

OIL ANALYSIS REPORT

OKLAHOMA/3/EG - STATIONARY ENGINE-GEN USE 88.95GH [OKLAHOMA^3^EG - STATIONARY ENGINE-GEN USE] Component

Diesel Engine

MOBIL DELVAC 1300 SUPER15W40 (--- GAL)





NORMAL

	ΛΑΤΙΟΝ	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0834104	WC0800828	WC059014
Sample Date		Client Info		27 Sep 2023	21 Mar 2023	17 Jun 202
Machine Age	hrs	Client Info		16170	15867	11281
Oil Age	hrs	Client Info		15867	11281	1227
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATIO	N	method	limit/base	current	history1	history
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history
Iron	ppm	ASTM D5185m	>100	34	62	46
Chromium	ppm	ASTM D5185m	>20	<1	1	<1
Nickel	ppm	ASTM D5185m	>4	<1	<1	<1
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	3	4	0
Lead		ASTM D5185m	>40	2	7	23
	ppm		>330	3	<1	1
Copper	ppm			-		
Tin	ppm		>15	<1	<1	<1
Antimony	ppm	ASTM D5185m				0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history
Boron	ppm	ASTM D5185m	0	76	48	46
				-		
Barium	ppm	ASTM D5185m	0	0	0	0
Barium Molybdenum		ASTM D5185m ASTM D5185m	0	0 46		
	ppm		•	-	0	0
Molybdenum	ppm ppm	ASTM D5185m	•	46	0 47	0 25
Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m	0	46 2	0 47 2	0 25 <1
Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	46 2 551	0 47 2 558	0 25 <1 519
Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0	46 2 551 1724 780	0 47 2 558 1840 765	0 25 <1 519 1395
Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0	46 2 551 1724	0 47 2 558 1840	0 25 <1 519 1395 651
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	0	46 2 551 1724 780 971	0 47 2 558 1840 765 995	0 25 <1 519 1395 651 777 1920
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	0	46 2 551 1724 780 971 2627	0 47 2 558 1840 765 995 2554 <u>history1</u> 7	0 25 <1 519 1395 651 777 1920
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	0 0 0 limit/base	46 2 551 1724 780 971 2627 current	0 47 2 558 1840 765 995 2554 history1	0 25 <1 519 1395 651 777 1920 history2
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 Method ASTM D5185m	0 0 0 limit/base >25	46 2 551 1724 780 971 2627 current 9	0 47 2 558 1840 765 995 2554 <u>history1</u> 7	0 25 <1 519 1395 651 777 1920 history: 6
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 method ASTM D5185m ASTM D5185m	0 0 0 limit/base >25	46 2 551 1724 780 971 2627 current 9 6	0 47 2 558 1840 765 995 2554 history1 7 4	0 25 <1 519 1395 651 777 1920 history2 6 2 <1
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	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 ASTM D5185m	0 0 0 0 <u>limit/base</u> >25 >20	46 2 551 1724 780 971 2627 current 9 6 4	0 47 2 558 1840 765 995 2554 history1 7 4 0	0 25 <1 519 1395 651 777 1920 history2 6 2 <1
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	0 0 0 ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! !	46 2 551 1724 780 971 2627 current 9 6 4 2 2 2027	0 47 2 558 1840 765 995 2554 history1 7 4 0 history1	0 25 <1 519 1395 651 777 1920 history 6 2 <1 history
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 !imit/base >25 >20 !imit/base >3	46 2 551 1724 780 971 2627 current 9 6 4 2	0 47 2 558 1840 765 995 2554 history1 7 4 0 history1 1.9	0 25 <1 519 1395 651 777 1920 history 6 2 <1 history 1.7
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	0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	46 2 551 1724 780 971 2627 current 9 6 4 4 current 1.5 7.8	0 47 2 558 1840 765 995 2554 <u>history1</u> 7 4 0 <u>history1</u> 1.9 11.3	0 25 <1 519 1395 651 777 1920 history 6 2 <1 history 1.7 1.7 11.4 27.4
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 D51854 *ASTM D7844 *ASTM D7624	0 0 0 1 2 25 >25 >20 1 imit/base >3 >20 >30	46 2 551 1724 780 971 2627 current 9 6 4 current 1.5 7.8 23.1	0 47 2 558 1840 765 995 2554 history1 7 4 0 history1 1.9 11.3 27.0	0 25 <1 519 1395 651 777 1920 history2 6 2 <1 history2 1.7 1.7

Recommendation

DIAGNOSIS

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

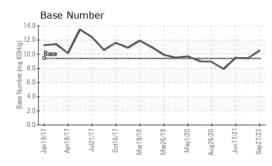
There is no indication of any contamination in the oil.

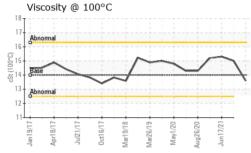
Fluid Condition

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



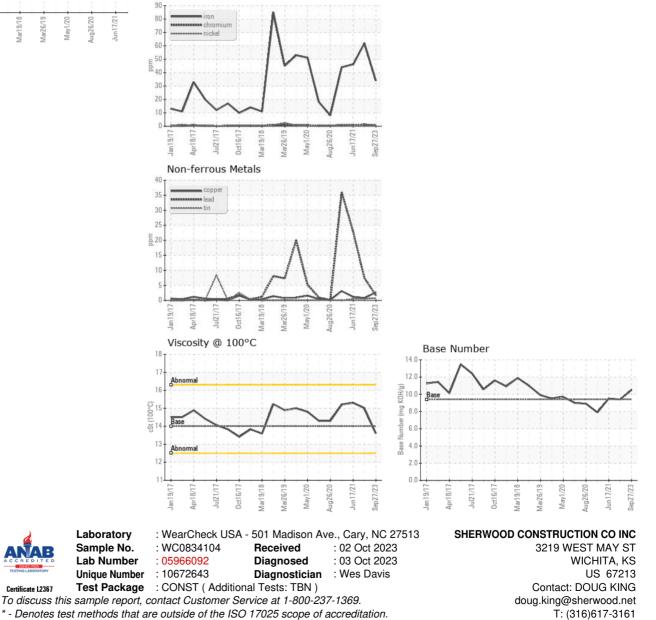
OIL ANALYSIS REPORT

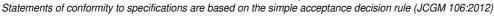




VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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 PROPER	TIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14	13.6	15.0	15.3
GRAPHS						

Ferrous Alloys





Certificate L2367

F: x: