

OIL ANALYSIS REPORT

Area Bernardsville Machine Id PETERBILT 1321

Diesel Engine

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

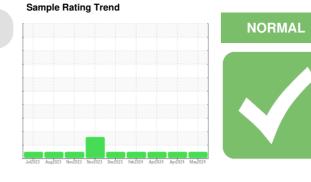
All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

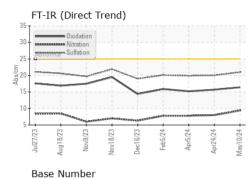
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

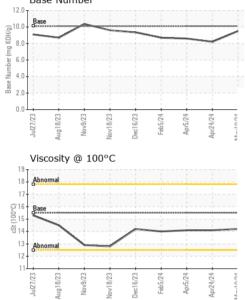


SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0937540	WC0900041	WC0900030
Sample Date		Client Info		10 May 2024	24 Apr 2024	05 Apr 2024
Machine Age	hrs	Client Info		45761	45665	45538
Oil Age	hrs	Client Info		45761	45665	45538
Oil Changed		Client Info		N/A	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATIO	N	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	>110	31	25	28
Chromium	ppm	ASTM D5185m	>4	<1	1	2
Nickel	ppm	ASTM D5185m	>2	<1	1	- 1
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>2	<1	0	<1
Aluminum	ppm	ASTM D5185m	>25	3	1	3
Lead	ppm	ASTM D5185m	>45	9	6	5
Copper	ppm	ASTM D5185m	>85	8	7	8
Tin	ppm	ASTM D5185m	>4	1	2	2
Vanadium	ppm	ASTM D5185m		<1	<1	<1
Cadmium	ppm	ASTM D5185m		•	1	1
Oddiniani	ppin	ASTIVI DUTOUIII		0	I	I
ADDITIVES	ppm	method	limit/base	current	history1	history2
	ppm		limit/base			
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 16	history1 8	history2 17
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m		current 16 0	history1 8 0	history2 17 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m		current 16 0 62	history1 8 0 58	history2 17 0 80
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	66	current 16 0 62 <1	history1 8 0 58 <1	history2 17 0 80 1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	66 1000	Current 16 0 62 <1 905	history1 8 0 58 <1 753	history2 17 0 80 1 1038
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	66 1000 1050	Current 16 0 62 <1 905 1380	history1 8 0 58 <1 753 1348	history2 17 0 80 1 1038 1770
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	66 1000 1050 1150	Current 16 0 62 <1 905 1380 1111	history1 8 0 58 <1 753 1348 1016	history2 17 0 80 1 1038 1770 1539
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	66 1000 1050 1150	Current 16 0 62 <1 905 1380 1111 1406	history1 8 0 58 <1 753 1348 1016 1225	history2 17 0 80 1 1038 1770 1539 1696
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	66 1000 1050 1150 1270 limit/base	Current 16 0 62 <1 905 1380 1111 1406 4024	history1 8 0 58 <1 753 1348 1016 1225 3668	history2 17 0 80 1 1038 1770 1539 1696 5186
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	66 1000 1050 1150 1270 limit/base	Current 16 0 62 <1 905 1380 1111 1406 4024 Current	history1 8 0 58 <1 753 1348 1016 1225 3668 history1	history2 17 0 80 1 1038 1770 1539 1696 5186 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Chosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	66 1000 1050 1150 1270 limit/base >30	current 16 0 62 <1 905 1380 1111 1406 4024 current 11	history1 8 0 58 <1 753 1348 1016 1225 3668 history1	history2 17 0 80 1 1038 1770 1539 1696 5186 history2 14
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	66 1000 1050 1150 1270 limit/base >30	Current 16 0 62 <1 905 1380 1111 1406 4024 current 11 2	history1 8 0 58 <1 753 1348 1016 1225 3668 history1 10 2	history2 17 0 80 1 1038 1770 1539 1696 5186 history2 14 3
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m	66 1000 1050 1150 1270 limit/base >30 >20	Current 16 0 62 <1 905 1380 1111 1406 4024 Current 11 2 2	history1 8 0 58 <1 753 1348 1016 1225 3668 history1 10 2 <1	history2 17 0 80 1 1038 1770 1539 1696 5186 history2 14 3 2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	66 1000 1050 1150 1270 limit/base >30 >20 limit/base	Current 16 0 62 <1 905 1380 1111 1406 4024 Current 11 2 2 2 Current	history1 8 0 58 <1 753 1348 1016 1225 3668 history1 10 2 <1 +istory1	history2 17 0 80 1 1038 1770 1539 1696 5186 history2 14 3 2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	66 1000 1050 1150 1270 limit/base >30 20 limit/base >33	Current 16 0 62 <1 905 1380 1111 1406 4024 current 11 2 2 current 0.7	history1 8 0 58 <1 753 1348 1016 1225 3668 history1 10 2 <1 0 2 <1 history1 0.5	history2 17 0 80 1 1038 1770 1539 1696 5186 history2 14 3 2 history2 0.4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Sulfur Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m	66 1000 1050 1150 1270 imit/base >30 20 imit/base >3 >20	Current 16 0 62 <1 905 1380 1111 1406 4024 Current 11 2 2 Current 0.7 9.4 21.0	history1 8 0 58 <1 753 1348 1016 1225 3668 history1 10 2 <1 0.5 8.0	history2 17 0 80 1 1038 1770 1539 1696 5186 history2 14 3 2 history2 0.4 7.8
ADDITIVES 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	method ASTM D5185m ASTM D5185m	66 1000 1050 1150 1270 imit/base >30 imit/base >3 >20 >3 >30	Current 16 0 62 <1 905 1380 1111 1406 4024 Current 11 2 2 Current 0.7 9.4 21.0	history1 8 0 58 <1 753 1348 1016 1225 3668 history1 10 2 <1 0.5 8.0 20.0	history2 17 0 80 1 1038 1770 1539 1696 5186 history2 14 3 2 history2 0.4 7.8 19.9



