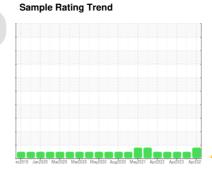


# **COOLANT REPORT**



**Grand River CAT 1 GRRM01BE** 

CHEVRON HEAVY DUTY PF COOLANT (250 GAL)





## **DIAGNOSIS**

#### Recommendation

No corrective action is recommended at this time. The fluid is suitable for further service.

### Corrosion

The copper level is abnormal.

#### Contaminants

There is no indication of any contamination in the coolant.

## **Coolant Condition**

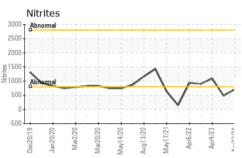
Glycol and nitrite levels are acceptable. The pH level of this fluid is within the acceptable limits.

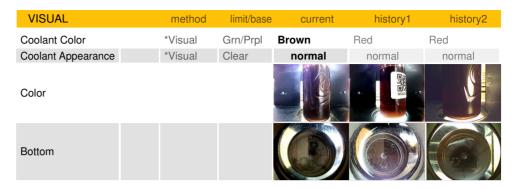
Sample Date         Client Info         23 Apr 2024         10 Oct 2023         04 Apr 2023           Machine Age         hrs         Client Info         72558         70050         68564           Oil Age         hrs         Client Info         72558         70050         68564           Oil Changed         hrs         Client Info         Not Changd         N/d Changd         N/d ANDRMAL           ABMORMAL         NORMAL         NORMAL         NORMAL           PHYSICAL TEST RESULTS         method         limit/base         current         history1         history2           Glycol Type         FT-IR               Specific Gravity         'ASTM D1287         10.5         8.68         8.89         8.95           Nitrites         ppm         AP-053:2009         >800         712         488         1088           Reserve Alkalinity         Szüle (20)         'ASTM D3321         50         47.5         47.0         47.0           Freezing Point         °F         ASTM D3321         37         -28         -28         -28           Total Dissolved Solids         213.5         251.5         229.5         1         251	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2	
Machine Age         hrs         Client Info         72558         70050         68564           Oil Age         hrs         Client Info         72558         70050         68564           Oil Changed         Client Info         Not Changd         Not Changd         N/A           Sample Status         ABNORMAL         NORMAL         NORMAL           PHYSICAL TEST RESULTS         method         limit/base         current         history1         history2           Glycol Type         FT-IR                Specific Gravity         PH         Scale 0-14         ASTM D1287         10.5         8.68         8.89         8.95           Nitrites         ppm         AP-053:2009         >800         712         488         1088           Reserve Alkalinity         Scale 0-20         "ASTM D1121	Sample Number		Client Info		WC0724918	WC0724857	WC0724828	
Machine Age         hrs         Client Info         72558         70050         68564           Oil Age         hrs         Client Info         72558         70050         68564           Oil Changed         Client Info         Not Changd         Not Changd         N/A           Sample Status         ABNORMAL         NORMAL         NORMAL           PHYSICAL TEST RESULTS         method         limit/base         current         history1         history2           Glycol Type         FT-IR                Specific Gravity         **ASTM D1287**         10.5         8.68         8.89         8.95           Nitrites         ppm         AP-053:2009         >800         712         488         1088           Reserve Alkalinity         Scale 0:20         "ASTM D1121**	Sample Date		Client Info		23 Apr 2024	10 Oct 2023	04 Apr 2023	
Oil Age         hrs         Client Info         72558         70050         68564           Oil Changed Sample Status         Client Info         Not Changd ABNORMAL         Not Changd N	Machine Age	hrs	Client Info		•	70050		
Oil Changed Sample Status         Client Info Sample Status         Not Changd ABNORMAL         Not Changd NORMAL         N/A NORMAL           PHYSICAL TEST RESULTS         method         limit/base         current         history1         history2           Glycol Type         FT-IR              Specific Gravity         'ASTM D1287         10.5         8.68         8.89         8.95           Nitrites         ppm         AP-0532009         >800         712         488         1088           Reserve Alkalinity         Scale 0.20         'ASTM D1121              Percentage Glycol         %         ASTM D1321         50         47.5         47.0         47.0           Freezing Point         °F         ASTM D3321         50         47.5         47.0         47.0           Freezing Point         °F         ASTM D3321         -37         -28         -28         -28           Total Dissolved Solids         CATROSION INHIBITORS         method         limit/base         current         history1         history1           Silicon         ppm         ASTM D6130         100         51         37         105           Phosphorus		hrs	Client Info		72558	70050	68564	
PHYSICAL TEST RESULTS         method         limit/base         current         history1         history2           Glycol Type         FT-IR               Specific Gravity         1x8TM D1298         1.064         1.064         1.064           pH         Scale 0.14         ASTM D1287         10.5         8.68         8.89         8.95           Nitrites         ppm         AP-053.2009         >800         712         488         1088           Reserve Alkalinity         Scale 0.20         'ASTM D1211              Percentage Glycol         %         ASTM D3321         50         47.5         47.0         47.0           Percentage Glycol         %         ASTM D3321         -37         -28         -28         -28           Treezing Point         °F         ASTM D6332         100         47.5         47.0         47.0           Freezing Point         °F         ASTM D6130         100         51         37         105           CORROSION INHIBITORS         method         limit/base         current         history1         history2           Boron         ppm         ASTM D6130	•		Client Info		Not Changd	Not Changd	N/A	
Specific Gravity	Sample Status					Ü	NORMAL	
Specific Gravity         "ASTM D1298"         1.064         1.064         1.064           pH         Scale 0-14         ASTM D1287         10.5         8.68         8.89         8.95           Nitrites         ppm         AP-053:2009         >800         712         488         1088           Reserve Alkalinity         Scale 0-20         "ASTM D1121              Percentage Glycol         %         ASTM D3321         50         47.5         47.0         47.0           Freezing Point         "F         ASTM D3321         -37         -28         -28         -28           Carboxylate         ASTM D3321         -37         -28         -28         -28         -28           Carboxylate         n/a         n/a         fail         n/a         fail           CORROSION INHIBITORS method limit/base current         limit/base pm         ASTM D6130         100         51         37         105           Phosphorus         ppm         ASTM D6130         100         51         37         105           Phosphorus         ppm         ASTM D6130         322         313         58           Boron         ppm         ASTM D613	PHYSICAL TEST R	ESULTS	method	limit/base	current	history1	history2	
