

OIL ANALYSIS REPORT

Sample Rating Trend







Area [17958] Machine Id 20-88 Component

Diesel Engine

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

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.

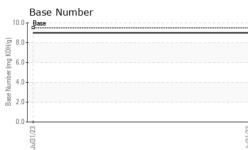
Fluid Condition

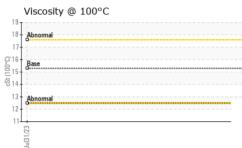
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0802435		
Sample Date		Client Info		31 Jul 2023		
Machine Age	hrs	Client Info		460		
Oil Age	hrs	Client Info		460		
Oil Changed		Client Info		Changed		
Sample Status				NORMAL		
CONTAMINATIO	N	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0		
Glycol		WC Method		NEG		
		ine ette e d	limit/base		late to must	la i a ta muQ
WEAR METALS		method		current	history1	history2
Iron	ppm	ASTM D5185m	>90	20		
Chromium	ppm	ASTM D5185m	>20	<1		
Nickel	ppm	ASTM D5185m	>2	0		
Titanium	ppm	ASTM D5185m	>2	<1		
Silver	ppm	ASTM D5185m	>2	<1		
Aluminum	ppm	ASTM D5185m	>20	4		
Lead	ppm	ASTM D5185m	>40	<1		
Copper	ppm	ASTM D5185m	>330	22		
Tin	ppm	ASTM D5185m	>15	<1		
Vanadium	ppm	ASTM D5185m		<1		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 85	current 15	history1	history2
	ppm ppm					
Boron		ASTM D5185m		15		
Boron Barium	ppm	ASTM D5185m ASTM D5185m		15 0		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		15 0 56		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	85	15 0 56 5		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	85 350	15 0 56 5 938		
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	85 350 1800	15 0 56 5 938 1198	 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	85 350 1800 1000	15 0 56 5 938 1198 994	 	
Boron 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	85 350 1800 1000 1100	15 0 56 5 938 1198 994 1213	 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	85 350 1800 1000 1100 3500 limit/base	15 0 56 5 938 1198 994 1213 3855		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	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	85 350 1800 1000 1100 3500 limit/base	15 0 56 5 938 1198 994 1213 3855 current		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS 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 method ASTM D5185m	85 350 1800 1000 1100 3500 limit/base >25	15 0 56 5 938 1198 994 1213 3855 current 24	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS 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 method ASTM D5185m	85 350 1800 1000 1100 3500 limit/base >25	15 0 56 5 938 1198 994 1213 3855 <u>current</u> 24 4	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	85 350 1800 1000 1100 3500 limit/base >25 >20	15 0 56 5 938 1198 994 1213 3855 current 24 4 2	 history1 	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	85 350 1800 1000 1100 3500 limit/base >25 >20 limit/base >6	15 0 56 5 938 1198 994 1213 3855 current 24 4 2 2 2 4 2 2 current	 history1 history1	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	85 350 1800 1000 1100 3500 limit/base >25 >20 limit/base >6	15 0 56 5 938 1198 994 1213 3855 <u>current</u> 24 4 2 2 4 2 2 <u>current</u> 0.1	 history1 history1	 history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	85 350 1800 1000 1100 3500 imit/base >25 >20 imit/base >6 >20	15 0 56 5 938 1198 994 1213 3855 current 24 24 4 2 2 current 0.1 7.2	 history1 history1 	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	85 350 1800 1000 1100 3500 imit/base >25 20 imit/base >6 >20	15 0 56 5 938 1198 994 1213 3855 <u>current</u> 24 4 2 2 <u>current</u> 0.1 7.2 19.7	 history1 history1 history1	 history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	85 350 1800 1000 1100 3500 25 >25 >20 >20 >20 >30 Simit/base	15 0 56 5 938 1198 994 1213 3855 current 24 4 2 2 current 0.1 7.2 19.7 current	 history1 history1 history1	 history2 history2 history2 history2



OIL ANALYSIS REPORT





	VISUAL		method	limit/base	current	history1	history2
	White Metal	scalar	*Visual	NONE	NONE		
	Yellow Metal	scalar	*Visual	NONE	NONE		
	Precipitate	scalar	*Visual	NONE	NONE		
	Silt	scalar	*Visual	NONE	NONE		
	Debris	scalar	*Visual	NONE	NONE		
	Sand/Dirt	scalar	*Visual	NONE	NONE		
Jul31/23	Appearance	scalar	*Visual	NORML	NORML		
Ju	Odor	scalar	*Visual	NORML	NORML		
	Emulsified Water	scalar	*Visual	>0.2	NEG		
	Free Water	scalar	*Visual		NEG		
	FLUID PROPERT	TIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	15.3	12.5		
	GRAPHS						
	Ferrous Alloys						
	iron						
	15 - nickel						
1	=						
	<u>ل</u> 10-						
	5						
	5						
	0	*****	*****				
	Jul31/23			Jul31/23			
				ηr			
	Non-ferrous Metal	S					
	copper						
	20 - management tin						
	15						
	10-						
	5 -						
	0						
	Jul31/23			Jul31/23			
	-			Juľ			
	Viscosity @ 100°C			Base Number			
				10.	Base		
	18 Abnormal				0-		
-				KOH/6			
	Base 15 3 14			B 6.	0		
4	5 ₁₄			Base Number (mg KOH/g)	0-		
	13 Abnormal			ase 8 2	0		
	12 -						
	11						
	Jul31/23			Jul31/23	Jul31/23		Jul31/23
Laboratory Sample No. Lab Number Unique Number	: WearCheck USA - 5 : WC0802435 : 05928593	501 Madi Receive Diagnos Diagnos	d : 18 / ed : 21 /		-		AND BRIDGE 122ND E AVE TULSA, OK US 74146



Unique Numl Test Package : CONST (Additional Tests: TBN) Contact: BEN CALDWELL Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. kevin.marson@wearcheck.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Submitted By: JAMES STEELMON

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