

SAMPLE INFORMATION

Area [150825] GENERAC RALEIGH MARSH MAINT

Diesel Engine

RED STAR 15W40 (7 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

Metal levels are typical for a new component breaking in.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

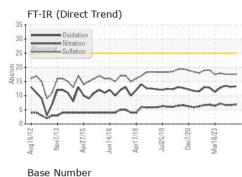
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

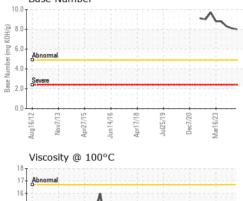
Sample	e Rating Tre	end		
			N	ORMAL
2012 Nev2013	Apr2015 Jun2016	Av2013 Ju2013 Dec2020 1		
method	limit/base	current	history1	history2
Client Info		WC0911411	WC0797331	WC0812707
Client Info		03 Apr 2024	14 Dec 2023	12 Sep 2023
Client Info		399	200	199
Client Info		0	0	0
Client Info		Changed	N/A	N/A
		NORMAL	NORMAL	NORMAL

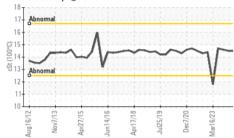
Sample Number		Client Info		WC0911411	WC0797331	WC0812707
Sample Date		Client Info		03 Apr 2024	14 Dec 2023	12 Sep 2023
Machine Age	hrs	Client Info		399	200	199
Oil Age	hrs	Client Info		0 Ohannad	0	0
Oil Changed		Client Info		Changed NORMAL	N/A NORMAL	N/A NORMAL
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	N	method	limit/base	current	history1	history2
Fuel		WC Method	>2.1	<1.0	<1.0	<1.0
Water		WC Method	>0.21	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>51	0	<1	2
Chromium	ppm	ASTM D5185m	>11	<1	0	0
Nickel	ppm	ASTM D5185m	>5	<1	0	0
Titanium	ppm	ASTM D5185m		31	27	28
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>31	2	2	3
Lead	ppm	ASTM D5185m	>26	<1	<1	<1
Copper	ppm	ASTM D5185m	>26	<1	<1	0
Tin	ppm	ASTM D5185m	>4	<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	<1	<1
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES			11 1. 0			In the terms of
ADDITIVE5		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	limit/base	current	history1 104	nistory2 115
	ppm ppm		limit/base			
Boron		ASTM D5185m	limit/base	125	104	115
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	125 0	104 0	115 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	125 0 59	104 0 51	115 0 55
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		125 0 59 <1	104 0 51 0	115 0 55 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		125 0 59 <1 209	104 0 51 0 206 1840 1073	115 0 55 0 225 1968 1059
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		125 0 59 <1 209 2114	104 0 51 0 206 1840	115 0 55 0 225 1968 1059 1259
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 ASTM D5185m		125 0 59 <1 209 2114 1160	104 0 51 0 206 1840 1073	115 0 55 0 225 1968 1059
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	125 0 59 <1 209 2114 1160 1229	104 0 51 0 206 1840 1073 1214	115 0 55 0 225 1968 1059 1259
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		125 0 59 <1 209 2114 1160 1229 4415	104 0 51 0 206 1840 1073 1214 3926	115 0 55 0 225 1968 1059 1259 4223
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	125 0 59 <1 209 2114 1160 1229 4415	104 0 51 0 206 1840 1073 1214 3926 history1	115 0 55 0 225 1968 1059 1259 4223 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	125 0 59 <1 209 2114 1160 1229 4415 current 8	104 0 51 0 206 1840 1073 1214 3926 history1 6	115 0 55 0 225 1968 1059 1259 4223 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 >22 >31	125 0 59 <1 209 2114 1160 1229 4415 <u>current</u> 8 <	104 0 51 0 206 1840 1073 1214 3926 history1 6 1	115 0 55 0 225 1968 1059 1259 4223 history2 6 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >22 >31 >20	125 0 59 <1 209 2114 1160 1229 4415 <u>current</u> 8 <1 3	104 0 51 0 206 1840 1073 1214 3926 history1 6 1 4 3	115 0 55 0 225 1968 1059 1259 4223 history2 6 1 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >22 >31 >20 limit/base	125 0 59 <1 209 2114 1160 1229 4415 current 8 <1 3	104 0 51 0 206 1840 1073 1214 3926 history1 6 1 <1 <1 kistory1	115 0 55 0 225 1968 1059 1259 4223 history2 6 1 2 2 history2
Boron Barium 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	limit/base >22 >31 >20 limit/base >3	125 0 59 <1 209 2114 1160 1229 4415 current 8 <1 3 current 0	104 0 51 0 206 1840 1073 1214 3926 history1 6 1 <1 <1 0	115 0 55 0 225 1968 1059 1259 4223 history2 6 1 2 history2 0
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	ASTM D5185m ASTM D5185m	limit/base >22 >31 >20 limit/base >3 >20	125 0 59 <1 209 2114 1160 1229 4415 <i>current</i> 8 <1 3 <i>current</i> 0 6.9	104 0 51 0 206 1840 1073 1214 3926 history1 6 1 <1 <1 history1 0 6.7	115 0 55 0 225 1968 1059 1259 4223 history2 6 1 2 history2 0 6.7
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	ASTM D5185m ASTM D5185m	limit/base >22 >31 >20 limit/base >3 >20 >30	125 0 59 <1 209 2114 1160 1229 4415 current 8 <1 3 current 0 6.9 17.6	104 0 51 0 206 1840 1073 1214 3926 history1 6 1 <1 <1 kistory1 0 6.7 17.6	115 0 55 0 225 1968 1059 1259 4223 history2 6 1 2 2 history2 0 6.7 17.6



