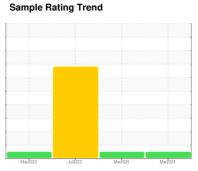


# **COOLANT REPORT**

# **THUNDER SPIRIT [200009532]** 15WEA84034 - CONVERTER (S/N 72802187630)

Coolant

INTERCOOL ETHYLENE GLYCOL (--- QTS)





### Recommendation

The fluid is suitable for further service.

All metal levels are normal indicating no corrosion in the cooling system.

### Contaminants

There is no indication of any contamination in the coolant.

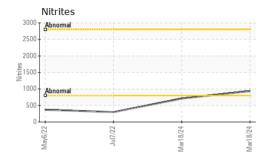
### **Coolant Condition**

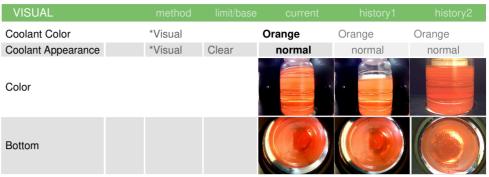
Glycol and nitrite levels are acceptable. The pH level of this fluid is within the acceptable limits.

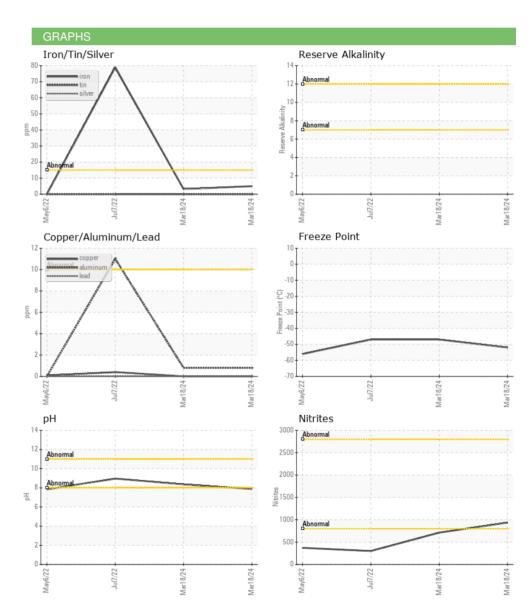
Sample Number         Client Info         NX014474         NX014495         NX009480           Sample Date         Client Info         18 Mar 2024         18 Mar 2024         07 Jul 2022           Machine Age         hrs         Client Info         57489         57489         0           Oil Age         hrs         Client Info         0         0         0         0           Oil Changed         Client Info         N/A         N/A         N/A         N/A           Sample Status         Image: Client Info         N/A         N/A         N/A         N/A           PHYSICAL TEST RESULTS         method         Imititibase         current         bistory1         history2           Glycol Type         FT-IR               Specific Gravity         "ASTM D1287         7.88         8.36         8.96         NItrities         9pm         AP-0532009         936         712         300         PReserve Alkalinity         Scale 0-20         ASTM D121			May202	2 Jul2022	Mar2024 N	la/2024	
Sample Date         Client Info         18 Mar 2024         18 Mar 2024         07 Jul 2022           Machine Age         hrs         Client Info         57489         57489         0           Oil Age         hrs         Client Info         0         0         0         0           Oil Changed         Client Info         N/A         N/A         N/A         N/A         N/A           Sample Status         NoRMAL         NORMAL         NORMAL         SEVERE           PHYSICAL TEST RESULTS         method         limit/base         current         history1         history2           Glycol Type         FT-IR               Specific Gravity         "ASTM D1287         7.88         8.36         8.96         NItrities         8.96         NItrities         8.96         NItrities         9036         712         300         Reserve Alkalinity         **Cale 0-20         "ASTM D1287         7.88         8.36         8.96         NItrities         **Cale 0-20         "ASTM D3321         -52         -47         -47         -47         Total 1         **Cale 0-20         **ASTM D3321	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age         hrs         Client Info         57489         57489         0           Oil Age         hrs         Client Info         0         0         0           Oil Changed         Client Info         N/A         N/A         N/A           Sample Status         NORMAL         NORMAL         SEVERE           PHYSICAL TEST RESULTS         method         limit/base         current         history1           Glycol Type         FT-IR             Specific Gravity         "ASTM D1287         7.88         8.36         8.96           Nitrities         ppm         AP-0532009         936         712         300           Reserve Alkalinity         ppm         AP-0532009         936         712         300           Reserve Alkalinity         ppm         ASTM D3321         -52         -47         -47           Freezing Point         "F         ASTM D3321         -52         -47         -47           Total Dissolved Solids         334.0         281.5         251.5         251.5           Carboxylate         n/a         n/a         n/a         n/a           CORROSION INHIBITORS         m	Sample Number		Client Info		NX014474	NX014495	NX009480
Oil Age         hrs         Client Info         0         0         0         0           Oil Changed         Client Info         N/A         N/A         N/A         N/A         N/A           Sample Status         Nitrides         Numbod         Nitribus         Current         history1         history2           Glycol Type         FT-IR	Sample Date		Client Info		18 Mar 2024	18 Mar 2024	07 Jul 2022
