	ppm	ASTM D5185(m)	<b>1186</b>	---	---
Phosphorus	ppm	ASTM D5185(m)	<b>654</b>	---	---
Zinc	ppm	ASTM D5185(m)	<b>728</b>	---	---
Sulfur	ppm	ASTM D5185(m)	<b>2245</b>	---	---
Lithium	ppm	ASTM D5185(m)	<b>&lt;1</b>	---	---

CONTAMINANTS	method	limit/base	current	history 1	history 2	
Silicon	ppm	ASTM D5185(m)	>30	<b>14</b>	---	---
Sodium	ppm	ASTM D5185(m)	>400	<b>&lt;1</b>	---	---
Potassium	ppm	ASTM D5185(m)	>20	<b>1</b>	---	---
Fuel	%	ASTM D3524(m)	>4.0	<b>2.9</b>	---	---
Glycol	%	ASTM D2982(m)		<b>0.0</b>	---	---

INFRA-RED	method	limit/base	current	history 1	history 2	
Soot %	%	ASTM D7686		<b>0</b>	---	---
Nitration	Abs/cm	ASTM D7624	>20	<b>10.9</b>	---	---
Sulfation	Abs/.1mm	ASTM D7415	>30	<b>21.9</b>	---	---

FLUID DEGRADATION	method	limit/base	current	history 1	history 2	
Oxidation	Abs/.1mm	ASTM D7414	>25	<b>15.7</b>	---	---
Acid Number (AN)	mg KOH/g	ASTM D974		<b>2.83</b>	---	---
Base Number (BN)	mg KOH/g	ASTM D2896		<b>4.93</b>	---	---

VISUAL	method	limit/base	current	history 1	history 2	
White Metal	scalar	Visual	NONE	<b>VLITE</b>	---	---
Yellow Metal	scalar	Visual	NONE	<b>NONE</b>	---	---
Precipitate	scalar	Visual	NONE	<b>NONE</b>	---	---
Silt	scalar	Visual	NONE	<b>VLITE</b>	---	---
Debris	scalar	Visual	NONE	<b>NONE</b>	---	---
Sand/Dirt	scalar	Visual	NONE	<b>NONE</b>	---	---
Appearance	scalar	Visual	NORML	<b>NORML</b>	---	---
Odor	scalar	Visual	NORML	<b>NORML</b>	---	---
Emulsified Water	scalar	Visual	>0.2	<b>NEG</b>	---	---
Free Water	scalar	Visual		<b>NEG</b>	---	---

FLUID PROPERTIES	method	limit/base	current	history 1	history 2	
Visc @ 100°C	cSt	ASTM D7279(m)	8.3	<b>7.4</b>	---	---

SAMPLE IMAGES	method	limit/base	current	history 1	history 2
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**Laboratory** : WearCheck - C  
**Sample No.** : WC1234567  
**Lab Number** : **01234567**  
**Unique Number** : 12345678  
**Test Package** : FLTR ( Additional Tests: FUELDILUTION, GLYCOL, PercentFuel, TAN AUTO, TAN Man )  
*To discuss this sample report, contact Customer Service at 1-800-268-2131.*  
*(m) Denotes a modified test method, (e) Denotes a test conducted using an external laboratory.*

**Diagnosed** : 18 Sep 2020  
**Diagnostician** : Bill Quesnel

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 USA 75900  
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