

OIL ANALYSIS REPORT

SHARP BUS LINES 1177

Component **Diesel Engine**

NOT GIVEN (--- GAL)



Sample Rating Trend



DIAGNOSIS

Recommendation

We advise that you check the fuel injection system. We advise that you check for the source of the coolant leak. We recommend that you drain the oil from the component if this has not already been done. We advise that you flush the component thoroughly before re-filling with oil. We recommend an early resample to monitor this condition. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

Aluminum ppm levels are abnormal. Piston wear is indicated.

Contamination

Test for glycol is positive. There is a high amount of fuel present in the oil. There is a light concentration of glycol present in the oil. Light concentration of carbon/soot present in the oil. Tests confirm the presence of fuel in the oil.

Fluid Condition

Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Sample Date Client Info 21 Aug 2023					Aug2023		
Sample Date Client Info 21 Aug 2023	SAMPLE INFOR	RMATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 0	Sample Number		Client Info		PC0081343		
Oil Age hrs Client Info N/A	Sample Date		Client Info		21 Aug 2023		
Client Info N/A	Machine Age	hrs	Client Info		0		
SEVERE	Oil Age	hrs	Client Info		0		
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185(m) >100 63 Chromium ppm ASTM D5185(m) >20 2 Nickel ppm ASTM D5185(m) >4 <1	Oil Changed		Client Info		N/A		
Chromium	Sample Status				SEVERE		
Chromium	WEAR METAL	_S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185(m)	>100	63		
Titanium	Chromium	ppm	ASTM D5185(m)	>20	2		
Silver	Nickel	ppm	ASTM D5185(m)	>4	<1		
Aluminum	Titanium	ppm	ASTM D5185(m)		0		
Lead ppm ASTM D5185(m) >40 5 Copper ppm ASTM D5185(m) >330 2 Tin ppm ASTM D5185(m) >15 <1	Silver	ppm	ASTM D5185(m)	>3	0		
Copper ppm ASTM D5185(m) >330 2 Tin ppm ASTM D5185(m) >15 <1	Aluminum	ppm	ASTM D5185(m)	>20	<u> </u>		
Copper ppm ASTM D5185(m) >330 2 Tin ppm ASTM D5185(m) >15 <1	Lead	ppm			5		
Trin	Copper		ASTM D5185(m)	>330	2		
Antimony	Tin		ASTM D5185(m)	>15	<1		
Beryllium	Antimony	ppm	ASTM D5185(m)		0		
Beryllium	Vanadium	ppm	ASTM D5185(m)		0		
Cadmium ppm ASTM D5185(m) 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 8 Barium ppm ASTM D5185(m) 0 Molybdenum ppm ASTM D5185(m) 56 Manganese ppm ASTM D5185(m) 784 Magnesium ppm ASTM D5185(m) 881 Calcium ppm ASTM D5185(m) 966 Phosphorus ppm ASTM D5185(m) 2132 Zinc ppm ASTM D5185(m) 2132 Sulfur ppm ASTM D5185(m) >25 6 Lithium ppm ASTM D5185(m) >25 6 Soliicon ppm ASTM D5185(m) </td <td>Beryllium</td> <td></td> <td>ASTM D5185(m)</td> <td></td> <td>0</td> <td></td> <td></td>	Beryllium		ASTM D5185(m)		0		
Boron	Cadmium		ASTM D5185(m)		0		
Barium ppm ASTM D5185(m) 0 Molybdenum ppm ASTM D5185(m) 56 Manganese ppm ASTM D5185(m) 784 Magnesium ppm ASTM D5185(m) 881 Calcium ppm ASTM D5185(m) 881 Phosphorus ppm ASTM D5185(m) 966 Zinc ppm ASTM D5185(m) 2132 Sulfur ppm ASTM D5185(m) <1 Lithium ppm ASTM D5185(m) <21 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >25 6 Sodium ppm ASTM D5185(m) >20 29 Fuel % ASTM D7593* <th>ADDITIVES</th> <th></th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185(m) 56 Manganese ppm ASTM D5185(m) 784 Calcium ppm ASTM D5185(m) 881 Phosphorus ppm ASTM D5185(m) 881 Zinc ppm ASTM D5185(m) 966 Sulfur ppm ASTM D5185(m) 2132 Lithium ppm ASTM D5185(m) <1	Boron	ppm	ASTM D5185(m)		8		
Manganese ppm ASTM D5185(m) <1 Magnesium ppm ASTM D5185(m) 784 Calcium ppm ASTM D5185(m) 881 Phosphorus ppm ASTM D5185(m) 966 Zinc ppm ASTM D5185(m) 2132 Sulfur ppm ASTM D5185(m) <1	Barium	ppm	ASTM D5185(m)		0		
Magnesium ppm ASTM D5185(m) 784 Calcium ppm ASTM D5185(m) 881 Phosphorus ppm ASTM D5185(m) 966 Zinc ppm ASTM D5185(m) 2132 Sulfur ppm ASTM D5185(m) <1	Molybdenum	ppm	ASTM D5185(m)		56		
Calcium ppm ASTM D5185(m) 881 Phosphorus ppm ASTM D5185(m) 966 Zinc ppm ASTM D5185(m) 2132 Sulfur ppm ASTM D5185(m) <1	Manganese	ppm	ASTM D5185(m)		<1		
Phosphorus ppm ASTM D5185(m) 881 Zinc ppm ASTM D5185(m) 966 Sulfur ppm ASTM D5185(m) 2132 Lithium ppm ASTM D5185(m) <1 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >25 6 Sodium ppm ASTM D5185(m) >25 6 Potassium ppm ASTM D5185(m) >20 29 Fuel % ASTM D7693* >2.0 11.5 Glycol % ASTM D7922* 0.024 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7624* >20 16.1	Magnesium	ppm	ASTM D5185(m)		784		
