

OIL ANALYSIS REPORT

^{Area} [20-190] 20-190 (S/N 5KJJAED11MPMT4896)

Diesel Engine

DIESEL ENGINE OIL SAE 30 (--- GAL)

Sample Rating Trend **NORMAL**

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) DIESEL ENGINE OIL SAE 30. Please confirm.

Metal levels are typical for a components first oil change.

Contamination

Fuel content negligible. There is no indication of any contamination in the oil.

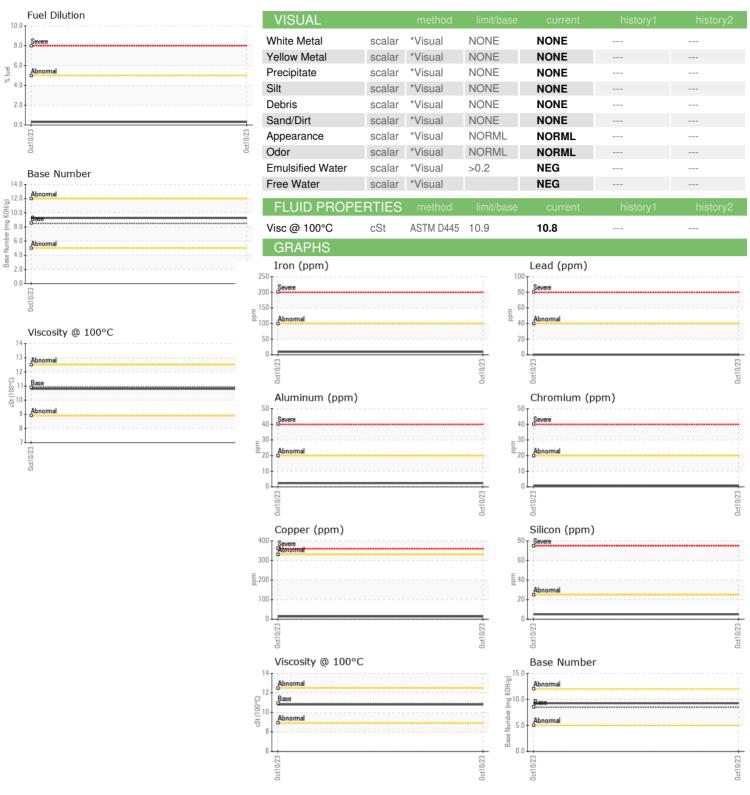
Fluid Condition

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

SAMPLE INFORMATION method limit/base current history1 history2					Oct2023		
Sample Date Client Info	SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Date Client Info	Sample Number		Client Info		PCA0104618		
Machine Age mls Client Info 147969 Ol Age <td></td> <td></td> <td>Client Info</td> <td></td> <th>10 Oct 2023</th> <td></td> <td></td>			Client Info		10 Oct 2023		
Contamer Contament Conta	•	mls	Client Info		147969		
CONTAMINATION	Oil Age	mls	Client Info		147969		
CONTAMINATION	Oil Changed		Client Info		N/A		
WEAR METALS	Sample Status				NORMAL		
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 9 Chromium ppm ASTM D5185m 20 <1 Nickel ppm ASTM D5185m >20 <1 Titanium ppm ASTM D5185m >3 0 Aluminum ppm ASTM D5185m >3 0 Lead ppm ASTM D5185m >40 0 Lead ppm ASTM D5185m >40 0 Copper ppm ASTM D5185m >40 0 Vanadium ppm ASTM D5185m >15 <1 Vanadium ppm ASTM D5185m 0 Cadmium ppm ASTM D5185m 10	CONTAMINAT	ION	method	limit/base	current	history1	history2
Iron	Glycol		WC Method		NEG		
Chromium	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	9		
Titanium	Chromium	ppm	ASTM D5185m	>20	<1		
Silver	Nickel	ppm	ASTM D5185m	>4	0		
Aluminum ppm ASTM D5185m >20 2 Lead ppm ASTM D5185m >40 0 Copper ppm ASTM D5185m >330 14 Tin ppm ASTM D5185m >15 <1	Titanium	ppm	ASTM D5185m		0		
Lead	Silver	ppm	ASTM D5185m	>3	0		
Copper ppm ASTM D5185m >330 14 Tin ppm ASTM D5185m >15 <1	Aluminum	ppm	ASTM D5185m	>20	2		
Tin ppm ASTM D5185m >1.5	Lead	ppm	ASTM D5185m	>40	0		
Vanadium ppm ASTM D5185m 0 Cadmium ppm ASTM D5185m 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 250 3 Barium ppm ASTM D5185m 10 0 Molybdenum ppm ASTM D5185m 100 55 Mangaese ppm ASTM D5185m 100 55 Magnesium ppm ASTM D5185m 450 798 Calcium ppm ASTM D5185m 3000 1136 Phosphorus ppm ASTM D5185m 1350 1090 Sulfur ppm ASTM D5185m 4250 2499 CONTAMINANTS method limit/base current hi	Copper	ppm	ASTM D5185m	>330	14		
Cadmium ppm ASTM D5185m 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 250 3 Barium ppm ASTM D5185m 10 0 Molybdenum ppm ASTM D5185m 100 55 Manganese ppm ASTM D5185m 100 55 Magnesium ppm ASTM D5185m 450 798 Calcium ppm ASTM D5185m 3000 1136 Phosphorus ppm ASTM D5185m 1350 1090 Zinc ppm ASTM D5185m 1350 1090 Sulfur ppm ASTM D5185m >25 5 CONTAMINANTS method limit/base current </td <td>Tin</td> <td>ppm</td> <td>ASTM D5185m</td> <td>>15</td> <th><1</th> <td></td> <td></td>	Tin	ppm	ASTM D5185m	>15	<1		
ADDITIVES	Vanadium	ppm	ASTM D5185m		0		
Boron	Cadmium	ppm	ASTM D5185m		0		
Barium ppm ASTM D5185m 10 0 Molybdenum ppm ASTM D5185m 100 55 Manganese ppm ASTM D5185m 450 798 Magnesium ppm ASTM D5185m 3000 1136 Phosphorus ppm ASTM D5185m 1150 889 Phosphorus ppm ASTM D5185m 1350 1090 Sulfur ppm ASTM D5185m 4250 2499 Sulfur ppm ASTM D5185m >25 5 Sodium ppm ASTM D5185m >25 5 Potassium ppm ASTM D5185m >20 0 Fuel % ASTM D584m >3 0.3 INFRA-RED method limit/base <th>ADDITIVES</th> <th></th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 100 55 Manganese ppm ASTM D5185m 450 798 Magnesium ppm ASTM D5185m 3000 1136 Calcium ppm ASTM D5185m 1150 889 Phosphorus ppm ASTM D5185m 1350 1090 Zinc ppm ASTM D5185m 4250 2499 Sulfur ppm ASTM D5185m >25 5 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 Sodium ppm ASTM D5185m >20 0 Fuel % ASTM D3185m >20 0 INFRA-RED method limit/base	Boron	ppm	ASTM D5185m	250	3		
