

Attendance List

**Atlantic Coast Pipeline Laydown Yards
Bealeton, VA & Culpeper, VA
November 1, 2017**

Name

Joe Klesin
Dan Carroll
Bill Dessent
Dan Stahl

Organization

PHMSA – Eastern Region
Dominion Energy
Dominion Energy
Dominion Energy

Atlantic Coast Pipeline
Pipe Coating Analysis
November 20, 2017

Consultant Information

Name: KTA-Tator, Inc.

Address: 115 Technology Drive, Pittsburgh, PA 15275

Contact: James D. Machen, Senior Consultant, 412-788-1300 x 220

Atlantic Coast Pipeline
Pipe Laydown Yards
August 1, 2017

Morgantown Yard

Morgantown Industrial Park
1000 Industrial Park Drive
Morgantown, WV 26501

Spreads: 1-1, 1-2, 2-1, 2-2, 2A, 3
All 42" pipe, all four wall thicknesses (600, 650, 720, 864).

Culpeper Yard

J&E Reload
601 Germanna Pike
Culpeper, VA 22701

Spreads: 3A and 4, plus the 720 and 864 wall pipe for 4A and 5.
All 42" pipe, all four wall thicknesses.

Bealeton Yard

Luck Stone Corp.
Energy Rd.
Bealeton, VA22712

Spreads: 4A and 5, except the 720 and 864 stored at Culpeper.
All 42" pipe, only 600, 650 and some 864 wall thicknesses.

Clarksville Yard

799 Burlington Rd.
Clarksville, VA 23927

Spreads: 6 and 7
All 42" pipe, all four wall thicknesses.

Plymouth Yard

Seaboard Timber Co.
1458 Morrattock Rd.
Plymouth, NC 27962

Spreads: 8, 11, 12a and 12b
All 36", 20" and 16" pipe, all wall thicknesses.

Fuquay Yard

Harnett Intermodal Transload
9027 US 401 North
Fuquay Varina, NC 27526

Spreads: 9, 10
All 36" pipe, all wall thicknesses.

Atlantic Coast Pipeline - Delivered Line Pipe - November 1, 2017

				Morgantown - Spreads 1-1, 1- 2, 2-1, 2-2, 2A, 3	Culpeper - Spread 3A, 4	Bealeton - Spread 4A, 5	Clarksville - Spreads 6, 7	Plymouth - Spreads 8, 11, 12a, 12b	Fuquay-Varina - Spreads 9, 10
O.D.	W.T.	COA TING	JOINT	Delivered	Delivered	Delivered	Delivered	Delivered	Delivered
INCHES	INCHES	TYPE	LENGTH	(Ft)	(Ft)	(Ft)	(Ft)	(Ft)	(Ft)
42	0.600	FBE	DRL	387,307	112,772	148,439	17,058		
42	0.600	FBE	DJ			133,124	480,314		
42	0.650	FBE	DRL		46,857	126,132			
42	0.650	FBE	DJ						
42	0.720	FBE	DRL	183,051	93,073	19,425	12,119		
42	0.720	FBE	DJ			33,534	10,001		
42	0.864	FBE	DRL	15,892	20,278	113	80		
42	0.864	PC	DRL	7,115	1,679	9,489	10,213		
	Total 42"			593,365	274,658	470,256	529,786		
36	0.515	FBE	DRL					4,737	9,228
36	0.515	FBE	DJ					174,128	321,739
36	0.618	FBE	DRL					71,033	114,433
36	0.618	FBE	DJ					60,180	178,803
36	0.741	FBE	DRL					14,444	44,049
36	0.741	PC	DRL					17,529	23,176
	Total 36"							342,050	691,428
20	0.286	FBE	DRL					29,217	
20	0.286	FBE	TRL					10,765	
20	0.286	FBE	DJ					314,734	
20	0.343	FBE	DRL					55,203	
20	0.343	FBE	TRL					409,919	
20	0.343	FBE	DJ						
20	0.412	FBE	DRL					44,012	
20	0.412	PC	DRL					29,268	
	Total 20"							73,280	
16	0.275	FBE	DRL						
16	0.330	FBE	DRL					2,775	
16	0.330	PC	DRL					359	
16	0.275	FBE	DRL						
16	0.330	FBE	DRL					5,672	
16	0.330	PC	DRL						
	Total 16"							8,805	
	Total by Yard			593,365	274,658	470,256	529,786	424,136	691,428

Contact Information

Atlantic Coast Pipeline

July 30, 2018

The primary point-of-contact for DETI is as follows:

Daniel Stahl
Pipeline Integrity Engineer
Office: 681-842-3365
Mobile: (b) (6)
Email: daniel.s.stahl@dominionenergy.com

The backup primary point-of-contact for DETI is as follows:

Drew Mongold
Pipeline Integrity Engineer
Office: 681-842-3215
Mobile: (b) (6)
Email: ronald.a.mongold@dominionenergy.com

The secondary point-of-contact for DETI is as follows:

Jeremy Ross
Manager, Pipeline Integrity
Office: 681-842-3586
Mobile: (b) (6)
Email: jeremy.ross@dominionenergy.com

Dominion Energy Pipe Data
Bealeton Yard

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
1-1	6489	C21815	6	18	17.8 16.6 17.4	10	ND	
1-2	6494	B21732	6	18	16.3 17.3 15.5	10		
2-1	8241	B1253	6-8	18	15.0 15.7 15.1	10		
2-2	6480	B21521	6	18	17.3 17.8 15.6	10		
2-2A	6464	C1510	6	22	20.0 18.3 17.9	10		
2-3	6855	A12674	6	20	18.9 19.1 16.5	10		
3-1	6851	B12399	6	19	18.5 17.6 18.4	10		
3-1A	6835	C11500	6-8	20	16.4 19.7 17.9	10		
3-2	6849	B12252	6	16	17.8 15.9 16.2	10		
3-3	6851	B12322	6	18	18.6 17.5 17.0	10		
4-1	6891	B12854	6	17	22.5 21.5 24.1	10		
4-1A	6869	B12554	6-8	20	17.5 15.4 16.6	10		

Dominion Energy Pipe Data
Bealeton Yard

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
4-2	6899	A12406	6	17	19.7 21.7 19.5	10		
4-3	6881	C11886	6	21	22.2 23.8 21.3	10		
5-1	6751	A10116	6	15	18.8 14.5 17.6	10		
5-1A	6766	B10309	6	19	20.2 22.7 22.0	10		
5-2	6858	B12520	6-8	19	18.0 17.9 18.4	10		
5-3	6842	A11959	6	20	18.3 16.5 18.2	10		
6-1	7544	C4321	6	16	16.3 17.9 15.4	10		
6-1A	7430	B3631	6	19	18.8 21.8 21.9	10		
6-2	7467	A2867	6-8	17	19.7 19.5 20.2	10		
7-1	6442	A25962	6-8	18	20.1 20.0 19.7	10		
7-2	6097	B27499	6	20	17.8 18.6 17.4	10		
7-3	6455	A25839	6-8	18	18.6 15.8 20.9	10		

Dominion Energy Pipe Data
Bealeton Yard

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
7-4	6411	B27162	6	18	16.9 17.2 14.8	10	ND	
8-1	6321	A24720	6	16	16.8 17.8 17.2	10		
8-2	6267	B2661	6	19	17.2 17.0 16.0	10		
8-3	6463	A25792	6	17	18.7 17.9 18.8	10		
8-4	6420	C25600	6	19	15.7 15.7 16.2	10		
8-5	6298	C26299	6	17	21.0 17.0 17.3	10		
9-1	7617	B8561	NC	22	21.4 22.1 21.1	10		No Chalk New Pipe
9-2	7633	B8759	NC	21	24.1 22.7 23.1	10		No Chalk New Pipe
9-3	7620	C8509	NC	22	24.3 22.7 23.9	10		No Chalk New Pipe

**Dominion Energy Pipe Data
Bealeton Yard**

Note 1: Chalking was evaluated in accordance with ASTM D4214, "Standard Test Methods for Evaluating the Degree of Chalking"

This test method involves wrapping black felt cloth around the index fingertip and making a 2 to 3 inch stroke over the FBE coated surface with medium pressure. The chalking spot on the black felt is then compared to photographic reference standard provided in the test method. In that regard, the photographic standard provides numerical chalk ratings of No. 8, No. 6, No. 4 and No. 2. KTA considers the numerical ratings to represent the following: No. 8 Little to No Chalking, No. 6 Slight Chalking, No. 4 Moderate Chalking, No. 2 Heavy Chalking.

Note 2: FBE thickness was evaluated in accordance with ASTM D4138, "Standard Practice for Dry Film Thickness of Protective Coating Systems by Destructive Cross-Sectioning Means"

A Tooke Gage was used for this destructive test method. The Tooke Gage is a hand-held portable instrument that includes cutting tips of a known angle and an integral 50X illuminated microscope with a graduated reticle. The FBE is scribed with a cutting tip and a cross-section of the scribe viewed through the graduated reticle on the microscope, indicates coating thickness.

Note 3: A non-destructive Positector magnetic dry film thickness gage was used for these thickness measurements.

The Positector is a portable battery operated, digital coating thickness gage that non-destructively measures non-magnetic coating thickness on a ferrous substrate using a magnetic principle.

Note 4: Adhesion was evaluated in accordance with a modified version of ASTM D6677, "Standard Test for Evaluating Adhesion by Knife"

Knife Adhesion involves scribing an "X" through the coating with a razor knife and then proving the intersection with the razor knife to rate adhesion based on the amount of force required to disbond the coating and the size of the coating chip disbonded. However, for this inspection, instead of scribing an "X" in the coating, the test procedure was modified such that the edge of the FBE along the cut-back area was proved. A numerical rating scale (progressively ranging from 0 - 10 in increments of 2) is provided in the standard. A rating of) indicates that the coating was easily peeled from the substrate in pieces greater than 1/4 of an inch and a 10 rating indicates that the coating was extremely difficult to remove and fragments were no larger than approximately 1/32 of an inch. KTA considers ratings of 8 - 10 to represent good adhesion, 4 - 6 to represent fair adhesion and 0 - 2 to represent poor adhesion.

Note 5: Chloride testing was performed in accordance with ISO 8502-6, "Extraction of Soluble Contaminants for Analysis" using Bresle Method.

Chloride testing was performed on the bare metal surface of the cut back area along when pipe end. "ND" = None Detected, below the detection limit of the test method used.

