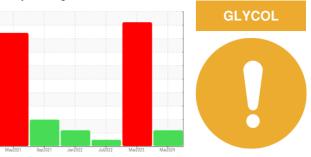


OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

80-190 Component Diesel Engine

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

Recommendation

Oil and filter 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

Sodium and/or potassium levels remain elevated. Test for glycol is negative.

Fluid Condition

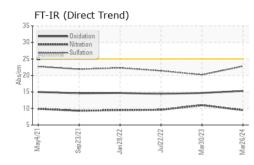
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0766501	WC0793288	WC0619259
Sample Date		Client Info		26 Mar 2024	30 Mar 2023	22 Jul 2022
Machine Age	hrs	Client Info		7553	6814	6227
Oil Age	hrs	Client Info		7553	587	5990
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				ATTENTION	SEVERE	NORMAL
CONTAMINATION	١	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
WEAR METALS		method	limit/base	ourront	history1	history2
				current		
Iron	ppm	ASTM D5185m	>100	30	▲ 97	20
Chromium	ppm	ASTM D5185m	>20	1	2	<1
Nickel	ppm	ASTM D5185m	>4	<1	<1	<1
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	1
Aluminum	ppm	ASTM D5185m	>20	4	4	3
Lead	ppm	ASTM D5185m	>40	5	3	1
Copper	ppm		>330	7	17	14
Tin	ppm	ASTM D5185m	>15	1	1	<1
Antimony	ppm	ASTM D5185m				
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	limit/base 85	26	38	63
Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m		26 0	38 0	63 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		26 0 30	38 0 6	63 0 8
Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m	85	26 0	38 0 6 2	63 0 8 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	85 350	26 0 30 <1 491	38 0 6 2 789	63 0 8 <1 686
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	85 350 1800	26 0 30 <1 491 1545	38 0 6 2 789 1325	63 0 8 <1 686 1273
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	85 350 1800 1000	26 0 30 <1 491 1545 1097	38 0 6 2 789 1325 1097	63 0 8 <1 686 1273 978
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	85 350 1800 1000 1100	26 0 30 <1 491 1545 1097 1201	38 0 6 2 789 1325 1097 1272	63 0 8 <1 686 1273 978 1122
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	85 350 1800 1000	26 0 30 <1 491 1545 1097	38 0 6 2 789 1325 1097	63 0 8 <1 686 1273 978
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	85 350 1800 1000 1100 3500 limit/base	26 0 30 <1 491 1545 1097 1201 3948 current	38 0 6 2 789 1325 1097 1272 4690 history1	63 0 8 <1 686 1273 978 1122 4091 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	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	26 0 30 <1 491 1545 1097 1201 3948 current 11	38 0 6 2 789 1325 1097 1272 4690 history1 17	63 0 8 <1 686 1273 978 1122 4091 history2 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	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	85 350 1800 1000 1100 3500 Iimit/base >25	26 0 30 <1 491 1545 1097 1201 3948 current 11 20	38 0 6 2 789 1325 1097 1272 4690 history1 17 17 346	63 0 8 <1 686 1273 978 1122 4091 history2 7 7 12
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm	ASTM D5185m ASTM D5185m	85 350 1800 1000 1100 3500 limit/base	26 0 30 <1 491 1545 1097 1201 3948 <u>current</u> 11 20 52	38 0 6 2 789 1325 1097 1272 4690 history1 17 17 ▲ 346 ▲ 748	63 0 8 <1 686 1273 978 1122 4091 history2 7 12 38
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	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	85 350 1800 1000 1100 3500 Iimit/base >25	26 0 30 <1 491 1545 1097 1201 3948 current 11 20	38 0 6 2 789 1325 1097 1272 4690 history1 17 17 346	63 0 8 <1 686 1273 978 1122 4091 history2 7 12
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm	ASTM D5185m ASTM D5185m	85 350 1800 1000 1100 3500 Iimit/base >25	26 0 30 <1 491 1545 1097 1201 3948 <u>current</u> 11 20 52	38 0 6 2 789 1325 1097 1272 4690 history1 17 17 ▲ 346 ▲ 748	63 0 8 <1 686 1273 978 1122 4091 history2 7 12 38
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol	ppm ppm	ASTM D5185m ASTM D5185m	85 350 1800 1000 1100 3500 imit/base >25 >20	26 0 30 <1 491 1545 1097 1201 3948 current 11 20 52 NEG	38 0 6 2 789 1325 1097 1272 4690 history1 17 ↓ 346 ↓ 748 ↓ 0.10	63 0 8 <1 686 1273 978 1122 4091 history2 7 12 38 NEG
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m *ASTM D2982	85 350 1800 1000 1100 3500 limit/base >25 >20	26 0 30 <1 491 1545 1097 1201 3948 current 11 20 52 NEG current	38 0 6 2 789 1325 1097 1272 4690 history1 17 17 346 346 ▲ 748 ▲ 0.10	63 0 8 <1 686 1273 978 1122 4091 history2 7 12 38 NEG history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm ppm ppm	ASTM D5185m ASTM D5185m *ASTM D2982 method	85 350 1800 1000 1100 3500 imit/base >25 >20 imit/base >3	26 0 30 <1 491 1545 1097 1201 3948 current 11 20 52 NEG current 0.4	38 0 6 2 789 1325 1097 1272 4690 history1 17 ▲ 346 ▲ 748 ▲ 0.10 history1 0.5	63 0 8 <1 686 1273 978 1122 4091 history2 7 7 12 38 NEG history2 0.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D2982 method *ASTM D7844	85 350 1800 1000 1100 3500 imit/base >25 >20 imit/base >3 >20	26 0 30 <1 491 1545 1097 1201 3948 current 11 20 52 NEG 52 NEG 0.4 9.5	38 0 6 2 789 1325 1097 1272 4690 history1 17 ▲ 346 ▲ 748 ▲ 0.10 history1 0.5 11.0	63 0 8 <1 686 1273 978 1122 4091 history2 7 12 38 NEG history2 0.3 9.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	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 *ASTM D5185m *ASTM D2982 method *ASTM D7844 *ASTM D7844	85 350 1800 1000 1100 3500 imit/base >25 >20 imit/base >3 >20 >3	26 0 30 <1 491 1545 1097 1201 3948 current 11 20 52 NEG 52 NEG 0.4 9.5 22.8	38 0 6 2 789 1325 1097 1272 4690 history1 17 ▲ 346 ▲ 748 ▲ 0.10 history1 0.5 11.0 20.2	63 0 8 <1 686 1273 978 1122 4091 history2 7 12 38 NEG history2 0.3 9.6 21.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	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 *ASTM D2982 method *ASTM D7844 *ASTM D7844 *ASTM D7624	85 350 1800 1000 1100 3500 imit/base >25 >20 imit/base >3 >20 >30 imit/base	26 0 30 <1 491 1545 1097 1201 3948 Current 11 20 52 NEG 52 NEG 0.4 9.5 22.8 22.8	38 0 6 2 789 1325 1097 1272 4690 history1 17 ▲ 346 ▲ 748 ▲ 0.10 history1 0.5 11.0 20.2 history1	63 0 8 <1 686 1273 978 1122 4091 history2 7 12 38 NEG history2 0.3 9.6 21.4 history2

