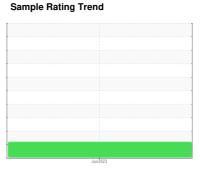


OIL ANALYSIS REPORT







Machine Id **23** Component

Diesel Engine

SHELL 15W40 T2 (--- QTS)

DIAGNOSIS

Recommendation

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Wear

All component wear rates are normal.

Contamination

Light fuel dilution occurring.

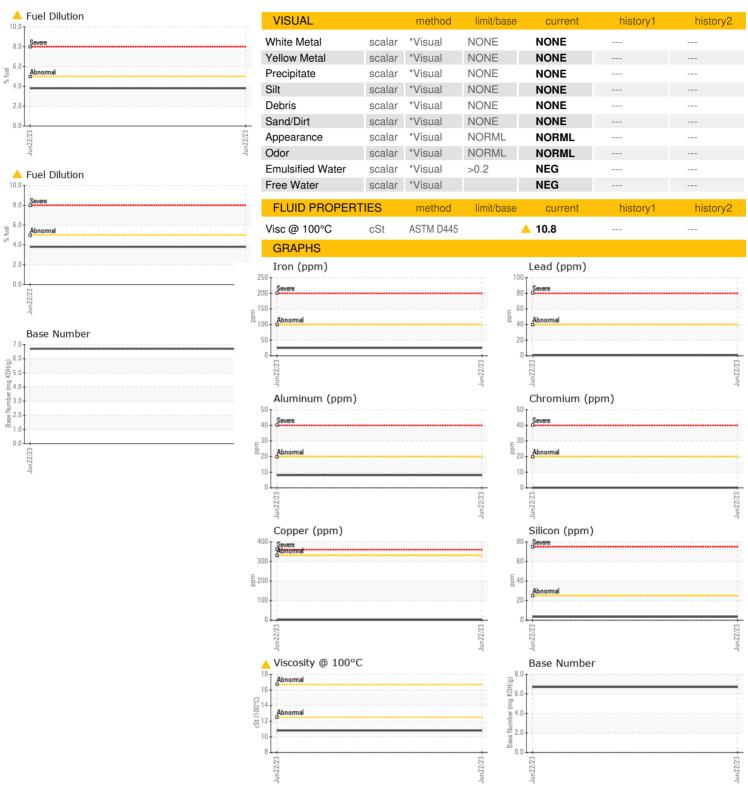
Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The condition of the oil is suitable for further service.

