

## **OIL ANALYSIS REPORT**

# Ewing Hauling PETERBILT 2596

Component Diesel Engine

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

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

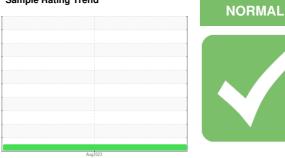
All component wear rates are normal.

#### 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 Rating Trend

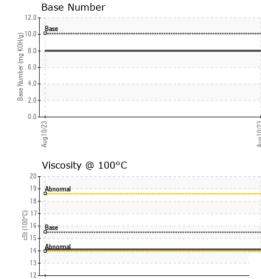


				Aug2023		
SAMPLE INFORM	<b>ATION</b>	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0830857		
Sample Date		Client Info		10 Aug 2023		
Machine Age	hrs	Client Info		13939		
Oil Age	hrs	Client Info		150		
Oil Changed		Client Info		Filtered		
Sample Status				NORMAL		
CONTAMINATIO	N	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0		
Glycol		WC Method		NEG		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>110	5		
Chromium	ppm	ASTM D5185m	>4	<1		
Nickel	ppm	ASTM D5185m	>2	0		
Titanium	ppm	ASTM D5185m		0		
Silver	ppm	ASTM D5185m	>2	0		
Aluminum	ppm	ASTM D5185m	>25	<1		
Lead	ppm	ASTM D5185m	>45	<1		
Copper	ppm	ASTM D5185m	>85	1		
Tin	ppm	ASTM D5185m	>4	0		
Vanadium	ppm	ASTM D5185m		<1		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 15	history1	history2
	ppm ppm		limit/base		history1 	
Boron		ASTM D5185m	limit/base	15		
Boron Barium	ppm	ASTM D5185m ASTM D5185m		15 0		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		15 0 66		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	66	15 0 66 0		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	66 1000	15 0 66 0 828		
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	66 1000 1050	15 0 66 0 828 1332	  	  
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	66 1000 1050 1150	15 0 66 0 828 1332 1051	   	
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	66 1000 1050 1150	15 0 66 0 828 1332 1051 1255	   	
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	66 1000 1050 1150 1270	15 0 66 0 828 1332 1051 1255 3906		
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	66 1000 1050 1150 1270 Imit/base	15 0 66 0 828 1332 1051 1255 3906 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 <b>method</b> ASTM D5185m	66 1000 1050 1150 1270 Imit/base	15 0 66 0 828 1332 1051 1255 3906 current 4	     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 <b>method</b> ASTM D5185m	66 1000 1050 1150 1270 limit/base >30	15 0 66 0 828 1332 1051 1255 3906 <u>current</u> 4 3	     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	66 1000 1050 1150 1270 limit/base >30 >20	15 0 66 0 828 1332 1051 1255 3906 current 4 3 0	     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	66 1000 1050 1150 1270 <b>limit/base</b> >30 >20 <b>limit/base</b>	15 0 66 0 828 1332 1051 1255 3906 current 4 3 0 0	     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 ppm	ASTM D5185m ASTM D5185m	66 1000 1050 1150 1270 limit/base >30 >20 limit/base >3	15 0 66 0 828 1332 1051 1255 3906 current 4 3 0 current 0.2	     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	66 1000 1050 1150 1270 1270 imit/base >30 >20 imit/base >3 >20	15 0 66 0 828 1332 1051 1255 3906 current 4 3 0 current 0.2 7.1	      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 D5185m	66 1000 1050 1150 1270 <b>imit/base</b> >30 >20 <b>imit/base</b> >3 >20	15 0 66 0 828 1332 1051 1255 3906 <u>current</u> 4 3 0 <u>current</u> 0.2 7.1 18.2	      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 D7844	66 1000 1050 1150 1270 imit/base >30 220 imit/base >3 >20 >30	15 0 66 0 828 1332 1051 1255 3906 current 4 3 0 current 0.2 7.1 18.2 current	     history1   history1  history1	     history2  history2  history2  history2



