

OIL ANALYSIS REPORT

Sample Rating Trend



KME 300950

Component Front Diesel Engine

SAFETY-KLEEN PERFORMANCE PLUS 15W40 (38 LTR)

DIAGNOSIS

Recommendation

Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor.

Wear

Metal levels are typical for a new component breaking in.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

Additive levels indicate the addition of a different brand, or type of oil. The condition of the oil is acceptable for the time in service.

W40 (38 LTR)		Jan2016	Aug2017 Apr2018			
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PC0078183	PC0029036	WC0310351
Sample Date		Client Info		06 Feb 2024	17 Apr 2020	04 Apr 2019
Machine Age	kms	Client Info		33865	22177	18699
Dil Age	kms	Client Info		0	7000	0
Dil Changed		Client Info		Changed	Changed	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
⁻ uel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
ron	ppm	ASTM D5185(m)	>165	18	18	8
Chromium	ppm	ASTM D5185(m)	>5	<1	1	<1
Nickel	ppm	ASTM D5185(m)	>4	<1	<1	0
Titanium	ppm	ASTM D5185(m)	>2	0	<1	0
Silver	ppm	ASTM D5185(m)	>2	<1	<1	0
Aluminum	ppm	ASTM D5185(m)	>20	2	1	1
ead	ppm	ASTM D5185(m)	>150	<1	<1	<1
Copper	ppm	ASTM D5185(m)	>90	4	8	5
Fin	ppm	ASTM D5185(m)	>5	<1	<1	0
Antimony	ppm	ASTM D5185(m)		0	<1	0
/anadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		0	0	<1
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	1.4	<1	0	4
Barium	ppm	ASTM D5185(m)	0.1	0	<1	0
Volybdenum	ppm	ASTM D5185(m)	0.1	61	61	56
Manganese	ppm	ASTM D5185(m)		0	<1	<1
Magnesium	ppm	ASTM D5185(m)	2.7	976	936	883
Calcium	ppm	ASTM D5185(m)	2328	1060	1140	1069
Phosphorus	ppm	ASTM D5185(m)	924	1036	1002	960
Zinc	ppm	ASTM D5185(m)	1004	1206	1198	1161
Sulfur	ppm	ASTM D5185(m)	3828	2747	2634	2733
_ithium	ppm	ASTM D5185(m)		<1	<1	0
CONTAMINAN	TS	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>35	6	8	8
Sodium	ppm	ASTM D5185(m)		3	1	2
Potassium	ppm	ASTM D5185(m)	>20	1	1	1
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>7.5	0.6	0.5	0.3
Nitration	Abs/cm	ASTM D7624*	>20	8.8	9.7	7.5
Sulfation	Abs/.1mm	ASTM D7415*	>30	21.3	24.0	19.1



