

OIL ANALYSIS REPORT

Sample Rating Trend



HOBBS CRUSHER 1

Diesel Engine Fluid NOT GIVEN (--- 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

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

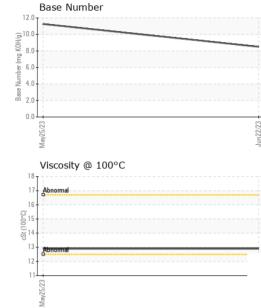
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		KL0011657	KL0012437	
Sample Date		Client Info		22 Jun 2023	25 May 2023	
Machine Age	hrs	Client Info		0	7148	
Oil Age	hrs	Client Info		0	0	
Oil Changed		Client Info		N/A	N/A	
Sample Status				NORMAL	ABNORMAL	
CONTAMINATION	N	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	
Glycol		WC Method		NEG	NEG	
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	17	16	
Chromium	ppm	ASTM D5185m	>20	<1	<1	
Nickel	ppm	ASTM D5185m	>4	0	0	
Titanium	ppm	ASTM D5185m		0	0	
Silver	ppm	ASTM D5185m	>3	0	0	
Aluminum	ppm	ASTM D5185m	>20	4	2	
Lead	ppm	ASTM D5185m	>40	1	<1	
Copper	ppm	ASTM D5185m	>330	8	6	
Tin	ppm	ASTM D5185m	>15	<1	2	
Vanadium	ppm	ASTM D5185m	210	0	0	
Cadmium	ppm	ASTM D5185m		0	0	
	ppm			-	-	
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	limit/base	351	316	
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	351 0	316 0	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	351 0 107	316 0 105	
Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	351 0 107 <1	316 0 105 <1	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	351 0 107 <1 491	316 0 105 <1 561	
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	351 0 107 <1 491 1605	316 0 105 <1 561 1707	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	351 0 107 <1 491 1605 757	316 0 105 <1 561 1707 801	
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	351 0 107 <1 491 1605 757 949	316 0 105 <1 561 1707 801 997	
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	limit/base	351 0 107 <1 491 1605 757	316 0 105 <1 561 1707 801	
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	limit/base	351 0 107 <1 491 1605 757 949	316 0 105 <1 561 1707 801 997	
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	limit/base	351 0 107 <1 491 1605 757 949 2897	316 0 105 <1 561 1707 801 997 3404	
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	limit/base	351 0 107 <1 491 1605 757 949 2897 current	316 0 105 <1 561 1707 801 997 3404 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	limit/base	351 0 107 <1 491 1605 757 949 2897 current 6	316 0 105 <1 561 1707 801 997 3404 history1 8	 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	limit/base	351 0 107 <1 491 1605 757 949 2897 2897 current 6 0	316 0 105 <1 561 1707 801 997 3404 history1 8 <	 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	limit/base >25 >20	351 0 107 <1 491 1605 757 949 2897 current 6 0 2	316 0 105 <1 561 1707 801 997 3404 history1 8 < 1 2	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3	351 0 107 <1 491 1605 757 949 2897 current 6 0 2 2	316 0 105 <1 561 1707 801 997 3404 history1 8 <1 2 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 ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3	351 0 107 <1 491 1605 757 949 2897 <u>current</u> 6 0 2 2 <u>current</u>	316 0 105 <1 561 1707 801 997 3404 <u>history1</u> 8 <1 2 <u>history1</u> 0.4	 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	limit/base >25 >20 limit/base >3 >20	351 0 107 <1 491 1605 757 949 2897 current 6 0 2 2 current 0.4 7.9	316 0 105 <1 561 1707 801 997 3404 history1 8 <1 2 history1 0.4 7.8	 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	limit/base >25 >20 limit/base >3 >20 >3 >20	351 0 107 <1 491 1605 757 949 2897 <u>current</u> 6 0 2 2 <u>current</u> 0.4 7.9 23.4	316 0 105 <1 561 1707 801 997 3404 history1 8 <1 2 history1 0.4 7.8 24.0	 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	limit/base >25 >20 limit/base >3 >20 >30 >30	351 0 107 <1 491 1605 757 949 2897 Current 6 0 2 Current 0.4 7.9 23.4 Current	316 0 105 <1 561 1707 801 997 3404 history1 8 8<12history10.47.824.0history1	 history2 history2 history2 history2



OIL ANALYSIS REPORT

VISUAL



	White Metal	scalar	*Visual	NONE	NONE	NONE	
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
	Precipitate	scalar	*Visual	NONE	NONE	NONE	
	Silt	scalar	*Visual	NONE	NONE	NONE	
	Debris	scalar	*Visual	NONE	NONE	NONE	
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
2/23 -		scalar	*Visual	NORML	NORML	NORML	
Jun22/23	Odor	scalar	*Visual	NORML	NORML	NORML	
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
	Free Water	scalar	*Visual		NEG	NEG	
	FLUID PROPER	TIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	IIIIII/base	12.9	12.9	
	GRAPHS	031	ASTIVI D445		12.9	12.9	
	Ferrous Alloys						
	16- iron chromium						
	14 nickel						
	E 10 8 8						
	6						
	4-						
	2						
				/23			
	May25/27			Jun22/23			
	∠ Non-ferrous Meta	ls		,			
	10 _T						
	copper						
	8+						
	second tin						
	6 -						
	6- Ed						
	6 -						
	6 -						
	6 -						
				33			
				lun2223			
	e e udd 4 c c c c c c c c c c c c c c c c c c			Jun22/23			
					Base Number		
	Viscosity @ 100°0			12.0			
	Viscosity @ 100°0	C		12.0			
	Viscosity @ 100°C	C		12.0			
	Viscosity @ 100°C	C		12.0			
	Viscosity @ 100°C	C		12.0			
	Viscosity @ 100°C	с С		12.0 (0)HO (0)HO (0)HO (0)HO (0) 8.0 (0) (0) 8.0 (0) (0) 8.0 (0) (0) 8.0 (0) (0) 8.0 (0) (0) 8.0 (0) (0) (0) (0) (0) (0) (0) (0) (0) (0			
	Viscosity @ 100°C			12.0			
	Viscosity @ 100°0	C		12.0 10.0			
	Viscosity @ 100°0	C		12.0 10.0			
	Viscosity @ 100°0	C		12.0 (0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(
Laboratory	Viscosity @ 100°0		son Ave Ca	12.0 (0,0) 10.0 (0,0)	May25/23	RAM	
Laboratory Sample No.	Viscosity @ 100°0			12.0 (0,0) 10.0 (0,0)	May25/23		MREZ & SON
Sample No. Lab Number	Viscosity @ 100°0 Viscosity @ 100°0 WearCheck USA - : KL0011657 : 05902734	501 Madia Received Diagnos	d :19. ed :20.	12.0 10.0	May25/23		/IREZ & SON TERPRISE D HOBBS, N
Sample No. Lab Number Unique Number	Viscosity @ 100°0 Viscosity @ 100°0 Control of the second secon	501 Madia	d :19. ed :20.	12.0 10.0	May25/23	3404 N EN	AIREZ & SON TERPRISE D HOBBS, NI US 8824
Sample No. Lab Number	Viscosity @ 100°0 Viscosity @ 100°0 Viscosity @ 100°0	501 Madia Received Diagnos Diagnost	d : 19 . ed : 20 . tician : We	12.0 10.0	May25/23	3404 N EN Contact:	/IREZ & SON TERPRISE D HOBBS, N

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Contact/Location: Rick Davidson - RAMHOB