Manganese ppm ASTM D5185m <1 Magnesium ppm ASTM D5185m 450 798 Calcium ppm ASTM D5185m 3000 1136 Phosphorus ppm ASTM D5185m 1150 889 Zinc ppm ASTM D5185m 1350 1090 Sulfur ppm ASTM D5185m 4250 2499 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 Sodium ppm ASTM D5185m >25 5 Potassium ppm ASTM D5185m >20 0 Fuel % ASTM D3185m >20 0 INFRA-RED method limit/base current <td>Barium</td> <td>ppm</td> <td>ASTM D5185m</td> <td>10</td> <th>0</th> <td></td> <td></td>	Barium	ppm	ASTM D5185m	10	0		
Magnesium ppm ASTM D5185m 450 798 Calcium ppm ASTM D5185m 3000 1136 Phosphorus ppm ASTM D5185m 1150 889 Zinc ppm ASTM D5185m 1350 1090 Sulfur ppm ASTM D5185m 4250 2499 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 Sodium ppm ASTM D5185m >75 2 Potassium ppm ASTM D5185m >20 0 Fuel % ASTM D3524 >5 0.3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844	Molybdenum	ppm	ASTM D5185m	100	55		
Calcium ppm ASTM D5185m 3000 1136 Phosphorus ppm ASTM D5185m 1150 889 Zinc ppm ASTM D5185m 1350 1090 Sulfur ppm ASTM D5185m 4250 2499 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 Sodium ppm ASTM D5185m >20 0 Potassium ppm ASTM D5185m >20 0 Fuel % ASTM D5185m >20 0 Fuel % ASTM D3524 >5 0.3 Soot % % *ASTM D7844 >3 0.3 Nitration Abs/cm *ASTM D7415 >3	Manganese	ppm	ASTM D5185m		<1		
Phosphorus ppm ASTM D5185m 1150 889 Zinc ppm ASTM D5185m 1350 1090 Sulfur ppm ASTM D5185m 4250 2499 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 Sodium ppm ASTM D5185m >75 2 Potassium ppm ASTM D5185m >20 0 Fuel % ASTM D3524 >5 0.3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 Soot % % *ASTM D7624 >20 7.5 Sulfation Abs/.1mm *ASTM D7415 >	Magnesium	nnm	AOTAL DELOE	450	700		
Zinc ppm ASTM D5185m 1350 1090 Sulfur ppm ASTM D5185m 4250 2499 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 Sodium ppm ASTM D5185m >75 2 Potassium ppm ASTM D5185m >20 0 Fuel % ASTM D5185m >20 0 Fuel % ASTM D5185m >20 0 Fuel % ASTM D3524 >5 0.3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 7.5 Nitration Abs/.1mm *ASTM D7415 >30	.	ppiii	ASTIVI DST85M	450	790		
Sulfur ppm ASTM D5185m 4250 2499 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 Sodium ppm ASTM D5185m >75 2 Potassium ppm ASTM D5185m >20 0 Fuel % ASTM D3524 >5 0.3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 Nitration Abs/cm *ASTM D7624 >20 7.5 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414<	Calcium						
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 Sodium ppm ASTM D5185m >75 2 Potassium ppm ASTM D5185m >20 0 Fuel % ASTM D3524 >5 0.3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 Nitration Abs/cm *ASTM D7624 >20 7.5 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.9		ppm	ASTM D5185m	3000	1136		
Silicon ppm ASTM D5185m >25 5 Sodium ppm ASTM D5185m >75 2 Potassium ppm ASTM D5185m >20 0 Fuel % ASTM D3524 >5 0.3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 Nitration Abs/cm *ASTM D7624 >20 7.5 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.9	Phosphorus	ppm ppm	ASTM D5185m ASTM D5185m	3000 1150	1136 889		
Sodium ppm ASTM D5185m >75 2 Potassium ppm ASTM D5185m >20 0 Fuel % ASTM D3524 >5 0.3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 Nitration Abs/cm *ASTM D7624 >20 7.5 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.9	Phosphorus Zinc	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	3000 1150 1350	1136 889 1090		
