

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 116125

Component Diesel Engine Fluid SHELL ROTELLA T 15W40 (--- 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

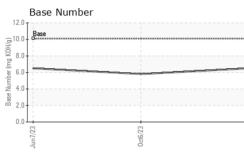
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

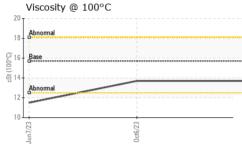
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		IL0033067	IL0032741	IL0027518
Sample Date		Client Info		24 Jan 2024	06 Oct 2023	07 Jun 2023
Machine Age	mls	Client Info		109701	75405	39945
Oil Age	mls	Client Info		34296	35460	39945
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL
CONTAMINATION	N	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	0.9
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>90	12	21	37
Chromium	ppm	ASTM D5185m	>20	<1	1	2
Nickel	ppm	ASTM D5185m	>2	<1	<1	<1
Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	10	17	A 26
Lead	ppm	ASTM D5185m	>40	2	3	4
Copper	ppm	ASTM D5185m	>330	2	6	26
Tin	ppm	ASTM D5185m	>15	1	1	3
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium		AOTH DELOF				
Gaumium	ppm	ASTM D5185m		0	0	0
ADDITIVES	ppm	method	limit/base	-	0 history1	0 history2
	ppm		limit/base 316	-	history1 28	history2 46
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	316	current 39	history1 28	history2 46 0 66
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	316 0.0 1.2	current 39 <1 34 <1	history1 28 0 29 <1	history2 46 0 66 5
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	316 0.0 1.2 24	current 39 <1 34 <1 306	history1 28 0 29 <1 255	history2 46 0 66 5 429
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	316 0.0 1.2 24 2292	current 39 <1 34 <1 306 1690	history1 28 0 29 <1 255 1691	history2 46 0 66 5 429 1781
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	316 0.0 1.2 24 2292 1064	current 39 <1 34 <1 306 1690 939	history1 28 0 29 <1 255 1691 898	history2 46 0 66 5 429 1781 946
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	method ASTM D5185m	316 0.0 1.2 24 2292 1064 1160	current 39 <1 34 <1 306 1690 939 1132	history1 28 0 29 <1 255 1691 898 1087	history2 46 0 66 5 429 1781 946 1216
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	316 0.0 1.2 24 2292 1064 1160 4996	current 39 <1 34 <1 306 1690 939 1132 3059	history1 28 0 29 <1 255 1691 898	history2 46 0 66 5 429 1781 946 1216 2788
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	316 0.0 1.2 24 2292 1064 1160	current 39 <1 34 <1 306 1690 939 1132 3059	history1 28 0 29 <1 255 1691 898 1087	history2 46 0 66 5 429 1781 946 1216 2788 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	316 0.0 1.2 24 2292 1064 1160 4996	current 39 <1 34 <1 306 1690 939 1132 3059 current 7	history1 28 0 29 <1 255 1691 898 1087 2735 history1 13	history2 46 0 66 5 429 1781 946 1216 2788 history2 ▲ 40
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	316 0.0 1.2 24 2292 1064 1160 4996 limit/base	current 39 <1 34 <1 306 1690 939 1132 3059 current 7 0	history1 28 0 29 <1 255 1691 898 1087 2735 history1 13 <1	history2 46 0 66 5 429 1781 946 1216 2788 history2 ▲ 40 3
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	316 0.0 1.2 24 2292 1064 1160 4996	current 39 <1 34 <1 306 1690 939 1132 3059 current 7	history1 28 0 29 <1 255 1691 898 1087 2735 history1 13	history2 46 0 66 5 429 1781 946 1216 2788 history2 ▲ 40
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	316 0.0 1.2 24 2292 1064 1160 4996 limit/base	current 39 <1 34 <1 306 1690 939 1132 3059 current 7 0 30	history1 28 0 29 <1 255 1691 898 1087 2735 history1 13 <1	history2 46 0 66 5 429 1781 946 1216 2788 history2 ▲ 40 3
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25	current 39 <1 34 <1 306 1690 939 1132 3059 current 7 0 30	history1 28 0 29 <1 255 1691 898 1087 2735 history1 13 <1 55 history1 0.3	history2 46 0 66 5 429 1781 946 1216 2788 history2 ▲ 40 3 71
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25 >20	current 39 <1 34 <1 306 1690 939 1132 3059 current 7 0 30 current	history1 28 0 29 <1 255 1691 898 1087 2735 history1 13 <1 55 history1	history2 46 0 66 5 429 1781 946 1216 2788 history2 ▲ 40 3 71 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Sulfur Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25 >20 limit/base	current 39 <1 34 <1 306 1690 939 1132 3059 current 7 0 30 current 0.4	history1 28 0 29 <1 255 1691 898 1087 2735 history1 13 <1 55 history1 0.3	 history2 46 0 66 5 429 1781 946 1216 2788 history2 ▲ 40 3 71 history2 0.3
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Sulfur Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25 >20 limit/base >6 >20	current 39 <1 34 <1 306 1690 939 1132 3059 current 7 0 30 current 0.4 9.2 22.5	history1 28 0 29 <1 255 1691 898 1087 2735 history1 13 <1 55 history1 0.3 9.0	history2 46 0 66 5 429 1781 946 1216 2788 history2 ▲ 40 3 71 history2 0.3 8.3
ADDITIVES 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	method ASTM D5185m ASTM D5185m	316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25 >20 limit/base >6 >20	current 39 <1 34 <1 306 1690 939 1132 3059 current 7 0 30 current 0.4 9.2 22.5	history1 28 0 29 <1 255 1691 898 1087 2735 history1 13 <1 55 history1 0.3 9.0 22.5	 history2 46 0 66 5 429 1781 946 1216 2788 history2 ▲ 40 3 71 history2 0.3 8.3 22.3



