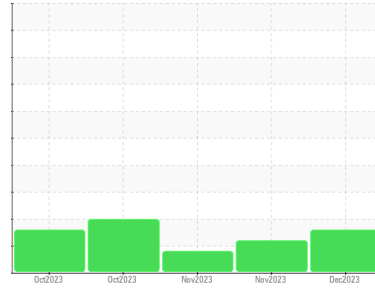




OIL ANALYSIS REPORT

Sample Rating Trend



WATER



Area
RIG 879
 Machine Id
R879-MP-02
 Component
Gearbox
 Fluid
GEAR OIL ISO 320 (--- GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is a light concentration of water present in the oil. The amount and size of particulates present in the system are acceptable.

Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		KL0013171	KL0013031	KL0013138
Sample Date	Client Info		01 Dec 2023	14 Nov 2023	09 Nov 2023
Machine Age	hrs	Client Info	0	0	0
Oil Age	hrs	Client Info	0	0	0
Oil Changed	Client Info		N/A	N/A	N/A
Sample Status			ABNORMAL	ABNORMAL	ATTENTION

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >200	31	42	14
Chromium	ppm	ASTM D5185m >10	<1	<1	0
Nickel	ppm	ASTM D5185m >10	0	0	0
Titanium	ppm	ASTM D5185m	0	0	0
Silver	ppm	ASTM D5185m	0	0	0
Aluminum	ppm	ASTM D5185m >25	2	1	1
Lead	ppm	ASTM D5185m >50	0	0	0
Copper	ppm	ASTM D5185m >200	4	3	<1
Tin	ppm	ASTM D5185m >10	0	<1	0
Vanadium	ppm	ASTM D5185m	0	<1	0
Cadmium	ppm	ASTM D5185m	<1	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 50	3	2	2
Barium	ppm	ASTM D5185m 15	0	0	0
Molybdenum	ppm	ASTM D5185m 15	1	3	<1
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m 50	10	0	3
Calcium	ppm	ASTM D5185m 50	35	9	17
Phosphorus	ppm	ASTM D5185m 350	152	131	154
Zinc	ppm	ASTM D5185m 100	81	82	94
Sulfur	ppm	ASTM D5185m 12500	8810	8578	8703

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >50	12	10	9
Sodium	ppm	ASTM D5185m	52	28	12
Potassium	ppm	ASTM D5185m >20	2	<1	0
Water	%	ASTM D6304 >0.2	▲ 0.247	---	---
ppm Water	ppm	ASTM D6304 >2000	▲ 2470	---	---

FLUID CLEANLINESS

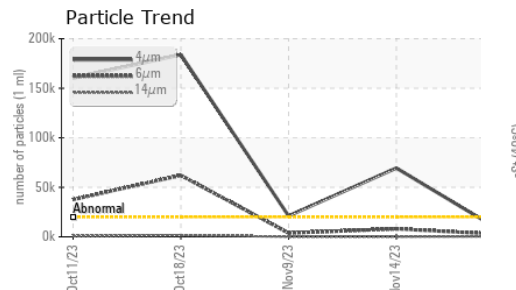
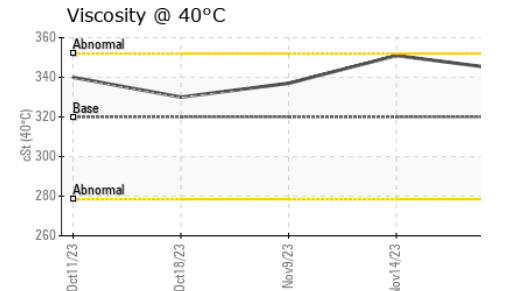
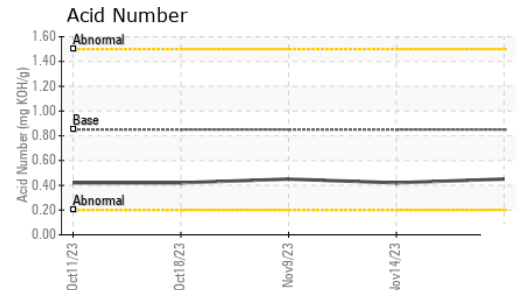
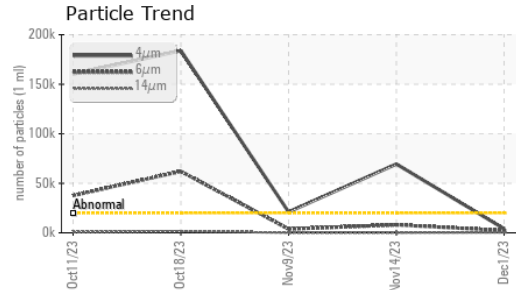
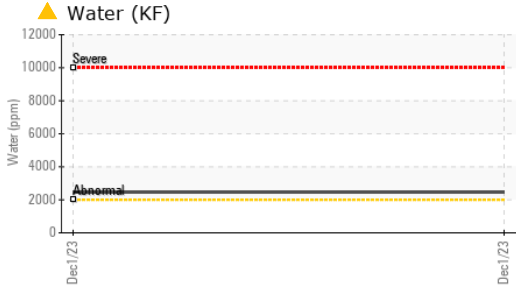
	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	4106	▲ 69440	▲ 21097
Particles >6µm	ASTM D7647	>5000	2237	▲ 8059	3858
Particles >14µm	ASTM D7647	>640	381	164	128
Particles >21µm	ASTM D7647	>160	128	23	22
Particles >38µm	ASTM D7647	>40	20	0	1
Particles >71µm	ASTM D7647	>10	2	0	0
Oil Cleanliness	ISO 4406 (c)	>21/19/16	19/18/16	▲ 23/20/15	▲ 22/19/14

