

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id **CR4416** Component **Diesel Engine** Fluid SHELL ROTELLA T4 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the component make and model with your next sample.

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 suitable for further service.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0704458	WC0610398	
Sample Date		Client Info		22 Sep 2022	26 Aug 2021	
Machine Age	hrs	Client Info		6260	5498	
Oil Age	hrs	Client Info		0	250	
Oil Changed		Client Info		Changed	Changed	
Sample Status				NORMAL	ATTENTION	
CONTAMINATION	٨	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	
Water		WC Method	>0.2	NEG	NEG	
Glycol		WC Method		NEG	NEG	
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	4	15	
Chromium	ppm	ASTM D5185m	>20	<1	<1	
Nickel	ppm	ASTM D5185m	>4	<1	0	
Titanium	ppm	ASTM D5185m		0	0	
Silver	ppm	ASTM D5185m	>3	0	0	
Aluminum	ppm	ASTM D5185m	>20	<1	<1	
Lead	ppm	ASTM D5185m	>40	2	3	
Copper	ppm	ASTM D5185m	>330	2	1	
Tin	ppm	ASTM D5185m	>15	<1	<1	
Antimony	ppm	ASTM D5185m			0	
Vanadium	ppm	ASTM D5185m		0	0	
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		89	20	
Barium	ppm	AOTH DELOF		0	0	
	ppiii	ASTM D5185m		•	0	
Molybdenum	ppm	ASTM D5185m ASTM D5185m		20	30	
Molybdenum Manganese				-	÷	
-	ppm	ASTM D5185m		20	30	
Manganese	ppm ppm	ASTM D5185m ASTM D5185m		20 <1	30 <1	
Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		20 <1 302	30 <1 354	
Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		20 <1 302 1948	30 <1 354 1976	
Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		20 <1 302 1948 1030	30 <1 354 1976 835	
Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	20 <1 302 1948 1030 1215	30 <1 354 1976 835 961 2511 history1	
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	limit/base >25	20 <1 302 1948 1030 1215 4298	30 <1 354 1976 835 961 2511	
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		20 <1 302 1948 1030 1215 4298 current	30 <1 354 1976 835 961 2511 history1	 history2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>25	20 <1 302 1948 1030 1215 4298 current 7	30 <1 354 1976 835 961 2511 history1 7	 history2
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	>25	20 <1 302 1948 1030 1215 4298 current 7 7	30 <1 354 1976 835 961 2511 history1 7 7 101	 history2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	>25 >20	20 <1 302 1948 1030 1215 4298 current 7 7 71 28 current 0.1	30 <1 354 1976 835 961 2511 history1 7 7 101 29	 history2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	>25 >20 limit/base	20 <1 302 1948 1030 1215 4298 current 7 7 71 28 current	30 <1 354 1976 835 961 2511 history1 7 7 101 29 history1	 history2 history2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	>25 >20 limit/base >3	20 <1 302 1948 1030 1215 4298 current 7 7 71 28 current 0.1	30 <1 354 1976 835 961 2511 history1 7 101 29 history1 0.5	 history2 history2
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	>25 >20 limit/base >3 >20	20 <1 302 1948 1030 1215 4298 current 7 7 71 28 current 0.1 7.7	30 <1 354 1976 835 961 2511 history1 7 101 29 history1 0.5 8.1	 history2 history2 history2
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 D51854 *ASTM D7844 *ASTM D7844	>25 >20 limit/base >3 >20 >30	20 <1 302 1948 1030 1215 4298 current 7 7 71 28 current 0.1 7.7 21.0 current 17.1	30 <1 354 1976 835 961 2511 history1 7 101 29 history1 0.5 8.1 21.2	 history2 history2 history2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7624	>25 >20 limit/base >3 >20 >30 limit/base	20 <1 302 1948 1030 1215 4298 current 7 7 71 28 current 0.1 7.7 21.0 current	30 <1 354 1976 835 961 2511 history1 7 101 29 history1 0.5 8.1 21.2 history1	 history2 history2 history2