Zinc ppm ASTM D5185(m) 966 Sulfur ppm ASTM D5185(m) 2132 Lithium ppm ASTM D5185(m) <1	Calcium	ppm	ASTM D5185(m)		881		
Sulfur ppm ASTM D5185(m) 2132 Lithium ppm ASTM D5185(m) <1 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >25 6 Sodium ppm ASTM D5185(m) >29 Potassium ppm ASTM D5185(m) >20 20 Fuel % ASTM D7593* >2.0 11.5 Glycol % ASTM D7922* 0.024 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7624* >3 3.4 Nitration Abs/cm ASTM D7415* >30 28.9 FLUID DEGRADATION method limit/base current history1 history2	Phosphorus	ppm	ASTM D5185(m)		881		
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >25 6 Sodium ppm ASTM D5185(m) >29 Potassium ppm ASTM D5185(m) >20 20 Fuel % ASTM D7593* >2.0 11.5 Glycol % ASTM D7922* ^ 0.024 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 ^ 3.4 Nitration Abs/cm ASTM D7624* >20 16.1 Sulfation Abs/.1mm ASTM D7415* >30 28.9 FLUID DEGRADATION limit/base current history1 history2	Zinc	ppm	ASTM D5185(m)		966		
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >25 6 Sodium ppm ASTM D5185(m) >29 Potassium ppm ASTM D5185(m) >20 20 Fuel % ASTM D7593* >2.0 11.5 Glycol % ASTM D7922* ^ 0.024 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 ^ 3.4 Nitration Abs/cm ASTM D7624* >20 16.1 Sulfation Abs/.1mm ASTM D7415* >30 28.9 FLUID DEGRADATION limit/base current history1 history2	Sulfur	ppm	ASTM D5185(m)		2132		
Silicon ppm ASTM D5185(m) >25 6 Sodium ppm ASTM D5185(m) ≥20 29 Potassium ppm ASTM D5185(m) >20 20 Fuel % ASTM D7593* >2.0 11.5 Glycol % ASTM D7922* 0.024 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 3.4 Nitration Abs/cm ASTM D7624* >20 16.1 Sulfation Abs/.1mm ASTM D7415* >30 28.9 FLUID DEGRADATION method limit/base current history1 history2	Lithium	ppm	ASTM D5185(m)		<1		
Sodium ppm ASTM D5185(m) 29 Potassium ppm ASTM D5185(m) >20 20 Fuel % ASTM D7593* >2.0 11.5 Glycol % ASTM D7922* ▲ 0.024 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 ▲ 3.4 Nitration Abs/cm ASTM D7624* >20 16.1 Sulfation Abs/.1mm ASTM D7415* >30 28.9 FLUID DEGRADATION method limit/base current history1 history2	CONTAMINAN	NTS	method	limit/base	current	history1	history2
Sodium ppm ASTM D5185(m) ▲ 29 Potassium ppm ASTM D5185(m) >20 Fuel % ASTM D7593* >2.0 11.5 Glycol % ASTM D7922* ▲ 0.024 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 ▲ 3.4 Nitration Abs/cm ASTM D7624* >20 16.1 Sulfation Abs/.1mm ASTM D7415* >30 28.9 FLUID DEGRADATION method limit/base current history1 history2	Silicon	ppm	ASTM D5185(m)	>25	6		
Potassium ppm ASTM D5185(m) >20 20 Fuel % ASTM D7593* >2.0 11.5 Glycol % ASTM D7922* 0.024 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 3.4 Nitration Abs/cm ASTM D7624* >20 16.1 Sulfation Abs/.1mm ASTM D7415* >30 28.9 FLUID DEGRADATION method limit/base current history1 history2	Sodium		ASTM D5185(m)		<u>^</u> 29		
Glycol % ASTM D7922* ▲ 0.024 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 ▲ 3.4 Nitration Abs/cm ASTM D7624* >20 16.1 Sulfation Abs/.1mm ASTM D7415* >30 28.9 FLUID DEGRADATION method limit/base current history1 history2				>20	<u>^</u> 20		
Glycol % ASTM D7922* ▲ 0.024 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 ▲ 3.4 Nitration Abs/cm ASTM D7624* >20 16.1 Sulfation Abs/.1mm ASTM D7415* >30 28.9 FLUID DEGRADATION method limit/base current history1 history2	Fuel	%	ASTM D7593*	>2.0	11.5		
Soot % % ASTM D7844* >3 ▲ 3.4 Nitration Abs/cm ASTM D7624* >20 16.1 Sulfation Abs/.1mm ASTM D7415* >30 28.9 FLUID DEGRADATION method limit/base current history1 history2	Glycol	%	ASTM D7922*				
Nitration Abs/cm ASTM D7624* >20 16.1 Sulfation Abs/.1mm ASTM D7415* >30 28.9 FLUID DEGRADATION method limit/base current history1 history2	INFRA-RED		method	limit/base	current	history1	history2
Nitration Abs/cm ASTM D7624* >20 16.1 Sulfation Abs/.1mm ASTM D7415* >30 28.9 FLUID DEGRADATION method limit/base current history1 history2	Soot %	%	ASTM D7844*	>3	△ 3.4		
Sulfation Abs/.1mm ASTM D7415* >30 28.9 FLUID DEGRADATION method limit/base current history1 history2							
· · · · · · · · · · · · · · · · · · ·	Sulfation						
	FLUID DEGRA	DATIO <u>N</u>	method	limit/base	current	history1	history2
	Oxidation			>25	22.8		



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