

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

STATE FAIR - HIGHLAND PARK - G010259528

Component

Diesel Engine

NAPA 5W30 (--- GAL)

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

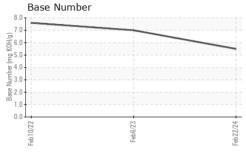
Fluid Condition

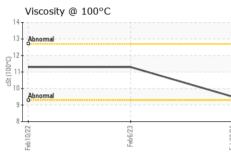
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sample Date Client Info 1522 1485 1461							
Company Comp			Feb	2022	Feb2023 Feb20	24	
Sample Date Client Info 22 Feb 2024 10 Feb 2023 10 Feb 2022 1485 1461 144 19 31 1461 19 31 1461 19 31 Not Change Nor Client Info Not Change Nor Male Nor MAL NORMAL	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Alachine Age hrs Client Info 1522 1485 1461 19 31 31 31 31 31 31 3	Sample Number		Client Info		WC0894388	WC0771554	WC0637066
Dit Changed	Sample Date		Client Info		22 Feb 2024	06 Feb 2023	10 Feb 2022
Client Info Not Change Not Change Nort Change No	Machine Age	hrs	Client Info		1522	1485	1461
CONTAMINATION method limit/base current history1 history2 history2	Oil Age	hrs	Client Info		14	19	31
CONTAMINATION method limit/base current history1 history2	Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Valer	Sample Status				NORMAL	NORMAL	ATTENTION
Value	CONTAMINATION	١	method	limit/base	current	history1	history2
NEG Neg	Fuel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METALS method limit/base current history1 history2 ron ppm ASTM D5185m >100 1 3 5 Chromium ppm ASTM D5185m >20 0 <1	Water		WC Method	>0.2	NEG	NEG	NEG
Description	Glycol		WC Method		NEG	NEG	NEG
Chromium	WEAR METALS		method	limit/base	current	history1	history2
Chromium	Iron	ppm	ASTM D5185m	>100	1	3	5
Strickel ppm ASTM D5185m >4 0 0 0 0 0	Chromium		ASTM D5185m	>20	0	<1	<1
Silver	Nickel				0		
Silver	Titanium		ASTM D5185m			5	29
Astrophysical Color Astrophysical Color	Silver			>3			
ASTM D5185m SATM D5185m	Aluminum		ASTM D5185m	>20		1	1
Description	Lead		ASTM D5185m	>40	0	<1	<1
Tin	Copper		ASTM D5185m	>330	<1	1	1
Antimony	Tin				0	0	
Anadium ppm ASTM D5185m 0 0 <1	Antimony		ASTM D5185m				0
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 131 106 97 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 71 50 5 Magnesium ppm ASTM D5185m 0 <1 <1 Magnesium ppm ASTM D5185m 474 388 554 Calcium ppm ASTM D5185m 1123 1522 1504 Phosphorus ppm ASTM D5185m 683 793 784 Pince ppm ASTM D5185m 753 955 920 Sulfur ppm ASTM D5185m 2840 3429 2717 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 22 10	Vanadium				0	0	<1
Soron ppm ASTM D5185m 131 106 97	Cadmium		ASTM D5185m			0	0
Decision Decision	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 71 50 5 Manganese ppm ASTM D5185m 0 <1	Boron	ppm	ASTM D5185m		131	106	97
Manganese ppm ASTM D5185m 0 <1	Barium	ppm	ASTM D5185m		0	0	0
Magnesium ppm ASTM D5185m 474 388 554 Calcium ppm ASTM D5185m 1123 1522 1504 Phosphorus ppm ASTM D5185m 683 793 784 Zinc ppm ASTM D5185m 753 955 920 Sulfur ppm ASTM D5185m 2840 3429 2717 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 10 22 6 Sodium ppm ASTM D5185m 11 39 81 Potassium ppm ASTM D5185m 20 <1	Molybdenum	ppm	ASTM D5185m		71	50	5
Magnesium ppm ASTM D5185m 474 388 554 Calcium ppm ASTM D5185m 1123 1522 1504 Phosphorus ppm ASTM D5185m 683 793 784 Zinc ppm ASTM D5185m 753 955 920 Sulfur ppm ASTM D5185m 2840 3429 2717 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 10 22 6 Solium ppm ASTM D5185m 11 39 81 Potassium ppm ASTM D5185m >20 <1 2 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0 0.1 0 Abs/am *ASTM D7845 >30 14.1 17.8 19.9 FLUID DEGRADATION method	Manganese	ppm	ASTM D5185m		0	<1	<1
Calcium ppm ASTM D5185m 1123 1522 1504 Phosphorus ppm ASTM D5185m 683 793 784 Zinc ppm ASTM D5185m 753 955 920 Sulfur ppm ASTM D5185m 2840 3429 2717 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 10 22 6 Sodium ppm ASTM D5185m 11 39 81 Potassium ppm ASTM D5185m >20 <1 2 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0 0.1 0 Witration Abs/.1mm *ASTM D7415 >30 14.1 17.8 19.9 FLUID DEGRADATION method limit/base current history1 history2	Magnesium		ASTM D5185m		474	388	554
Zinc ppm ASTM D5185m 753 955 920 Sulfur ppm ASTM D5185m 2840 3429 2717 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 10 22 6 Sodium ppm ASTM D5185m >20 <1	Calcium		ASTM D5185m		1123	1522	1504
Sulfur ppm ASTM D5185m 2840 3429 2717 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 10 22 6 Sodium ppm ASTM D5185m 11 39 81 Potassium ppm ASTM D5185m >20 <1	Phosphorus	ppm	ASTM D5185m		683	793	784
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 10 22 6 Sodium ppm ASTM D5185m 11 39 81 Potassium ppm ASTM D5185m >20 <1 2 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0 0.1 0 Nitration Abs/cm *ASTM D7624 >20 4.9 7.6 8.4 Sulfation Abs/.1mm *ASTM D7415 >30 14.1 17.8 19.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 7.5 12.9 14.9	Zinc	ppm	ASTM D5185m		753	955	920
Solicon ppm ASTM D5185m >25 10 22 6 6 6 6 6 6 6 6	Sulfur	ppm	ASTM D5185m		2840	3429	2717
Sodium ppm ASTM D5185m 11 39 81 Potassium ppm ASTM D5185m >20 <1	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 <1	Silicon	ppm	ASTM D5185m	>25	10	22	6
INFRA-RED	Sodium	ppm	ASTM D5185m		11	39	81
Boot % % *ASTM D7844 >3 0 0.1 0 Vitration Abs/cm *ASTM D7624 >20 4.9 7.6 8.4 Sulfation Abs/.1mm *ASTM D7415 >30 14.1 17.8 19.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 7.5 12.9 14.9	Potassium	ppm	ASTM D5185m	>20	<1	2	<1
Nitration Abs/cm *ASTM D7624 >20 4.9 7.6 8.4 Sulfation Abs/.1mm *ASTM D7615 >30 14.1 17.8 19.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 7.5 12.9 14.9	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 14.1 17.8 19.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 7.5 12.9 14.9	Soot %	%	*ASTM D7844	>3	0	0.1	0
Sulfation Abs/.1mm *ASTM D7415 >30 14.1 17.8 19.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 7.5 12.9 14.9	Nitration	Abs/cm	*ASTM D7624	>20	4.9	7.6	8.4
Oxidation Abs/.1mm *ASTM D7414 >25 7.5 12.9 14.9	Sulfation	Abs/.1mm			14.1		19.9
	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	7.5	12.9	14.9