Aug10/23

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	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		
2010	Appearance Odor	scalar	*Visual	NORML	NORML		
1. I.	Odor	scalar	*Visual	NORML	NORML		
	Emulsified Water	scalar	*Visual	>0.2	NEG		
	Free Water	scalar	*Visual		NEG		
	FLUID PROPER	TIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445		14.1		
	GRAPHS						
	Ferrous Alloys						
	10 iron						
	8 - newspace chromium						
	6						
	4 4						
	2 -						
	0						
	Aug10/23			Aug10/23 .			
	ug1			1gu			
	4			<			
		ls		A			
	Non-ferrous Meta	ls		A			
	Non-ferrous Meta	ls		A			
	Non-ferrous Meta	ls		×			
	Non-ferrous Meta	ls		A			
	Non-ferrous Meta	ls		4			
	Non-ferrous Meta	ls		4			
	Non-ferrous Meta	ls		<			
	Non-ferrous Meta	ls		~			
	Non-ferrous Meta						
	Non-ferrous Meta						
	Non-ferrous Meta						
	Non-ferrous Meta			Aug10/23	Base Number		
	Non-ferrous Meta			E20010ny 12.1	Base		
	Non-ferrous Meta			12.1 10.1	Base		
	Non-ferrous Meta			12.1 10.1	0 - Base		
	Non-ferrous Meta			12.1 10.1	0 - Base 0 - D		
	Non-ferrous Meta			12.1 10.1	0 0 0 0		
	Non-ferrous Meta			12.1 10.1	0 0 0 0		
	Non-ferrous Meta			Para (012) 10.1 10.1 10.1 10.1 10.1 10.1 10.1 10.	0 - Base		
	Non-ferrous Meta			12.1 10.1 10.1 10.1 10.1 10.1 10.1 10.1	0 - Base 0 - Control - Con		
	Non-ferrous Meta			12.1 10.1 10.1 10.1 10.1 10.1 10.1 10.1	0 - Base 0 - Control - Con		
	Non-ferrous Meta			12.1 (b)HOX Du() = 0.1 (b)HOX Du() = 0.1 (c)HOX	0 - Base 0		
	Non-ferrous Meta	2		12.1 (6)(HC)X Base Numper 10.1 (6)(HC)X Base Numper 10.1 (6)(HC)X Base 2.1 (0.1 (10.1 (10.1)) (10.1)	Base Base 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
Laboratory	Non-ferrous Meta	501 Madis	son Ave., Ca	EZOOL BINK EZOOL	Base Base 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	INTERSTATE W	ASTE-EWIN
Sample No.	Non-ferrous Meta	501 Madis Received	son Ave., Ca	12. 10. 10. 10. 10. 10. 10. 10. 10	Base Base 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	INTERSTATE W 432 STC	<b>/ASTE-EWIN</b> DKES AVENU
Sample No. Lab Number	Non-ferrous Meta	501 Madis Received Diagnose	son Ave., Ca I : 22 / ed : 24 /	12/ 10/ 10/ 10/ 10/ 10/ 10/ 10/ 10	Base Base 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	INTERSTATE W 432 STC	
Sample No. Lab Number Unique Number tificate L2367 Test Packag	Non-ferrous Meta	501 Madia Received Diagnost	son Ave., Ca 1 : 22 ) ed : 24 / ician : Dor	12/1 10/1	Base Base 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	INTERSTATE W 432 STO EWING T	<b>/ASTE-EWIN</b> DKES AVENU OWNSHIP, N
Sample No. Lab Number Unique Number	Non-ferrous Meta	501 Madia Received Diagnost <i>vice at 1-8</i>	son Ave., Ca 1 : 22 / 2d : 24 / ician : Dor 00-237-1365	12/ 10/ 10/ 10/ 10/ 10/ 10/ 10/ 10	Base Base 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	INTERSTATE W 432 STO EWING T	/ASTE-EWIN DKES AVENU OWNSHIP, N US 0863 t: Carlos Evar

Submitted By: Carlos Evans Page 2 of 2