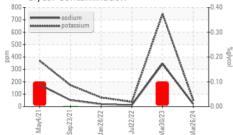
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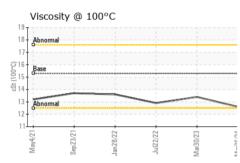


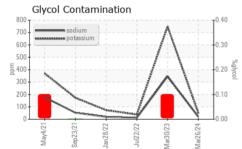
OIL ANALYSIS REPORT





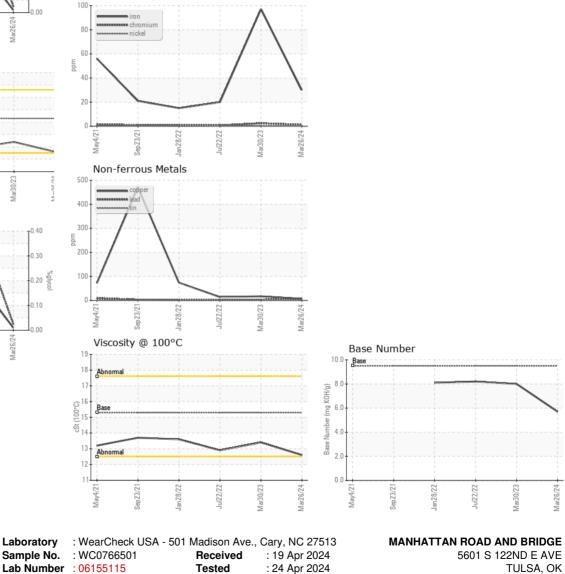






VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.3	12.6	13.4	12.9







Unique Number : 10990538 Diagnosed : 24 Apr 2024 - Jonathan Hester Test Package : CONST (Additional Tests: TBN) Certificate 12367 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)

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F: Submitted By: RICHARD PUGH

Contact: BEN CALDWELL

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T: (918)728-5749