Dominion Energy Pipe Data
Bealston

Chalk Rating		Tooke Gage (Mils)			Positector DFT (Mils)			Knife Adhesion Rating		Chlorides
		Minimum	Maximum	Average	Minimum	Maximum	Average			
0-8	21%									
NC	9%							10	100% of Readings	
0	70%	15	22	18.6	14.5	24.3	18.9			Below detection level

Dominion Energy Pipe Data
Bealeton Yard

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
1-1	6489	C21815	6	18	17.8 16.6 17.4	10	ND	
1-2	6494	B21732	6	18	16.3 17.3 15.5	10		
2-1	8241	B1253	6-8	18	15.0 15.7 15.1	10		
2-2	6480	B21521	6	18	17.3 17.8 15.6	10		
2-2A	6464	C1510	6	22	20.0 18.3 17.9	10		
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3-1	6851	B12399	6	19	18.5 17.6 18.4	10		
3-1A	6835	C11500	6-8	20	16.4 19.7 17.9	10		
3-2	6849	B12252	6	16	17.8 15.9 16.2	10		
3-3	6851	B12322	6	18	18.6 17.5 17.0	10		
4-1	6891	B12854	6	17	22.5 21.5 24.1	10		
4-1A	6869	B12554	6-8	20	17.5 15.4 16.6	10		

Dominion Energy Pipe Data
Bealeton Yard

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
4-2	6899	A12406	6	17	19.7 21.7 19.5	10		
4-3	6881	C11886	6	21	22.2 23.8 21.3	10		
5-1	6751	A10116	6	15	18.8 14.5 17.6	10		
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6-2	7467	A2867	6-8	17	19.7 19.5 20.2	10		
7-1	6442	A25962	6-8	18	20.1 20.0 19.7	10		
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Dominion Energy Pipe Data
Bealeton Yard

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
7-4	6411	B27162	6	18	16.9 17.2 14.8	10	ND	
8-1	6321	A24720	6	16	16.8 17.8 17.2	10		
8-2	6267	B2661	6	19	17.2 17.0 16.0	10		
8-3	6463	A25792	6	17	18.7 17.9 18.8	10		
8-4	6420	C25600	6	19	15.7 15.7 16.2	10		
8-5	6298	C26299	6	17	21.0 17.0 17.3	10		
9-1	7617	B8561	NC	22	21.4 22.1 21.1	10		No Chalk New Pipe
9-2	7633	B8759	NC	21	24.1 22.7 23.1	10		No Chalk New Pipe
9-3	7620	C8509	NC	22	24.3 22.7 23.9	10		No Chalk New Pipe

**Dominion Energy Pipe Data
Bealeton Yard**

Note 1: Chalking was evaluated in accordance with ASTM D4214, "Standard Test Methods for Evaluating the Degree of Chalking"

This test method involves wrapping black felt cloth around the index fingertip and making a 2 to 3 inch stroke over the FBE coated surface with medium pressure. The chalking spot on the black felt is then compared to photographic reference standard provided in the test method. In that regard, the photographic standard provides numerical chalk ratings of No. 8, No. 6, No. 4 and No. 2. KTA considers the numerical ratings to represent the following: No. 8 Little to No Chalking, No. 6 Slight Chalking, No. 4 Moderate Chalking, No. 2 Heavy Chalking.

Note 2: FBE thickness was evaluated in accordance with ASTM D4138, "Standard Practice for Dry Film Thickness of Protective Coating Systems by Destructive Cross-Sectioning Means"

A Tooke Gage was used for this destructive test method. The Tooke Gage is a hand-held portable instrument that includes cutting tips of a known angle and an integral 50X illuminated microscope with a graduated reticle. The FBE is scribed with a cutting tip and a cross-section of the scribe viewed through the graduated reticle on the microscope, indicates coating thickness.

Note 3: A non-destructive Positector magnetic dry film thickness gage was used for these thickness measurements.

The Positector is a portable battery operated, digital coating thickness gage that non-destructively measures non-magnetic coating thickness on a ferrous substrate using a magnetic principle.

Note 4: Adhesion was evaluated in accordance with a modified version of ASTM D6677, "Standard Test for Evaluating Adhesion by Knife"

Knife Adhesion involves scribing an "X" through the coating with a razor knife and then proving the intersection with the razor knife to rate adhesion based on the amount of force required to disbond the coating and the size of the coating ship disbonded. However, for this inspection, instead of scribing an "X" in the coating, the test procedure was modified such that the edge of the FBE along the cut-back area was proved. A numerical rating scale (progressively ranging from 0 - 10 in increments of 2) is provided in the standard. A rating of) indicates that the coating was easily peeled from the substrate in pieces greater than 1/4 of an inch and a 10 rating indicates that the coating was extremely difficult to remove and fragments were no larger than approximately 1/32 of an inch. KTA considers ratings of 8 - 10 to represent good adhesion, 4 - 6 to represent fair adhesion and 0 - 2 to represent poor adhesion.

Note 5: Chloride testing was performed in accordance with ISO 8502-6, "Extraction of Soluble Contaminants for Analysis" using Bresle Method.

Chloride testing was performed on the bare metal surface of the cut back area along when pipe end. "ND" = None Detected, below the detection limit of the test method used.

Dominion Energy Pipe Data
Bealton

Chalk Rating		Tooke Gage (Mils)			Positector DFT (Mils)			Knife Adhesion Rating		Chlorides
		Minimum	Maximum	Average	Minimum	Maximum	Average			
0-8	21%									
NC	9%							10	100% of Readings	
0	70%	15	22	18.6	14.6	24.3	18.9			Below detection level

**Dominion Pipe Line Data
Clarksville, VA**

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
1-1	7424	B3125	NC	21	20.1 20.2 20.8	10		
1-2	7449	C3106	6	22	28 29 25	10	ND	
2-1	6961	C13549	6	18	17.6 16.8 20.7	10		
2-2	6165	A20455	6	21	16.0 17.0 19.6	10		
3-1	6765	X13343	6	16	15.8 18.0 17.2	10		
3-2	6937	X13124	6	16	17.9 16.9 16.0	10		
4-1	7495	X3277	6	18	17.3 17.6 18.6	10		
4-2	5947	V14147	6	18	18.5 18.5 18.7	10		
5-1	7484	C3187	NC	18	19.8 19.9 19.9	10		
5-2	7469	C2713	6	21	19.1 18.6 17.5	10		
6-1	7633	B8649	NC	21	23.8 23.9 23.9	10		

**Dominion Pipe Line Data
Clarksville, VA**

7-1	6264	B26542	6	20	17.3 17.5 18.5	10		
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**Dominion Pipe Line Data
Clarksville, VA**

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
6-2	6440	B26596	6	16	15.7 15.0 16.2	10	ND	
7-2	6311	B26363	6	20	16.9 18.0 16.9	10		
6-3	6315	A25242	6	19	17.8 18.8 14.5	10		
7-3	6387	B24867	6	19	17.0 17.6 16.8	10		
6-4	6304	A25055	6	17	18.8 19.9 16.9	10		
7-4	6381	C25345	6	19	19.1 19.4 18.1	10		
6-5	6352	B27301	6	19	20.5 20.0 22.9	10		
7-5	6412	B25243	6	16	15.3 15.4 15.8	10		
7-6	6239	A23961	6	17	16.3 15.4 17.9	10		
8-1	6383	C25220	6	17	16.5 16.3 17.6	10		
8-2	6353	C24201	6	17	15.8 17.8 14.6	10		

**Dominion Pipe Line Data
Clarksville, VA**

8-3	6434	C24574	6	20	18.6 16.4 17.3	10	ND	
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**Dominion Pipe Line Data
Clarksville, VA**

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
8-4	6377	C24674	6	18	15.8 17.1 17.1	10		
8-5	6189	B24445	6	18	15.8 14.7 17.3	10		
8-6	6097	C22570	6	19	19.4 17.9 18.3	10		
9-1	6060	A22217	6	18	19.6 17.2 15.9	10		
9-2	6128	B23259	6	17	14.3 15.0 16.9	10		
10-1	6136	A22109	6	20	17.4 18.3 20.8	10		
9-3	6426	B25881	6	16	14.4 16.6 16.3	10		
10-2	6098	C22070	6	19	18.5 17.5 18.3	10		
11-1	6117	B22804	6	20	21.3 20.8 21.9	10		
12-1	6117	C22879	6	20	17.7 16.9 20.2	10		
11-2	6305	B24349	6	18	19.3 20.3 18.0	10		

**Dominion Pipe Line Data
Clarksville, VA**

12-2	6092	C22184	6	21	23.5 19.9 20.4	10		
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**Dominion Pipe Line Data
Clarksville, VA**

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
11-3	6022	A23049	6	21	19.6 21.4 22.2	10		
12-3	6053	B23380	6	18	20.3 18.1 16.6	10		
11-4	6040	C24003	6	20	16.9 16.0 16.4	10		
12-4	6044	A22733	6	20	20.2 18.8 18.5	10		
11-5	6080	A22889	6	18	16.9 17.0 19.3	10		
12-5	6062	A22707	6	20	18.7 16.5 19.5	10		
11-6	6043	B23240	6	18	19.3 15.7 16.4	10		
12-6	6362	B23213	6	17	19.9 19.4 16.3	10	ND	

Dominion Pipe Line Data Clarksville, VA

Note 1: Chalking was evaluated in accordance with ASTM D4214, "Standard Test Methods for Evaluating the Degree of Chalking"

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A Tooke Gage was used for this destructive test method. The Tooke Gage is a hand-held portable instrument that includes cutting tips of a known angle and an integral 50X illuminated microscope with a graduated reticle. The FBE is scribed with a cutting tip and a cross-section of the scribe viewed through the graduated reticle on the microscope, indicates coating thickness.

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Note 5: Chloride testing was performed in accordance with ISO 8502-6, "Extraction of Soluble Contaminants for Analysis" using Bresle Method.

Chloride testing was performed on the bare metal surface of the cut back area along when pipe end. "ND" = None Detected.

Dominion Energy Pipe Data
Clarksville, VA

Chalk Rating			Tooke Gage (Mils)			Positector DFT (Mils)			Knife Adhesion Rating		Chlorides
6	100%		Minimum	Maximum	Average	Minimum	Maximum	Average	10	100% of Readings	Below detection limit
			16	21	18.5	15.6	29	22.3			

**Dominion Energy Pipe Data
Culpeper Lower Yard**

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Knife ⁴ Adh	Tooke Gage ² (Mils) BASE	Tooke Gage ² (Mils) 2018-1	Tooke Gage ² (Mils) 2018-2	Tooke Gage ² (Mils) 2019-1	Tooke Gage ² (Mils) 2019-2	Min BASE	Max BASE	Avg BASE	2018-1 Avg	2018-2 Avg	2019-1 Avg	2019-2 Avg	Cl ⁵ (PPM)	Comments
1-1	6927	A12993	6-8	10	21					17.4	20.1	18.75						Original 1-1 gone Replaced with 1-1N
1-1N	6949	B1475	6-8	10	N/A	20							18					
1-2	6936	B13928	6-8	10	18	17-18				16.5	17.7	17.1	17					
2-1	6933	B13093	6-8	10	19					16.4	17.7	17.05						Original 2-1 gone Replaced with 2-1N
2-1N	8256	B1149	8	10	N/A	15							15.8					
2-2	6490	B21629	6-8	10	17					15.7	18.3	17						Original 2 - gone No replacement
3-1	6488	C21703	6-8	10	17	16-17				16.9	20	18.45	17				ND	
3-2	6946	B14192	6-8	10	18	18				15.6	17.3	16.45	17.1					
4-1	6920	C12690	6-8	10	16					15.5	17.5	16.5						Row 4 gone
4-2	6946	B13590	6-8	10	17					17.9	19.2	18.55						Row 4 gone
5-1	6071	C21311	6-8	10	19					16.5	18.4	17.45						Original 5-1 now on bottom replaced with 5-1N on top pile
5-1N	6284	A20120	6-8	10	16	N/A	16						16					
5-2	6925	B13596	6-8	10	18	18				17.2	19.8	18.5	17.5					
6-1	6922	C12192	6-8	10	18	18				17.8	18.8	18.3	17.9					
6-2	6067	C21304	6-8	10	18	17-18				17.3	18	17.65	16.2					