Report Id: BUCWILTX [WUSCAR] 05663890 (Generated: 04/29/2024 16:02:06) Rev: 1

Contact/Location: JOHN HAWKINS - BUCWILTX



OIL ANALYSIS REPORT

FT-IR (Direct Trend)		VISUAL		method	limit/base	current	history1	history2
30 - Oxidation		White Metal	scalar	*Visual	NONE	NONE	NONE	
25 - G		Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
g 20 -	*******	Precipitate	scalar	*Visual	NONE	NONE	NONE	
Ř		Silt	scalar	*Visual	NONE	NONE	NONE	
		Debris	scalar	*Visual	NONE	NONE	NONE	
10		Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
54	22	Appearance	scalar	*Visual	NORML	NORML	NORML	
Aug26/21	Sep22/22	Odor	scalar	*Visual	NORML	NORML	NORML	
		Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
Base Number		Free Water	scalar	*Visual	20.2	NEG	NEG	
					11 11 /			
(b) 10.0 B (b) HO 0 B (b) 10.0 B (b) 10.0 B (c) 10.0 C (c) 10.0 C		FLUID PROPER Visc @ 100°C	cSt	method ASTM D445	limit/base 15	current 13.7	history1 13.8	history2
a 6.0- 		GRAPHS	COL	A3110 D443	15	13.7	13.0	
		Ferrous Alloys						
		¹⁶						
Aug26/21	6466	14- iron chromium						
Aug	C.m.	12 - nickel						
Viscosity @ 100°C		10- E 8-						
19 19		6						
18 17		4						
		2-						
© 16 0 15 15 15 0 15 0 15 0 0 15 0 15 0 0 15 0 15		0						
		Aug26/21			Sep22/22			
13 + Abnormal 12 +		Augá			Sep2			
11		Non-ferrous Meta	ls					
Aug26/21	64.66	10 copper]						
Aug	0	8 and						
		tin tin						
		6-						
		E d d						
		2-						
		0						
		6/21			22/22 -			
		Aug2			Sep2.			
		Viscosity @ 100°	2			Base Numbe	r	
		18			12.0			
		Abnormal				Base		
					HOX 8.0			
		216 0 15 Base			0.8 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0			
		ti 14			10 6.U			
		13			2 4.0	+		
		13 Abnormal			2.0	1		
		11			0.0			
		6/21				6/21		2/22 -
		Aug26/21			Sep22/22	Aug26/21		Sep22/22
		: WearCheck USA - 50	1 Madiec	n Ave Carv	NO 07510		BUCK	NER - WILLIS
Sam	ple No.	: WC0704458	Rece	ived : 11	Oct 2022			WY 75 NORTH
Sam	ple No. Number	: WC0704458 : 05663890	Rece Teste	ived : 11 ed : 12	1 Oct 2022 2 Oct 2022	es Davis		WY 75 NORTH WILLIS, TX
ANAB Sam ANAB Lab	ple No. Number Je Number	: WC0704458 : 05663890 : 10168459	Rece Teste Diagr	ived : 11 ed : 12 nosed : 12	Oct 2022	es Davis	18123 H	
Certificate L2367 Test To discuss this samp	ple No. Number Je Number Package pole report, o	: WC0704458 : 05663890 : 10168459 : CONST (Additional ⁻ <i>contact Customer Ser</i>	Rece Teste Diagr Tests: TB rice at 1-8	ived : 11 ed : 12 nosed : 12 N) 800-237-1369	I Oct 2022 2 Oct 2022 2 Oct 2022 - We 9.	es Davis	18123 H	NY 75 NORTH WILLIS, TX US 77378 NHN HAWKINS
Certificate L2367 To discuss this samp *- Denotes test meti	ple No. Number Je Number Package ple report, of hods that a	: WC0704458 : 05663890 : 10168459 : CONST (Additional ⁻	Rece Teste Diagr Fests: TB vice at 1-8	ived : 11 id : 12 nosed : 12 N) 800-237-1369 ope of accrea	I Oct 2022 2 Oct 2022 2 Oct 2022 - We 9. <i>litation.</i>		18123 H Contact: JC johnh@bucknerc	NY 75 NORTH WILLIS, TX US 77378 NHN HAWKINS

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