OIL ANALYSIS REPORT







	VISUAL		ام مراغ میں			hi at a mut	biotow.0
	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
and the same a sumbly of the same is	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
11 11 11 11 11 11	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Dec7/20 -	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Dec7/20 Mar16/23	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
	Emulsified Water	scalar	*Visual	>0.21	NEG	NEG	NEG
	Free Water	scalar	*Visual		NEG	NEG	NEG
$\sim$	FLUID PROPERT		method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445		14.5	14.5	14.6
	GRAPHS				-		-
	Iron (ppm)				Lead (ppm)		
	200 Severe			10	Severe	1030003003	
Dec7/20 Mar16/23	150			8			
Mai	톱 100			E G	10000000		
	50 Abnormal				Abnormal		
1111111111111111111	50 - 2	111		2	0		
		3	20 19	3		16	20
	Aug16/12 Nov7/13 Apr27/15 Jun14/16	Apr17/18	Jul25/19 Dec7/20	Mart b/23	Aug16/12 Nov7/13 Apr27/15	Jun14/16 - Apr17/18 -	Dec7/20 Mar16/23
$\sim T$		4		2	⊲ Chromium (p	7 7	· 2
V	Aluminum (ppm) 60 T Severe 23				5 <del></del>	, pini) 1 1 1 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	50			2	0 - Severe		
	40 E 30 Abnormal						
Dec7/20 Mar16/23	8 30 - Abnormal				Abnormal		
Mari	10				5		
	0			~			
	Aug16/12 Nov7/13 Apr27/15 Jun14/16	Apr17/18	Jul25/19 Dec7/20	Mart b/23	Aug16/12 Nov7/13	Jun14/16 - Apr17/18 -	Dec7/20 Mar16/23
	Aug Nc Apr	Apı	n i i				W De
	Copper (ppm)			4	Silicon (ppm)		
	Severe			1111	Severe		
	100 -			3	Abnormal		
	udd			E 2	0 - Abnormal	· · · · · · · · · · · · · · · · · · ·	
	50 Abnormal			1	1 to a transfer	in hen hend	here and here
	0					$\sim$	$\sim\sim$
	3/12 7/15	7/18 -	Jul25/19	0/23		4/16 7/18	3/23
	Aug16/12 Nov7/13 Apr27/15 Jun14/16	Apr17/18.	Jul25/19	Mart b/2.3	Aug16/12 Nov7/13 Apr27/15	Jun14/16 Apr17/18 -	Dec7/20 Mar16/23
	Viscosity @ 100°C				Base Number	r	
	18 Abnormal				• I sanansen et s	11120000511113	~
	a ¹⁶			Hoy 8.	0		
	16- (0,001)14 4 Abnormal		~~~	<u>۲</u> ق	Abnormal		
	45 Abnormal			fung 4.	0- Severe		
	12-	111 111		(b)H03 Base Number (mg K0H/g) 2.1			
		18	20 -	0.		16	23
	Aug16/12 Nov7/13 Apr27/15 Jun14/16	Apr17/18	Jul25/19 Dec7/20	Mart b/23	Aug16/12 Nov7/13 Apr27/15	Jun 14/16 Apr17/18	Dec7/20 Mar16/23
	A I	A	10 T	2	A A	IL A I	Σ
	W/ 0/ //01						
Laboratory Sample No.	: WearCheck USA - 50						
Sample No. Lab Number	: WC0911411 : 06148443	Rece Teste	iveu : 1: ed · 1:	5 Apr 2024 6 Apr 2024		454	1 PRESLYN DR RALEIGH, NC
	: 10078521		10 - 10		loc Davie		

RALEIGH, NC US 27616 Contact: BRANDON RICE brandon.rice@natpow.com T: F: (919)790-9714



: 16 Apr 2024 - Wes Davis Unique Number : 10978521 Diagnosed Test Package : MOB 1 (Additional Tests: TBN) Certificate 12367 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)

Report Id: NATRAL [WUSCAR] 06148443 (Generated: 04/16/2024 10:32:10) Rev: 1

Contact/Location: BRANDON RICE - NATRAL

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