**Dominion Energy Pipe Data
Culpepper Lower Yard**

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Knife ⁴ Adh	Tooke Gage ² (Mils) BASE	Tooke Gage ² (Mils) 2018-1	Tooke Gage ² (Mils) 2018-2	Tooke Gage ² (Mils) 2019-1	Tooke Gage ² (Mils) 2019-2	Positector ³ DFT (MILS)						CI ⁵ (PPM)	Comments
										Min BASE	Max BASE	Avg BASE	2018-1 Avg	2018-2 Avg	2019-1 Avg		
7-1N	6155	A20665	8	10	N/A	16							15.8				Original 7-1 gone, replaced with 7-1N
7-2	6144	20504	6-8	10	16	16				14.5	16.6	15.55	15				
8-1	6172	A20523	6	10	17					15.9	16.9	16.4					Row 8 Gone
8-2	6274	B20286	6-8	10	17					15.4	16.5	15.95					Row 8 Gone
9-1	6270	A20023	6-8	10	18	18-19				15.7	16.3	16	20.6				
9-2	6158	B20567	6	10	17	16-17				13.9	15.9	14.9	15				
10-1	6286	C20480	6-8	10	20	21				17.3	20.9	19.1	18.9				
10-2	6279	A20049	6-8	10	18	17				17	17.1	17.05	17				
11-1	6123	B20816	6-8	10	16	17				14	16.9	15.45	15.1				
11-2	6279	B20007	6-8	10	18	18				16.5	18.5	17.5	18.2				
12-1	7580	C5110	6-8	10	17	16-17				17.3	18.7	18	17				
12-2	7645	B4525	6-8	10	18	17				14.9	16.7	15.8	14.9				

**Dominion Energy Pipe Data
Culpepper Lower Yard**

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Knife ⁴ Adh	Tooke Gage ² (Mils) BASE	Tooke Gage ² (Mils) 2018-1	Tooke Gage ² (Mils) 2018-2	Tooke Gage ² (Mils) 2019-1	Tooke Gage ² (Mils) 2019-2	Min BASE	Max BASE	Avg BASE	2018-1 Avg	2018-2 Avg	2019-1 Avg	2019-2 Avg	Cl ⁵ (PPM)	Comments
13-1	7576	A5183	6-8	10	16	16				16 9			17					
13-2	7614	C4694	6-8	10	20	20				17 4	18 4	17 9	18 9					
14-1	7614	B4672	6-8	10	18	18				17 9	20 8	19 4	19 1				ND	
14-2	7540	C4525	6-8	10	18	17				15 5	19 7	17 6	16					
15-1	7461	C3164	6	10	16					15 6	19 6	17 6						Original 15-1 now on bottom replaced with 15-1 N on top of pile
15-1N	3215	C16428	8	10		20							19					
15-2	6459	B21597	6-8	10	20	19-20				16 6	18 8	17 7	18 5					
16-1N	3248	C16343	6-8	10		20							21					New Row 2018-1
16-2N	3283	A15230	6-8	10		20							19 6					New Row 2018-1
17-1N	3250	B16496	8	10		20							20 1					New Row 2018-1
17-2N	3241	B16482	8	10		18							18 5					New Row 2018-1
18-1N	3283	B15457	8	10		20							21					New Row 2018-1
18-2N	3213	B16542	8	10		19							19					New Row 2018-1

Dominion Energy Pipe Data Culpepper Lower Yard

Note 1: Chalking was evaluated in accordance with ASTM D4214, "Standard Test Methods for Evaluating the Degree of Chalking"

This test method involves wrapping black felt cloth around the index fingertip and making a 2 to 3 inch stroke over the FBE coated surface with medium pressure. The chalking spot on the black felt is then compared to photographic reference standard provided in the test method. In that regard, the photographic standard provides numerical chalk ratings of No. 8, No. 6, No. 4 and No. 2. KTA considers the numerical ratings to represent the following: No. 8 Little to No Chalking, No. 6 Slight Chalking, No. 4 Moderate Chalking, No. 2 Heavy Chalking.

Note 2: FBE thickness was evaluated in accordance with ASTM D4138, "Standard Practice for Dry Film Thickness of Protective Coating Systems by Destructive Cross-Sectioning Means"

A Tooke Gage was used for this destructive test method. The Tooke Gage is a hand-held portable instrument that includes cutting tips of a known angle and an integral 50X illuminated microscope with a graduated reticle. The FBE is scribed with a cutting tip and a cross-section of the scribe viewed through the graduated reticle on the microscope, indicates coating thickness.

Note 3: A non-destructive Positector magnetic dry film thickness gage was used for these thickness measurements.

The Positector is a portable battery operated, digital coating thickness gage that non-destructively measures non-magnetic coating thickness on a ferrous substrate using a magnetic principle.

Note 4: Adhesion was evaluated in accordance with a modified version of ASTM D6677, "Standard Test for Evaluating Adhesion by Knife"

Knife Adhesion involves scribing an "X" through the coating with a razor knife and then proving the intersection with the razor knife to rate adhesion based on the amount of force required to disbond the coating and the size of the coating chip disbonded. However, for this inspection, instead of scribing an "X" in the coating, the test procedure was modified such that the edge of the FBE along the cut-back area was proved. A numerical rating scale (progressively ranging from 0 - 10 in increments of 2) is provided in the standard. A rating of) indicates that the coating was easily peeled from the substrate in pieces greater than 1/4 of an inch and a 10 rating indicates that the coating was extremely difficult to remove and fragments were no larger than approximately 1/32 of an inch. KTA considers ratings of 8 - 10 to represent good adhesion, 4 - 6 to represent fair adhesion and 0 - 2 to represent poor adhesion.

Note 5: Chloride testing was performed in accordance with ISO 8502-6, "Extraction of Soluble Contaminants for Analysis" using Bresle Method.

Chloride testing was performed on the bare metal surface of the cut back area along when pipe end. "ND" = None Detected, below the detection limit for the test method used.

***2018-1 Inspection Note: Chalking, adhesion, and chloride test results remained the same for the 2018-1 Inspection (5/24/18)**

**Dominion Energy Pipe Data
Culpepper Upper**

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Knife ⁴ Adh	Tooke ² Gage ² (Mils) BASE	Tooke ² Gage ² (Mils) 2018-1	Tooke ² Gage ² (Mils) 2019-1	Tooke ² Gage ² (Mils) 2019-2	Positector ³ DFT (MILS)						Cl ⁵ (PPM)	Comments	
									Min BASE	Max BASE	Avg BASE	2018-1 Avg	2018-2 Avg	2019-1 Avg			2019-2 Avg
U1-1	8224	B1509	6-8	10	17	17-18				15	17.4	16.2	16.5				
U1-2	8213	A1432	6-8	10	18	18				16.5	17.4	17.0	16.9		ND		
U2-1	7566	B4462	6-8	10	16	16				18.1	19	18.6	18.5				
U2-2	7552	A4446	6	10	18	18				16.5	17.5	17.0	18				
U3-1	7544	B4463	6-8	10	16	16-17				14.6	18.6	16.6	17.5				
U3-2	7540	B4405	6	10	19	18-19				15.1	17.9	16.5	17.1				
U4-1	7503	A3917	6-8	10	16					15	15.7	15.4			Original U4-1 now on bottom of pile, replaced with U4-1N on top of pile		
U4-1N	7491	B2753	6	10		18							18				
U4-2	7404	C3831	6-8	10	17	17				19.9	20	20.0	16.8				
U5-1	7435	A2725	6-8	10	18	18				17.1	18.6	17.9	18.1				
U5-2	7504	C3677	6-8	10	19	19				17.1	18.6	17.9	17.5				
U6-1	7403	A3893	6-8	10	18					15.1	15.5	15.3			Original U6-1 now bottom of pile, replaced with U6-1N on top of pile		
U61-1N	7401	A2672	6	10	N/A	20							20.3				
U6-2	7411	C3701	6	10	17	17				16.2	19.7	18.0	16.5				

Dominion Energy Pipe Data Culpepper Upper

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Knife ⁴ Adh	Tooke ² Gage ² (Mils) BASE	Tooke ² Gage ² (Mils) 2018-1	Tooke ² Gage ² (Mils) 2019-1	Tooke ² Gage ² (Mils) 2019-2	Positector ³ DFT (MILS)					Cl ⁵ (PPM)	Comments
									Min BASE	Max BASE	Avg BASE	2018-1 Avg	2019-1 Avg		
U7-IN	7529	A2674	6	10	N/A	21						21			Original now on bottom of pile, replaced with U7-IN on top of pile
U7-2	7416	A3751	6	10	16	16			19.4	20.9	20.2	16.5			

Note 1: Chalking was evaluated in accordance with ASTM D4214, "Standard Test Methods for Evaluating the Degree of Chalking".

This test method involves wrapping black felt cloth around the index finger and making a 2 to 3 inch stroke over the FBE coated surface with medium pressure. The chalking spot on the black felt is then compared to photographic reference standard provided in the test method. In that regard, the photographic standard provides numerical chalk ratings of No. 8, No. 6, No. 4 and No. 2. KTA considers the numerical ratings to represent the following: No. 8 Little to No Chalking, No. 6 Slight Chalking, No. 4 Moderate Chalking, No. 2 Heavy Chalking

Note 2: FBE thickness was evaluated in accordance with ASTM D4138, "Standard Practice for Dry Film Thickness of Protective Coating Systems by Destructive Cross-Sectioning Means".

A Tooke Gauge was used for this destructive test method. The Tooke Gauge is a hand-held portable instrument that includes cutting tips of a known angle and an integral 50X illuminated microscope with a graduated reticle. The FBE is scribed with a cutting tip and a cross-section of the scribe viewed through the graduated reticle on the microscope, indicates coating thickness.

Note 3: A non-destructive Postector magnetic dry film thickness gage was used for these thickness measurements.

The Postector is a portable batter operated, digital coating thickness gage that non-destructively measures non-magnetic coating thickness on a ferrous substrate using a magnetic principle.

Note 4: Adhesion was evaluated in accordance with a modified version of ASTM D6677, "Standard Test for Evaluating Adhesion by Knife".

Knife Adhesion involves scribing an "X" through the coating with a razor knife and then proving the intersection with the razor knife to rate adhesion based on the amount of force required to disbond the coating and the size of the coating chip disbonded. However, for this inspection, instead of scribing an "X" in the coating, the test procedure was modified such that the edge of the FBE along the cut-back area was proved. A numerical rating scale (progressively ranging from 0 - 10 in increments of 2) is provided in the standard. A rating of 1 indicates that the coating was easily peeled from the substrate in pieces greater than 1/4 of an inch and a 10 rating indicates that the coating was extremely difficult to remove and fragments were no larger than approximately 1/32 of an inch. KTA considers ratings of 8 - 10 to represent good adhesion, 4 - 6 to represent fair adhesion and 0 - 2 to represent poor adhesion.