Dil Changed Sample Status	Machine Age	hrs	Client Info		57489	57489	0
NORMAL   NORMAL   SEVERE	Oil Age	hrs	Client Info		0	0	0
PHYSICAL TEST RESULTS   method   limit/base   current   history1   history2	Oil Changed		Client Info		N/A	N/A	N/A
Specific Gravity   FT-IR                   Specific Gravity   'ASTM D1298   1.077   1.075   1.075   1.075         pH	Sample Status				NORMAL	NORMAL	SEVERE
Specific Gravity	PHYSICAL TEST R	RESULTS	method	limit/base	current	history1	history2
Ph	Glycol Type		FT-IR				
Nitrites	Specific Gravity		*ASTM D1298		1.077	1.075	1.075
Reserve Alkalinity Percentage Glycol Percentage	рН	Scale 0-14	ASTM D1287		7.88	8.36	8.96
Percentage Glycol         %         ASTM D3321         57.9         55.7         55.7           Freezing Point         °F         ASTM D3321         -52         -47         -47           Total Dissolved Solids         n/a         n/a         n/a         n/a           Carboxylate         n/a         n/a         n/a         n/a           CORROSION INHIBITORS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D6130         7         19         154           Phosphorus         ppm         ASTM D6130         279         249         308           Boron         ppm         ASTM D6130         2         72         272           CORROSION         method         limit/base         current         history1         history2           Iron         ppm         ASTM D6130         >15         3         5         ▲ 79           Aluminum         ppm         ASTM D6130         >10         0         0         <1	Nitrites	ppm	AP-053:2009		936	712	300
Freezing Point         °F         ASTM D3321         -52         -47         -47           Total Dissolved Solids         334.0         281.5         251.5           Carboxylate         n/a         n/a         n/a           CORROSION INHIBITORS method limit/base         limit/base         current         history1         history2           Silicon         ppm         ASTM D6130         7         19         154           Phosphorus         ppm         ASTM D6130         279         249         308           Boron         ppm         ASTM D6130         279         249         308           Molybdenum         ppm         ASTM D6130         >15         3         5         479           Iron         ppm         ASTM D6130         >15         3         5         479           Aluminum         ppm         ASTM D6130         >10         <1	Reserve Alkalinity	Scale 0-20	*ASTM D1121				
Total Dissolved Solids         334.0         281.5         251.5           Carboxylate         n/a         n/a         n/a           CORROSION INHIBITORS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D6130         7         19         154           Phosphorus         ppm         ASTM D6130         1685         1268         853           Boron         ppm         ASTM D6130         279         249         308           Molybdenum         ppm         ASTM D6130         2         72         272           CORROSION         method         limit/base         current         history1         history2           Iron         ppm         ASTM D6130         >10         <1	Percentage Glycol	%	ASTM D3321		57.9	55.7	55.7
Carboxylate         n/a         n/a         n/a         n/a           CORROSION INHIBITORS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D6130         7         19         154           Phosphorus         ppm         ASTM D6130         1685         1268         853           Boron         ppm         ASTM D6130         279         249         308           Molybdenum         ppm         ASTM D6130         2         72         272           CORROSION         method         limit/base         current         history1         history2           Iron         ppm         ASTM D6130         >15         3         5         479           Aluminum         ppm         ASTM D6130         >10         <1	Freezing Point	°F	ASTM D3321		-52	-47	-47
