

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



CATERPILLAR RH BEYMER

Port Genset

KENDALL SUPER-D XA 15W40 (--- GAL)

וט	AG	INC	5	5	

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

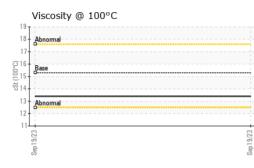
Fluid Condition

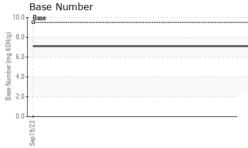
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0843981		
Sample Date		Client Info		19 Sep 2023		
Machine Age	hrs	Client Info		16943		
Oil Age	hrs	Client Info		500		
Oil Changed		Client Info		Changed		
Sample Status				NORMAL		
CONTAMINATIO	N	method	limit/base	current	history1	history2
Fuel		WC Method	>4.0	<1.0		
Glycol		WC Method		NEG		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	8		
Chromium	ppm	ASTM D5185m	>4	0		
Nickel	ppm	ASTM D5185m	>2	0		
Titanium	ppm	ASTM D5185m		27		
Silver	ppm	ASTM D5185m	>5	0		
Aluminum	ppm	ASTM D5185m	>12	<1		
Lead	ppm	ASTM D5185m	>17	1		
Copper	ppm	ASTM D5185m	>70	14		
Tin	ppm	ASTM D5185m	>15	<1		
Vanadium	ppm	ASTM D5185m		0		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		ام م مالد م من				bists m.O
ADDITIVES		method	limit/base	current	history1	history2
	ppm	ASTM D5185m	50	41	history1	nistory2
Boron	ppm ppm					
Boron Barium		ASTM D5185m ASTM D5185m ASTM D5185m		41		
Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m		41 0		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		41 0 47		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50	41 0 47 <1 178 2198		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	270	41 0 47 <1 178 2198 939		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 270 1900 1000 1260	41 0 47 <1 178 2198	 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 270 1900 1000	41 0 47 <1 178 2198 939	 	
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	50 270 1900 1000 1260	41 0 47 <1 178 2198 939 1257	 	
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	50 270 1900 1000 1260 3400	41 0 47 <1 178 2198 939 1257 3599		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	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	50 270 1900 1000 1260 3400	41 0 47 <1 178 2198 939 1257 3599 current	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	50 270 1900 1000 1260 3400	41 0 47 <1 178 2198 939 1257 3599 current 3	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	50 270 1900 1000 1260 3400 limit/base >25	41 0 47 <1 178 2198 939 1257 3599 current 3 15	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	50 270 1900 1260 3400 limit/base >25 >20	41 0 47 <1 178 2198 939 1257 3599 current 3 15 2	 history1 	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	50 270 1900 1000 1260 3400 limit/base >25 >20 limit/base	41 0 47 <1 178 2198 939 1257 3599 current 3 15 2 2	 history1 history1	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	50 270 1900 1000 1260 3400 limit/base >25 >20 limit/base	41 0 47 <1 178 2198 939 1257 3599 current 3 15 2 2 current 0.1	 history1 history1 history1	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	50 270 1900 1260 3400 <i>limit/base</i> >25 >20 <i>limit/base</i>	41 0 47 <1 178 2198 939 1257 3599 current 3 15 2 current 0.1 10.2	 history1 history1 history1	history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	50 270 1900 1000 1260 3400 limit/base >25 limit/base >20 limit/base >20	41 0 47 <1 178 2198 939 1257 3599 current 3 15 2 current 0.1 10.2 19.9	 history1 history1 history1	 history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	50 270 1900 1260 3400 25 25 20 imit/base >20 >30 imit/base	41 0 47 <1 178 2198 939 1257 3599 current 3 15 2 current 0.1 10.2 19.9 current	 history1 history1 history1	history2 history2 history2 history2 history2 history2



OIL ANALYSIS REPORT





VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE		
Yellow Metal	scalar	*Visual	NONE	NONE		
Precipitate	scalar	*Visual	NONE	NONE		
Silt	scalar	*Visual	NONE	NONE		
Debris	scalar	*Visual	NONE	NONE		
Sand/Dirt	scalar	*Visual	NONE	NONE		
Appearance	scalar	*Visual	NORML	NORML		
Odor	scalar	*Visual	NORML	NORML		
Emulsified Water	scalar	*Visual	>0.1	NEG		
Free Water	scalar	*Visual		NEG		
FLUID PROPER	TIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.3	13.4		
GRAPHS						
Ferrous Alloys						
0 _T						
iron						
8 - nickel						
6						
4						
2						
2-						
0						
Sep19/23			Sep19/23			
Seb			Sep			
Non-ferrous Meta	ls					
copper						
tin						
0						
8						
6 -						
4						
2						

23			23			
Sep 19/23			Sep 19/23			
	-		3			
Viscosity @ 100°				Base Number	-	
J			10.0	Base		

8.

6 (

2.0

0.0

(mg KOH/g)

Number 4 (Base

Sep19/23 -



Sep19/23 Sep19/23 : WearCheck USA - 501 Madison Ave., Cary, NC 27513 SUPERIOR MARINE : 02 Oct 2023 201 KELLY LANE : 03 Oct 2023 CHESAPEAKE, OH Diagnostician : Don Baldridge US 45619 Contact: DARRELL KEARNS darrellkearns@superiormarineinc.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

Certificate L2367

Laboratory

Sample No.

Lab Number

Unique Number : 10672478

Test Package : FLEET

18 Ab

17

B

13 Abnorma

12 11-

Sep19/23

: WC0843981

: 05965927

To discuss this sample report, contact Customer Service at 1-800-237-1369.

Received

Diagnosed