

# **OIL ANALYSIS REPORT**

Sample Rating Trend





#### Component 1 Differential Fluid GEAR OIL SAE 75W90 (--- QTS)

### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

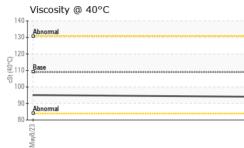
## Fluid Condition

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

				Aug2023		
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0101673	PCA0092851	
Sample Date		Client Info		15 Aug 2023	08 May 2023	
Machine Age	mls	Client Info		38761	18735	
Oil Age	mls	Client Info		38761	18735	
Oil Changed		Client Info		Not Changd	Not Changd	
Sample Status				NORMAL	NORMAL	
CONTAMINAT	ION	method	limit/base	current	history1	history2
Water		WC Method	>.2	NEG	NEG	
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>500	175	152	
Chromium	ppm	ASTM D5185m	>10	2	3	
Nickel	ppm	ASTM D5185m	>10	2	2	
Titanium	ppm	ASTM D5185m		0	<1	
Silver	ppm	ASTM D5185m		0	0	
Aluminum	ppm	ASTM D5185m	>25	2	2	
Lead	ppm	ASTM D5185m	>25	7	2	
Copper	ppm	ASTM D5185m	>100	34	23	
Tin	ppm	ASTM D5185m	>10	3	2	
Vanadium	ppm	ASTM D5185m		<1	0	
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES		method	limit/base	current	history1	history2
Daman			100			
Boron	ppm	ASTM D5185m	400	146	161	
	ppm ppm	ASTM D5185m ASTM D5185m	400 200	146 0	161 3	
Barium				-		
Barium Molybdenum	ppm	ASTM D5185m	200	0	3	
Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m	200	0 0	3 <1	
Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	200 12	0 0 10	3 <1 10	
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	200 12 12	0 0 10 0	3 <1 10 2	  
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	200 12 12 12 150	0 0 10 0 0	3 <1 10 2 13	
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	200 12 12 12 150 1650	0 0 10 0 0 1053	3 <1 10 2 13 1069	  
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	200 12 12 12 150 1650 125	0 0 10 0 0 1053 0	3 <1 10 2 13 1069 12	  
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	200 12 12 150 1650 125 22500 <b>limit/base</b>	0 0 10 0 0 1053 0 26664	3 <1 10 2 13 1069 12 29070	   
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	200 12 12 150 1650 125 22500 <b>limit/base</b> >75	0 0 10 0 1053 0 26664 current	3 <1 10 2 13 1069 12 29070 history1	   
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	200 12 12 150 1650 125 22500 limit/base >75	0 0 10 0 0 1053 0 26664 <u>current</u> 30	3 <1 10 2 13 1069 12 29070 history1 30	     history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	200 12 12 150 1650 125 22500 limit/base >75	0 0 10 0 0 1053 0 26664 <u>current</u> 30 8	3 <1 10 2 13 1069 12 29070 history1 30 8	     history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	200 12 12 150 1650 125 22500 <b>limit/base</b> >75 >20	0 0 10 0 0 1053 0 26664 <u>current</u> 30 8 <1	3 <1 10 2 13 1069 12 29070 history1 30 8 4	     history2  
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	200 12 12 150 1650 125 22500 125 22500 1imit/base >75 >20	0 0 10 0 0 1053 0 26664 <u>current</u> 30 8 <1 current	3 <1 10 2 13 1069 12 29070 history1 30 8 4 4 history1	    history2   history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	200 12 12 150 1650 125 22500 <i>limit/base</i> >75 >20 <i>limit/base</i> NONE	0 0 10 0 1053 0 26664 <i>current</i> 30 8 <1 <i>current</i> NONE	3 <1 10 2 13 1069 12 29070 history1 30 8 4 4 history1 NONE	    history2  history2  history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m Yisual	200 12 12 150 1650 125 22500 <i>limit/base</i> >75 >20 <i>limit/base</i> NONE NONE	0 0 10 0 1053 0 26664 <u>current</u> 30 8 <1 <u>current</u> NONE NONE	3 <1 10 2 13 1069 12 29070 history1 30 8 4 4 history1 NONE NONE	     history2  history2  history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt	ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b> ppm ppm ppm ppm scalar	ASTM D5185m ASTM D5185m Yisual	200 12 12 150 1650 125 22500 imit/base >75 >20 imit/base NONE NONE NONE NONE	0 0 10 0 0 1053 0 26664 <u>current</u> 30 8 <1 <u>current</u> NONE NONE NONE	3 <1 10 2 13 1069 12 29070 history1 30 8 4 4 <b>history1</b> NONE NONE NONE	      history2  history2  history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt Debris	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m Yuisual *Visual *Visual	200 12 12 150 1650 125 22500 imit/base >75 >20 imit/base NONE NONE NONE NONE NONE	0 0 10 0 0 1053 0 26664 <u>current</u> 30 8 <1 <u>current</u> NONE NONE NONE NONE NONE	3 <1 10 2 13 1069 12 29070 history1 30 8 4 4 <u>history1</u> NONE NONE NONE NONE NONE	<ul> <li></li> <li></li> <li></li> <li></li> <li></li> <li>history2</li> <li></li> <li></li> <li>history2</li> <li></li> <li></li></ul>
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m *Visual *Visual *Visual *Visual *Visual	200 12 12 12 150 1650 125 22500 imit/base >75 >20 imit/base NONE NONE NONE NONE NONE NONE	0 0 10 0 0 1053 0 26664 <u>current</u> 30 8 <1 <u>current</u> NONE NONE NONE NONE NONE	3 <1 10 2 13 1069 12 29070 history1 30 8 4 4 history1 NONE NONE NONE NONE NONE NONE NONE	      history2  history2  history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m *Visual *Visual *Visual *Visual *Visual *Visual	200 200 12 12 150 1650 125 22500 imit/base >75 >20 imit/base NONE NONE NONE NONE NONE NONE NONE NONE	0 0 10 0 10 0 1053 0 26664 Current 30 8 <1 Current NONE NONE NONE NONE NONE NONE NONE NONE NONE	3 <1 10 2 13 1069 12 29070 history1 30 8 4 4 NONE NONE NONE NONE NONE NONE NONE	<ul> <li></li> <li></li> <li></li> <li></li> <li></li> <li></li> <li>history2</li> <li></li> <li></li> <li>history2</li> <li></li> <li></li></ul>
Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual	200 200 12 12 150 1650 125 22500 imit/base >75 220 imit/base NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE	0 0 10 0 0 1053 0 26664 266664 266664 266664 266666 266666 266666 2666666 2666666 2666666	3 <1 10 2 13 1069 12 29070 history1 30 8 4 4 NONE NONE NONE NONE NONE NONE NONE	<ul> <li></li> <li></li> <li></li> <li></li> <li></li> <li></li> <li>history2</li> <li></li> <li></li></ul>
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Precipitate Silt Debris Sand/Dirt Appearance Odor	ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b> <b>TS</b> <b>TS</b> <b>S</b> scalar scalar scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m Yisual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual	200 200 12 12 150 150 125 22500 imit/base >75 220 imit/base NONE	0 0 10 0 1053 0 26664 <u>current</u> 30 8 <1 <u>current</u> NONE NONE NONE NONE NONE NONE NONE NON	3 <1 10 2 13 1069 12 29070 history1 30 8 4 4 NONE NONE NONE NONE NONE NONE NONE	     history2   history2        -



# **OIL ANALYSIS REPORT**



	FLUID PROPI	ERTIES	method	limit/base	current	history1	history2		
	Visc @ 40°C	cSt	ASTM D445	109	94.1	95.1			
	SAMPLE IMA	GES	method	limit/base	current	history1	history2		
2	Color				no image	no image	no image		
Aug15/23	Bottom				no image	no image	no image		
	GRAPHS								
e3(140°C)	60 40 20 0 10 10 15 10 5 0 15 10 5 0 15 10 15 10 15 10 15 10 15 10 15 10 15 10 15 10 15 10 15 10 15 10 10 10 10 10 10 10 10 10 10			Aug15/23					
Laboratory Sample No. Lab Number	: WearCheck USA - : PCA0101673 : 06031994	Received Diagnos	d:11[ ed:14[	Dec 2023 Dec 2023	3 PERD		<b>EORGETOW</b> SAVANAH R IGETOWN, D		
Certificate L2367 Co discuss this sample report, co - Denotes test methods that and	: 10781785 Diagnostician : Sean Felton : FLEET Conta						tact: ROBERT LOCKWOOL ert.Lockwood@Perdue.con F:		