

## **OIL ANALYSIS REPORT**

Sample Rating Trend



Area [20125] 30-86

# Component Left Final Drive

Elui

### CONOCO PHILLIPS GUARDOL ECT 15W40 (--- GAL)

#### 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 suitable for further service.

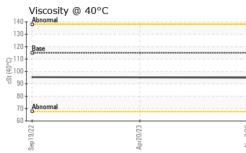
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0836116	WC0750219	WC0620120
Sample Date		Client Info		02 Nov 2023	20 Apr 2023	19 Sep 2022
Machine Age	hrs	Client Info		3441	3141	2838
Oil Age	hrs	Client Info		1441	0	0
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	J	method	limit/base	current	history1	history2
Water		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>500	183	131	93
Chromium	ppm	ASTM D5185m	>10	5	3	2
Nickel	ppm		>10	<1	<1	0
Titanium	ppm	ASTM D5185m		1	<1	<1
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>25	3	4	3
Lead	ppm	ASTM D5185m	>25	0	0	<1
Copper	ppm	ASTM D5185m	>50	20	12	10
Tin	ppm		>10	0	0	<1
Vanadium	ppm	ASTM D5185m	210	<1	<1	<1
Cadmium	ppm	ASTM D5185m		0	0	0
	ppm		1'			-
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	85	8	4	4
Barium	ppm	ASTM D5185m		5	0	0
				-	4	4
Molybdenum	ppm	ASTM D5185m		6	4	4
Manganese	ppm	ASTM D5185m		2	2	1
Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m	350	2 17	2 20	1 21
Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	1800	2 17 4412	2 20 4237	1 21 4436
Manganese Magnesium Calcium Phosphorus	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1800 1000	2 17 4412 989	2 20 4237 890	1 21 4436 876
Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	1800	2 17 4412	2 20 4237	1 21 4436 876 1122
Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1800 1000	2 17 4412 989	2 20 4237 890	1 21 4436 876
Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1800 1000 1100	2 17 4412 989 1134 6953 current	2 20 4237 890 1055 6499 history1	1 21 4436 876 1122 6710 history2
Maganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1800 1000 1100 3500	2 17 4412 989 1134 6953 current 48	2 20 4237 890 1055 6499	1 21 4436 876 1122 6710
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>Method</b>	1800 1000 1100 3500 limit/base	2 17 4412 989 1134 6953 current	2 20 4237 890 1055 6499 history1	1 21 4436 876 1122 6710 history2
Maganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1800 1000 1100 3500 limit/base >75	2 17 4412 989 1134 6953 current 48	2 20 4237 890 1055 6499 history1 38	1 21 4436 876 1122 6710 history2 29
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1800 1000 1100 3500 limit/base >75	2 17 4412 989 1134 6953 current 48 0	2 20 4237 890 1055 6499 history1 38 1	1 21 4436 876 1122 6710 history2 29 0
Maganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium VISUAL White Metal	ppm ppm ppm ppm ppm ppm ppm ppm ppm scalar	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m XBTM D5185m	1800 1000 1100 3500 limit/base >75 >20 limit/base NONE	2 17 4412 989 1134 6953 current 48 0 4 2 4 8 0 4 2 Current NONE	2 20 4237 890 1055 6499 history1 38 1 <1 <1 history1 NONE	1 21 4436 876 1122 6710 history2 29 0 <1 kistory2 NONE
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium VISUAL White Metal Yellow Metal	ppm ppm ppm ppm ppm ppm ppm ppm ppm scalar scalar	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Yisual	1800 1000 1100 3500 imit/base >75 >20 imit/base NONE NONE	2 17 4412 989 1134 6953 current 48 0 4 current NONE NONE	2 20 4237 890 1055 6499 history1 38 1 <1 <1 history1 NONE NONE	1 21 4436 876 1122 6710 history2 29 0 <1 kistory2 NONE NONE
Maganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *Visual *Visual	1800 1000 1100 3500 imit/base >75 >20 imit/base NONE NONE NONE NONE	2 17 4412 989 1134 6953 current 48 0 4 4 current NONE NONE NONE	2 20 4237 890 1055 6499 <u>history1</u> 38 1 <1 ×1 NONE NONE NONE NONE	1 21 4436 876 1122 6710 history2 29 0 <1 29 0 <1 history2 NONE NONE NONE NONE
Maganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt	ppm ppm ppm ppm ppm ppm ppm ppm ppm scalar scalar	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Yisual	1800 1000 1100 3500 <b>Iimit/base</b> >75 >20 <b>Iimit/base</b> NONE NONE NONE NONE NONE	2 17 4412 989 1134 6953 current 48 0 4 4 current NONE NONE NONE NONE NONE	2 20 4237 890 1055 6499 history1 38 1 <1 <1 NONE NONE NONE NONE NONE NONE	1 21 4436 876 1122 6710 history2 29 0 <1 NONE NONE NONE NONE NONE NONE
Maganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS 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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *Visual *Visual	1800 1000 1100 3500 <b>Imit/base</b> >75 >20 <b>Imit/base</b> NONE NONE NONE NONE NONE NONE	2 17 4412 989 1134 6953 current 48 0 4 4 0 4 vorrent NONE NONE NONE NONE NONE NONE	2 20 4237 890 1055 6499 <u>history1</u> 38 1 <1 ×1 NONE NONE NONE NONE	1 21 4436 876 1122 6710 history2 29 0 <1 NONE NONE NONE NONE NONE NONE NONE NON
Magnese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Yuisual *Visual *Visual *Visual	1800 1000 1100 3500 <b>Iimit/base</b> >75 >20 <b>Iimit/base</b> NONE NONE NONE NONE NONE	2 17 4412 989 1134 6953 current 48 0 4 4 current NONE NONE NONE NONE NONE	2 20 4237 890 1055 6499 history1 38 1 <1 <1 NONE NONE NONE NONE NONE NONE	1 21 4436 876 1122 6710 history2 29 0 <1 NONE NONE NONE NONE NONE NONE
Magnese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS 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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *Visual *Visual *Visual *Visual *Visual	1800 1000 1100 3500 <b>Imit/base</b> >75 >20 <b>Imit/base</b> NONE NONE NONE NONE NONE NONE	2 17 4412 989 1134 6953 current 48 0 4 4 0 4 vorrent NONE NONE NONE NONE NONE NONE	2 20 4237 890 1055 6499 history1 38 1 <1 <1 NONE NONE NONE NONE NONE NONE NONE	1 21 4436 876 1122 6710 history2 29 0 <1 NONE NONE NONE NONE NONE NONE NONE NON
Magnese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS 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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m XaSTM D5185m Visual *Visual *Visual *Visual *Visual *Visual *Visual	1800 1000 1100 3500 <b>Imit/base</b> >75 >20 <b>Imit/base</b> NONE NONE NONE NONE NONE NONE NONE NON	2 17 4412 989 1134 6953 current 48 0 4 4 current NONE NONE NONE NONE NONE NONE NONE NON	2 20 4237 890 1055 6499 history1 38 1 <1 <1 NONE NONE NONE NONE NONE NONE NONE NON	1 21 4436 876 1122 6710 history2 29 0 <1 kistory2 29 0 <1 NONE NONE NONE NONE NONE NONE NONE NON
Maganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS 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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual	1800 1000 1100 3500 <b>Imit/base</b> >75 >20 <b>Imit/base</b> NONE NONE NONE NONE NONE NONE NONE NON	2 17 4412 989 1134 6953 <u>current</u> 48 0 4 4 <u>current</u> NONE NONE NONE NONE NONE NONE NONE NON	2 20 4237 890 1055 6499 history1 38 1 <1 <1 NONE NONE NONE NONE NONE NONE NONE NON	1 21 4436 876 1122 6710 <b>history2</b> 29 0 <1 <b>history2</b> 0 <1 <b>NONE</b> NONE NONE NONE NONE NONE NONE NONE
Maganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance Odor	ppm ppm ppm ppm ppm ppm ppm ppm ppm scalar scalar scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual	1800 1000 1100 3500 <b>Imit/base</b> >75 20 <b>Imit/base</b> NONE NONE NONE NONE NONE NONE NONE NON	2 17 4412 989 1134 6953 <b>current</b> 48 0 4 4 <b>current</b> NONE NONE NONE NONE NONE NONE NONE NON	2 20 4237 890 1055 6499 history1 38 1 <1 38 1 <1 ×1 NONE NONE NONE NONE NONE NONE NONE NON	1 21 4436 876 1122 6710 history2 29 0 <1 NONE NONE NONE NONE NONE NONE NONE NON

