

### **OIL ANALYSIS REPORT**

Sample Rating Trend

### NORMAL

Machine Id

# PETERBILT 3 (S/N 695898)

Component Diesel Engine Fluid SHELL ROTELLA T 15W40 (--- QTS)

#### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

Metal levels are typical for a new component breaking in.

#### Contamination

There is no indication of any contamination in the oil.

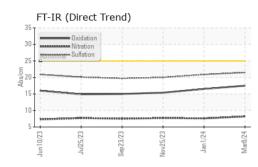
#### Fluid Condition

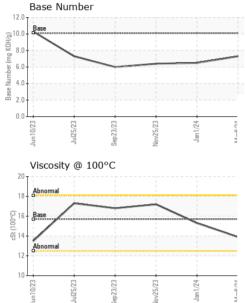
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0838288	WC0838325	WC0838289
Sample Date		Client Info		08 Mar 2024	01 Jan 2024	25 Nov 2023
Machine Age	mls	Client Info		11879	1150514	0
Oil Age	mls	Client Info		0	10948	10305
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	ABNORMAL	ABNORMAL
CONTAMINATION	١	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	18	22	38
Chromium	ppm	ASTM D5185m	>20	1	<1	2
Nickel	ppm	ASTM D5185m	>4	<1	1	2
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	1	<1	<1
Aluminum	ppm	ASTM D5185m	>20	2	2	2
Lead	ppm	ASTM D5185m	>40	<1	<1	<1
Copper	ppm	ASTM D5185m	>330	530	<b>4</b> 72	▲ 583
Tin	ppm	ASTM D5185m	>15	1	<1	1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 316	current 194	history1 131	history2 106
	ppm ppm					
Boron		ASTM D5185m	316	194	131	106
Boron Barium	ppm	ASTM D5185m ASTM D5185m	316 0.0	194 1	131 10	106 10
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	316 0.0	194 1 3	131 10 2	106 10 3
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	316 0.0 1.2	194 1 3 <1	131 10 2 0	106 10 3 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	316 0.0 1.2 24	194 1 3 <1 24	131 10 2 0 17	106 10 3 0 18
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	316 0.0 1.2 24 2292	194 1 3 <1 24 2251	131 10 2 0 17 1915	106 10 3 0 18 1734
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	316 0.0 1.2 24 2292 1064	194 1 3 <1 24 2251 1095	131 10 2 0 17 1915 926	106 10 3 0 18 1734 860
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	316 0.0 1.2 24 2292 1064 1160	194 1 3 <1 24 2251 1095 1190	131 10 2 0 17 1915 926 1001	106 10 3 0 18 1734 860 941
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	316 0.0 1.2 24 2292 1064 1160 4996	194 1 3 <1 24 2251 1095 1190 3904	131 10 2 0 17 1915 926 1001 3435	106 10 3 0 18 1734 860 941 3234
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	316 0.0 1.2 24 2292 1064 1160 4996	194 1 3 <1 24 2251 1095 1190 3904 current	131 10 2 0 17 1915 926 1001 3435 history1	106 10 3 0 18 1734 860 941 3234 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 ASTM D5185m	316 0.0 1.2 24 2292 1064 1160 4996 <b>limit/base</b>	194 1 3 <1 24 2251 1095 1190 3904 current 8	131 10 2 0 17 1915 926 1001 3435 history1 8	106 10 3 0 18 1734 860 941 3234 history2 19
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 ASTM D5185m	316 0.0 1.2 24 2292 1064 1160 4996 <b>limit/base</b>	194 1 3 <1 24 2251 1095 1190 3904 current 8 0	131 10 2 0 17 1915 926 1001 3435 history1 8 0	106 10 3 0 18 1734 860 941 3234 history2 19 0
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	316 0.0 1.2 24 2292 1064 1160 4996 <b>limit/base</b> >25 >20	194 1 3 <1 24 2251 1095 1190 3904 <u>current</u> 8 0 10	131 10 2 0 17 1915 926 1001 3435 history1 8 0 8	106 10 3 0 18 1734 860 941 3234 history2 19 0 8
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	316 0.0 1.2 24 2292 1064 1160 4996 <b>Imit/base</b> >25 >20	194 1 3 <1 24 2251 1095 1190 3904 current 8 0 10 current	131 10 2 0 17 1915 926 1001 3435 history1 8 0 8 0 8	106 10 3 0 18 1734 860 941 3234 history2 19 0 8 8 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	316 0.0 1.2 24 2292 1064 1160 4996 <b>limit/base</b> >25 >20 <b>limit/base</b> >3	194 1 3 <1 24 2251 1095 1190 3904 <u>current</u> 8 0 10 <u>current</u> 0.3	131 10 2 0 17 1915 926 1001 3435 <b>history1</b> 8 0 8 <b>bistory1</b> 0.3	106 10 3 0 18 1734 860 941 3234 history2 19 0 8 history2 0.5
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	316 0.0 1.2 24 2292 1064 1160 4996 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20	194 1 3 <1 24 2251 1095 1190 3904 current 8 0 10 current 0.3 8.2	131 10 2 0 17 1915 926 1001 3435 history1 8 0 8 0 8 history1 0.3 7.6	106 10 3 0 18 1734 860 941 3234 history2 19 0 8 <u>history2</u> 0.5 7.7
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	316 0.0 1.2 24 2292 1064 1160 4996 <b>Imit/base</b> >25 >20 <b>Imit/base</b> >3 >20 >30	194 1 3 <1 24 2251 1095 1190 3904 <u>current</u> 8 0 10 <u>current</u> 0.3 8.2 21.5	131 10 2 0 17 1915 926 1001 3435 <b>history1</b> 8 0 8 <b>bistory1</b> 0.3 7.6 20.9	106 10 3 0 18 1734 860 941 3234 <b>history2</b> 19 0 8 <b>history2</b> 0.5 7.7 20.0
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	316 0.0 1.2 24 2292 1064 1160 4996 <b>imit/base</b> >25 >20 >20 >30 >30 <b>imit/base</b>	194 1 3 <1 24 2251 1095 1190 3904 Current 8 0 10 Current 0.3 8.2 21.5 Current	131 10 2 0 17 1915 926 1001 3435 history1 8 0 8 0 8 history1 0.3 7.6 20.9 history1	106 10 3 0 18 1734 860 941 3234 history2 19 0 8 history2 0.5 7.7 20.0 history2

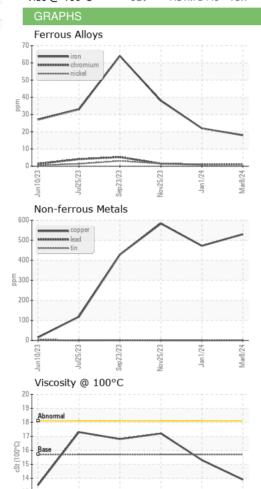


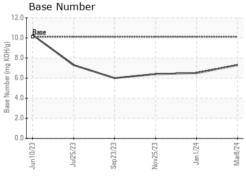
## **OIL ANALYSIS REPORT**





VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.7	13.9	15.3	17.2
СРАРИС						





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 LONGMIRE LOGGING Sample No. : WC0838288 Received 538 SANDERS FORK RD : 10 May 2024 Lab Number : 06176600 Tested : 13 May 2024 WOODVILLE, MS Unique Number : 11022653 Diagnosed : 13 May 2024 - Wes Davis US 39669 Test Package : FLEET Contact: SERVICE MANAGER Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. longmirelogging@gmail.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (601)807-6242 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

Sep23/23

Nov25/23

Jan 1/24 -

Mar8/24 -

12 11

Jun10/23

Contact/Location: SERVICE MANAGER - LONWOOMS