

OIL ANALYSIS REPORT

Area CONSTRUCTORS, INC Machine Id DETROIT DIESEL 10-1621 Component

Diesel Engine

MOBIL DELVAC 1300 SUPER 10W30 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

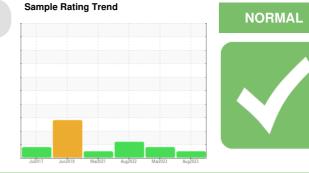
All component wear rates are normal.

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		SBP0004757	SBP0001304	SBP0001343
Sample Date		Client Info		11 Aug 2023	10 Mar 2023	17 Aug 2022
Machine Age	hrs	Client Info		6022	5787	5540
Oil Age	hrs	Client Info		235	247	235
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	ABNORMAL	ABNORMAL
CONTAMINATIO	N	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method	20	NEG	NEG	NEG
WEAR METALS			limit/base			
		method			history1	history2
Iron	ppm	ASTM D5185m	>100	65	▲ 101 0	73
Chromium	ppm	ASTM D5185m	>20	2	2	2
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m	0	<1	<1	0
Silver	ppm	ASTM D5185m		0	0	2
Aluminum	ppm	ASTM D5185m	>20	<1	2	<1
Lead	ppm	ASTM D5185m	>40	2	1	1
Copper	ppm	ASTM D5185m	>330	8	4	4
Tin	ppm	ASTM D5185m	>15	5	5	4
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	<1
ADDITIVES		method				history2
100111120		methou	mmbase	Current	nistory i	motory
Boron	ppm	ASTM D5185m	mmbase	42	41	18
	ppm ppm		innivbase			
Boron		ASTM D5185m		42	41	18
Boron Barium	ppm	ASTM D5185m ASTM D5185m		42 0	41 0	18 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		42 0 51	41 0 49	18 0 50
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		42 0 51 1	41 0 49 1	18 0 50 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		42 0 51 1 781	41 0 49 1 687	18 0 50 <1 807
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		42 0 51 1 781 1662	41 0 49 1 687 1612	18 0 50 <1 807 1128
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		42 0 51 1 781 1662 904	41 0 49 1 687 1612 804	18 0 50 <1 807 1128 838
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	limit/base	42 0 51 1 781 1662 904 1174	41 0 49 1 687 1612 804 1052	18 0 50 <1 807 1128 838 1059
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	limit/base	42 0 51 1 781 1662 904 1174 3423	41 0 49 1 687 1612 804 1052 2724	18 0 50 <1 807 1128 838 1059 2545
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	limit/base	42 0 51 1 781 1662 904 1174 3423 current	41 0 49 1 687 1612 804 1052 2724 history1	18 0 50 <1 807 1128 838 1059 2545 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	limit/base	42 0 51 1 781 1662 904 1174 3423 current 6	41 0 49 1 687 1612 804 1052 2724 history1 11	18 0 50 <1 807 1128 838 1059 2545 history2 6
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	limit/base >25	42 0 51 1 781 1662 904 1174 3423 <u>current</u> 6 2	41 0 49 1 687 1612 804 1052 2724 history1 11 3	18 0 50 <1 807 1128 838 1059 2545 history2 6 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25	42 0 51 1 781 1662 904 1174 3423 <u>current</u> 6 2 1	41 0 49 1 687 1612 804 1052 2724 history1 11 3 <	18 0 50 <1 807 1128 838 1059 2545 history2 6 <1 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Chlorine	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20	42 0 51 1 781 1662 904 1174 3423 current 6 2 1 1 	41 0 49 1 687 1612 804 1052 2724 history1 11 3 <1 history1	18 0 50 <1 807 1128 838 1059 2545 history2 6 <1 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Chlorine INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3	42 0 51 1 781 1662 904 1174 3423 <i>current</i> 6 2 1 1 <i>current</i> 2.4	41 0 49 1 687 1612 804 1052 2724 history1 11 3 <1 history1 2.3	18 0 50 <1 807 1128 838 1059 2545 history2 6 <1 0 <1 0 0 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Chlorine INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20	42 0 51 1 781 1662 904 1174 3423 current 6 2 1 1 	41 0 49 1 687 1612 804 1052 2724 history1 11 3 <1 history1	18 0 50 <1 807 1128 838 1059 2545 history2 6 <1 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Chlorine INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3 >20	42 0 51 1 781 1662 904 1174 3423 <i>current</i> 6 2 1 1 <i>current</i> 2.4 7.9	41 0 49 1 687 1612 804 1052 2724 history1 11 3 <1 history1 2.3 8.4	18 0 50 <1 807 1128 838 1059 2545 history2 6 <1 0 < history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Chlorine INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3 >20 >30 limit/base	42 0 51 1 781 1662 904 1174 3423 <u>current</u> 6 2 1 1 <u>current</u> 2.4 7.9 23.2 <u>current</u>	41 0 49 1 687 1612 804 1052 2724 history1 11 3 <1 history1 2.3 8.4 24.5 history1	18 0 50 <1 807 1128 838 1059 2545 history2 6 <100 < history2 0 3 9.9 24.7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Chlorine INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3 >20 >3 >20	42 0 51 1 781 1662 904 1174 3423 <u>current</u> 6 2 1 <u>current</u> 2.4 7.9 23.2	41 0 49 1 687 1612 804 1052 2724 history1 11 3 <1 history1 2.3 8.4 24.5	18 0 50 <1 807 1128 838 1059 2545 history2 6 <1 0 history2 ↓ 3 9.9 24.7