Note 5: Chloride testing was performed in accordance with ISO 8502-6, "Extraction of Soluble Contaminants for Analysis" using Bresle Method.

Chloride testing was performed on the bare metal surface of the cut back area along when pipe end. "ND" = None Detected

***2018-1 Inspection Notes: Chalking, adhesion and chloride test results remained the same for the 2018-1 inspection (5/24/18)**

**Dominion Energy Pipe Data
Culpeper Lower Yard**

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
1-1	6927	A12993	6-8	21	18.4 17.4 20.1	10		
1-2	6936	B13928	6-8	18	17.7 16.5 17.2	10		
2-1	6933	B13093	6-8	19	16.4 17.7 16.5	10		
2-2	6490	B21629	6-8	17	18.3 17.7 15.7	10		
3-1	6488	C21703	6-8	17	16.9 20.0 17.0	10	ND	
3-2	6946	B14192	6-8	18	17.3 15.6 17.0	10		
4-1	6920	C12690	6-8	16	15.5 16.1 17.5	10		
4-2	6946	B13590	6-8	17	19.2 19.1 17.9	10		
5-1	6071	C21311	6-8	19	17.5 18.4 16.5	10		
5-2	6925	B13596	6-8	18	18.9 19.8 17.2	10		
6-1	6922	C12192	6-8	18	18.8 17.8 17.9	10		
6-2	6067	C21304	6-8	18	18.0 17.7 17.3	10		

Dominion Energy Pipe Data
Culpeper Lower Yard

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
7-1	6869	C12731	6-8	18	19.8 19.1 19.4	10		
7-2	6144	20504	6-8	16	15.5 14.5 16.6	10		
8-1	6172	A20523	6	17	16.3 16.9 15.9	10		
8-2	6274	B20286	6-8	17	15.4 15.2 16.5	10		
9-1	6270	A20023	6-8	18	16.3 15.7 15.9	10		
9-2	6158	B20567	6	17	15.2 15.9 13.9	10		
10-1	6286	C20480	6-8	20	17.3 20.9 18.7	10		
10-2	6279	A20049	6-8	18	17.0 17.0 17.1	10		
11-1		B200	6-8	16	16.9 14.0 16.5	10		
11-2	6279	B20007	6-8	18	17.6 18.5 16.5	10		
12-1	7580	C5110	6-8	17	18.7 17.9 17.3	10		
12-2	7645	B4525	6-8	18	14.9 16.1 16.7	10		

**Dominion Energy Pipe Data
Culpepper Lower Yard**

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
13-1	7576	A5183	6-8	18	19.4 19.7 19.9	10		
13-2	7614	C4694	6-8	20	17.8 17.4 18.4	10		
14-1	7614	B4672	6-8	18	20.3 20.8 17.9	10	ND	
14-2	7540	C4525	6-8	18	15.7 19.7 17.5	10		
15-1	7461	C3164	6	16	15.6 18.8 19.6	10		
15-2	6459	B21597	6-8	20	18.8 16.9 16.6	10		

Note 1: Chalking was evaluated in accordance with ASTM D4214, "Standard Test Methods for Evaluating the Degree of Chalking"

This test method involves wrapping black felt cloth around the index fingertip and making a 2 to 3 inch stroke over the FBE coated surface with medium pressure. The chalking spot on the black felt is then compared to photographic reference standard provided in the test method. In that regard, the photographic standard provides numerical chalk ratings of No. 8, No. 6, No. 4 and No. 2. KTA considers the numerical ratings to represent the following: No. 8 Little to No Chalking, No. 6 Slight Chalking, No. 4 Moderate Chalking, No. 2 Heavy Chalking

Note 2: FBE thickness was evaluated in accordance with ASTM D4138, "Standard Practice for Dry Film Thickness of Protective Coating Systems by Destructive Cross-Sectioning Means"

A Tooke Gage was used for this destructive test method. The Tooke Gage is a hand-held portable instrument that includes cutting tips of a known angle and an integral 50X illuminated microscope with a graduated reticle. The FBE is scribed with a cutting tip and a cross-section of the scribe viewed through the graduated reticle on the microscope, indicates coating thickness

Note 3: A non-destructive Positector magnetic dry film thickness gage was used for these thickness measurements

The Positector is a portable batter operated, digital coating thickness gage that non-destructively measures non-magnetic coating thickness on a ferrous substrate using a magnetic principle

Note 4: Adhesion was evaluated in accordance with a modified version of ASTM D6677, "Standard Test for Evaluating Adhesion by Knife"

Knife Adhesion involves scribing an "X" through the coating with a razor knife and then proving the intersection with the razor knife to rate adhesion based on the amount of force required to disbond the coating and the size of the coating ship disbonded. However, for this inspection, instead of scribing an "X" in the coating, the test procedure was modified such that the edge of the FBE along the cut-back area was proved. A numerical rating scale (progressively ranging from 0 - 10 in increments of 2) is provided in the standard. A rating of 2 indicates that the coating was easily peeled from the substrate in pieces greater than 1/4 of an inch and a 10 rating indicates that the coating was extremely difficult to remove and fragments were no larger than approximately 1/32 of an inch. KTA considers ratings of 8 - 10 to represent good adhesion, 4 - 6 to represent fair adhesion and 0 - 2 to represent poor adhesion

Note 5: Chloride testing was performed in accordance with ISO 8502-6, "Extraction of Soluble Contaminants for Analysis" using Bresle Method

Chloride testing was performed on the bare metal surface of the cut back area along when pipe end. "ND" = None Detected, below the detection limit for the test method used

Dominion Energy Pipe Data
Culpeper Upper

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
U1-1	8224	B1509	6-8	17	16.8 17.4 15.0	10		
U1-2	8213	A1432	6-8	18	17.4 16.5 16.6	10	ND	
U2-1	7566	B4462	6-8	16	18.8 19.0 18.1	10		
U2-2	7552	A4446	6	18	17.5 16.5 16.6	10		
U3-1	7544	B4463	6-8	16	15.8 14.6 18.6	10		
U3-2	7540	B4405	6	19	17.9 15.1 17.3	10		
U4-1	7503	A3917	6-8	16	15.5 15.0 15.7	10		
U4-2	7404	C3831	6-8	17	20.0 19.3 19.9	10		
U5-1	7435	A2725	6-8	18	17.1 18.6 18.2	10		
U5-2	7504	C3677	6-8	19	18.6 17.3 17.1	10		
U6-1	7403	A3893	6-8	18	16.5 16.2 15.1	10		
U6-2	7411	C3701	6	17	19.7 16.2 17.8	10		

Dominion Energy Pipe Data
Culpepper Upper

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
U7-1	7405	A3914	8	18	15.4 16.9 16.3	10		
U7-2	7416	A3751	6	16	20.9 19.9 19.4	10		

Note 1: Chalking was evaluated in accordance with ASTM D4214, "Standard Test Methods for Evaluating the Degree of Chalking".

This test method involves wrapping black felt cloth around the index fingertip and making a 2 to 3 inch stroke over the FBE coated surface with medium pressure. The chalking spot on the black felt is then compared to photographic reference standard provided in the test method. In that regard, the photographic standard provides numerical chalk ratings of No. 8, No. 6, No. 4 and No. 2. KTA considers the numerical ratings to represent the following: No. 8 Little to No Chalking, No. 6 Slight Chalking, No. 4 Moderate Chalking, No. 2 Heavy Chalking.

Note 2: FBE thickness was evaluated in accordance with ASTM D4138, "Standard Practice for Dry Film Thickness of Protective Coating Systems by Destructive Cross-Sectioning Means".

A Tooke Gage was used for this destructive test method. The Tooke Gage is a hand-held portable instrument that includes cutting tips of a known angle and an integral 50X illuminated microscope with a graduated reticle. The FBE is scribed with a cutting tip and a cross-section of the scribe viewed through the graduated reticle on the microscope, indicates coating thickness.

Note 3: A non-destructive Positector magnetic dry film thickness gage was used for these thickness measurements.

The Positector is a portable batter operated, digital coating thickness gage that non-destructively measures non-magnetic coating thickness on a ferrous substrate using a magnetic principle.

Note 4: Adhesion was evaluated in accordance with a modified version of ASTM D6677, "Standard Test for Evaluating Adhesion by Knife".

Knife Adhesion involves scribing an "X" through the coating with a razor knife and then proving the intersection with the razor knife to rate adhesion based on the amount of force required to disbond the coating and the size of the coating ship disbonded. However, for this inspection, instead of scribing an "X" in the coating, the test procedure was modified such that the edge of the FBE along the cut-back area was proved. A numerical rating scale (progressively ranging from 0 - 10 in increments of 2) is provided in the standard. A rating of 1 indicates that the coating was easily peeled from the substrate in pieces greater than 1/4 of an inch and a 10 rating indicates that the coating was extremely difficult to remove and fragments were no larger than approximately 1/32 of an inch. KTA considers ratings of 8 - 10 to represent good adhesion, 4 - 6 to represent fair adhesion and 0 - 2 to represent poor adhesion.

Note 5: Chloride testing was performed in accordance with ISO 8502-6, "Extraction of Soluble Contaminants for Analysis" using Bresle Method.

Chloride testing was performed on the bare metal surface of the cut back area along when pipe end. "ND" = None Detected.

Domestic Energy Pipe Data
Copper Lower Yard

Crack Rating		Tooke Gaps (Mils)			Positector DFT (Mils)			Knife Adhesion Rating		Chlorides
6	17%	Minimum	Maximum	Average	Minimum	Maximum	Average	10	100% of Readings	Below detection limit
6-8	83%	16	21	18.5	13.9	20.8	17.4			

Dominion Energy Pipe Data
Calverton Upper Yard

Chalk Rating		Tooke Gage (Mils)			Positector DFT (Mils)			Knife Adhesion Rating		Chlorides
6	29%	Minimum	Maximum	Average	Minimum	Maximum	Average	10	100% of Readings	Below detection limit
6-8	71%	16	19	17.5	14.0	20	17.3			

Dominion Energy Pipe Data
Fuquay Varina Yard

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
1-1	8419	A5705	6-8	20.0	18.2 23.3 18.3	10		
1-2	8367	C5341	6-8	22.0	21.2 21.5 22.2	10		
1-3	8477	A5960	6-8	23.0	20.3 21.8 21.7	10		
1-4	8370	A4586	6-8	18.0	20.2 19.5 19.8	10		
2-1	4545	B9358	6-8	19.0	22.9 24.1 20.7	10		
2-2	4511	B11050	6-8	23.0	23.6 20.2 22.7	10	ND	
2-3	4545	B10159	6-8	22.0	21.1 22.3 24.3	10		
2-4	4559	B10983	6-8	24.0	23.5 21.4 21.0	10		
2-5	4525	C10566	6-8	20.0	22.3 22.3 22.1	10		
3-1	8409	A3326	6	18.0	19.7 17.8 16.0	10		
3-2	8541	B3111	6	18.0	19.0 18.8 18.9	10		
4-1	8509	B2937	6	17.0	17.9 17.8 20.0	10		

Dominion Energy Pipe Data
Fuquay Varina Yard

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
4-2	8421	A3490	6	22.0	19.3 19.7 17.2	10		
5-1	3638	B1447	6	18.0	22.4 22.4 24.4	10		
5-2	4638	B6879	6	19.0	17.7 17.6 19.2	10		
6-1	8406	C2196	6	19.0	19.8 18.5 20.1	10		
6-2	8383	A2232	6	20.0	19.5 18.6 20.6	10	ND	
7-1	8523	A2936	6	21.0	20.4 17.8 21.5	10		
7-2	8495	A2194	6	22.0	22.2 18.8 19.8	10		
7-3	8419	B2301	6	21.0	19.1 20.8 21.3	10		
8-1	4522	C10572	6	21.0	21.5 23.6 19.6	10		
8-2	4677	A8197	6	19.0	18.0 21.4 19.3	10		
8-3	4545	A10595	6	20.0	19.8 20.5 19.4	10		
9-1	8376	B5564	6	22.0	23.4 24.1 24.5	10		

**Dominion Energy Pipe Data
Fuquay Varina Yard**

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
9-2	8371	A5152	6	22.0	19.4 21.6 20.9	10		
10-1	8475	A5360	6	21.0	21.4 21.0 21.5	10		
10-2	8436	A5378	6	24.0	20.4 22.8 22.6	10		
10-3	8460	A5004	6	22.0	21.2 22.3 20.3	10		
11-1	8497	A4759	6	19.0	19.1 17.9 19.4	10	ND	
11-2	8445	A4956	6	22.0	19.2 22.7 21.5	10		
11-3	8461	A5754	6	19.0	21.6 19.1 20.6	10		
12-1	8455	C3458	6	21.0	20.5 20.0 19.8	10		
12-2	8535	B3201	6	21.0	19.9 19.9 17.6	10		
13-1	4575	A10123	6	21.0	21.7 21.9 20.8	10		
13-2	4536	B10480	6	22.0	18.6 20.6 22.1	10		
13-3	4568	C10085	6	19.0	19.8 16.4 19.2	10		

**Dominion Energy Pipe Data
Fuquay Varina Yard**

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
13-4	4666	C8706	6	20.0	22.8 19.1 20.1	10		
14-1	4672	A7864	6	19.0	19.3 17.0 19.2	10		
14-2	4604	B9172	6	18.0	19.0 20.3 18.6	10		
14-3	4561	A9838	6	20.0	17.2 19.3 24.4	10		
14-4	4524	B10875	6	20.0	18.3 19.9 18.0	10		
15-1	4688	B8355	6	22.0	18.8 18.9 19.0	10		
15-2	4583	A10717	6	24.0	19.9 22.2 22.8	10		
16-1	4615	C8682	6	21.0	20.9 21.3 19.3	10	ND	
16-2	4639	C7279	6	23.0	19.3 20.3 20.0	10		
17-1	4639	C7233	6	19.0	20.6 22.1 21.4	10	ND	
17-2	4637	C7029	6	17.0	18.6 17.8 18.5	10		
18-1	N/A ALL POWER CRETE COATED							

**Dominion Energy Pipe Data
Fuquay Varina Yard**

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
18-2								N/A ALL POWER CRETE COATED
19-1	3643	C1803	6	18.0	18.8 17.0 19.7	10		
19-2	3624	C1793	6	16.0	16.6 16.7 17.8	10		
20-1	3653	B1864	6	18.0	18.7 18.8 20.2	10		
20-2	3645	B1570	6	20.0	18.0 19.0 17.3	10		

Note 1: Chalking was evaluated in accordance with ASTM D4214, "Standard Test Methods for Evaluating the Degree of Chalking"

This test method involves wrapping black felt cloth around the index fingertip and making a 2 to 3 inch stroke over the FBE coated surface with medium pressure. The chalking spot on the black felt is then compared to photographic reference standard provided in the test method. In that regard, the photographic standard provides numerical chalk ratings of No. 8, No. 6, No. 4 and No. 2. KTA considers the numerical ratings to represent the following: No. 8 Little to No Chalking, No. 6 Slight Chalking, No. 4 Moderate Chalking, No. 2 Heavy Chalking

Note 2: FBE thickness was evaluated in accordance with ASTM D4138, "Standard Practice for Dry Film Thickness of Protective Coating Systems by Destructive Cross-Sectioning Means"

A Tooke Gage was used for this destructive test method. The Tooke Gage is a hand-held portable instrument that includes cutting tips of a known angle and an integral 50X illuminated microscope with a graduated reticle. The FBE is scribed with a cutting tip and a cross-section of the scribe viewed through the graduated reticle on the microscope, indicates coating thickness

Note 3: A non-destructive Positector magnetic dry film thickness gage was used for these thickness measurements

The Positector is a portable batter operated, digital coating thickness gage that non-destructively measures non-magnetic coating thickness on a ferrous substrate using a magnetic principle

Note 4: Adhesion was evaluated in accordance with a modified version of ASTM D6677, "Standard Test for Evaluating Adhesion by Knife"

Knife Adhesion involves scribing an "X" through the coating with a razor knife and then proving the intersection with the razor knife to rate adhesion based on the amount of force required to disbond the coating and the size of the coating ship disbonded. However, for this inspection, instead of scribing an "X" in the coating, the test procedure was modified such that the edge of the FBE along the cut-back area was proved. A numerical rating scale (progressively ranging from 0 - 10 in increments of 2) is provided in the standard. A rating of 2 indicates that the coating was easily peeled from the substrate in pieces greater than 1/4 of an inch and a 10 rating indicates that the coating was extremely difficult to remove and fragments were no larger than approximately 1/32 of an inch. KTA considers ratings of 8 - 10 to represent good adhesion, 4 - 6 to represent fair adhesion and 0 - 2 to represent poor adhesion

Note 5: Chloride testing was performed in accordance with ISO 8502-6, "Extraction of Soluble Contaminants for Analysis" using Bresle Method

Chloride testing was performed on the bare metal surface of the cut back area along when pipe end. "ND" = None Detected

Distillation Pipe Data
Faquay Varium Yard

Chalk Rating		Tooke Gage (Mils)			Posifector DFT (Mils)			Knife Adhesion Rating		Chlorides
B-B	16%	Minimum	Maximum	Average	Minimum	Maximum	Average	10	100% of Readings	(Below detection limit)
	82%	16	24	20	16	24.5	20.3			

**Dominion Energy Pipe Data
Morgantown, WV (Upper Yard)**

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
1/1	6939	A13175	6	20	19.6 21.1 21.8	10	N/A	
1/2	6934	C13368	6	21	17.7 18.1 17.9	10	N/A	
2-1	6287	A20229	6	15	15.0 15.4 15.4	10	N/A	
2-2	6287	C20528	6	16	16.1 17.6 16.9	10	N/A	
3-1	6277	C20208	6	16	17.2 17.7 16.7	10	N/A	
3-2	6488	A21490	6	20	18.7 19.1 17.9	10	N/A	
4-1	6171	C20653	6	18	18.4 20.4 20.0	10	N/A	
4-2	6278	C20065	6	17	19.5 17.7 17.3	10	N/A	
4-3	6810	B11258	6	17	17.6 17.6 16.1	10	N/A	
5-1	6750	A10587	6	16	16.3 16.4 16.0	10	N/A	
5-2	6888	A12583	6	16	16.8 18.0 17.4	10	ND	
5-3	6761	B10848	6	17	16.8 17.2 16.4	10	N/A	

**Dominion Energy Pipe Data
Morgantown, WV (Upper Yard)**

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
5-4	6711	A11688	6	15	14.5 16.6 15.1	10	N/A	
6-1	6738	C11262	6	21	18.6 21.0 18.2	10	N/A	
6-2	6838	A11817	6	18	17.9 17.6 16.9	10	N/A	
6-3	6836	B11292	6	19	18.5 18.8 18.1	10	N/A	
6-4	6806	B11269	6	19	19.0 19.2 21.3	10	N/A	
7-1	6836	B11395	6	21	19.2 16.1 18.5	10	N/A	
7-2	6735	B11521	6	17	15.7 15.8 15.8	10	N/A	
7-3	6787	C11521	6	19	20.0 18.8 18.3	10	N/A	
7-4	6278	B20034	6	19	18.5 16.7 17.9	10	N/A	
8-1	6495	A21365	6	19	18.4 17.3 18.0	10	N/A	
8-2	6819	A10842	6	18	17.3 17.3 17.8	10	N/A	
8-3	6712	B11640	6	18	17.3 16.5 17.1	10	ND	

**Dominion Energy Pipe Data
Morgantown, WV (Upper Yard)**

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
8-4	6755	A10474	6	16	15.9 15.9 15.6	10	N/A	
8-5	6788	B10746	6	17	17.7 16.3 16.4	10	N/A	
9-1	6845	A11860	6	19	16.0 19.2 16.2	10	N/A	
9-2	6764	A10675	6	18	17.0 16.4 15.9	10	N/A	
9-3	6800	C10290	6	18	14.0 14.0 17.8	10	N/A	
9-4	6765	C10096	6	16	16.6 14.4 15.9	10	N/A	
9-5	6467	A21150	6	19	20.1 19.7 17.7	10	N/A	
10-1	8205	B1737	6	20	18.3 18.3 19.3	10	N/A	
10-2	8257	B1134	6	19	16.6 18.5 18.3	10	N/A	
10-3	7608	B4752	6	18	17.3 17.4 17.0	10	N/A	
10-4	7441	A5433	6	22	23.5 24.1 24.2	10	N/A	
11-1	6003	C20227	6	19	18.2 18.1 18.8	10	N/A	

**Dominion Energy Pipe Data
Morgantown, WV (Upper Yard)**

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
11-2	6500	C21853	6	18	17.8 19.4 19.4	10	N/A	
12-1	6910	C13432	6	20	17.8 17.7 16.7	10	N/A	
12-2	6941	C13632	6	20	16.2 17.9 17.0	10	N/A	
13-1	6945	A12937	6	18	16.2 17.9 17.0	10	N/A	
13-2	6960	A12953	6	17	18.2 16.9 16.8	10	N/A	
14-1	6947	B14237	6	22	19.2 20.8 19.5	10	N/A	
14-2	6929	B13800	6	20	18.3 20.4 18.6	10	N/A	
15-1	6502	C22019	6	18	18.3 19.1 18.1	10	N/A	
15-2	6955	C12861	6	16	17.4 18.8 16.0	10	N/A	
16-1	7558	A4982	6	17	19.3 18.1	10	ND	
16-2	7613	A4777	6	18	17.0 16.3 16.4	10	N/A	
16-3	7562	A4463	6	17	16.7 15.6 17.0	10	N/A	

**Dominion Energy Pipe Data
Morgantown, WV (Upper Yard)**

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
16-4	7595	B4796	6	18	17.8 16.7 17.5	10	N/A	
16-5	6479	C21369	6	18	16.4 16.9 18.6	10	N/A	
17-1	6501	B21698	6	18	16.6 16.1 16.2	10	N/A	
17-2	7548	B4134	6	17	16.3 17.0 16.1	10	N/A	
17-3	7546	C4257	6	19	16.2 16.4 18.0	10	N/A	
17-4	7505	C3647	6	23	25.4 22.1 22.1	10	N/A	
17-5	7509	C3542	6	18	17.5 18.4 18.2	10	N/A	
18-1	7462	B3593	6	19	17.1 17.0 16.9	10	N/A	
18-2	7455	A3529	6	21	20.1 18.5 19.1	10	N/A	
18-3	7492	C3193	6	16	16.3 17.9 16.3	10	N/A	
18-4	7500	C3058	6	18	17.1 15.2 16.1	10	N/A	
18-5	6481	B21312	6	15	16.7 14.7 15.3	10	N/A	

**Dominion Energy Pipe Data
Morgantown, WV (Upper Yard)**

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
19-1	7426	B3407	6	16	16.0 17.0 16.7	10	ND	
19-2	7469	B2927	6	19	19.0 18.1 17.9	10	N/A	
19-3	7480	A3082	6	17	16.3 17.0 17.9	10	N/A	
19-4	7506	B2564	6	17	16.3 16.2 14.8	10	N/A	

Note 1: Chalking was evaluated in accordance with ASTM D4138, "Standard Test Methods for Evaluating the Degree of Chalking"

This test method involves wrapping black felt cloth around the index fingertip and making a 2 to 3 inch stroke over the FBE coated surface with medium pressure. The chalking spot on the black felt is then compared to photographic reference standard provided in the test method. In that regard, the photographic standard provides numerical chalk ratings of No. 8, No. 6, No. 4 and No. 2. KTA considers the numerical ratings to represent the following: No. 8 Little to No Chalking, No. 6 Slight Chalking, No. 4 Moderate Chalking, No. 2 Heavy Chalking.

Note 2: FBE thickness was evaluated in accordance with ASTM D4138, "Standard Practice for Dry Film Thickness of Protective Coating Systems by Destructive Cross-Sectioning Means"

A Tooke Gage was used for this destructive test method. The Tooke Gage is a hand-held portable instrument that includes cutting tips of a known angle and an integral 50X illuminated microscope with a graduated reticle. The FBE is scribed with a cutting tip and a cross-section of the scribe viewed through the graduated reticle on the microscope, indicates coating thickness.

Note 3: A non-destructive Positector magnetic dry film thickness gage was used for these thickness measurements.

The Positector is a portable batter operated, digital coating thickness gage that non-destructively measures non-magnetic coating thickness on a ferrous substrate using a magnetic principle.

Note 4: Adhesion was evaluated in accordance with a modified version of ASTM D6677, "Standard Test for Evaluating Adhesion by Knife"

Knife Adhesion involves scribing an "X" through the coating with a razor knife and then proving the intersection with the razor knife to rate adhesion based on the amount of force required to disbond the coating and the size of the coating ship disbonded. However, for this inspection, instead of scribing an "X" in the coating, the test procedure was modified such that the edge of the FBE along the cut-back area was proved. A numerical rating scale (progressively ranging from 0 - 10 in increments of 2) is provided in the standard. A rating of 2 indicates that the coating was easily peeled from the substrate in pieces greater than 1/4 of an inch and a 10 rating indicates that the coating was extremely difficult to remove and fragments were no larger than approximately 1/32 of an inch. KTA considers ratings of 8 - 10 to represent good adhesion, 4 - 6 to represent fair adhesion and 0 - 2 to represent poor adhesion.

Note 5: Chloride testing was performed in accordance with ISO 8502-6, "Extraction of Soluble Contaminants for Analysis" using Bresle Method.

Chloride testing was performed on the bare metal surface of the cut back area along when pipe end. "ND" = None Detected.

**Dominion Pipe Data
Morgantown, WV Upper Yard**

6	Chalk Rating: 100% of Readings	Tie-In Gauge (Mils)			Post-Inector DFT (Mils)			Knife Adhesion Rating	Chlorides Below detection level
		Minimum	Maximum	Average	Minimum	Maximum	Average		
		15	23	19	14	24.4	19.7	10	100% of Readings

Dominion Energy Pipe Data
Plymouth Yard

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
1-1	629720	325609629720	6	18.0	25.7 26.5 25.3	10		
1-2	629651	156256608629651	6	17.0	12.4 15.2 14.8	10		
1-3	629801	26325613629801	6	17.0	17.3 15.3 16.6	10		
2-1	617164	13525607617164	6	22.0	27.1 24.8 26.8	10		
2-2	617156	19425607617156	6	17.0	14.8 14.8 18.3	10		
2-3	629801	2642560629801	6	17.0	16.1 16.7 17.8	10		
3-1	4662	B8145	6	18.0	19.1 18.2 18.8	10	ND	
3-2	4569	A8476	6	19.0	20.5 20.2 19.9	10		
3-3	4550	C10540	6	25.0	22.6 22.5 20.5	10		
3-4	617189	10025613617186	6	17.0	16.2 16.5 16.3	10		
4-1	4641	B7354	6	19.0	18.6 18.6 19.0	10		
4-2	4664	C7503	6	20.0	18.0 20.8 20.1	10		

Dominion Energy Pipe Data
Plymouth Yard

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
4-3	4640	C7197	6	20.0	17.8 18.2 18.4	10		
4-4	4642	B7479	6	19.0	20.2 17.0 19.9	10		
5-1	4586	A9308	6	20.0	17.2 19.4 19.1	10		
5-2	4615	A9872	6	23.0	20.6 21.0 21.5	10	ND	
5-3	4550	B10405	6	18.0	20.6 22.4 17.0	10		
5-4	4522	B10735	6	20.0	21.6 21.5 20.0	10		
6-1	517154	624606617154	6	15.0	18.6 17.5 15.9	10		
6-2	8528	B3348	6	20.0	18.3 18.6 19.5	10		
6-3	617438	30225624617438	6	20.0	17.2 16.4 17.3	10		
7-1	8520	C2621	6	18.0	17.8 17.5 19.8	10		
7-2	616999	323608616999	6	18.0	16.9 19.5 15.6	10		
7-3	617085	3823610617085	6	19.0	16.4 17.7 16.3	10		

Dominion Energy Pipe Data
Plymouth Yard

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
8-1	629557	509603629557	6	19.0	16.4 17.6 18.1	10		
8-2	4533	A10686	6	23.0	24.2 27.1 20.7	10		
8-3	8493	A3432	6	21.0	21.2 19.3 19.6	10		
9-1	8401	C4042	6	22.0	20.9 22.6 23.5	10		
9-2	8363	A4503	6	21.0	20.5 19.5 210.1	10		
9-3	8505	C4456	6	18.0	19.0 19.3 19.6	10		
9-4	8413	B4427	6	20.0	19.3 17.3 19.2	10	ND	
10-1	8485	C2134	6	21.0	21.8 22.1 21.1	10		
10-2	8504	A2421	6	24.0	20.6 18.9 20.1	10	ND	
10-3	8399	A306	6	20.0	20.1 19.3 17.7	10		
10-4	8410	B2023	6	20.0	15.9 19.0 18.0	10		
11-1	4626	A9610	6	17.0	17.5 18.9 19.3	10		

**Dominion Energy Pipe Data
Plymouth Yard**

Row/Piece	Heat #	Pipe #	Chalk ¹ Rating	Tooke Gage ² (Mils)	Positector ³ DFT (MILS)	Knife ⁴ Adh	Chloride ⁵ (PPM)	Comments
11-2	3615	A1260	6	2.0	17.3 16.3 17.1	10		
11-3	3628	B1664	6	15.0	17.6 16.4 15.9	10		

Note 1: Chalking was evaluated in accordance with ASTM D4214, "Standard Test Methods for Evaluating the Degree of Chalking"

This test method involves wrapping black felt cloth around the index fingertip and making a 2 to 3 inch stroke over the FBE coated surface with medium pressure. The chalking spot on the black felt is then compared to photographic reference standard provided in the test method. In that regard, the photographic standard provides numerical chalk ratings of No. 8, No. 6, No. 4 and No. 2. KTA considers the numerical ratings to represent the following: No. 8 Little to No Chalking, No. 6 Slight Chalking, No. 4 Moderate Chalking, No. 2 Heavy Chalking.

Note 2: FBE thickness was evaluated in accordance with ASTM D4138, "Standard Practice for Dry Film Thickness of Protective Coating Systems by Destructive Cross-Sectioning Means"

A Tooke Gage was used for this destructive test method. The Tooke Gage is a hand-held portable instrument that includes cutting tips of a known angle and an integral 50X illuminated microscope with a graduated reticle. The FBE is scribed with a cutting tip and a cross-section of the scribe viewed through the graduated reticle on the microscope, indicates coating thickness.

Note 3: A non-destructive Positector magnetic dry film thickness gage was used for these thickness measurements.

The Positector is a portable batter operated, digital coating thickness gage that non-destructively measures non-magnetic coating thickness on a ferrous substrate using a magnetic principle.

Note 4: Adhesion was evaluated in accordance with a modified version of ASTM D6677, "Standard Test for Evaluating Adhesion by Knife"

Knife Adhesion involves scribing an "X" through the coating with a razor knife and then proving the intersection with the razor knife to rate adhesion based on the amount of force required to disbond the coating and the size of the coating ship disbonded. However, for this inspection, instead of scribing an "X" in the coating, the test procedure was modified such that the edge of the FBE along the cut-back area was proved. A numerical rating scale (progressively ranging from 0 - 10 in increments of 2) is provided in the standard. A rating of) indicates that the coating was easily peeled from the substrate in pieces greater than 1/4 of an inch and a 10 rating indicates that the coating was extremely difficult to remove and fragments were no larger than approximately 1/32 of an inch. KTA considers ratings of 8 - 10 to represent good adhesion, 4 - 6 to represent fair adhesion and 0 - 2 to represent poor adhesion.

Note 5: Chloride testing was performed in accordance with ISO 8502-6, "Extraction of Soluble Contaminants for Analysis" using Bresle Method. Chloride testing was performed on the bare metal surface of the cut back area along when pipe end. "ND" = None Detected.

**(Dominion Energy Pipe Data
Plymouth Yard)**

6)	Chalk Rating	Tensile Gauge (Mils)			Puff Deflection OF T (Mils)			Knife Adhesion Rating		Chlorides
		Minimum	Maximum	Average	Minimum	Maximum	Average	10	100% of Readings	
	100% of Readings	15	25	20	14.8	27.1	20.9			Below detection limit

**Dominion Energy Pipe Data
Morgantown, WV (Upper Yard)
2018 6 mo. Re-inspection (4/5/18)**

Row/Piece	Heat #	Pipe #	Knife ⁴ Adh	Chalk ¹ Rating	Tooke Gage ² (Mils) BASE	Tooke Gage ² (Mils) 2018-1	Tooke Gage ² (Mils) 2018-2	Tooke Gage ² (Mils) 2019-1	Tooke Gage ² (Mils) 2019-2	Positector ³ DFT (MILS)							CI ⁵ (PPM)	Comments
										Min BASE	Max BASE	Avg BASE	2018-1 Avg	2018-2 Avg	2019-1 Avg	2019-2 Avg		
1/1	6939	A13175	10	6	20	20				19 6	21 8	20 7	20 6				N/A	
1/2	6934	C13368	10	6	21	20				17 7	18 1	17 9	18 3				N/A	
2-1	6287	A20229	10	6	15	15				15	15 4	15 2	14 9				N/A	
2-2	6287	C20528	10	6	16	16				16 1	17 6	16 85	18 4				N/A	
3-1	6277	C20208	10	6	16	17				16 7	17 7	17 2	17				N/A	
3-2	6488	A21490	10	6	20	20				17 9	19 1	18 5	20				N/A	
4-1	6171	C20653	10	6	18	17-18				18 4	20 4	19 4	19 1				N/A	
4-2	6278	C20065	10	6	17	17				17 3	19 5	18 4	18 7				N/A	
4-3	6810	B11258	10	6	17	17				16 1	17 6	16 85	16 1				N/A	
5-1	6750	A10587	10	6	16	16				16	16 4	16 2	15 8				N/A	
5-2	6888	A12583	10	6	16	16				16 8	18	17 4	17				ND	
5-3	6761	B10848	10	6	17	16-17				16 4	17 2	16 8	16 1				N/A	

Dominion Energy Pipe Data
Morgantown, WV (Upper Yard)
2018 6 mo. Re-inspection (4/5/18)

Row/Piece	Heat #	Pipe #	Knife ⁴ Adh	Chalk ¹ Rating	Tooke ² Gage ² (Mils) BASE	Tooke ² Gage ² (Mils) 2018-1	Tooke ² Gage ² (Mils) 2018-2	Tooke ² Gage ² (Mils) 2019-1	Tooke ² Gage ² (Mils) 2019-2	Positector ³ DFT (MILS)						CI ⁵ (PPM)	Comments	
										Min BASE	Max BASE	Avg BASE	2018-1 Avg	2018-2 Avg	2019-1 Avg			2019-2 Avg
6-1	6738	C11262	10	6	21	20				18 2	21	19 6	19 8				N/A	
6-2	6838	A11817	10	6	18	18				16 9	17 9	17 4	18 2				N/A	
6-3	6836	B11292	10	6	19	18				18 1	18 8	18 45	18 2				N/A	
6-4	6806	B11269	10	6	19	19				19	21 3	20 15	19 6				N/A	
7-1	6836	B11395	10	6	21	20				16 1	19 2	17 65	17 7				N/A	
7-2	6735	B11521	10	6	17	17				15 7	15 8	15 75	15 8				N/A	
7-3	6787	C11521	10	6	19	18-19				18 3	20	19 15	19 6				N/A	
7-4	6278	B20034	10	6	19	19				16 7	18 5	17 6	17 8				N/A	
8-1	6495	A21365	10	6	19	18-19				17 3	18 4	17 85	18 2				N/A	
8-2	6819	A10842	10	6	18	17-18				17 3	17 8	17 55	17 4				N/A	
8-3	6712	B11640	10	6	18	16-17				16 5	17 3	16 9	16 9				ND	
8-4					22							19 9						

**Dominion Energy Pipe Data
Morgantown, WV (Upper Yard)
2018 6 mo. Re-inspection (4/5/18)**

Row/Piece	Heat #	Pipe #	Knife ⁴ Adh	Chalk ¹ Rating	Tooke Gage ² (Mils) BASE	Tooke Gage ² (Mils) 2018-1	Tooke Gage ² (Mils) 2018-2	Tooke Gage ² (Mils) 2019-1	Tooke Gage ² (Mils) 2019-2	Positector ³ DFT (MILS)						CI ⁵ (PPM)	Comments	
										Min BASE	Max BASE	Avg BASE	2018-1 Avg	2018-2 Avg	2019-1 Avg			2019-2 Avg
8-5	6788	B10746	10	6	17	17-18				16 3	17 7	17	16 5				N/A	
9-1	6845	A11860	10	6	19	19				16	19 2	17 6	18 8				N/A	
9-2	6764	A10675	10	6	18	18-19				15 9	17	16 45	17 2				N/A	
9-3	6800	C10290	10	6	18	17-18				14	17 8	15 9	17 3				N/A	
9-4	6765	C10096	10	6	16	16-17				14 4	16 6	15 5	15 4				N/A	
9-5	6467	A21150	10	6	19	18-19				17 7	20 1	18 9	19 4				N/A	
10-1	8205	B1737	10	6	20	20				18 3	19 3	18 8	18 4				N/A	
10-2	8257	B1134	10	6	19	18-19				16 6	18 5	17 55	17 1				N/A	
10-3	7608	B4752	10	6	18	18				17	17 4	17 2	17 6				N/A	
10-4	7441	A5433	10	6	22	17				23 5	24 2	23 85	16				N/A	
11-1	6003	C20227	10	6	19	19-20				18 1	18 8	18 45	18 4				N/A	

**Dominion Energy Pipe Data
Morgantown, WV (Upper Yard)
2018 6 mo. Re-inspection (4/5/18)**

Row/Piece	Heat #	Pipe #	Knife ⁴ Adh	Chalk ¹ Rating	Tooke Gage ² (Mils) BASE	Tooke Gage ² (Mils) 2018-1	Tooke Gage ² (Mils) 2018-2	Tooke Gage ² (Mils) 2019-1	Tooke Gage ² (Mils) 2019-2	Positector ³ DFT (MILS)						CI ⁵ (PPM)	Comments	
										Min BASE	Max BASE	Avg BASE	2018-1 Avg	2018-2 Avg	2019-1 Avg			2019-2 Avg
12-1	6910	C13432	10	6	20	20				16 7	17 8	17 25	18 8				N/A	
12-2	6941	C13632	10	6	20	20				16 2	17 9	17 05	17 4				N/A	
13-1	6945	A12937	10	6	18					16 2	17 9	17 05					N/A	Part of row 3 moved to Bealton, VA Yard Pipe 13-1 Removed
13-2	6960	A12953	10	6	17	16-17				16 8	18 8	17 8	16 6				N/A	
14-1	6947	B14237	10	6	22	21-22				19 2	20 8	20	19 8				N/A	
14-2	6929	B13800	10	6	20	20				18 3	20 4	19 35	20 5				N/A	
15-1	6502	C22019	10	6	18	18				18 1	19 1	18 6	18 6				N/A	
15-2	6955	C12861	10	6	16	16				16	18 8	17 4	16 1				N/A	
16-1	7558	A4982	10	6	17	17				18 1	19 3	18 7	18 7				ND	
16-2	7613	A4777	10	6	18	17-18				16 3	17	16 65	16 1				N/A	
16-3	7562	A4463	10	6	17	17				15 6	17	16 3	16 5				N/A	

**Dominion Energy Pipe Data
Morgantown, WV (Upper Yard)
2018 6 mo. Re-inspection (4/5/18)**

Row/Piece	Heat #	Pipe #	Knife ⁴ Adh	Chalk ¹ Rating	Tooke Gage ² (Mils) BASE	Tooke Gage ² (Mils) 2018-1	Tooke Gage ² (Mils) 2018-2	Tooke Gage ² (Mils) 2019-1	Tooke Gage ² (Mils) 2019-2	Positector ³ DFT (MILS)						CI ⁵ (PPM)	Comments	
										Min BASE	Max BASE	Avg BASE	2018-1 Avg	2018-2 Avg	2019-1 Avg			2019-2 Avg
16-5	6479	C21369	10	6	18	17-18				16 4	18 6	17 5	17 1				N/A	
17-1	6501	B21698	10	6	18	18				16 1	16 6	16 35	16 7				N/A	Part of Row 17 and all of Rows 18 and 19 moved to Bealton, VA Yard
17-2	7548	B4134	10	6	17					16 1	17	16 55					N/A	Part of Row 17 and all of Rows 18 and 19 moved to Bealton, VA Yard
17-3	7546	C4257	10	6	19					16 2	18	17 1					N/A	Part of Row 17 and all of Rows 18 and 19 moved to Bealton, VA Yard
17-4	7505	C3647	10	6	23					22 1	25 4	23 75					N/A	Part of Row 17 and all of Rows 18 and 19 moved to Bealton, VA Yard
17-5	7509	C3542	10	6	18					17 5	18 4	17 95					N/A	Part of Row 17 and all of Rows 18 and 19 moved to Bealton, VA Yard
18-1	7462	B3593	10	6	19					16 9	17	16 95					N/A	Part of Row 17 and all of Rows 18 and 19 moved to Bealton, VA Yard
18-2	7455	A3529	10	6	21					18 5	20 1	19 3					N/A	Part of Row 17 and all of Rows 18 and 19 moved to Bealton, VA Yard
18-3	7492	C3193	10	6	16					16 3	17 9	17 1					N/A	Part of Row 17 and all of Rows 18 and 19 moved to Bealton, VA Yard
18-4	7500	C3058	10	6	18					15 2	17 1	16 15					N/A	Part of Row 17 and all of Rows 18 and 19 moved to Bealton, VA Yard
18-5	6481	B21312	10	6	15					14 7	16 7	15 7					N/A	Part of Row 17 and all of Rows 18 and 19 moved to Bealton, VA Yard

**Dominion Energy Pipe Data
Morgantown, WV (Upper Yard)
2018 6 mo. Re-inspection (4/5/18)**

Row/Piece	Heat #	Pipe #	Knife ⁴ Adh	Chalk ¹ Rating	Tooke Gage ² (Mils) BASE	Tooke Gage ² (Mils) 2018-1	Tooke Gage ² (Mils) 2018-2	Tooke Gage ² (Mils) 2019-1	Tooke Gage ² (Mils) 2019-2	Positector ³ DFT (MILS)						CI ⁵ (PPM)	Comments	
										Min BASE	Max BASE	Avg BASE	2018-1 Avg	2018-2 Avg	2019-1 Avg			2019-2 Avg
19-2	7469	B2927	10	6	19					17 9	19	18 45					N/A	Part of Row 17 and all of Rows 18 and 19 moved to Bealton, VA Yard
19-3	7480	A3082	10	6	17					16 3	17 9	17 1					N/A	Part of Row 17 and all of Rows 18 and 19 moved to Bealton, VA Yard
19-4	7506	B2564	10	6	17					14 8	16 3	15 55					N/A	Part of Row 17 and all of Rows 18 and 19 moved to Bealton, VA Yard
18N-1	3276	C15287	10	8	26					25 4	27 2	26 3					N/A	New Rows for 2018
18N-2	3283	C15498	10	8	20					20	20 8	20 4					N/A	New Rows for 2018
18N-3	3233	A15953	10	8	22					21 8	22	21 9					N/A	New Rows for 2018
19N-1	8263	A1048	10	8	17					17 7	19 4	18 55					N/A	New Rows for 2018
19N-2	3264	B15037	10	8	23					23	24 2	23 6					N/A	New Rows for 2018
19N-3	3264	C15316	10	8	22					21 8	22	21 9					N/A	New Rows for 2018
19N-4	3200	C16164	10	8	21					20 1	20 8	20 45					N/A	New Rows for 2018

**Dominion Energy Pipe Data
Morgantown, WV (Upper Yard)
2018 6 mo. Re-Inspection (4/5/18)**

Note 1: Chalking was evaluated in accordance with ASTM D4214, "Standard Test Methods for Evaluating the Degree of Chalking"

This test method involves wrapping black felt cloth around the index fingertip and making a 2 to 3 inch stroke over the FBE coated surface with medium pressure. The chalking spot on the black felt is then compared to photographic reference standard provided in the test method. In that regard, the photographic standard provides numerical chalk ratings of No. 8, No. 6, No. 4 and No. 2. KTA considers the numerical ratings to represent the following: No. 8 Little to No Chalking, No. 6 Slight Chalking, No. 4 Moderate Chalking, No. 2 Heavy Chalking. **Caulk ratings remained the same for the 6 mo (2018-1) re-inspection**

Note 2: FBE thickness was evaluated in accordance with ASTM D4138, "Standard Practice for Dry Film Thickness of Protective Coating Systems by Destructive Cross-Sectioning Means"

A Tooke Gage was used for this destructive test method. The Tooke Gage is a hand-held portable instrument that includes cutting tips of a known angle and an integral 50X illuminated microscope with a graduated reticle. The FBE is scribed with a cutting tip and a cross-section of the scribe viewed through the graduated reticle on the microscope, indicates coating thickness.

Note 3: A non-destructive Positector magnetic dry film thickness gage was used for these thickness measurements. The Positector is a portable batter operated, digital coating thickness gage that non-destructively measures non-magnetic coating thickness on a ferrous substrate using a magnetic principle.

Note 4: Adhesion was evaluated in accordance with a modified version of ASTM D6677, "Standard Test for Evaluating Adhesion by Knife"

Knife Adhesion involves scribing an "X" through the coating with a razor knife and then proving the intersection with the razor knife to rate adhesion based on the amount of force required to disbond the coating and the size of the coating chip disbonded. However, for this inspection, instead of scribing an "X" in the coating, the test procedure was modified such that the edge of the FBE along the cut-back area was proved. A numerical rating scale (progressively ranging from 0 - 10 in increments of 2) is provided in the standard. A rating of 1 indicates that the coating was easily peeled from the substrate in pieces greater than 1/4 of an inch and a 10 rating indicates that the coating was extremely difficult to remove and fragments were no larger than approximately 1/32 of an inch. KTA considers ratings of 8 - 10 to represent good adhesion, 4 - 6 to represent fair adhesion and 0 - 2 to represent poor adhesion. **Adhesion ratings remained the same for the 6 mo (2018-1) re-inspection**

Note 5: Chloride testing was performed in accordance with ISO 8502-6, "Extraction of Soluble Contaminants for Analysis" using Bresle Method

Chloride testing was performed on the bare metal surface of the cut back area along when pipe end. "ND" = None Detected. **Chloride levels remaine "ND" for the 6 mo (2018-1) re-inspection**

Note 6: 18N and 19N were new rows of pipe that were added to replace the pipe rows that were moved to the Bealton, VA Yard. The 2018-1 Inspection is the initial baseline measurement for these new rows of pipe

**Dominion Pipe Data
Morgantown, WV Upper Yard**

6	Chalk Rating 100% of Readings	Tuckage Gage (Mils)			Posttector DFT (Mils)			Knife Adhesion Rating	Chlorides Below detection level
		Minimum	Maximum	Average	Minimum	Maximum	Average		
		13	23	19	14	25.4	19.7	10	100% of Readings































C=6
A=10
T=

17.2
7-11 14.8

16.9

1







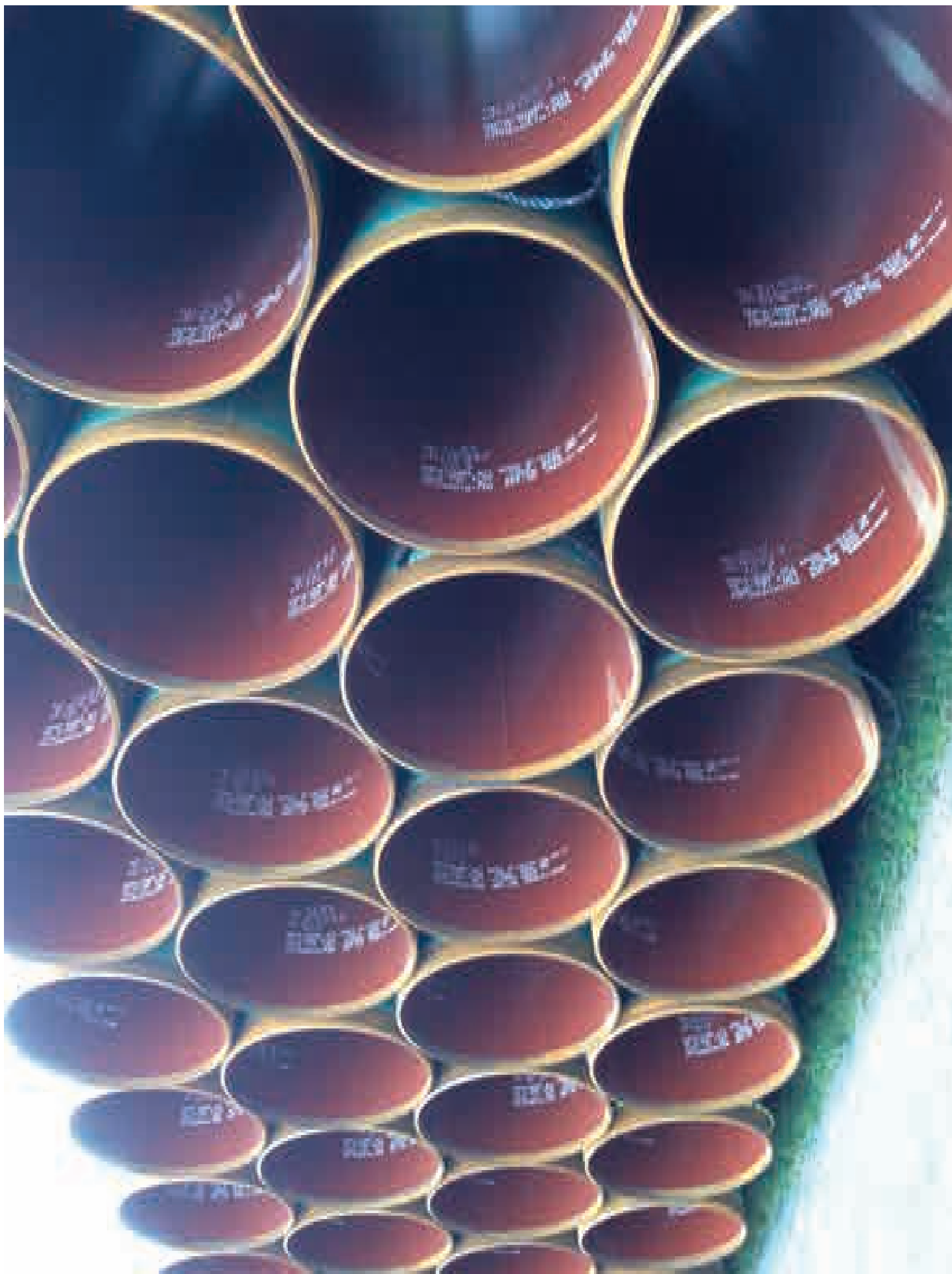


8204
SEND
APR 1

MOZILLA
P900 0X29
00210005P 021

THE

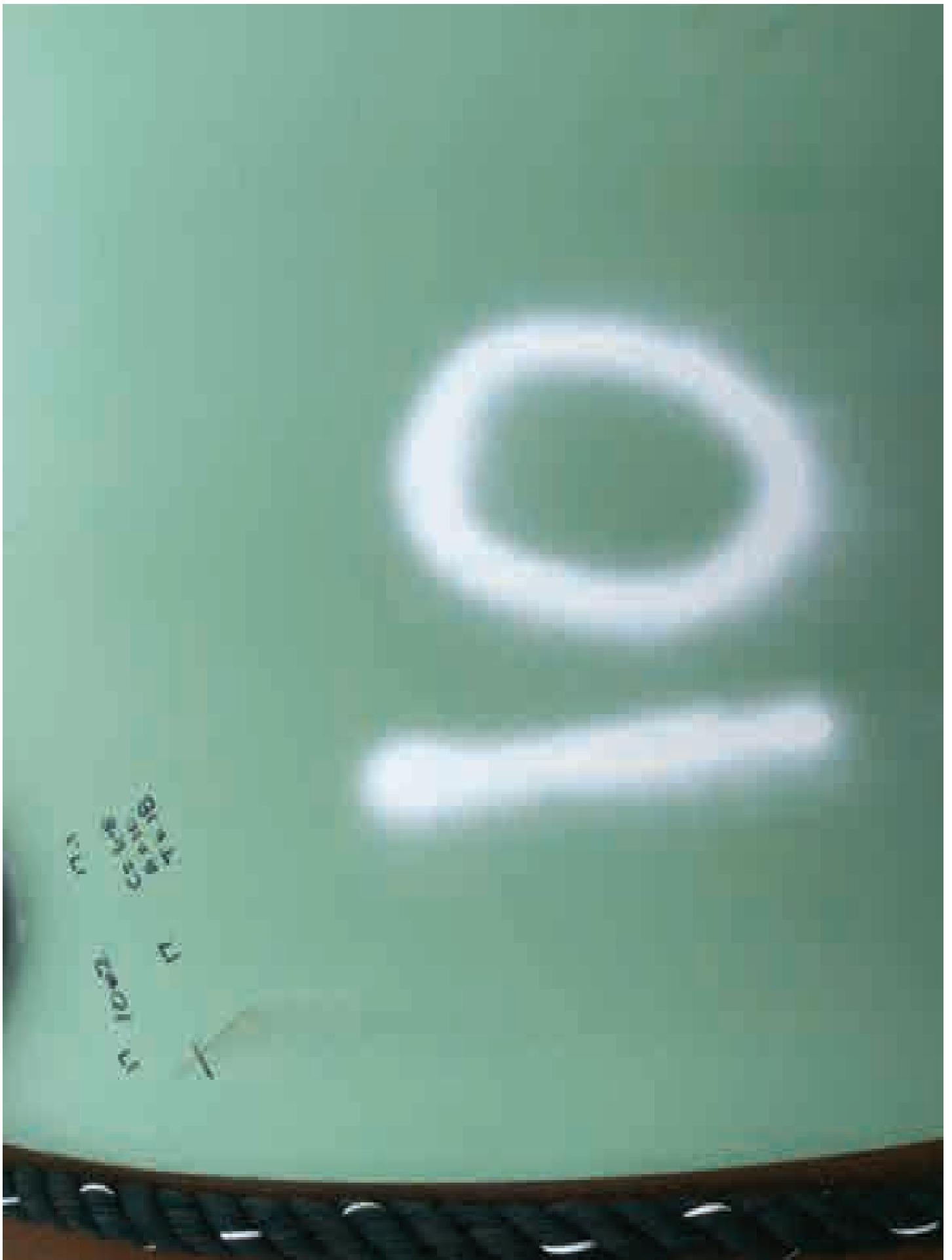




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LT-1015434
DURA-GUN
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1 NSP-171
100-4500191788

Spec 5L-11476 (P)
PSL-2 SAWL
TESTED 2270
287.32
CYN-01-M18F
08/17

BBZ 161005
MIX DG
14V



9-1

2010
C-6-E
7-12

16.5

15.7

T

15.9