CORROSION INHIBITORS method limit/base current history1 history2  Silicon ppm ASTM D6130 7 19 154  Phosphorus ppm ASTM D6130 1685 1268 853  Boron ppm ASTM D6130 279 249 308  Molybdenum ppm ASTM D6130 2 2 72 272  CORROSION method limit/base current history1 history2  Iron ppm ASTM D6130 >15 3 5 ↑ 79  Aluminum ppm ASTM D6130 >10 <1 <1  11  Copper ppm ASTM D6130 >10 0 0 <1  Lead ppm ASTM D6130 >10 0 0 0  Tin ppm ASTM D6130 >10 0 0 0  Zinc ppm ASTM D6130 >10 0 0 0  CONTAMINANTS method limit/base current history1 history2  Chlorine ppm ASTM D6130 10 21 20 23  CARRIER SALTS method limit/base current history1 history2  Sodium ppm ASTM D6130 387 544 526  Potassium ppm ASTM D6130 >100 0 0 0  SCALE POTENTIAL method limit/base current history1 history2  Calcium ppm ASTM D6130 >100 0 0 0  Magnesium ppm ASTM D6130 >100 0 0 0  Magnesium ppm ASTM D6130 >100 0 0 0  Magnesium ppm ASTM D6130 >100 0 0 0 0  Magnesium ppm ASTM D6130 >100 0 0 0 0  Magnesium ppm ASTM D6130 >100 0 0 0 0  ASTM D6130 >100 0 0 0 0  Magnesium ppm ASTM D6130 >100 0 0 0 0  Magnesium ppm ASTM D6130 >100 0 0 0 0	Total Dissolved Solids				334.0	281.5	251.5
Silicon         ppm         ASTM D6130         7         19         154           Phosphorus         ppm         ASTM D6130         1685         1268         853           Boron         ppm         ASTM D6130         279         249         308           Molybdenum         ppm         ASTM D6130         2         72         272           CORROSION         method         limit/base         current         history1         history2           Iron         ppm         ASTM D6130         >15         3         5         ▲ 79           Aluminum         ppm         ASTM D6130         >10         0         0         <1	Carboxylate				n/a	n/a	n/a
Phosphorus         ppm         ASTM D6130         1685         1268         853           Boron         ppm         ASTM D6130         279         249         308           Molybdenum         ppm         ASTM D6130         2         72         272           CORROSION         method         limit/base         current         history1         history2           Iron         ppm         ASTM D6130         >15         3         5         ▲ 79           Aluminum         ppm         ASTM D6130         >10         <1	CORROSION INH	IBITORS	method	limit/base	current	history1	history2
Boron         ppm         ASTM D6130         279         249         308           Molybdenum         ppm         ASTM D6130         2         72         272           CORROSION         method         limit/base         current         history1         history2           Iron         ppm         ASTM D6130         >15         3         5         ▲ 79           Aluminum         ppm         ASTM D6130         >10         <1	Silicon	ppm	ASTM D6130		7	19	154
Molybdenum         ppm         ASTM D6130         2         72         272           CORROSION         method         limit/base         current         history1         history2           Iron         ppm         ASTM D6130         >15         3         5         ▲ 79           Aluminum         ppm         ASTM D6130         >10         <1	Phosphorus	ppm	ASTM D6130		1685	1268	853
CORROSION         method         limit/base         current         history1         history2           Iron         ppm         ASTM D6130         >15         3         5         ▲ 79           Aluminum         ppm         ASTM D6130         >10         <1	Boron	ppm	ASTM D6130		279	249	308
Iron         ppm         ASTM D6130         >15         3         5         ▲ 79           Aluminum         ppm         ASTM D6130         >10         <1         <1         ▲ 11           Copper         ppm         ASTM D6130         >10         0         0         <1           Lead         ppm         ASTM D6130         >10         0         0         0           Tin         ppm         ASTM D6130         >10         0         0         0           Zinc         ppm         ASTM D6130         0         0         0         6           CONTAMINANTS         method         limit/base         current         history1         history2           Chlorine         ppm         ASTM D6130         21         20         23           CARRIER SALTS         method         limit/base         current         history1         history2           Sodium         ppm         ASTM D6130         5116         4190         1950           SCALE POTENTIAL         method         limit/base         current         history1         history2           Calcium         ppm         ASTM D6130         >100         0         0         0	Molybdenum	ppm	ASTM D6130		2	72	272
Aluminum         ppm         ASTM D6130         >10         <1         <1         ▲ 11           Copper         ppm         ASTM D6130         >10         0         0         <1	CORROSION		method	limit/base	current	history1	history2
Copper         ppm         ASTM D6130         >10         0         0         <1           Lead         ppm         ASTM D6130         >10         0         0         0           Tin         ppm         ASTM D6130         >10         0         0         0           Zinc         ppm         ASTM D6130         0         0         0         6           CONTAMINANTS         method         limit/base         current         history1         history2           Chlorine         ppm         ASTM D6130         21         20         23           CARRIER SALTS         method         limit/base         current         history1         history2           Sodium         ppm         ASTM D6130         387         544         526           Potassium         ppm         ASTM D6130         5116         4190         1950           SCALE POTENTIAL         method         limit/base         current         history1         history2           Calcium         ppm         ASTM D6130         >100         0         0         0           Magnesium         ppm         ASTM D6130         >40         0         0         <1	Iron	ppm	ASTM D6130	>15	3	5	<b>1</b> 79
Lead         ppm         ASTM D6130         >10         0         0         0           Tin         ppm         ASTM D6130         >10         0         0         0           Zinc         ppm         ASTM D6130         0         0         0         6           CONTAMINANTS         method         limit/base         current         history1         history2           Chlorine         ppm         ASTM D6130         21         20         23           CARRIER SALTS         method         limit/base         current         history1         history2           Sodium         ppm         ASTM D6130         387         544         526           Potassium         ppm         ASTM D6130         5116         4190         1950           SCALE POTENTIAL         method         limit/base         current         history1         history2           Calcium         ppm         ASTM D6130         >100         0         0         0           Magnesium         ppm         ASTM D6130         >40         0         0         <1	Aluminum	ppm	ASTM D6130	>10	<1	<1	<u> </u>
Tin         ppm         ASTM D6130         >10         0         0         0         0           Zinc         ppm         ASTM D6130         0         0         0         6           CONTAMINANTS         method         limit/base         current         history1         history2           Chlorine         ppm         ASTM D6130         21         20         23           CARRIER SALTS         method         limit/base         current         history1         history2           Sodium         ppm         ASTM D6130         387         544         526           Potassium         ppm         ASTM D6130         5116         4190         1950           SCALE POTENTIAL         method         limit/base         current         history1         history2           Calcium         ppm         ASTM D6130         >100         0         0         0           Magnesium         ppm         ASTM D6130         >40         0         0         <1	Copper	ppm	ASTM D6130	>10	0	0	<1
Zinc         ppm         ASTM D6130         0         0         6           CONTAMINANTS         method         limit/base         current         history1         history2           Chlorine         ppm         ASTM D6130         21         20         23           CARRIER SALTS         method         limit/base         current         history1         history2           Sodium         ppm         ASTM D6130         387         544         526           Potassium         ppm         ASTM D6130         5116         4190         1950           SCALE POTENTIAL         method         limit/base         current         history1         history2           Calcium         ppm         ASTM D6130         >100         0         0         0           Magnesium         ppm         ASTM D6130         >40         0         0         <1	Lead	ppm	ASTM D6130	>10	0	0	0
CONTAMINANTS         method         limit/base         current         history1         history2           Chlorine         ppm         ASTM D6130         21         20         23           CARRIER SALTS         method         limit/base         current         history1         history2           Sodium         ppm         ASTM D6130         387         544         526           Potassium         ppm         ASTM D6130         5116         4190         1950           SCALE POTENTIAL         method         limit/base         current         history1         history2           Calcium         ppm         ASTM D6130         >100         0         0         0           Magnesium         ppm         ASTM D6130         >40         0         0         <1	Tin	ppm	ASTM D6130	>10	0	0	0
Chlorine         ppm         ASTM D6130         21         20         23           CARRIER SALTS         method         limit/base         current         history1         history2           Sodium         ppm         ASTM D6130         387         544         526           Potassium         ppm         ASTM D6130         5116         4190         1950           SCALE POTENTIAL         method         limit/base         current         history1         history2           Calcium         ppm         ASTM D6130         >100         0         0         0           Magnesium         ppm         ASTM D6130         >40         0         0         <1	Zinc	ppm	ASTM D6130		0	0	6
CARRIER SALTS         method         limit/base         current         history1         history2           Sodium         ppm         ASTM D6130         387         544         526           Potassium         ppm         ASTM D6130         5116         4190         1950           SCALE POTENTIAL         method         limit/base         current         history1         history2           Calcium         ppm         ASTM D6130         >100         0         0         0           Magnesium         ppm         ASTM D6130         >40         0         0         <1	CONTAMINANTS		method	limit/base	current	history1	history2
Sodium         ppm         ASTM D6130         387         544         526           Potassium         ppm         ASTM D6130         5116         4190         1950           SCALE POTENTIAL         method         limit/base         current         history1         history2           Calcium         ppm         ASTM D6130         >100         0         0         0           Magnesium         ppm         ASTM D6130         >40         0         0         <1	Chlorine	ppm	ASTM D6130		21	20	23
Potassium         ppm         ASTM D6130         5116         4190         1950           SCALE POTENTIAL         method         limit/base         current         history1         history2           Calcium         ppm         ASTM D6130         >100         0         0         0           Magnesium         ppm         ASTM D6130         >40         0         0         <1	CARRIER SALTS		method	limit/base	current	history1	history2
SCALE POTENTIAL         method         limit/base         current         history1         history2           Calcium         ppm         ASTM D6130         >100         0         0         0           Magnesium         ppm         ASTM D6130         >40         0         0         <1	Sodium	ppm	ASTM D6130		387	544	526
Calcium         ppm         ASTM D6130         >100         0         0         0           Magnesium         ppm         ASTM D6130         >40         0         0         <1	Potassium	ppm	ASTM D6130		5116	4190	1950
Magnesium         ppm         ASTM D6130         >40         0         0         <1	SCALE POTENTI	AL	method	limit/base	current	history1	history2
	Calcium	ppm	ASTM D6130	>100	0	0	0
Hardness mgL CaCC3 *In-house <75 <b>0</b> 0 0	Magnesium	ppm	ASTM D6130	>40	0	0	<1
	Hardness	mg/L CaCO3	*In-house	<75	0	0	0



# **COOLANT REPORT**









Laboratory Sample No.

: NX014474 Lab Number : 06135985 Unique Number : 10955450

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

Received **Tested** Diagnosed

: 01 Apr 2024 : 05 Apr 2024 : 05 Apr 2024 - Jonathan Hester

**NORDEX USA - Chicago** 300 SOUTH WACKER DRIVE, SUITE 1500

CHICAGO, IL US 60606

Test Package : COOL ( Additional Tests: GlycolType ) Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369.

Contact: DEVIN LINEHAN DLinehan@nordex-online.com T: (312)386-4124

\* - 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)

Contact/Location: DEVIN LINEHAN - NORDEX

F: (312)386-7102