

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Pillen Family Farms LSTK 67

Diesel Engine

DIESEL ENGINE OIL SAE 40 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

Metal levels are typical for a new component breaking in.

Contamination

There is no indication of any contamination in the oil

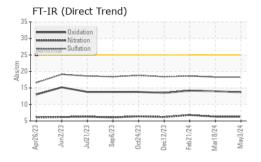
Fluid Condition

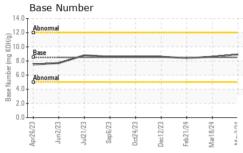
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

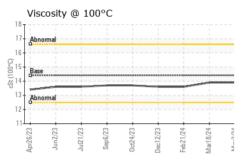
SAMPLE INFORMATION method imitibase current history1 history2			Apr2023 Jui	n2023 Jul2023 Sep2023	Oct2023 Dec2023 Feb 2024 Mar 20	24 May2024	
Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age mls Client Info 12000 12000 12000 12000 Oil Age mls Client Info 0 0 0 12000 Oil Changed Sample Status Client Info Not Changd NORMAL Not Changd NoRMAND NoRMAL Not	Sample Number		Client Info		SBP0006870	SBP0006818	SBP0005321
Oil Age mls Client Info Not Changd Not Changd Not Changd NeG Not Changd NeG Not Changd NeG NeG NeG NeG NeG NeG NeG NeG Iron ppm ASTM D5185m >20			Client Info		03 May 2024	18 Mar 2024	21 Feb 2024
Oil Changed Sample Status Client Info Not Changd NORMAL	Machine Age	mls	Client Info		12000	12000	12000
Sample Status	Oil Age	mls	Client Info		0	0	12000
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water Glycol WC Method WC Method NEG Ned NEG Iron ASTM DSTM ASTM DSTBS 40	CONTAMINATION	٧	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 7 8 16 Chromium ppm ASTM D5185m >20 <1 <1 1 Nickel ppm ASTM D5185m >20 <1 <1 <1 Titanium ppm ASTM D5185m >3 <1 0 0 Aluminum ppm ASTM D5185m >20 1 2 3 Lead ppm ASTM D5185m >20 1 0 <1 Copper ppm ASTM D5185m >20 1 0 <1 Copper ppm ASTM D5185m >15 0 0 <1 1 Vanadium ppm ASTM D5185m 0 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 <1 2 2 Barium ppm ASTM D5185m	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	7	8	16
Titanium ppm ASTM D5185m 0 0 0 Silver ppm ASTM D5185m >3 <1	Chromium	ppm	ASTM D5185m	>20	<1	<1	1
Silver	Nickel	ppm	ASTM D5185m	>4	0	<1	<1
Aluminum ppm ASTM D5185m >20 1 2 3 Lead ppm ASTM D5185m >40 <1 0 <1 Copper ppm ASTM D5185m >330 0 <1 <1 Tin ppm ASTM D5185m >15 0 0 <1 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 250 0 <1 2 Barium ppm ASTM D5185m 10 0 0 0 Molybdenum ppm ASTM D5185m 100 62 55 67 Manganese ppm ASTM D5185m 40 1110 964 103 Calcium ppm ASTM D5185m 3000 1253 10	Titanium	ppm	ASTM D5185m		0	0	0
Lead	Silver	ppm	ASTM D5185m	>3	<1	0	0
Copper ppm ASTM D5185m >330 0 <1	Aluminum	ppm	ASTM D5185m	>20	1	2	3
Tin ppm ASTM D5185m >15 0 0 <1	Lead	ppm	ASTM D5185m	>40	<1	0	<1
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 250 0 <1	Copper	ppm	ASTM D5185m	>330	0	<1	<1
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 250 0 <1 2 Barium ppm ASTM D5185m 10 0 0 0 Molybdenum ppm ASTM D5185m 100 62 55 67 Manganese ppm ASTM D5185m 100 62 55 67 Magnesium ppm ASTM D5185m 450 1110 964 1030 Calcium ppm ASTM D5185m 3000 1253 1071 1110 Phosphorus ppm ASTM D5185m 1350 1479 1222 1338 Sulfur ppm ASTM D5185m 1350 1479 1222 1338 Sulfur ppm ASTM D5185m >25 4 3 6 Sodium ppm ASTM D5185m >216 <1 </th <th>Tin</th> <th>ppm</th> <th>ASTM D5185m</th> <th>>15</th> <th>0</th> <th>0</th> <th><1</th>	Tin	ppm	ASTM D5185m	>15	0	0	<1
ADDITIVES	Vanadium	ppm	ASTM D5185m		0	0	0
Boron	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 10 0 0 0 Molybdenum ppm ASTM D5185m 100 62 55 67 Manganese ppm ASTM D5185m 450 1110 964 1030 Calcium ppm ASTM D5185m 3000 1253 1071 1110 Phosphorus ppm ASTM D5185m 3000 1253 1071 1110 Phosphorus ppm ASTM D5185m 1150 1189 1079 1093 Zinc ppm ASTM D5185m 1350 1479 1222 1338 Sulfur ppm ASTM D5185m 4250 4144 3432 3437 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 3 6 Sodium ppm ASTM D5185m >20 2 <1 4 INFRA-RED method	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 100 62 55 67 Manganese ppm ASTM D5185m <1	Boron	ppm	ASTM D5185m	250	0	<1	2
Manganese ppm ASTM D5185m <1	Barium	ppm	ASTM D5185m	10	0	0	0
Magnesium ppm ASTM D5185m 450 1110 964 1030 Calcium ppm ASTM D5185m 3000 1253 1071 1110 Phosphorus ppm ASTM D5185m 1150 1189 1079 1093 Zinc ppm ASTM D5185m 1350 1479 1222 1338 Sulfur ppm ASTM D5185m 4250 4144 3432 3437 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 3 6 Sodium ppm ASTM D5185m >216 <1	Molybdenum	ppm	ASTM D5185m	100	62	55	67
Calcium ppm ASTM D5185m 3000 1253 1071 1110 Phosphorus ppm ASTM D5185m 1150 1189 1079 1093 Zinc ppm ASTM D5185m 1350 1479 1222 1338 Sulfur ppm ASTM D5185m 4250 4144 3432 3437 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 3 6 Sodium ppm ASTM D5185m >216 <1 2 2 Potassium ppm ASTM D5185m >20 2 <1 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 6.3 6.3 6.8 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 18.3 18.6 FLUID DEGRADATION *	Manganese	ppm	ASTM D5185m		<1	0	0
Phosphorus ppm ASTM D5185m 1150 1189 1079 1093 Zinc ppm ASTM D5185m 1350 1479 1222 1338 Sulfur ppm ASTM D5185m 4250 4144 3432 3437 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 3 6 Sodium ppm ASTM D5185m >216 <1 2 2 Potassium ppm ASTM D5185m >20 2 <1 4 INFRA-RED method limit/base current history1 history2 Soot % "ASTM D7844 >3 0.3 0.3 0.4 Nitration Abs/cm "ASTM D7624 >20 6.3 6.3 6.8 Sulfation Abs/.1mm "ASTM D7415 >30 18.3 18.3 18.6 FLUID DEGRADATION method	Magnesium	ppm	ASTM D5185m	450	1110	964	1030
Zinc ppm ASTM D5185m 1350 1479 1222 1338 Sulfur ppm ASTM D5185m 4250 4144 3432 3437 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 3 6 Sodium ppm ASTM D5185m >216 <1 2 2 Potassium ppm ASTM D5185m >20 2 <1 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.3 0.4 Nitration Abs/cm *ASTM D7624 >20 6.3 6.3 6.8 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 18.3 18.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm <	Calcium	ppm	ASTM D5185m	3000	1253	1071	1110
Sulfur ppm ASTM D5185m 4250 4144 3432 3437 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 3 6 Sodium ppm ASTM D5185m >216 <1 2 2 Potassium ppm ASTM D5185m >20 2 <1 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.3 0.4 Nitration Abs/cm *ASTM D7624 >20 6.3 6.3 6.8 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 18.3 18.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7 14.0 14.2	Phosphorus	ppm	ASTM D5185m	1150	1189	1079	1093
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 3 6 Sodium ppm ASTM D5185m >216 <1 2 2 Potassium ppm ASTM D5185m >20 2 <1 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.3 0.4 Nitration Abs/cm *ASTM D7624 >20 6.3 6.3 6.8 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 18.3 18.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7 14.0 14.2	Zinc	ppm	ASTM D5185m	1350	1479	1222	1338
Silicon ppm ASTM D5185m >25 4 3 6 Sodium ppm ASTM D5185m >216 <1	Sulfur	ppm	ASTM D5185m	4250	4144	3432	3437
Sodium ppm ASTM D5185m >216 <1	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 2 <1		ppm		>25	4		6
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.3 0.4 Nitration Abs/cm *ASTM D7624 >20 6.3 6.3 6.8 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 18.3 18.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7 14.0 14.2		ppm	ASTM D5185m	>216	<1	2	2
Soot % % *ASTM D7844 >3 0.3 0.3 0.4 Nitration Abs/cm *ASTM D7624 >20 6.3 6.3 6.8 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 18.3 18.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7 14.0 14.2	Potassium	ppm	ASTM D5185m	>20	2	<1	4
Nitration Abs/cm *ASTM D7624 >20 6.3 6.3 6.8 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 18.3 18.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7 14.0 14.2	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 18.3 18.3 18.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7 14.0 14.2	Soot %	%	*ASTM D7844	>3	0.3	0.3	0.4
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7 14.0 14.2	Nitration	Abs/cm	*ASTM D7624	>20	6.3	6.3	6.8
Oxidation Abs/.1mm *ASTM D7414 >25 13.7 14.0 14.2	Sulfation	Abs/.1mm	*ASTM D7415	>30	18.3	18.3	18.6
	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 8.5 8.9 8.6 8.4	Oxidation	Abs/.1mm	*ASTM D7414	>25	13.7	14.0	14.2
	Base Number (BN)	mg KOH/g	ASTM D2896	8.5	8.9	8.6	8.4



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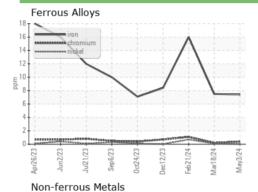


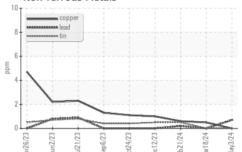


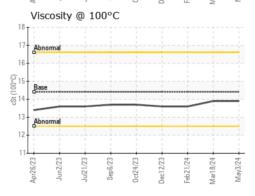
VISUAL		method				history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	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

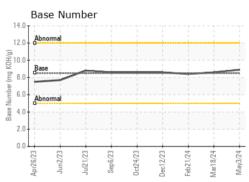
FLUID PROPER	TIES	method				history2
Visc @ 100°C	cSt	ASTM D445	14.4	13.9	13.9	13.6

GRAPHS













Certificate 12367

Laboratory Sample No.

: SBP0006870 Lab Number : 06193305

Unique Number : 11050057 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received **Tested**

: 30 May 2024 Diagnosed

: 30 May 2024 - Wes Davis

: 28 May 2024

US 61357 Contact: Troy Runge troyfr@pillenfamilyfarms.com

Pillen Family Farms - 722828

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) 26741 NE-91

Humphrey, NE

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