13 cSt (100°C) 11 Base

Abnorma

Jun1/18

Jul26/17

OIL ANALYSIS REPORT

VISUAL

Base Number 12.0 Base 0.0 Jul26/17 Jun1/18 -Mar26/21 Viscosity @ 100°C 15 14 Abnorma

		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	
7/22	0/23		scalar	*Visual	NORML	NORML	NORML	NORML
Aug17/22	Mar1 0/23 Aug 1 1/23	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG	
	Free Water	scalar	*Visual		NEG	NEG	NEG	
1		FLUID PROPER	TIES	method	limit/base	current	history1	history2
		Visc @ 100°C	cSt	ASTM D445	11.9	12.5	12.4	12.9
		GRAPHS						
		Ferrous Alloys						
2		120 iron						
Aug17/22	Mar1 0/23	100 - chromium	\mathbf{i}	\wedge				
Au	Ma	80						
		E 60						
		40 -						
		20 -						
		Jul26/17 Jun1/18	7/22	0/23	1/23			
		Jul26/	Mar26/21 Aug17/22	Mar10/23	Aug11/23			
		Non-ferrous Meta	als					
		10 T						
		8 + copper lead						
		o Tessessesses tin			/			
		6		/				
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			of the local division in the state of the st	Thursdan and the second s	and an address of the second			
		and a second						
			21		53			
		0	g17/22 +	ar10/23 +	g11/23 +			
			Mar26/21 Aug17/22	Mar10/23 +	Aug11/23			
		Viscosity @ 100°		Mar10/23 +		Base Number		
		Viscosity @ 100°		Mar10/23		T :	_	
		Viscosity @ 100°		Mar10/23	12.0			
		Viscosity @ 100°		Mar10/23	12.0	Base		
		Viscosity @ 100°		Mar10/23	12.0	Base		
		Viscosity @ 100°		Mar10/23	12.0	Base		
		Viscosity @ 100°		Mar10/23	12.0	Base		
		Viscosity @ 100°		Mar10/23	12.0 (0,0) (Base		
		Viscosity @ 100°		Mar10/23	12.0 (0,0) (Base		
		Viscosity @ 100°	С		12.0 (0)HO 8.0 (0)HO 8.0 (Base	22	23
		Viscosity @ 100°	С		12.0 (0)HO 8.0 (0)HO 8.0 (Base	Ma76/21	Mart 0/23
		Viscosity @ 100°	Mar26/21	Mar10/23 -	12.0 (D)HO3 8.0 (D)HO3	Base 81/1unr		
	Laboratory Sample No	Viscosity @ 100°	C 	ECOLIER Son Ave., Ca	12.0 10.0	Base 81/1unr		rs Inc 6036
	Sample No.	Viscosity @ 100°	C TZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZ	con Ave., Ca	12.0 10.0	Base 81/1unr		r s Inc 6036 1815 Y Stre
	Sample No. Lab Number	Viscosity @ 100°	C Total and the second and the seco	con Ave., Ca I : 14 / ed : 15 /	12.0 10.0	Base 81/1unr		r s Inc 6036 1815 Y Stre Lincoln, I
ticate L2367	Sample No.	Viscosity @ 100°	C TZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZ	con Ave., Ca I : 14 / ed : 15 /	12.0 10.0	Base 81/1unr	Constructor	r s Inc 6036 1815 Y Str

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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