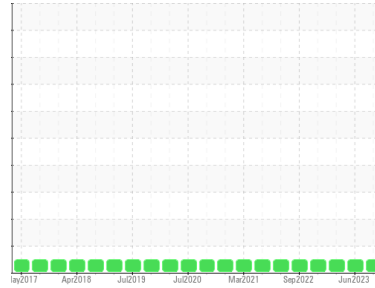




OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Area
[W116516]
 Machine Id
CITY OF RALEIGH
 Component
Diesel Engine
 Fluid
DIESEL ENGINE OIL SAE 15W40 (2 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 INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	WC0812701	WC0812717	WC0663207
Sample Date	Client Info	12 Sep 2023	06 Jun 2023	17 Mar 2023
Machine Age	hrs	224	207	205
Oil Age	hrs	0	0	0
Oil Changed	Client Info	N/A	Not Changd	Changed
Sample Status		NORMAL	NORMAL	NORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >5	<1.0	<1.0	<1.0
Glycol	WC Method	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m >250	1	2	1
Chromium	ppm	ASTM D5185m >10	0	<1	<1
Nickel	ppm	ASTM D5185m >5	0	0	<1
Titanium	ppm	ASTM D5185m	26	26	19
Silver	ppm	ASTM D5185m >3	0	0	0
Aluminum	ppm	ASTM D5185m >35	3	<1	2
Lead	ppm	ASTM D5185m >100	<1	<1	<1
Copper	ppm	ASTM D5185m >60	<1	<1	0
Tin	ppm	ASTM D5185m >5	<1	<1	<1
Vanadium	ppm	ASTM D5185m	<1	<1	<1
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m 250	112	118	95
Barium	ppm	ASTM D5185m 10	0	0	0
Molybdenum	ppm	ASTM D5185m 100	49	49	38
Manganese	ppm	ASTM D5185m	0	<1	1
Magnesium	ppm	ASTM D5185m 450	272	277	336
Calcium	ppm	ASTM D5185m 3000	1951	2083	1815
Phosphorus	ppm	ASTM D5185m 1150	1055	1068	1000
Zinc	ppm	ASTM D5185m 1350	1280	1283	1286
Sulfur	ppm	ASTM D5185m 4250	4216	4842	4377

CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m >35	5	7	6
Sodium	ppm	ASTM D5185m >158	1	2	2
Potassium	ppm	ASTM D5185m >20	2	2	4

INFRA-RED

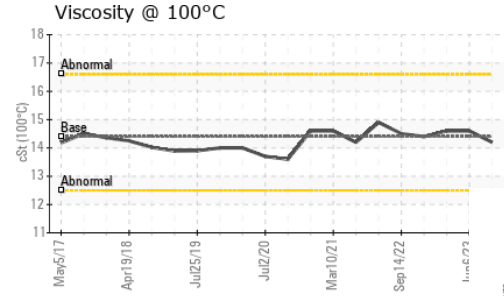
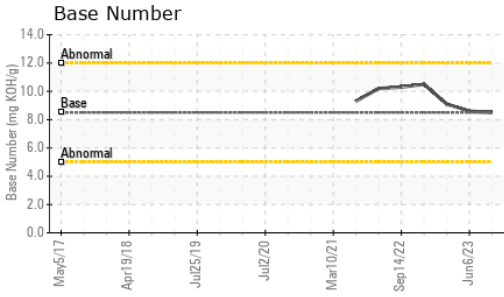
method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844 >3	0	0.1	0.1
Nitration	Abs/cm	*ASTM D7624 >20	7.0	6.8	6.5
Sulfation	Abs/.1mm	*ASTM D7415 >30	17.8	18.3	18.1

FLUID DEGRADATION

method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414 >25	13.4	13.4	12.6
Base Number (BN)	mg KOH/g	ASTM D2896 8.5	8.5	8.6	9.1