Specific Gravity	Glycol Type		FT-IR					
pH         Scale 0-14         ASTM D1287         10.5         8.68         8.89         8.95           Nitrites         ppm         AP-053:2009         >800         712         488         1088           Reserve Alkalinity         Scale 0-20         "ASTM D1121              Percentage Glycol         %         ASTM D3321         50         47.5         47.0         47.0           Freezing Point         °F         ASTM D3321         -37         -28         -28         -28           Total Dissolved Solids         213.5         251.5         229.5         229.5         229.5           Carboxylate         m/a         n/a         fail         n/a         fail           CORROSION INHIBITORS method         limit/base         current         history1         history2           Silicon         ppm         ASTM D6130         1000         51         37         105           Phosphorus         ppm         ASTM D6130         0         8         5         33           Boron         ppm         ASTM D6130         322         313         580           Molybdenum         ppm         ASTM D6130         >15         6<	• • • • • • • • • • • • • • • • • • • •		*ASTM D1298		1.064	1.064	1.064	
Nitrites	•	Scale 0-14	ASTM D1287	10.5	8.68	8.89	8.95	
Reserve Alkalinity Percentage Glycol Percentage	•	mag	AP-053:2009	>800	712	488	1088	
Percentage Glycol % ASTM D3321 50 47.5 47.0 47.0  Freezing Point °F ASTM D3321 -37 -28 -28 -28  Total Dissolved Solids								
Freezing Point         °F         ASTM D3321         -37         -28         -28         -28         -28           Total Dissolved Solids         213.5         251.5         229.5           Carboxylate         n/a         n/a         fail           CORROSION INHIBITORS method         limit/base         current         history1         history2           Silicon         ppm         ASTM D6130         1000         51         37         105           Phosphorus         ppm         ASTM D6130         0         8         5         33           Boron         ppm         ASTM D6130         322         313         580           Molybdenum         ppm         ASTM D6130         208         207         364           CORROSION         method         limit/base         current         history1         history2           Iron         ppm         ASTM D6130         >15         6         0         4           Aluminum         ppm         ASTM D6130         >10         <1	•			50	47.5	47.0	47.0	
Total Dissolved Solids	•							
Carboxylate         n/a         n/a         fail           CORROSION INHIBITORS method         limit/base         current         history1         history2           Silicon         ppm         ASTM D6130         1000         51         37         105           Phosphorus         ppm         ASTM D6130         0         8         5         33           Boron         ppm         ASTM D6130         322         313         580           Molybdenum         ppm         ASTM D6130         208         207         364           CORROSION         method         limit/base         current         history1         history2           Iron         ppm         ASTM D6130         >15         6         0         4           Aluminum         ppm         ASTM D6130         >10         0         <1	<u> </u>							
CORROSION INHIBITORS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D6130         1000         51         37         105           Phosphorus         ppm         ASTM D6130         0         8         5         33           Boron         ppm         ASTM D6130         322         313         580           Molybdenum         ppm         ASTM D6130         208         207         364           CORROSION         method         limit/base         current         history1         history2           Iron         ppm         ASTM D6130         >15         6         0         4           Aluminum         ppm         ASTM D6130         >10         0         <1								
Silicon         ppm         ASTM D6130         1000         51         37         105           Phosphorus         ppm         ASTM D6130         0         8         5         33           Boron         ppm         ASTM D6130         322         313         580           Molybdenum         ppm         ASTM D6130         208         207         364           CORROSION         method         limit/base         current         history1         history2           Iron         ppm         ASTM D6130         >15         6         0         4           Aluminum         ppm         ASTM D6130         >10         0         <1	-	BITORS	method	limit/base	current	history1	history2	
Phosphorus         ppm         ASTM D6130         0         8         5         33           Boron         ppm         ASTM D6130         322         313         580           Molybdenum         ppm         ASTM D6130         208         207         364           CORROSION         method         limit/base         current         history1         history2           Iron         ppm         ASTM D6130         >15         6         0         4           Aluminum         ppm         ASTM D6130         >10         0         <1         0           Copper         ppm         ASTM D6130         >10         4         23         3         7           Lead         ppm         ASTM D6130         >10         <1         0         <1           Tin         ppm         ASTM D6130         >10         0         0         0           Zinc         ppm         ASTM D6130         11         0         <1           CONTAMINANTS         method         limit/base         current         history1         history2           Chlorine         ppm         ASTM D6130         1884         1841         3053	Silicon	nnm	ASTM D6130	1000	51			
Boron         ppm         ASTM D6130         322         313         580           Molybdenum         ppm         ASTM D6130         208         207         364           CORROSION         method         limit/base         current         history1         history2           Iron         ppm         ASTM D6130         >15         6         0         4           Aluminum         ppm         ASTM D6130         >10         0         <1	<td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
Molybdenum         ppm         ASTM D6130         208         207         364           CORROSION         method         limit/base         current         history1         history2           Iron         ppm         ASTM D6130         >15         6         0         4           Aluminum         ppm         ASTM D6130         >10         0         <1	•			Ü	-			
