



COLORADO METALLURGICAL SERVICES

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Date: September 21, 2022
P.O. #: Paid CC
Ref. #:
Material:
Specification: ASTM E1621-21

Company: Grinch
ATTN: CarbonSteel
Address:
Address:

Lab #: 2209-020

Size:

<u>CHEMICAL ANALYSIS</u>	<u>Shaft</u>	<u>Collar</u>
Carbon	N/T	N/T
Sulfur	0.02	0.03
Phosphorus	0.04	0.04
Silicon	0.29	0.37
Chromium	0.17	0.73
Nickel	N/D	0.40
Manganese	1.35	0.92
Copper	0.13	0.06
Molybdenum	0.01	0.17
Vanadium	0.05	0.04
Iron	Base	Base

Chemistry Run By: XRF X-MET8000
N/T: Not Tested
N/D: Not Detected
Percent By Weight
Shaft is most similar to a plain carbon steel
Collar is most similar to a 8620 steel
[X] Information Only

Respectfully Submitted,

Nick Rollman
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Materials Engineer