

OIL ANALYSIS REPORT

Sample Rating Trend



WARREN 1-2 - J100162892

Diesel Engine

NAPA Motor Oil 15W40 (--- 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

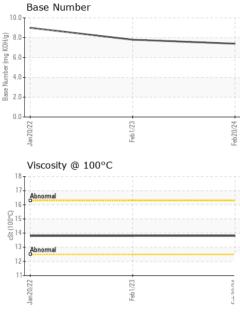
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0894427	WC0771558	WC0637008
Sample Date		Client Info		20 Feb 2024	01 Feb 2023	20 Jan 2022
Machine Age	hrs	Client Info		572	501	470
Oil Age	hrs	Client Info		48	23	0
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	J	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	2	2	3
Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	<1	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	1	2	2
Lead	ppm	ASTM D5185m	>40	0	1	<1
Copper	ppm	ASTM D5185m	>330	<1	1	2
Tin	ppm	ASTM D5185m	>15	0	<1	0
Antimony	ppm	ASTM D5185m				<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
Cadinium	ppiii			v	Ū	
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 21	history1 244	history2 381
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	limit/base	current 21 0	history1 244 0	history2 381 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 21 0 22	history1 244 0 98	history2 381 0 95
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 21 0 22 0	history1 244 0 98 <1	history2 381 0 95 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 21 0 22 0 26	history1 244 0 98 <1 219	history2 381 0 95 <1 437
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	Current 21 0 22 0 26 2284	history1 244 0 98 <1 219 1807	history2 381 0 95 <1 437 1309
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	limit/base	Current 21 0 22 0 26 2284 954	history1 244 0 98 <1 219 1807 949	history2 381 0 95 <1 437 1309 771
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base	Current 21 0 22 0 26 2284 954 1084	history1 244 0 98 <1 219 1807 949 1197	history2 381 0 95 <1 437 1309 771 948
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		Current 21 0 22 0 26 2284 954 1084 3807	history1 244 0 98 <1 219 1807 949 1197 3990	history2 381 0 95 <1 437 1309 771 948 2608
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	limit/base	current 21 0 22 0 26 2284 954 1084 3807 current	history1 244 0 98 <1 219 1807 949 1197 3990 history1	history2 381 0 95 <1 437 1309 771 948 2608 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base	current 21 0 22 0 26 2284 954 1084 3807 current 3	history1 244 0 98 <1 219 1807 949 1197 3990 history1 4	history2 381 0 95 <1 437 1309 771 948 2608 history2 4
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	limit/base	current 21 0 22 0 26 2284 954 1084 3807 current 3 1	history1 244 0 98 <1 219 1807 949 1197 3990 history1 4 2	history2 381 0 95 <1 437 1309 771 948 2608 history2 4 2
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	limit/base >25 >20	current 21 0 22 0 26 2284 954 1084 3807 current 3 1 <1	history1 244 0 98 <1 219 1807 949 1197 3990 history1 4 2 <1	history2 381 0 95 <1 437 1309 771 948 2608 history2 4 2 0 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base >25 >20 limit/base	current 21 0 22 0 26 2284 954 1084 3807 current 3 1 <1 current	history1 244 0 98 <1 219 1807 949 1197 3990 history1 4 2 <1 4 2 <1 history1	history2 381 0 95 <1 437 1309 771 948 2608 history2 4 2 0 history2 4 2 0 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm	method ASTM D5185m	limit/base >25 >20 limit/base >3	current 21 0 22 0 26 2284 954 1084 3807 current 3 1 <1 current 0.1	history1 244 0 98 <1 219 1807 949 1197 3990 history1 4 2 <1 <1 history1 0.1	history2 381 0 95 <1 437 1309 771 948 2608 history2 4 2 0 history2 4 2 0 history2 0.1
ADDITIVES 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	method ASTM D5185m	limit/base >25 >20 limit/base >3 >20	current 21 0 22 0 26 2284 954 1084 3807 current 3 1 <1 current 0.1 5.6	history1 244 0 98 <1 219 1807 949 1197 3990 history1 4 2 <1 0.1 6.1	history2 381 0 95 <1 437 1309 771 948 2608 history2 4 2 0 history2 4 2 0 history2 0.1 5.0
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	limit/base >25 >20 limit/base >3 >20 >3 >20	current 21 0 22 0 26 2284 954 1084 3807 current 3 1 <1 current 0.1 5.6 15.7	history1 244 0 98 <1 219 1807 949 1197 3990 history1 4 2 <1 history1 4 2 <1 history1 0.1 6.1 19.1	history2 381 0 95 <1 437 1309 771 948 2608 history2 4 2 0 history2 0 bistory2 0.1 5.0 21.8
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D7185M *ASTM D7624 *ASTM D7415 method	limit/base >25 >20 limit/base >3 >20 >30 >30	current 21 0 22 0 26 2284 954 1084 3807 current 3 1 <1 current 0.1 5.6 15.7 current	history1 244 0 98 <1 219 1807 949 1197 3990 history1 4 2 <1 0.1 6.1 19.1 history1	history2 381 0 95 <1 437 1309 771 948 2608 history2 4 2 0 history2 4 2 0 history2 0.1 5.0 21.8 history2

Contact/Location: BRANDON RICE - NATRAL



OIL ANALYSIS REPORT



lumber	: WearCheck USA - 50 : WC0894427 : 06101322 : 10899552 : MOB 1 (Additional T	Recei [:] Teste Diagn	ved : 2 d : 2 osed : 2	ry, NC 27513 27 Feb 2024 28 Feb 2024 28 Feb 2024 - Do	NATIONAL POWER COF 4541 PRESLYN E RALEIGH, N US 276 Contact: BRANDON RIC brandon.rice@natpow.cc		
	Jan 20/22 →	Feb1/23 +		Feb20/24	Jan20/22	Feb1/23 +	
	Abnormal			2	.0		
	16 - 9 (0,001) 47 73 4bnormal			r (mg Ko	.0 -		
	Abnormal	 ! !		(B)HC			
	⊸ Viscosity @ 100°			يت.	് Base Numbe		
	Jan 20/22	Feb 1/23		Feb20/24	Jan 20/22	Feb1/23	
	0						
	100 -			d.	Abnormal		
	<u></u> <u></u> <u></u> <u></u> <u></u> 200-			u.			
	300				50		
	Copper (ppm)				Silicon (ppm)	
	Jan 20/22	Feb		Feb20/24	Jan20/22	Feb	
	0/22	Feb 1/23 -		0/24	0/22	Feb1/23	
	10-				10-		
	30 20 - Abnormal						
	40 Severe				10 Severe		
	Aluminum (ppm)				Chromium (ppm)	
	Jan 20,22	Feb 1/23		Feb20/24	Jan 20/22	Feb1/23	
	0/22)/24	0 322	1/23	
	50-				20 -		
L	Abnormal			<u> </u>	40 - Abnormal		
רייר אים	150				50 -		
Vt	250 200 Severe	1			30 Severe	1	
	Iron (ppm)				Lead (ppm)		
	GRAPHS						
	Visc @ 100°C	cSt	ASTM D44	5	13.8	13.8	13.8
	FLUID PROPER	TIES	method	limit/base	current	history1	history2
	Free Water	scalar	*Visual		NEG	NEG	NEG
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Feb20/24	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
/24	Appearance	scalar scalar	*Visual	NORML	NORE	NORML	NORML
	Debris Sand/Dirt	scalar	*Visual *Visual	NONE	NONE	NONE	NONE
	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE



Certificate L2367

Contact/Location: BRANDON RICE - NATRAL