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# **OIL ANALYSIS REPORT**

FLUID PROPERTIES



	Visc @ 40°C	cSt	ASTM D445	115	95.0	95.2	95.4
	SAMPLE II	MAGES	method	limit/base	current	history1	history2
23	Color				no image	no image	no image
Apr20/23 Nov2/23	Bottom				no image	no image	no image
	GRAPHS						
	Ferrous Allo	oys					
	180 - iron 160 - iron nickel	ium					
	140 -						
	120 <u><u><u></u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u>						
	80 - 60 -						
	40						
		23 6		23			
	Sep19/22	Apr20/23		Nov2/23			
	Non-ferrou	s Metals					
	18 - copper 16 - copper lead	r	/				
	14-	/	/				
	12- <u><u><u></u></u> 10-</u>						
	8						
	4						
	52	23		23			
	Sep19/22	Apr20/23		Nov2/23			
	Viscosity @ 140 T Abnormal	40°C					
	130						
	120 Base						
	55 55						
	90						
	80						
	60	23		53			
	Sep19/22	Apr20/23		Nov2/23			
Laboratory Sample No. Lab Number Unique Number	: WC0836116 : <mark>06010419</mark>	USA - 501 Mac Receive Diagno Diagno	ed :161 sed :201	ry, NC 2751 Nov 2023 Nov 2023 .n Felton	3 <b>MAN</b>	HATTAN ROAD 5601 S	AND BRIDGE 122ND E AVE TULSA, OK US 74146
Certificate 12367 Test Package To discuss this sample report,	: CONST	-				Contact: Bl kevin.marson@	EN CALDWELL
<ul> <li>* - Denotes test methods that a Statements of conformity to specific</li> </ul>	are outside of the	e ISO 17025 so	cope of accred	itation.		T:	(918)728-5749 F

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Submitted By: JAMES STEELMON

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