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045 0.85	0.45	0.42	0.45



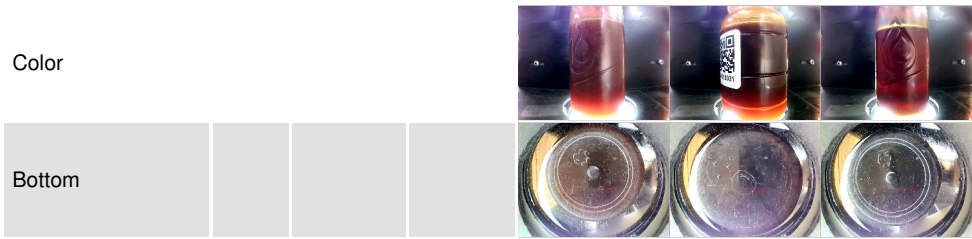
OIL ANALYSIS REPORT



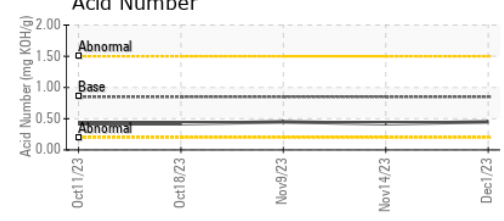
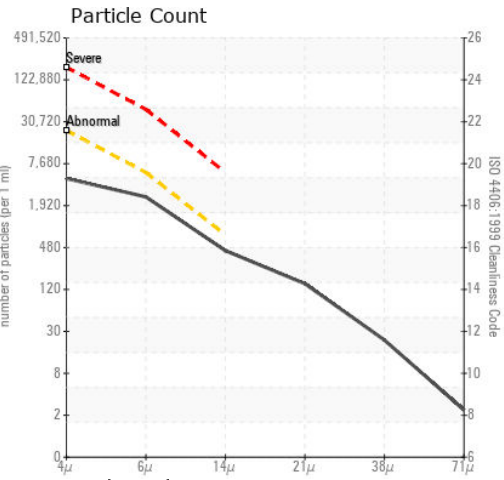
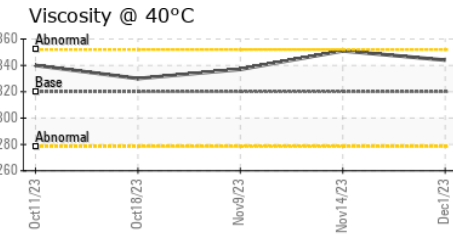
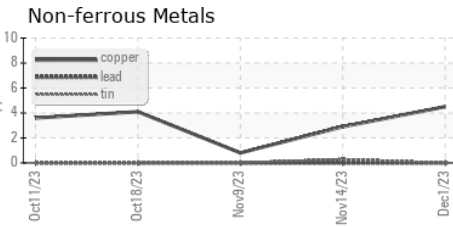
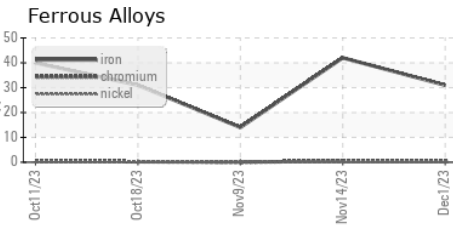
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	LIGHT
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	320	344	351

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0013171 **Received** : 07 Dec 2023
Lab Number : 06028660 **Diagnosed** : 14 Dec 2023
Unique Number : 10778451 **Diagnostician** : Jonathan Hester
Test Package : MOB 2 (Additional Tests: KF, PrtCount)

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 9915 WEST INDUSTRIAL
 MIDLAND, TX
 US 79706
 Contact: RICKY MATA
 ricky.mata@patenergy.com
 T: (832)219-4559
 F: (432)561-9388

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)