Iron         ppm         ASTM D6130         >15         6         0         4           Aluminum         ppm         ASTM D6130         >10         0         <1         0           Copper         ppm         ASTM D6130         >10         23         3         7           Lead         ppm         ASTM D6130         >10         <1         0         <1           Tin         ppm         ASTM D6130         >10         0         0         0           Zinc         ppm         ASTM D6130         11         0         <1           CONTAMINANTS         method         limit/base         current         history1         history2           Chlorine         ppm         ASTM D6130         15         4         33           CARRIER SALTS         method         limit/base         current         history1         history2           Sodium         ppm         ASTM D6130         115         66         218           SCALE POTENTIAL         method         limit/base         current         history1         history2           Calcium         ppm         ASTM D6130         <1         <1         <1         1								
Aluminum         ppm         ASTM D6130 > 10         0         <1         0           Copper         ppm         ASTM D6130 > 10         23         3         7           Lead         ppm         ASTM D6130 > 10         <1         0         <1           Tin         ppm         ASTM D6130 > 10         0         0         0           Zinc         ppm         ASTM D6130   11         0         <1           CONTAMINANTS         method   limit/base   current   history1   history2         history2           Chlorine         ppm         ASTM D6130   1884   1841   3053           CARRIER SALTS         method   limit/base   current   history1   history2           Sodium         ppm         ASTM D6130   115   66   218           SCALE POTENTIAL         method   limit/base   current   history1   history2           Calcium         ppm         ASTM D6130   <<1   <1   <1   <1	CORROSION		method	limit/base	current	history1	history2	
Aluminum         ppm         ASTM D6130         >10         0         <1         0           Copper         ppm         ASTM D6130         >10         ▲ 23         3         7           Lead         ppm         ASTM D6130         >10         <1	Iron	maa	ASTM D6130	>15	6	0	4	
Copper         ppm         ASTM D6130         >10         23         3         7           Lead         ppm         ASTM D6130         >10         <1         0         <1           Tin         ppm         ASTM D6130         >10         0         0         0           Zinc         ppm         ASTM D6130         11         0         <1           CONTAMINANTS         method         limit/base         current         history1         history2           Chlorine         ppm         ASTM D6130         15         4         33           CARRIER SALTS         method         limit/base         current         history1         history2           Sodium         ppm         ASTM D6130         1884         1841         3053           Potassium         ppm         ASTM D6130         115         66         218           SCALE POTENTIAL         method         limit/base         current         history1         history2           Calcium         ppm         ASTM D6130         <1         <1         <1         1	Aluminum	• •				<1	0	
Lead         ppm         ASTM D6130         >10         <1         0         <1           Tin         ppm         ASTM D6130         >10         0         0         0           Zinc         ppm         ASTM D6130         11         0         <1					-			
Tin         ppm         ASTM D6130         >10         0         0         0           Zinc         ppm         ASTM D6130         11         0         <1           CONTAMINANTS         method         limit/base         current         history1         history2           Chlorine         ppm         ASTM D6130         15         4         33           CARRIER SALTS         method         limit/base         current         history1         history2           Sodium         ppm         ASTM D6130         1884         1841         3053           Potassium         ppm         ASTM D6130         115         66         218           SCALE POTENTIAL         method         limit/base         current         history1         history2           Calcium         ppm         ASTM D6130         <1								
Zinc         ppm         ASTM D6130         11         0         <1           CONTAMINANTS         method         limit/base         current         history1         history2           Chlorine         ppm         ASTM D6130         15         4         33           CARRIER SALTS         method         limit/base         current         history1         history2           Sodium         ppm         ASTM D6130         1884         1841         3053           Potassium         ppm         ASTM D6130         115         66         218           SCALE POTENTIAL         method         limit/base         current         history1         history2           Calcium         ppm         ASTM D6130         <1								
Chlorine         ppm         ASTM D6130         15         4         33           CARRIER SALTS         method         limit/base         current         history1         history2           Sodium         ppm         ASTM D6130         1884         1841         3053           Potassium         ppm         ASTM D6130         115         66         218           SCALE POTENTIAL         method         limit/base         current         history1         history2           Calcium         ppm         ASTM D6130         <1		• •			-		<1	
Chlorine         ppm         ASTM D6130         15         4         33           CARRIER SALTS         method         limit/base         current         history1         history2           Sodium         ppm         ASTM D6130         1884         1841         3053           Potassium         ppm         ASTM D6130         115         66         218           SCALE POTENTIAL         method         limit/base         current         history1         history2           Calcium         ppm         ASTM D6130         <1	CONTAMINANTS		method	limit/base	current	history1	history2	
Sodium         ppm         ASTM D6130         1884         1841         3053           Potassium         ppm         ASTM D6130         115         66         218           SCALE POTENTIAL         method         limit/base         current         history1         history2           Calcium         ppm         ASTM D6130         <1         <1         1	Chlorine	ppm	ASTM D6130		15			
Potassium         ppm         ASTM D6130         115         66         218           SCALE POTENTIAL         method         limit/base         current         history1         history2           Calcium         ppm         ASTM D6130         <1         <1         1	CARRIER SALTS		method	limit/base	current	history1	history2	
Potassium         ppm         ASTM D6130         115         66         218           SCALE POTENTIAL         method         limit/base         current         history1         history2           Calcium         ppm         ASTM D6130         <1         <1         1	Sodium	ppm	ASTM D6130		1884	1841	3053	
Calcium ppm ASTM D6130 <1 <1 1	Potassium							
Calcium         ppm         ASTM D6130         <1         <1         1	SCALE POTENTI	AL	method	limit/base	current	history1	history2	
pp	Calcium	mag	ASTM D6130		<1			
	Magnesium	ppm	ASTM D6130		0	<1	<1	