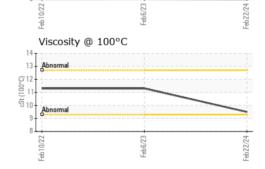
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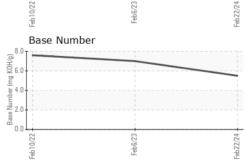




VISUAL		method				history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	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
	TIES	mothod	limit/bass	ourropt	hiotonyi	hiotom/2

Visc @ 100°C	cSt	ASTM D445	9.5	11.3	11.3	
GRAPHS						
Iron (ppm)			Lead (ppn	n)		
Severe			Severe			
Abnormal			60 - Abnormal			
100 - Abnormal			40 + Abnormal			
50			20			
Feb10/22	Feb6/23 -	E4/27/24	Feb10/22	Feb 6/23 -	Feb22/24	
-	Ē	7	<u>a</u>	Ē	Feb2	
Aluminum (ppm)		Chromium	n (ppm)		
Severe			Severe			
Abnormal			E 30			
a Abnormal			20 Abnormal		-	
10			10			
122	62/	40	72	723	124	
Feb10/22	Feb6/23	Esk22724	Feb 10/22	Feb 6/23	Feb22/24	
Copper (ppm)	er (ppm) Silicon (ppm)					









Laboratory Sample No.

Lab Number : 06101314 Unique Number : 10899544

100

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : WC0894388

Tested Diagnosed Test Package: MOB 1 (Additional Tests: TBN)

Received : 27 Feb 2024 : 28 Feb 2024

: 28 Feb 2024 - Don Baldridge

4541 PRESLYN DR RALEIGH, NC US 27616 Contact: BRANDON RICE brandon.rice@natpow.com

NATIONAL POWER CORP

To discuss this sample report, contact Customer Service at 1-800-237-1369. * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

F: (919)790-9714