OIL ANALYSIS REPORT





end)					VISUAL		method	limit/base	current	history1	history2	
						White Metal	scalar	*Visual	NONE	NONE	NONE	NONE	
1			1			Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE	
-		- Trained				Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE	
	L	-			_	Silt	scalar	*Visual	NONE	NONE	NONE	NONE	
						Debris	scalar	*Visual	NONE	NONE	NONE	NONE	
	Blog Blog (378)(37	2.446.848.00		Concernant State State	LL COLL	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE	
Nov18/23	Dec16/23	Feb5/24	Apr5/24	Apr24/24	May10/24	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML	
Nov1	Dec1	Fet	Ap	Aprá	May1	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	TIES	method	limit/base	current	history1	history2	
						Visc @ 100°C	cSt	ASTM D445	15.5	14.2	14.1	14.1	
						GRAPHS							
						Iron (ppm)				Lead (ppm)			
_						200 Severe		+	80				
Nov18/23	Dec16/23	Feb5/24	Apr5/24	Apr24/24	VC/UF-W	150			60				
Nov	Dec	B	A	Apt	W	톱 100 Abnormal				Abnormal			
0°C						50			20				
			1				1						
)/23 //23 //23	3/23 -	5/24 + 5/24 +	0/24		6/23 - 6/23 - 6/24 -	;/24 +	
						Jul27/23 Aug18/23 Nov9/23	Dec16/23	Feb5/24 Apr5/24 Apr24/24	May10/24	Jui27/23 Aug18/23 Nov9/23	Nov18/23 Dec16/23 Feb5/24	Apr5/24 Apr24/24 May10/24	
			1			Aluminum (ppm)			_	Chromium (p	pm)	_	
1						50 Severe			10	T			
						40			8	Severe			
23 -	23	24	24	24	VC	B ³⁰ 20			und d	Abnormal			
Nov18/23	Dec16/23	Feb5/24	Apr5/24	Apr24/24	10/UL-W				4	-		-	
Z				4	N.A	10			2				
							6/23	Feb5/24 - Apr5/24 - \pr24/24 -	0/24	Jul27/23 Jug18/23 - Nov9/23 -	ov18/23 + ec16/23 + Feb5/24 +	Apr5/24 -	
						Jul27/23 Aug18/23 Nov9/23	Dec16/23	Feb5/24 Apr5/24 Apr24/24	May10/24	Jul27/23 Aug18/23 Nov9/23	Nov18/23 Dec16/23 Feb5/24	Apr5/24 Apr24/24 May10/24	
						Copper (ppm)				Silicon (ppm)			
	20			200 Severe		I I I	60 50-		1				
		150			150 -			40	Gereie				
				톱 100 - Abnormal			틆 30			-			
						50			20				
						0			10				
							6/23 -	Feb5/24 Apr5/24 - Apr24/24 -	0/24	Jul27/23 + Jug18/23 + Nov9/23 +	Nov18/23 - Dec16/23 - Feb5/24 -	Apr5/24 + Apr24/24 + Aay10/24 +	
						Jul27/23 Aug18/23 Nov9/23	Dec16/23	Feb Apr Apr2	May10/24	Jul27/23 Aug18/23 Nov9/23	Nov18/23 Dec16/23 Feb5/24	Apr5/24 Apr24/24 May10/24	
						Viscosity @ 100°C	2			Base Number			
						20 18 Abnormal				Base			
									(D)H0.0 H0 X (D) but x (D)				
						0-016 Base			in 6.0				
						Abnormal			5 4.0 % 2 0				
						10		++	0.0	·			
						Jul27/23 Aug18/23 Nov9/23	Dec16/23	Feb5/24 Apr5/24 Apr24/24	May10/24	Jul27/23 Aug18/23 Nov9/23	Nov18/23 Dec16/23 Feb5/24	Apr5/24 Apr24/24 May10/24	
						Jul Nov	Dec	Ap Apri	May	Aug	Nov Dec	Ar Apri Mav	
	ertificate I o discu		Sa La Uni Te:	ique Nu st Pac	No. nber umber kage	: WearCheck USA - 50 : WC0937540 : 06185498 : 11036824 : MOB 1 (Additional Te ; contact Customer Servi	ived : 20 ed : 24 nosed : 24	ed : 20 May 2024 : 24 May 2024 sed : 24 May 2024 - Wes Davis			STATE WASTE-BERNARDSVILLE 33 OLD QUARRY ROAD BERNARDSVILLE, NJ US 07924 Contact: Thomas Deluca tdeluca@interstatewaste.com		
* -	Denc	otes te	est me	ethods	s that	are outside of the ISO 1	7025 sco	ope of accred	litation.		_	Т:	
						pecifications are based o				rule (JCGM 100	6:2012)	F:	
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Contact/Location: Thomas Deluca - INTBER Page 2 of 2