SAMPLE INFORMATION method limit/base current history1 history2 Sample Number Client Info RW0002407 Sample Date Client Info 164278 Oil Age mls Client Info 10778 Oil Changed Client Info Changed Sample Status Client Info Changed GOYTAMINATION method limit/base current history1 history2 Glycol WC Method NEG MEG Chromium ppm ASTM 05185m >20 0 Iron ppm ASTM 05185m >20 0 Iron ppm ASTM 05185m >3 0 Iron ppm ASTM 05185m >4 -1 Iron ppm ASTM 05185m >3 0					Jun 2023		
Sample Number Client Info RW0002407 Sample Date Client Info 22 Jun 2023 Machine Age mls Client Info 164278 Oil Age mls Client Info 10778 Oil Changed Client Info Changed Sample Status BANORMAL CONTAMINATION method limit/base current history1 history2 Glycol WC Method NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 25 Chromium ppm ASTM D5185m >4 <1 Irianium ppm ASTM D5185m >4 <1 Silver ppm ASTM D5185m >20 8 Lead ppm ASTM D5185	CAMPLE INFORM	ATION					
Client Info 22 Jun 2023	SAMPLE INFORM	TATION	method	limit/base	current	history1	history2
Machine Age mls Client Info 164278	Sample Number		Client Info		RW0002407		
Dil Age	Sample Date		Client Info		22 Jun 2023		
Contamination Changed Contamination Changed Contamination Contami	Machine Age	mls	Client Info		164278		
ABNORMAL	Oil Age	mls	Client Info		10778		
CONTAMINATION	Oil Changed		Client Info		Changed		
MEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 25 Chromium ppm ASTM D5185m >20 0 Nickel ppm ASTM D5185m >4 <1	Sample Status				ABNORMAL		
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 25 Chromium ppm ASTM D5185m >20 0 Nickel ppm ASTM D5185m >4 <1	CONTAMINATION	١	method	limit/base	current	history1	history2
Iron	Glycol		WC Method		NEG		
Chromium	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	25		
Nickel	Chromium	• •	ASTM D5185m	>20	0		
Silver	Nickel				<1		
ASTM D5185m PDM AST	Titanium	• •	ASTM D5185m		<1		
Aluminum ppm ASTM D5185m >20 8 Lead ppm ASTM D5185m >40 <1				>3			
Lead ppm ASTM D5185m >40 <1 Copper ppm ASTM D5185m >330 2 Tin ppm ASTM D5185m >15 <1		• •			-		
Copper ppm ASTM D5185m >3330 2 Tin ppm ASTM D5185m >15 <1					-		
Tin ppm ASTM D5185m >15 <1							
Vanadium ppm ASTM D5185m <1 Cadmium ppm ASTM D5185m 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 43 Barium ppm ASTM D5185m 0 Molybdenum ppm ASTM D5185m 81 Manganese ppm ASTM D5185m 255 Magnesium ppm ASTM D5185m 1947 Calcium ppm ASTM D5185m 937 Zinc ppm ASTM D5185m 937 Zinc ppm ASTM D5185m 3895 Sulfur ppm ASTM D5185m >25 4 CONTAMINANTS method limit/base current h	• •				_		
Cadmium ppm ASTM D5185m 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 43 Barium ppm ASTM D5185m 0 Molybdenum ppm ASTM D5185m 81 Manganese ppm ASTM D5185m 255 Magnesium ppm ASTM D5185m 255 Calcium ppm ASTM D5185m 937 Phosphorus ppm ASTM D5185m 937 Zinc ppm ASTM D5185m 937 Sulfur ppm ASTM D5185m 3895 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 3 <td></td> <td>• •</td> <td></td> <td>>10</td> <td></td> <td></td> <td></td>		• •		>10			
ADDITIVES							
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Molybdenum ppm ASTM D5185m 81 Manganese ppm ASTM D5185m 255 Magnesium ppm ASTM D5185m 1947 Calcium ppm ASTM D5185m 937 Phosphorus ppm ASTM D5185m 937 Zinc ppm ASTM D5185m 937 Sulfur ppm ASTM D5185m 3895 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 Sodium ppm ASTM D5185m >20 3 Fuel % ASTM D5185m >20 3 INFRA-RED method limit/base current history1 history2 Soot % % <t< td=""><td>Boron</td><td>ppm</td><td>ASTM D5185m</td><td></td><td>43</td><td></td><td></td></t<>	Boron	ppm	ASTM D5185m		43		
Manganese ppm ASTM D5185m <1 Magnesium ppm ASTM D5185m 255 Calcium ppm ASTM D5185m 1947 Phosphorus ppm ASTM D5185m 937 Zinc ppm ASTM D5185m 1102 Sulfur ppm ASTM D5185m 3895 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 Sodium ppm ASTM D5185m >20 3 Fuel % ASTM D5185m >20 3 Fuel % ASTM D5185m >20 3 INFRA-RED method limit/base current history1 history2 Soot % % <td>Barium</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <td>0</td> <td></td> <td></td>	Barium	ppm	ASTM D5185m		0		
Magnesium ppm ASTM D5185m 255 Calcium ppm ASTM D5185m 1947 Phosphorus ppm ASTM D5185m 937 Zinc ppm ASTM D5185m 1102 Sulfur ppm ASTM D5185m 3895 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 Sodium ppm ASTM D5185m >20 3 Potassium ppm ASTM D5185m >20 3 Fuel % ASTM D3524 >5 3.8 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 Sulfat	Molybdenum	ppm	ASTM D5185m		81		
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Zinc ppm ASTM D5185m 1102 Sulfur ppm ASTM D5185m 3895 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 Sodium ppm ASTM D5185m >20 3 Potassium ppm ASTM D5185m >20 3 Fuel % ASTM D3524 >5 A 3.8 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 9.6 Nitration Abs/.1mm *ASTM D7415 >30 19.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.9 <td>Calcium</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <td>1947</td> <td></td> <td></td>	Calcium	ppm	ASTM D5185m		1947		
Sulfur ppm ASTM D5185m 3895 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 Sodium ppm ASTM D5185m 4 Potassium ppm ASTM D5185m >20 3 Fuel % ASTM D5185m >20 3 Fuel % ASTM D5185m >20 3 Fuel % ASTM D5185m >20 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 Nitration Abs/.1mm *ASTM D7624 >20 9.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 <td>Phosphorus</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <td>937</td> <td></td> <td></td>	Phosphorus	ppm	ASTM D5185m		937		
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 Sodium ppm ASTM D5185m 4 Potassium ppm ASTM D5185m >20 3 Fuel % ASTM D3524 >5 ▲ 3.8 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 Nitration Abs/cm *ASTM D7624 >20 9.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.9	Zinc	ppm	ASTM D5185m		1102		
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Sodium ppm ASTM D5185m 4 Potassium ppm ASTM D5185m >20 3 Fuel % ASTM D3524 >5 ▲ 3.8 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 Nitration Abs/cm *ASTM D7624 >20 9.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.9	CONTAMINANTS		method	limit/base	current	history1	history2
Sodium ppm ASTM D5185m 4 Potassium ppm ASTM D5185m >20 3 Fuel % ASTM D3524 >5 ▲ 3.8 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 Nitration Abs/cm *ASTM D7624 >20 9.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.9	Silicon	ppm	ASTM D5185m	>25	4		
Potassium ppm ASTM D5185m >20 3 Fuel % ASTM D3524 >5 ▲ 3.8 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 Nitration Abs/cm *ASTM D7624 >20 9.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.9	Sodium		ASTM D5185m		4		
Fuel % ASTM D3524 >5 ▲ 3.8 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 Nitration Abs/cm *ASTM D7624 >20 9.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.9				>20	3		
Soot % *ASTM D7844 >3 0.4 Nitration Abs/cm *ASTM D7624 >20 9.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.9	Fuel		ASTM D3524	>5	△ 3.8		
Soot % *ASTM D7844 >3 0.4 Nitration Abs/cm *ASTM D7624 >20 9.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.9	INFRA-RED		method	limit/base	current	history1	history2
Nitration Abs/cm *ASTM D7624 >20 9.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.9		0/2					
Sulfation Abs/.1mm *ASTM D7415 >30 19.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.9							
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.9							
Oxidation					19.6		
		TION	method			history1	history2
Base Number (BN) mg KOH/g ASTM D2896 6.70	Oxidation	Abs/.1mm	*ASTM D7414	>25	14.9		
	D AL L (DAI)	110111					



OIL ANALYSIS REPORT







Laboratory Sample No. Lab Number **Unique Number**

: RW0002407 : 05902485

: 10563841

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received Diagnosed Diagnostician : Wes Davis

: 19 Jul 2023 : 21 Jul 2023

Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel) To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - 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)

PERRY LOCAL SCHOOLS

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Contact: S. LAWSON lawsons@perry-lake.org

T:

F: