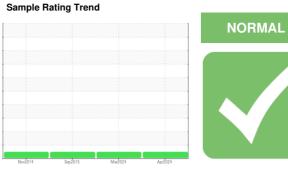


OIL ANALYSIS REPORT

QUANDRA COOLANT

SULLIVAN PALATEK 1308120007 - KERFORD LIMESTONE UNIT 4

Component



DIAGNOSIS

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

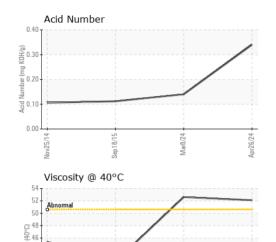
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Sample Number Client Info UCS06181446 UCS06131458 UCS03851251 Sample Date Client Info 26 Apr 2024 08 Mar 2024 18 Sep 2015 Machine Age hrs Client Info 65692 64681 12529 Oil Age hrs Client Info 0 2100 998 Oil Changed Client Info N/A Not Changd Not Changd Sample Status NORMAL NORMAL NORMAL NORMAL							
Sample Date Client Info 26 Apr 2024 08 Mar 2024 18 Sep 2015 Machine Age hrs Client Info 65692 64681 12529 Oil Age hrs Client Info 0 2100 998 Oil Changed Client Info N/A Not Changd Not Changd Sample Status NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Water WC Method >0.1 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 2 1 0 WEAR METALS method limit/base current history1 history2 Water WC Method >0.1 NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m <1 <1	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 65692 64681 12529 Oil Age hrs Client Info 0 2100 998 Oil Changed Client Info N/A Not Changd <	Sample Number		Client Info		UCS06181446	UCS06131458	UCS03851251
Dil Age	Sample Date		Client Info		26 Apr 2024	08 Mar 2024	18 Sep 2015
Oil Changed Client Info N/A Not Changd NORMAL NORMAL	Machine Age	hrs	Client Info		65692	64681	12529
NORMAL NORMAL NORMAL NORMAL	Oil Age	hrs	Client Info		0	2100	998
CONTAMINATION method limit/base current history1 history2 Water WC Method >0.1 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 2 1 0 Chromium ppm ASTM D5185m >10 <1 <1 0 Nickel ppm ASTM D5185m <1 <1 0 0 Silver ppm ASTM D5185m <1 <1 0 0 Aluminum ppm ASTM D5185m <25 1 2 0 Lead ppm ASTM D5185m >25 1 2 0 Copper ppm ASTM D5185m >50 2 1 0 Tin ppm ASTM D5185m >15 <1 <1 2 Antimony ppm ASTM D5185m <1 <1 <1 0	Oil Changed		Client Info		N/A	Not Changd	Not Changd
Water WC Method >0.1 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 2 1 0 Nickel ppm ASTM D5185m >10 <1	Sample Status				NORMAL	NORMAL	NORMAL
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 2 1 0 Chromium ppm ASTM D5185m >10 <1 <1 0 Nickel ppm ASTM D5185m <1 <1 0 Silver ppm ASTM D5185m <1 <1 0 Silver ppm ASTM D5185m >25 1 2 0 Aluminum ppm ASTM D5185m >25 1 2 0 Lead ppm ASTM D5185m >50 2 1 0 Copper ppm ASTM D5185m >15 <1 <1 2 Antimony ppm ASTM D5185m -1 <1 <1 0 Vanadium ppm ASTM D5185m -1 <1 0 0 Cadmium ppm ASTM D5185m -1 <1 0 0	CONTAMINATIO	N	method	limit/base	current	history1	history2
Iron	Water		WC Method	>0.1	NEG	NEG	NEG
Chromium ppm ASTM D5185m >10 <1 <1 0 Nickel ppm ASTM D5185m <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>50	2	1	0
Titanium	Chromium	ppm	ASTM D5185m	>10	<1	<1	0
Silver	Nickel	ppm	ASTM D5185m		<1	<1	0
Aluminum ppm ASTM D5185m >25 1 2 0 Lead ppm ASTM D5185m >25 <1	Titanium	ppm	ASTM D5185m		<1	<1	0
Lead ppm ASTM D5185m >25 <1 <1 0 Copper ppm ASTM D5185m >50 2 1 0 Tin ppm ASTM D5185m >15 <1 <1 2 Antimony ppm ASTM D5185m 0 Vanadium ppm ASTM D5185m <1 <1 0 Vanadium ppm ASTM D5185m <1 <1 0 Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m <1 0 0 Barium ppm ASTM D5185m <582 667 0 Molybdenum ppm ASTM D5185m <1 <1 0 Magnesium ppm ASTM D5185m <1 <1 0 Calcium ppm ASTM D5185m 15 7	Silver	ppm	ASTM D5185m		<1	<1	0
Copper ppm ASTM D5185m >50 2 1 0 Tin ppm ASTM D5185m >15 <1	Aluminum	ppm	ASTM D5185m	>25	1	2	0
Copper ppm ASTM D5185m >50 2 1 0 Tin ppm ASTM D5185m >15 <1	Lead	ppm	ASTM D5185m	>25	<1	<1	0
Tin ppm ASTM D5185m >15 <1 <1 2 Antimony ppm ASTM D5185m 0 Vanadium ppm ASTM D5185m <1 <1 0 Cadmium ppm ASTM D5185m <1 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m <1 0 0 Barium ppm ASTM D5185m 582 667 0 Molybdenum ppm ASTM D5185m <1 <1 0 Manganese ppm ASTM D5185m <1 <1 0 Magnesium ppm ASTM D5185m 3 <1 0 Calcium ppm ASTM D5185m 15 7 0 Phosphorus ppm ASTM D5185m 8 0 0 Zinc ppm ASTM D5185m 850 409 944 <tr< td=""><td>Copper</td><td>ppm</td><td>ASTM D5185m</td><td>>50</td><th></th><td>1</td><td>0</td></tr<>	Copper	ppm	ASTM D5185m	>50		1	0
Vanadium ppm ASTM D5185m <1 <1 0 Cadmium ppm ASTM D5185m <1 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m <1 0 0 Barium ppm ASTM D5185m 582 667 0 Molybdenum ppm ASTM D5185m <1 <1 0 Magnese ppm ASTM D5185m <1 <1 0 Magnesium ppm ASTM D5185m 3 <1 0 Calcium ppm ASTM D5185m 15 7 0 Phosphorus ppm ASTM D5185m 109 93 716 Zinc ppm ASTM D5185m 8 0 0 Sulfur ppm ASTM D5185m 850 409 944 CONTAMINANTS method limit/base current history1 history2	Tin	ppm	ASTM D5185m	>15	<1	<1	2
