

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id MACK 2434

Component Diesel Engine Fluid

GIBRALTAR 15W/40 SUPER S-3 LX (11)

DIAGNOSIS

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

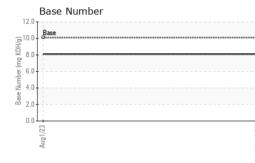
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

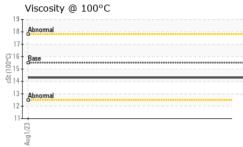
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0831069		
Sample Date		Client Info		01 Aug 2023		
Machine Age	hrs	Client Info		15556		
Oil Age	hrs	Client Info		300		
Oil Changed		Client Info		Not Changd		
Sample Status				NORMAL		
CONTAMINATIO	N	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0		
Glycol		WC Method		NEG		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	4		
Chromium	ppm	ASTM D5185m	>20	0		
Nickel	ppm	ASTM D5185m	>5	0		
Titanium	ppm	ASTM D5185m	>2	0		
Silver	ppm	ASTM D5185m	>2	<1		
Aluminum	ppm	ASTM D5185m	>20	<1		
Lead	ppm	ASTM D5185m	>40	<1		
Copper	ppm	ASTM D5185m	>330	<1		
Tin	ppm	ASTM D5185m	>15	<1		
Vanadium	ppm	ASTM D5185m		0		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 11	history1	history2
	ppm ppm		limit/base			
Boron		ASTM D5185m	limit/base 660	11		
Boron Barium	ppm	ASTM D5185m ASTM D5185m		11 2		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		11 2 69		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	660	11 2 69 0		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	660 1000	11 2 69 0 841		
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	660 1000 1050	11 2 69 0 841 1336	 	
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	660 1000 1050 1150	11 2 69 0 841 1336 1056	 	
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	660 1000 1050 1150	11 2 69 0 841 1336 1056 1251	 	
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	660 1000 1050 1150 1270	11 2 69 0 841 1336 1056 1251 3451		
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	660 1000 1050 1150 1270 limit/base	11 2 69 0 841 1336 1056 1251 3451 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	660 1000 1050 1150 1270 limit/base	11 2 69 0 841 1336 1056 1251 3451 <i>current</i> 10	 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	660 1000 1050 1150 1270 limit/base >25	11 2 69 0 841 1336 1056 1251 3451 <u>current</u> 10 0	 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	660 1000 1050 1150 1270 imit/base >25 >20	11 2 69 0 841 1336 1056 1251 3451 current 10 0 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 ppm ppm	ASTM D5185m ASTM D5185m	660 1000 1050 1150 1270 limit/base >25 >20 limit/base	11 2 69 0 841 1336 1056 1251 3451 <i>current</i> 10 0 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	660 1000 1050 1150 1270 limit/base >25 >20 limit/base >20	11 2 69 0 841 1336 1056 1251 3451 <i>current</i> 10 0 2 <i>current</i> 0.1	 history1 history1 	 history2 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	660 1000 1050 1150 1270 1270 imit/base >25 >20 imit/base >4 >20	11 2 69 0 841 1336 1056 1251 3451 current 10 0 2 current 0.1 7.2	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 D7844 *ASTM D7844	660 1000 1050 1150 1270 225 225 220 220 1imit/base >4 >20 >30	11 2 69 0 841 1336 1056 1251 3451 Current 10 0 2 Current 0.1 7.2 19.3 Current	 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	660 1000 1050 1150 1270 225 >25 >20 imit/base >4 >20 >30	11 2 69 0 841 1336 1056 1251 3451 <u>current</u> 10 0 2 <u>current</u> 0.1 7.2 19.3	 history1 history1 history1 history1	 history2 history2 history2 history2 history2



OIL ANALYSIS REPORT

VIOLIAI





		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	>0.2	NEG		
Free Water	scalar	*Visual		NEG		
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.5	14.3		
GRAPHS						
Ferrous Alloys						
10 iron						
8 - chromium						
6 -						
4-						
2-						
0 33 33	**********		/23			
Aug1/23			Aug1/23			
Non-ferrous Metals	s					
¹⁰ T						
copper						
reserves [690						
8 - tin						
6						
6						
6						
8 tin 6						
8						
8 6 4 2						
8			1/23 11			
			Aug1/23			
Viscosity @ 100°C				Base Number		
Viscosity @ 100°C			12.0	Base Number		
Viscosity @ 100°C			12.0			
Viscosity @ 100°C			12.0			
Viscosity @ 100°C			12.0			
Viscosity @ 100°C			12.0			
b d d d d d d d d d d d d d			12.0			
Viscosity @ 100°C			12.0 10.0 (PH 0) 8.0 4 9 6.0			

Aug1/23 -

: 14 Aug 2023

: 15 Aug 2023

Aug1/23



Unique Number : 10603161 Diagnostician : Don Baldridge Test Package : FLEET Contact: Pablo Chardon Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. PChardon@interstatewaste.com * - 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)

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

Received

Diagnosed

Aug1/23.

: WC0831069

: 05923214

Laboratory

Sample No.

Lab Number

Contact/Location: Pablo Chardon - INTBER

INTERSTATE WASTE-BERNARDSVILLE

33 OLD QUARRY ROAD

BERNARDSVILLE, NJ

US 07924

Т:

F:

Aug1/23