

# WEAR ATTENTION CONTAMINATION ABNORMAL FLUID CONDITION NORMAL

#### Machine Id 54117 Component Left Final Drive Filuid GEAR OIL SAE 80W90 (--- QTS)

## RECOMMENDATION

We advise that you check all areas where dirt can enter the system. The oil change at the time of sampling has been noted. Resample at the next service interval to monitor.

#### **WEAR**

All component wear rates are normal.

### CONTAMINATION

Elemental levels of silicon (Si) and aluminum (Al) indicate aluminasilicate (coarse dirt) ingress.

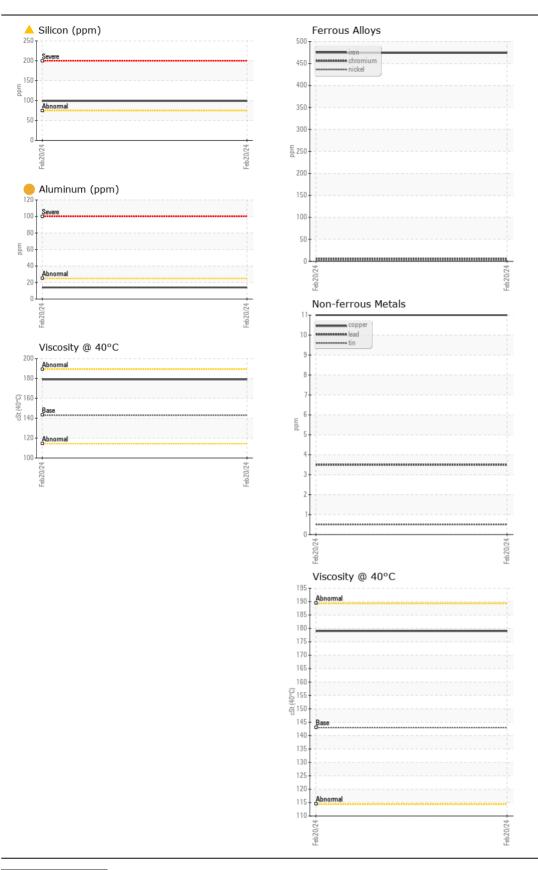
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### FLUID CONDITION

The condition of the oil is acceptable for the time in service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0905314		
Sample Date		Client Info		20 Feb 2024		
Machine Age	hrs	Client Info		2585		
Oil Age	hrs	Client Info		250		
Filter Age	hrs	Client Info		250		
Oil Changed		Client Info		Changed		
Filter Changed		Client Info		N/A		
Sample Status				ABNORMAL		
lron			. 500			
Iron	ppm	ASTM D5185m	>500	474		
Chromium	ppm	ASTM D5185m	>10	6		
Nickel	ppm	ASTM D5185m	>10	1		
Titanium	ppm	ASTM D5185m		1		
Silver	ppm	ASTM D5185m	. 05	0		
Aluminum	ppm	ASTM D5185m	>25	<b>1</b> 4		
Lead	ppm	ASTM D5185m	>25	4		
Copper	ppm	ASTM D5185m	>50	11		
Tin	ppm	ASTM D5185m	>10	<1		
Vanadium	ppm	ASTM D5185m	NONE	0		
White Metal	scalar	*Visual	NONE	NONE		
Mallan, Mastal	a state of the second	*) /! 1	NONE	NONE		
Yellow Metal	scalar	*Visual	NONE	NONE		
Yellow Metal Silicon	scalar ppm	*Visual ASTM D5185m	NONE	NONE		
Silicon	ppm	ASTM D5185m	>75	▲ 99		
Silicon Potassium	ppm	ASTM D5185m ASTM D5185m	>75 >20	▲ 99 2		
Silicon Potassium Water	ppm ppm	ASTM D5185m ASTM D5185m WC Method	>75 >20 >0.2	▲ 99 2 NEG		
Silicon Potassium Water Silt	ppm ppm scalar	ASTM D5185m ASTM D5185m WC Method *Visual	>75 >20 >0.2 NONE	<ul> <li>99</li> <li>2</li> <li>NEG</li> <li>MODER</li> </ul>		
Silicon Potassium Water Silt Debris	ppm ppm scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual	>75 >20 >0.2 NONE NONE	<ul> <li>99</li> <li>2</li> <li>NEG</li> <li>MODER</li> <li>NONE</li> </ul>		  
Silicon Potassium Water Silt Debris Sand/Dirt	ppm ppm scalar scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual	>75 >20 >0.2 NONE NONE NONE	<ul> <li>99</li> <li>2</li> <li>NEG</li> <li>MODER</li> <li>NONE</li> <li>NONE</li> </ul>		
Silicon Potassium Water Silt Debris Sand/Dirt Appearance	ppm ppm scalar scalar scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual	>75 >20 >0.2 NONE NONE NONE NORML	<ul> <li>99</li> <li>2</li> <li>NEG</li> <li>MODER</li> <li>NONE</li> <li>NORML</li> </ul>		
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water	ppm ppm scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual	>75 >20 >0.2 NONE NONE NONE NORML NORML >0.2	<ul> <li>99</li> <li>2</li> <li>NEG</li> <li>MODER</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> </ul>		
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium	ppm ppm scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m	>75 >20 >0.2 NONE NONE NORML NORML >0.2	<ul> <li>99</li> <li>2</li> <li>NEG</li> <li>MODER</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>6</li> </ul>		
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron	ppm ppm scalar scalar scalar scalar scalar scalar gppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m	<ul> <li>&gt;75</li> <li>&gt;20</li> <li>&gt;0.2</li> <li>NONE</li> <li>NORME</li> <li>NORML</li> <li>&gt;0.2</li> <li>&gt;1700</li> <li>400</li> </ul>	<ul> <li>99</li> <li>2</li> <li>NEG</li> <li>MODER</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>6</li> <li>3</li> </ul>		
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium	ppm ppm scalar scalar scalar scalar scalar scalar ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m	<ul> <li>&gt;75</li> <li>&gt;20</li> <li>&gt;0.2</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>&gt;0.2</li> <li>&gt;170</li> <li>400</li> <li>200</li> </ul>	<ul> <li>99</li> <li>2</li> <li>NEG</li> <li>MODER</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>6</li> <li>3</li> <li>&lt;1</li> </ul>		
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum	ppm ppm scalar scalar scalar scalar scalar scalar ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m	<ul> <li>&gt;75</li> <li>&gt;20</li> <li>&gt;0.2</li> <li>NONE</li> <li>NORME</li> <li>NORML</li> <li>&gt;0.2</li> <li>&gt;1700</li> <li>400</li> </ul>	<ul> <li>99</li> <li>2</li> <li>NEG</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>6</li> <li>3</li> <li>&lt;1</li> <li>&lt;1</li> </ul>		
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese	ppm ppm scalar scalar scalar scalar scalar gpm ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	<ul> <li>&gt;75</li> <li>&gt;20</li> <li>&gt;0.2</li> <li>NONE</li> <li>NORME</li> <li>NORML</li> <li>&gt;0.2</li> <li>&gt;1700</li> <li>4000</li> <li>2000</li> <li>12</li> </ul>	<ul> <li>99</li> <li>2</li> <li>NEG</li> <li>MODER</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>6</li> <li>3</li> <li>&lt;1</li> <li>&lt;1</li> <li>7</li> </ul>		
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium	ppm ppm scalar scalar scalar scalar scalar scalar ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	<ul> <li>&gt;75</li> <li>&gt;20</li> <li>&gt;0.2</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>&gt;0.2</li> <li>&gt;170</li> <li>400</li> <li>200</li> <li>12</li> <li>12</li> </ul>	<ul> <li>99</li> <li>2</li> <li>NEG</li> <li>MODER</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>6</li> <li>3</li> <li>&lt;1</li> <li>&lt;1</li> <li>7</li> <li>&lt;1</li> </ul>		
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Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	<ul> <li>&gt;75</li> <li>&gt;20</li> <li>&gt;0.2</li> <li>NONE</li> <li>NORME</li> <li>NORML</li> <li>&gt;0.2</li> <li>&gt;1700</li> <li>400</li> <li>200</li> <li>12</li> <li>12</li> <li>150</li> <li>1650</li> </ul>	<ul> <li>99</li> <li>2</li> <li>NEG</li> <li>MODER</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>6</li> <li>3</li> <li>&lt;1</li> <li>&lt;1</li> <li>7</li> <li>&lt;1</li> <li>23</li> <li>1934</li> </ul>		
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	<ul> <li>&gt;75</li> <li>&gt;20</li> <li>&gt;0.2</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>&gt;0.2</li> <li>&gt;170</li> <li>400</li> <li>200</li> <li>12</li> <li>150</li> <li>125</li> </ul>	<ul> <li>99</li> <li>2</li> <li>NEG</li> <li>MODER</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>6</li> <li>3</li> <li>&lt;1</li> <li>&lt;1</li> <li>7</li> <li>&lt;1</li> <li>23</li> <li>1934</li> <li>11</li> </ul>		
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	<ul> <li>&gt;75</li> <li>&gt;20</li> <li>&gt;0.2</li> <li>NONE</li> <li>NORME</li> <li>NORML</li> <li>&gt;0.2</li> <li>&gt;1700</li> <li>400</li> <li>200</li> <li>12</li> <li>12</li> <li>150</li> <li>1650</li> </ul>	<ul> <li>99</li> <li>2</li> <li>NEG</li> <li>MODER</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>6</li> <li>3</li> <li>&lt;1</li> <li>&lt;1</li> <li>7</li> <li>&lt;1</li> <li>23</li> <li>1934</li> </ul>		

Contact/Location: SCOTT SULLIVAN - MSCDUR



SULLIVAN EASTERN INC : WearCheck USA - 501 Madison Ave., Cary, NC 27513 2860 C SLATER RD : 26 Feb 2024 MORRISVILLE, NC : 27 Feb 2024 : 28 Feb 2024 - Don Baldridge US 27560 Contact: SCOTT SULLIVAN To discuss this sample report, contact Customer Service at 1-800-237-1369. ssullivan@sullivaneastern.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (919)484-8993 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: (919)484-2136

Certificate L2367

Laboratory

Sample No.

Lab Number : 06100470

Unique Number : 10898700

Test Package : CONST

: WC0905314

Received

Diagnosed

Tested

Contact/Location: SCOTT SULLIVAN - MSCDUR

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