

# Store 9 - Marietta

## PETERBILT 567 1XPCP4EX9PD810461

# Front Differential

## GEAR OIL SAE 75W90 (5 GAL)

### RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

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The copper level is abnormal. All other metal levels are typical for a new component breaking in.

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Elemental level of silicon (Si) above normal indicating ingress of seal material.

#### 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		LEC0039459	LEC0033728	
Sample Date		Client Info		09 Mar 2023	24 Aug 2022	
Machine Age	mls	Client Info		48674	15181	
Oil Age	mls	Client Info		48674	15181	
Filter Age	mls	Client Info		0	0	
Oil Changed		Client Info		Not Changd	Not Changd	
Filter Changed		Client Info		N/A	None	
Sample Status				ABNORMAL	ABNORMAL	
		ASTM D8184		45	00	
PQ			500	15	22	
Iron	ppm	ASTM D5185m	>500	110	210	
Chromium	ppm	ASTM D5185m	>10	<1	2	
Nickel	ppm	ASTM D5185m	>10	<1	1	
Titanium	ppm	ASTM D5185m		0	<1	
Silver	ppm	ASTM D5185m	05	0	<1	
Aluminum	ppm	ASTM D5185m	>25	2	11	
Lead	ppm	ASTM D5185m	>25	0	<1	
Copper	ppm	ASTM D5185m	>100	▲ 442	▲ 125	
Tin	ppm	ASTM D5185m	>10	8	3	
Vanadium	ppm	ASTM D5185m		0	<1	
White Metal	scalar	*Visual	NONE	NONE	NONE	
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
					NONL	
Silicon	ppm	ASTM D5185m	>75	▲ 84	▲ 75	
Silicon Potassium						
	ppm	ASTM D5185m	>75	<b>A</b> 84	<b>▲</b> 75	 
Potassium	ppm	ASTM D5185m ASTM D5185m	>75 >20	▲ 84 3	▲ 75 2	
Potassium Water	ppm ppm	ASTM D5185m ASTM D5185m WC Method	>75 >20 >.2	▲ 84 3 NEG	▲ 75 2 NEG	
Potassium Water Silt	ppm ppm scalar	ASTM D5185m ASTM D5185m WC Method *Visual	>75 >20 >.2 NONE	84 3 NEG NONE	<ul> <li>75</li> <li>2</li> <li>NEG</li> <li>NONE</li> </ul>	
Potassium Water Silt Debris	ppm ppm scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual	>75 >20 >.2 NONE NONE	<ul> <li>84</li> <li>3</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> </ul>	<ul> <li>75</li> <li>2</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> </ul>	
Potassium Water Silt Debris Sand/Dirt	ppm ppm scalar scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual	>75 >20 >.2 NONE NONE NONE	<ul> <li>84</li> <li>3</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NONE</li> </ul>	<ul> <li>75</li> <li>2</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NONE</li> </ul>	
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 >.2 NONE NONE NONE NORML	<ul> <li>84</li> <li>3</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> </ul>	<ul> <li>75</li> <li>2</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> </ul>	  
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water	ppm ppm scalar scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual	>75 >20 >.2 NONE NONE NONE NORML NORML	<ul> <li>84</li> <li>3</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> </ul>	<ul> <li>75</li> <li>2</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> </ul>	
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium	ppm ppm scalar scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m	>75 >20 >.2 NONE NONE NORML NORML >.2	<ul> <li>84</li> <li>3</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>4</li> </ul>	<ul> <li>75</li> <li>2</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NEG</li> <li>4</li> </ul>	
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron	ppm ppm scalar scalar scalar scalar scalar scalar gpm	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;.2</li> <li>NONE</li> <li>NORME</li> <li>NORML</li> <li>&gt;.2</li> <li>400</li> </ul>	<ul> <li>84</li> <li>3</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>4</li> <li>210</li> </ul>	<ul> <li>75</li> <li>2</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>4</li> <li>259</li> </ul>	
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	>75 >20 >.2 NONE NONE NORML NORML >.2 400 200	<ul> <li>84</li> <li>3</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>4</li> <li>210</li> <li>3</li> </ul>	<ul> <li>75</li> <li>2</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>4</li> <li>259</li> <li>2</li> </ul>	