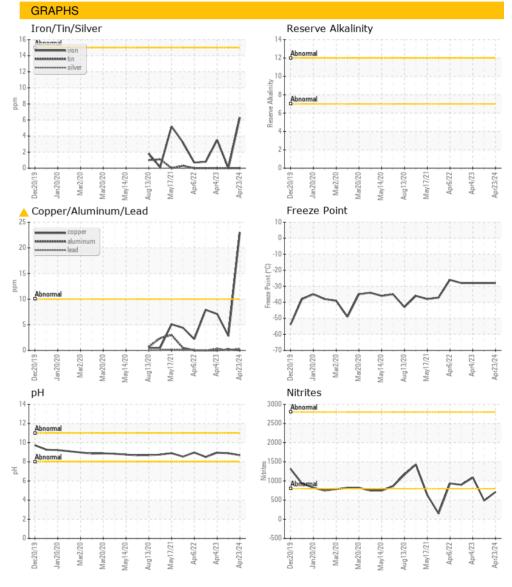


# **COOLANT REPORT**













Laboratory

Sample No.

: WC0724918 Lab Number : 06160900 Unique Number : 10996323

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

: 25 Apr 2024 **Tested** : 30 Apr 2024 Diagnosed : 30 Apr 2024 - Jonathan Hester **EDL NA Recips-Grand River** 

Grand River Powerstation, 8550 West Grand River Hwy Grand Ledge, MI US 48837

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

Contact: JAMES ALEXANDER james.alexander@edlenergy.com T:

 $^st$  - 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)

F: