



# Mill Test Certificate

**Bri-Steel Manufacturing Inc.**  
 2125-64 Avenue, Edmonton, AB Canada T6P 1Z4  
 Tel: 001 (780) 469-6603  
 Fax: 001 (780) 469-6986  
 www.brichemsteel.com

Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0778** Product Size: **NPS 18 XS** Production Date: **March 20, 2013**

Production Method: **Hot Expansion** Product Heat Treatment: **As-rolled**

Product Standards: **ASME B36.10-2004, API SL-44th Ed. Grade B PSL1, ASTM/ASME A/SA106-2011 Grade B NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009, MR0103-2010**

Product Markings: **.BRI-STEEL MFG <API> SL-0898 API SL GR B PSL1 ASTM/ASME A/SA106 GR B A/SA53 GR B NPS 18 XS 0.5 inchWT HEAT BSM-0778 (PIPE # LENGTH MASS) 93.45lb/ft NDE 1370 PSI SMIS NACE MR0175 2013/03 MADE IN CANADA.**

Product Details				Non-Destructive Testing										
Heat	Test Type	Product Size	Pieces	Length	Mass	Geliger	Res.Mag.	Visual	OD	UT	UT	ET	HydroTest	End
BSM-0778	Heat	NPS 18 XS 0.5 in.WT	7	DRL	lb/ft	µR/hr	Gauss	Insp.	Pass	Pass	Pass	Pass	Pass	37.5° Bevel
					93.45	<5	<20	Pass	Pass	Pass	Pass	Pass	Pass	Condition

Chemical Analysis (wt%)																	
Heat	Steelmaking Method	Analysis	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE	CE
BSM-0778	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed	Heat	0.18	0.96	0.002	0.003	0.24	0.03	0.08	0.01	0.04	-	-	-	0.0003	-	-
Product		Product	0.21	0.94	0.008	0.007	0.23	0.04	0.07	0.02	0.03	0.003	0.001	0.001	0.0003	0.39	0.39

Mechanical Properties											
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test		Yield (Rt0.5)	Yield (Rp0.2)	Tensile (Rm)	Y/T	Elongation (A)
					HRBW	Pass					
BSM-0778	Heat	Ferrite & Pearlite	73	Pass	Transverse; 38.1mm x WT	Longitudinal; 38.1mm x WT	43,900	42,100	69,000	0.64	41
							43,000	42,400	69,500	0.62	44

- Additional Details:
- ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing Inc. in accordance with API SL-44th Ed., ASTM/ASME A/SA106-2011, A/SA53-2012 and the purchase order requirements, and that the results meet the corresponding requirements.
  - ✓ This pipe product meets the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour Service, and NACE MR0103-2010 Section 2.1.
  - ✓ No weld repairs have been performed on this product.
  - ✓ This product has not come into contact with mercury during the Bri-Steel Manufacturing processes.
  - ✓ This certificate represents a quality control system that is compliant with EN 10204:2004 Type 3.1.

Mill Test Certificate approved by:

*[Signature]*  
**2013 Mar 26**  
 Kenton Dechant, P.Eng.  
 Manager of Quality and R&D