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 ASTM D5185m ASTM D5185m ASTM D5185m	<ul> <li>&gt;75</li> <li>&gt;20</li> <li>&gt;.2</li> <li>NONE</li> <li>NORME</li> <li>NORML</li> <li>&gt;.2</li> <li>400</li> </ul>	<ul> <li>84</li> <li>3</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>4</li> <li>210</li> <li>3</li> <li>&lt;1</li> </ul>	<ul> <li>75</li> <li>2</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>4</li> <li>259</li> <li>2</li> <li>&lt;1</li> </ul>	
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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>75 >20 >.2 NONE NONE NORM NORM >.2 400 200 12	<ul> <li>84</li> <li>3</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>4</li> <li>210</li> <li>3</li> <li>&lt;1</li> <li>14</li> </ul>	<ul> <li>75</li> <li>2</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>4</li> <li>259</li> <li>2</li> <li>&lt;1</li> <li>14</li> </ul>	
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium	ppm ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	<ul> <li>&gt;75</li> <li>&gt;20</li> <li>&gt;.2</li> <li>NONE</li> <li>NORME</li> <li>NORML</li> <li>&gt;.2</li> <li>400</li> <li>200</li> <li>12</li> <li>12</li> </ul>	<ul> <li>84</li> <li>3</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>4</li> <li>210</li> <li>3</li> <li>&lt;1</li> <li>14</li> <li>1</li> </ul>	<ul> <li>75</li> <li>2</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>4</li> <li>259</li> <li>2</li> <li>&lt;1</li> <li>14</li> <li>3</li> </ul>	
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Malybdenum Manganese Magnesium	ppm ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	<ul> <li>&gt;75</li> <li>&gt;20</li> <li>&gt;2</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>&gt;2</li> <li>400</li> <li>200</li> <li>12</li> <li>12</li> <li>12</li> <li>150</li> </ul>	<ul> <li>84</li> <li>3</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>4</li> <li>210</li> <li>3</li> <li>&lt;1</li> <li>14</li> <li>1</li> <li>10</li> </ul>	<ul> <li>75</li> <li>2</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>4</li> <li>259</li> <li>2</li> <li>41</li> <li>14</li> <li>3</li> <li>19</li> </ul>	
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	ppm pm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m WC Method *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;.2</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>&gt;.2</li> <li>400</li> <li>200</li> <li>12</li> <li>12</li> <li>150</li> <li>1650</li> </ul>	<ul> <li>84</li> <li>3</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>4</li> <li>210</li> <li>3</li> <li>&lt;1</li> <li>14</li> <li>1</li> <li>10</li> <li>1380</li> </ul>	<ul> <li>75</li> <li>2</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>4</li> <li>259</li> <li>2</li> <li>&lt;1</li> <li>14</li> <li>3</li> <li>19</li> <li>1285</li> </ul>	
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	<ul> <li>&gt;75</li> <li>&gt;20</li> <li>&gt;2</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>&gt;2</li> <li>400</li> <li>200</li> <li>12</li> <li>12</li> <li>150</li> <li>125</li> </ul>	<ul> <li>84</li> <li>3</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>4</li> <li>210</li> <li>3</li> <li>&lt;1</li> <li>14</li> <li>1</li> <li>10</li> <li>1380</li> <li>15</li> </ul>	<ul> <li>75</li> <li>2</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>4</li> <li>259</li> <li>2</li> <li>&lt;1</li> <li>14</li> <li>3</li> <li>19</li> <li>1285</li> <li>11</li> </ul>	
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	ppm pm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m WC Method *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;.2</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>&gt;.2</li> <li>400</li> <li>200</li> <li>12</li> <li>12</li> <li>150</li> <li>1650</li> </ul>	<ul> <li>84</li> <li>3</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>4</li> <li>210</li> <li>3</li> <li>&lt;1</li> <li>14</li> <li>1</li> <li>10</li> <li>1380</li> </ul>	<ul> <li>75</li> <li>2</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>4</li> <li>259</li> <li>2</li> <li>&lt;1</li> <li>14</li> <li>3</li> <li>19</li> <li>1285</li> </ul>	