Cadmium ppm ASTM D5185m <1 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m <1	Antimony		ASTM D5185m				0
Cadmium ppm ASTM D5185m <1 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m <1	Vanadium	ppm	ASTM D5185m		<1	<1	0
Boron ppm ASTM D5185m <1 0 0	Cadmium		ASTM D5185m		<1	<1	0
Barium ppm ASTM D5185m 582 667 0 Molybdenum ppm ASTM D5185m <1 <1 0 Manganese ppm ASTM D5185m <1 <1 0 Magnesium ppm ASTM D5185m 3 <1 0 Calcium ppm ASTM D5185m 15 7 0 Phosphorus ppm ASTM D5185m 109 93 716 Zinc ppm ASTM D5185m 8 0 0 Sulfur ppm ASTM D5185m 850 409 944 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 1 0 Sodium ppm ASTM D5185m >20 3 2 2 FLUID DEGRADATION method limit/base current history1 history2	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m <1 <1 0 Manganese ppm ASTM D5185m <1 <1 0 Magnesium ppm ASTM D5185m 3 <1 0 Calcium ppm ASTM D5185m 15 7 0 Phosphorus ppm ASTM D5185m 109 93 716 Zinc ppm ASTM D5185m 8 0 0 Sulfur ppm ASTM D5185m 850 409 944 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 1 0 Sodium ppm ASTM D5185m >20 3 2 2 FLUID DEGRADATION method limit/base current history1 history2	Boron	ppm	ASTM D5185m		<1	0	0
Manganese ppm ASTM D5185m <1 <1 0 Magnesium ppm ASTM D5185m 3 <1 0 Calcium ppm ASTM D5185m 15 7 0 Phosphorus ppm ASTM D5185m 109 93 716 Zinc ppm ASTM D5185m 8 0 0 Sulfur ppm ASTM D5185m 850 409 944 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 1 0 Sodium ppm ASTM D5185m 20 3 2 2 FLUID DEGRADATION method limit/base current history1 history2	Barium	ppm	ASTM D5185m		582	667	0
Magnesium ppm ASTM D5185m 3 <1 0 Calcium ppm ASTM D5185m 15 7 0 Phosphorus ppm ASTM D5185m 109 93 716 Zinc ppm ASTM D5185m 8 0 0 Sulfur ppm ASTM D5185m 850 409 944 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 1 0 Sodium ppm ASTM D5185m 26 13 0 Potassium ppm ASTM D5185m >20 3 2 2 FLUID DEGRADATION method limit/base current history1 history2	Molybdenum	ppm	ASTM D5185m		<1	<1	0
Calcium ppm ASTM D5185m 15 7 0 Phosphorus ppm ASTM D5185m 109 93 716 Zinc ppm ASTM D5185m 8 0 0 Sulfur ppm ASTM D5185m 850 409 944 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 1 0 Sodium ppm ASTM D5185m 26 13 0 Potassium ppm ASTM D5185m >20 3 2 2 FLUID DEGRADATION method limit/base current history1 history2	Manganese	ppm	ASTM D5185m		<1	<1	0
Phosphorus ppm ASTM D5185m 109 93 716 Zinc ppm ASTM D5185m 8 0 0 Sulfur ppm ASTM D5185m 850 409 944 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 1 0 Sodium ppm ASTM D5185m 26 13 0 Potassium ppm ASTM D5185m >20 3 2 2 FLUID DEGRADATION method limit/base current history1 history2	Magnesium	ppm	ASTM D5185m		3	<1	0
Zinc ppm ASTM D5185m 8 0 0 Sulfur ppm ASTM D5185m 850 409 944 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 1 0 Sodium ppm ASTM D5185m 26 13 0 Potassium ppm ASTM D5185m >20 3 2 2 FLUID DEGRADATION method limit/base current history1 history2	Calcium	ppm	ASTM D5185m		15	7	0
Sulfur ppm ASTM D5185m 850 409 944 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 1 0 Sodium ppm ASTM D5185m 26 13 0 Potassium ppm ASTM D5185m >20 3 2 2 FLUID DEGRADATION method limit/base current history1 history2	Phosphorus	ppm	ASTM D5185m		109	93	716
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 1 0 Sodium ppm ASTM D5185m 26 13 0 Potassium ppm ASTM D5185m >20 3 2 2 FLUID DEGRADATION method limit/base current history1 history2	Zinc	ppm	ASTM D5185m		8	0	0
Silicon ppm ASTM D5185m >25 4 1 0 Sodium ppm ASTM D5185m 26 13 0 Potassium ppm ASTM D5185m >20 3 2 2 FLUID DEGRADATION method limit/base current history1 history2	Sulfur	ppm	ASTM D5185m		850	409	944
Sodium ppm ASTM D5185m 26 13 0 Potassium ppm ASTM D5185m >20 3 2 2 FLUID DEGRADATION method limit/base current history1 history2	CONTAMINANTS	5	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 3 2 2 FLUID DEGRADATION method limit/base current history1 history2	Silicon	ppm	ASTM D5185m	>25	4	1	0
FLUID DEGRADATION method limit/base current history1 history2	Sodium	ppm	ASTM D5185m		26	13	0
	Potassium	ppm	ASTM D5185m	>20	3	2	2
Acid Number (AN) mg KOH/g ASTM D8045 0.34 0.14 0.112	FLUID DEGRADA	NOITA	method	limit/base	current	history1	history2
	Acid Number (AN)	mg KOH/g	ASTM D8045		0.34	0.14	0.112

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OIL ANALYSIS REPORT



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	LIGHT	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	MODER	HEAVY
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	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	TIES	method	limit/base	current	history1	history2

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Visc @ 40°C	cSt	ASTM D445	52.1	52.6	42.2	

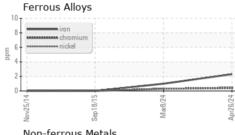
SAMPLE IMAGES

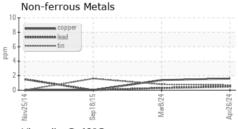
Color

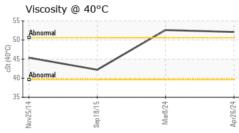


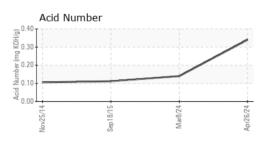
Bottom















Certificate 12367

Laboratory Sample No. Lab Number : 06181446

: UCS06181446 Unique Number : 11032772

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 16 May 2024 **Tested**

: 17 May 2024 Diagnosed : 20 May 2024 - Sean Felton

RASMUSSEN AIR & GAS ENERGY - RAGE 655 240TH STREET WATERLOO, NE US 68069

Contact: CHASE SVOBODA chase.svoboda@rage-energy.com T: (402)614-9926

Test Package : IND 2 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)