Potassium ppm ASTM D5185m >20 0 Fuel % ASTM D3524 >5 0.3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 Nitration Abs/cm *ASTM D7624 >20 7.5 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.9	Phosphorus Zinc Sulfur	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	3000 1150 1350 4250	1136 889 1090 2499		
Fuel % ASTM D3524 >5 0.3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 Nitration Abs/cm *ASTM D7624 >20 7.5 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.9	Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	3000 1150 1350 4250 limit/base	1136 889 1090 2499		
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 Nitration Abs/cm *ASTM D7624 >20 7.5 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.9	Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	3000 1150 1350 4250 limit/base >25	1136 889 1090 2499 current	 history1 	 history2
Soot % % *ASTM D7844 >3 0.3 Nitration Abs/cm *ASTM D7624 >20 7.5 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.9	Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	3000 1150 1350 4250 limit/base >25 >75	1136 889 1090 2499 current 5	 history1 	 history2
Nitration Abs/cm *ASTM D7624 >20 7.5 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.9	Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	3000 1150 1350 4250 limit/base >25 >75 >20	1136 889 1090 2499 current 5 2	 history1 	 history2
Nitration Abs/cm *ASTM D7624 >20 7.5 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.9	Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	3000 1150 1350 4250 limit/base >25 >75 >20 >5	1136 889 1090 2499 current 5 2 0	 history1 	 history2
Sulfation Abs/.1mm *ASTM D7415 >30 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.9	Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D3524	3000 1150 1350 4250 limit/base >25 >75 >20 >5	1136 889 1090 2499 current 5 2 0 0.3	history1 history1 history1	 history2
Oxidation Abs/.1mm *ASTM D7414 >25 14.9	Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D3524 method *ASTM D7844	3000 1150 1350 4250 limit/base >25 >75 >20 >5 limit/base >3	1136 889 1090 2499 current 5 2 0 0.3 current	history1 history1 history1	history2 history2 history2
	Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm %	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D3524 method *ASTM D7844 *ASTM D7624	3000 1150 1350 4250 limit/base >25 >75 >20 >5 limit/base >3 >20	1136 889 1090 2499 current 5 2 0 0.3 current 0.3 7.5	history1 history1 history1	history2 history2 history2
	Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm %	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D3524 Method *ASTM D7844 *ASTM D7624 *ASTM D76145	3000 1150 1350 4250 limit/base >25 >75 >20 >5 limit/base >3 >20 >30	1136 889 1090 2499 current 5 2 0 0.3 current 0.3 7.5 18.8	history1 history1 history1	history2 history2 history2
	Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D3524 Method *ASTM D7844 *ASTM D7624 *ASTM D7415 Method	3000 1150 1350 4250 limit/base >25 >75 >20 >5 limit/base >3 >20 >30 limit/base	1136 889 1090 2499 current 5 2 0 0.3 current 0.3 7.5 18.8	history1 history1 history1 history1	history2 history2 history2 history2 history2



OIL ANALYSIS REPORT





Certificate L2367

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

: PCA0104618 : 05981317 : 10698612

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 17 Oct 2023 Diagnosed : 18 Oct 2023

Diagnostician : Wes Davis

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) **SLT CONSTRUCTION**

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Contact: MARC CARVALHO marcc@sltconstruction.net

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