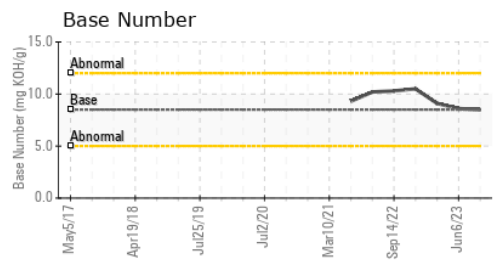
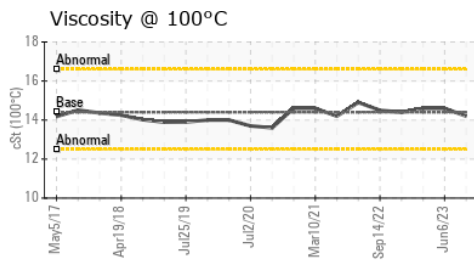
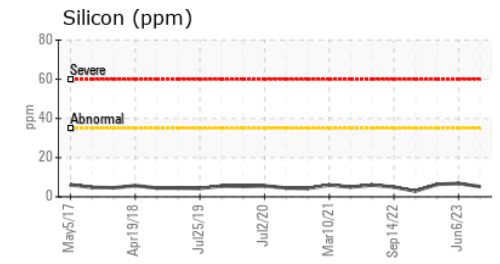
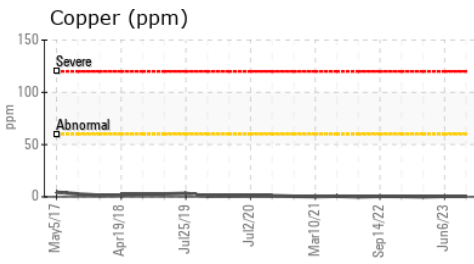
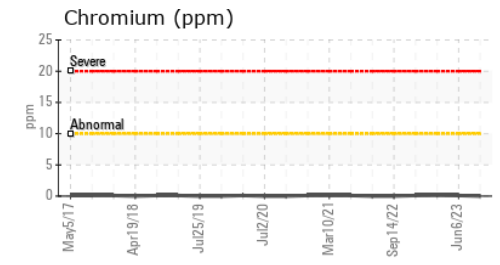
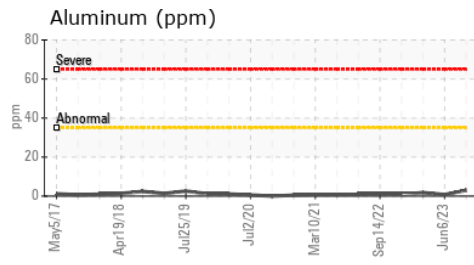
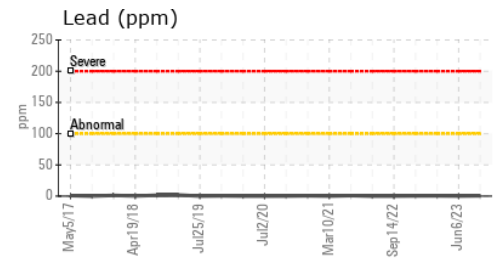
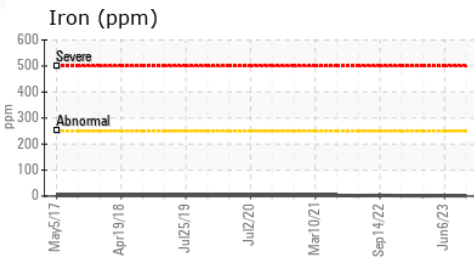
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	14.4	14.2	14.6	14.6

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0812701 **Received** : 27 Sep 2023
Lab Number : **05961962** **Diagnosed** : 28 Sep 2023
Unique Number : 10668513 **Diagnostician** : Wes Davis
Test Package : MOB 1 (Additional Tests: TBN)

NATIONAL POWER CORP
 4541 PRESLYN DR
 RALEIGH, NC
 US 27616
 Contact: BRANDON RICE
 brandon.rice@natpow.com
 T:
 F: (919)790-9714

Certificate L2367
 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)