Abnormal

 Viscosity @ 40°C

OIL ANALYSIS REPORT

VISUAL method limit/base current history1 hi Emulsified Water scalar Visual* >0.2 NEG NEG NEG Free Water scalar Visual* NEG NEG NEG NEG FUID PROPERTIES method Imit/base current history1 hi Visc @ 40°C cSt ASTMD7279(m) 112 105 94.8 Visc @ 100°C cSt ASTMD7279(m) 15.3 14.1 13.3 13.4 Viscosity Index (VI) Scale ASTM D2270* 143 136 139 GRAPHS Iron (ppm) Imit (p	FLUID DEGRA	DATION	method	limit/base	current	histo	ory1	histo
Emulsified Water scalar Visual* >0.2 NEG NEG NEG Free Water scalar Visual* NEG NEG NEG NEG FLUID PROPERTIES method limit/base current history1 hi Visc $@ 40^{\circ}$ C cSt ASTM D7279(m) 112 105 94.8 Visc $@ 100^{\circ}$ C cSt ASTM D7279(m) 15.3 14.1 13.3 13.4 Viscosity Index (VI) Scale ASTM D7279(m) 15.3 14.1 13.3 13.4 CGRAPHS Incomposition of the state	Oxidation	Abs/.1mm	ASTM D7414*	>25	15.6	14.5		13.6
Free Water scalar Visual* NEG NEG NEG FLUID PROPERTIES method limit/base current history1 hi Visc @ 40°C cSt ASTM D7279(m) 112 105 94.8 Visc @ 100°C cSt ASTM D7279(m) 15.3 14.1 13.3 13.4 Viscosity Index (VI) Scale ASTM D7279(m) 14.3 136 139 GRAPHS Iron (ppm) Iron (pp	VISUAL		method	limit/base	current	histo	ory1	histo
FLUID PROPERTIES method limit/base current history1 hi Visc @ 40°C cSt ASTM D7279(m) 112 105 94.8 Visc @ 100°C cSt ASTM D7279(m) 15.3 14.1 13.3 13.4 Visco @ 100°C cSt ASTM D7279(m) 15.3 14.1 13.3 13.4 Viscosity Index (VI) Scale ASTM D2270' 143 136 139 GRAPHS Iron (ppm)	Emulsified Water	scalar	Visual*	>0.2	NEG	NEG		NEG
	Free Water	scalar	Visual*		NEG	NEG		NEG
Visc $@ 100^{\circ}C$ cSt ASTM D2270" 143 136 139 GRAPHS Iron (ppm)	FLUID PROPE	RTIES	method	limit/base	current	histo	ory1	histo
Viscosity Index (VI) Scale ASTM D2270° 143 136 139 GRAPHS Iron (ppm)	Visc @ 40°C	cSt	()	112	105	94.8		
GRAPHS Iron (ppm)	Visc @ 100°C	cSt	ASTM D7279(m)	15.3	14.1	13.3		13.3
Lead (ppm) Lead (• • • •	Scale	ASTM D2270*	143	136	139		
Aluminum (ppm) Copper (ppm)								
Aluminum (ppm) Copper (ppm))			300				
Aluminum (ppm) Aluminum (ppm) Copper (ppm) Copper (ppm) Copper (ppm) Aluminum (ppm) Copper (pp	0 - Severe			250	Ú			
Aluminum (ppm) Copper (ppm)	Abnormal							· · · · · · · · · · · · · · · · · · ·
Aluminum (ppm) Copper (ppm)	0					1		1
B1/budk B1/bud	i i i							
Aluminum (ppm) Chromium (ppm)	9 1 0	6					6	
Aluminum (ppm) Aluminum (ppm) Abnomal	an 13/1 ug 29/1 Apr4/1	Apr4/1	\pr17/2	Feb 6/2	an 13/1 ug 29/1	Apr4/1	Apr4/1	pr17/2
Bevere Bevere Abnormal Building Building Build	· · · · · ·		4			(ma		4
Abnormal Abnorm	Ο τ		1		Smarn			I I
Abnormal Abnorm	D-					1		1
Copper (ppm)	Abnormal							
Copper (ppm)								<u>1</u>
61/brgh 61								_
Copper (ppm) Silicon (ppm) Severe Abnormal 20 10 10 10 10 10 10 10 10 10 1		4/19	7/20	6/24		4/18	61/9	7/20 +
Abnormal	Jan1 Aug2 Apr	Apr	Apr1	Feb	Jan1 Aug2	Apr	Apr	Apr1
Severe 50 Severe 50 Abnormal 20 10	Copper (ppm)			70				
Bevern E 40 Amomal Abnormal 20 10 10	N				C			
20 10								
20 10	0 Severe			E 40	Abnormal			
	0 Abnorma			20				
13/16 29/17 29/17 17/20 17/20 13/16 13/16 13/16 13/16 13/16 13/16 13/16 13/16 13/16		_		o				
	Jan 13/16 - Aug 29/17 - Apr4/18 -	Apr4/19	4pr17/20	Feb 6/24	Jan 13/16 Aug 29/17	pr4/18	Apr4/19 -	Apr17/20 -
	Viscosity @ 100°C				Soot %			

S

8.0 - Ab

° 6.0 50 4.0 2.0

0.0

Jan 13/16

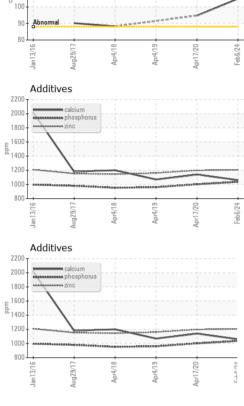
Aug29/17

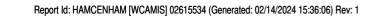
Feb6/24

: 14 Feb 2024

: 14 Feb 2024

: 14 Feb 2024 - Wes Davis





CALA

ISO 17025:2017 Accredited Laboratory

18

12

Jan13/16

: PC0078183

To discuss this sample report, contact Customer Service at 1-800-268-2131.

Apr4/18 ,

Aug29/17

Test Package : MOB 1 (Additional Tests: KV40, VI)

Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.

Validity of results and interpretation are based on the sample and information as supplied.

Apr4/19 4

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9

Received

Diagnosed

Tested

Apr17/20 -

cSt (100°C)

Laboratory

Sample No.

Lab Number : 02615534

Unique Number : 5724629

Contact/Location: Jenny-Lynn Pellegrino - HAMCENHAM

Apr4/18

Apr4/19

MECHANICAL DIV., 177 BAY STREET NORTH

Contact: Jenny-Lynn Pellegrino

jenny-lynn.pellegrino@hamilton.ca

Apr17/20

HAMILTON, ON

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HAMILTON FIRE DEPT

Feb6/24