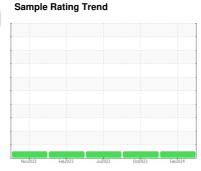


OIL ANALYSIS REPORT

MIXERS [MIXERS] M221

Diesel Engine

KENDALL 15W40 (--- GAL)





DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

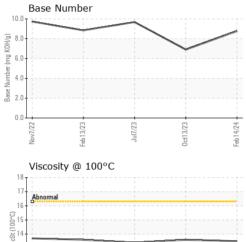
Fluid Condition

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

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0110024	LP0000664	LP0000185
Sample Date		Client Info		14 Feb 2024	13 Oct 2023	07 Jul 2023
Machine Age	hrs	Client Info		3135	2441	1942
Oil Age	hrs	Client Info		600	600	600
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
						17
Iron	ppm	ASTM D5185m	>100	11	12	
Chromium	ppm	ASTM D5185m		<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	<1
Titanium	ppm	ASTM D5185m	0	<1	1	1
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m		2	3	2
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m		<1	<1	<1
Tin	ppm	ASTM D5185m	>15	<1	<1	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 35	history1 33	history2 28
	ppm					
Boron		ASTM D5185m	6.3	35	33	28
Boron Barium	ppm	ASTM D5185m ASTM D5185m	6.3 0.6	35 0	33	28
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	6.3 0.6	35 0 83	33 0 86	28 0 74
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	6.3 0.6 0.4	35 0 83 <1	33 0 86 0	28 0 74 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	6.3 0.6 0.4	35 0 83 <1 86	33 0 86 0 230	28 0 74 <1 393
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	6.3 0.6 0.4 277 1514	35 0 83 <1 86 1968	33 0 86 0 230 2025	28 0 74 <1 393 1756
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	6.3 0.6 0.4 277 1514 634	35 0 83 <1 86 1968 988	33 0 86 0 230 2025 981	28 0 74 <1 393 1756 1032
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	6.3 0.6 0.4 277 1514 634 743	35 0 83 <1 86 1968 988 1246	33 0 86 0 230 2025 981 1249	28 0 74 <1 393 1756 1032 1242
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	6.3 0.6 0.4 277 1514 634 743 2592 limit/base	35 0 83 <1 86 1968 988 1246 3517	33 0 86 0 230 2025 981 1249 3923	28 0 74 <1 393 1756 1032 1242 4210
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	6.3 0.6 0.4 277 1514 634 743 2592 limit/base	35 0 83 <1 86 1968 988 1246 3517 current	33 0 86 0 230 2025 981 1249 3923 history1	28 0 74 <1 393 1756 1032 1242 4210 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	6.3 0.6 0.4 277 1514 634 743 2592 limit/base >25	35 0 83 <1 86 1968 988 1246 3517 current	33 0 86 0 230 2025 981 1249 3923 history1	28 0 74 <1 393 1756 1032 1242 4210 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m	6.3 0.6 0.4 277 1514 634 743 2592 limit/base >25	35 0 83 <1 86 1968 988 1246 3517 current 4	33 0 86 0 230 2025 981 1249 3923 history1 3	28 0 74 <1 393 1756 1032 1242 4210 history2 3 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm	ASTM D5185m	6.3 0.6 0.4 277 1514 634 743 2592 limit/base >25	35 0 83 <1 86 1968 988 1246 3517 current 4 3 2	33 0 86 0 230 2025 981 1249 3923 history1 3 2	28 0 74 <1 393 1756 1032 1242 4210 history2 3 3 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m method *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D5185m	6.3 0.6 0.4 277 1514 634 743 2592 limit/base >25 >20 limit/base	35 0 83 <1 86 1968 988 1246 3517 current 4 3 2 current 0.4	33 0 86 0 230 2025 981 1249 3923 history1 3 2 2 history1 0.3	28 0 74 <1 393 1756 1032 1242 4210 history2 3 2 history2 0.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	ASTM D5185m method *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	6.3 0.6 0.4 277 1514 634 743 2592 limit/base >25 >20 limit/base	35 0 83 <1 86 1968 988 1246 3517 current 4 3 2 current 0.4 9.4	33 0 86 0 230 2025 981 1249 3923 history1 3 2 2 history1 0.3 8.7	28 0 74 <1 393 1756 1032 1242 4210 history2 3 3 2 history2 0.5 9.7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m Method *ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76145	6.3 0.6 0.4 277 1514 634 743 2592 limit/base >25 >20 limit/base >3 >20 >30	35 0 83 <1 86 1968 988 1246 3517 current 4 3 2 current 0.4 9.4 19.5	33 0 86 0 230 2025 981 1249 3923 history1 3 2 2 history1 0.3 8.7 18.5	28 0 74 <1 393 1756 1032 1242 4210 history2 3 2 history2 0.5 9.7 20.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method *ASTM D7844 *ASTM D7844 *ASTM D7844 *ASTM D7844 *ASTM D7844	6.3 0.6 0.4 277 1514 634 743 2592 limit/base >25 >20 limit/base >3 >20 >30 limit/base	35 0 83 <1 86 1968 988 1246 3517 current 4 3 2 current 0.4 9.4 19.5 current	33 0 86 0 230 2025 981 1249 3923 history1 3 2 2 history1 0.3 8.7 18.5 history1	28 0 74 <1 393 1756 1032 1242 4210 history2 3 3 2 history2 0.5 9.7 20.2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m Method *ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76145	6.3 0.6 0.4 277 1514 634 743 2592 limit/base >25 >20 limit/base >3 >20 >30	35 0 83 <1 86 1968 988 1246 3517 current 4 3 2 current 0.4 9.4 19.5	33 0 86 0 230 2025 981 1249 3923 history1 3 2 2 history1 0.3 8.7 18.5	28 0 74 <1 393 1756 1032 1242 4210 history2 3 2 history2 0.5 9.7 20.2

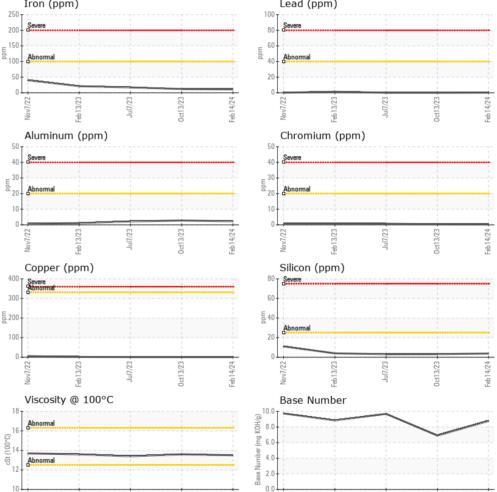


OIL ANALYSIS REPORT



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
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

17-	Abnormal				FLUID PROF	PERTIES	method	limit/base	current	history1	histo
15-			 		Visc @ 100°C	cSt	ASTM D445		13.5	13.6	13.4
14 - 13 -					GRAPHS						
10	Abnormal	-		1	Iron (nnm)				Load (nnm)		







Certificate L2367

Laboratory Sample No.

: PCA0110024 Lab Number : 06096403 Unique Number: 10889256 Test Package : MOB 2

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 21 Feb 2024 **Tested**

: 22 Feb 2024 : 22 Feb 2024 - Wes Davis Diagnosed

Feb14/24

Feb 13/23

US 01095 Contact: Michael Dupuis

CONSTRUCTION SERVICES

mdupuis@cs-ma.us

T: (413)733-6331

2420 BOSTON RD

WILBRAHAM, MA

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.

Feb13/23

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