OIL ANALYSIS REPORT

VISUAL





	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
0ct6/23 - an24/24 -		scalar	*Visual	NORML	NORML	NORML	NORML
0ct6/23 Jan24/24	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
	Free Water	scalar	*Visual		NEG	NEG	NEG
	FLUID PROPER		method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445		13.7	13.7	▲ 11.5
	GRAPHS	001	A011010443	10.7	10.7	10.7	A 11.5
	Ferrous Alloys						
	40						
0ct6/23	35 30						
	25						
	튭 20 -						
	15						
	10						
	5 -						
	Jun7/23	0ct6/23		Jan 24/24			
	Non-ferrous Meta	le		ř			
	³⁰ T	115					
	25 - copper lead						
	management tin						
	20						
	<u>ة</u> 15						
	10						
	5						
	A S.S. & A. S. Barry, Chart Ch						
	U	/23 -		/24 +			
	Jun7/23	0ct6/23		Jan 24/24			
	Viscosity @ 100°C	C		_,	Base Number		
	²⁰ 19			12.0			
	18 - Abnormal			10.0	Base		
	17-			0.8 KOH/g			
	() 16 Base 15 5 15 14			Buj			
	र्छ 14			10.0 E			
	13 - Abnormal			2 4.0			
	12			2.0	1		
	11						
		0ct6/23 -		4/24	7/23 -	0ct6/23 +	
	Jun7/23	Octf		Jan 24/24	Jun7/23	Octf	
Laboratory Sample No. Lab Number Unique Number	: 06076699	501 Madis Recieved Diagnose Diagnost	l :01 ed :02	ry, NC 27513 Feb 2024 Feb 2024 s Davis	IDEA		DRTHWEST HANSEN ROA IREEN BAY, V US 543
ficate L2367 Test Package		Biagnost		0 0 4 10		Contact	: GARY KOL
discuss this sample report,		vice at 1-8	00-237-1369	9.			@pcitrucks.co
Denotes test methods that a							: (920)499-62
enoles lest melhous that a ements of conformity to spe					ICGM 106.2012		: (920)499-62 · (920)499-53

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

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