Teadit Response

Smith, Vanessa (A)

From: Smith, Vanessa (A)
Sent: Friday, February 15, 2013 11:55 AM
To: 'ronw@teadit.com'
Cc: DeVine, Dan (DJ); 'Russ Christian'; Burdick, Matthew (MJ); Dahl, Kathy (KA)
Subject: Teadit: 2013 Low E Technology
Attachments: 2236Product Warranty.pdf; 2645_Rev1.pdf; Teadit_2236 Handout.pdf

Good Afternoon,

As you may recall, in late 2011 Dow Chemical Michigan Operations entered a Consent Decree requiring Low Emission valves and/or packing to be installed in the Covered Process Units. In early 2012, a questionnaire was sent to you to determine if your products met the specifications of the Consent Decree. Attached are the completed questionnaires and any supporting data that you provided.

Per the Consent Decree, each year we must revalidate the Low Emission valves and/or packing determinations. Please review the attached information that you provided in 2012 upon which we based our original determination. Once reviewed, please reply to the questions below:

1. **Are the valves or packing that met the Low-E definition per the Dow Chemical Consent Decree in 2012 last year still Low-E? See definition below.**

2. **Do you have any valves or packing that qualify as Low-E per the definitions below since the last time the questionnaire was answered? If yes, please include the testing data.**

"Low-Emissions Valve" or "Low-E Valve" shall mean either (i) or (ii) as follows:

(i) A valve (including its specific packing assembly) for which the manufacturer has issued a written warranty that it will not emit fugitives at greater than 100 ppm, and that, if it does so emit at any time in the first five years, the manufacturer will replace the valve; provided however, that no valve shall qualify as "Low-E" by reason of written warranty unless the valve (including its specific packing assembly) either:

(a) first was tested by the manufacturer or a qualified testing firm pursuant to generally-accepted good engineering practices for testing fugitive emissions and the results of the testing reasonably support the warranty; or

(b) is as an Extension of another valve that qualified as "Low-E" per the definition of "Extension" listed below.

Or

(ii) A valve (including its specific packing assembly) that:

(a) Has been tested by the manufacturer or a qualified testing firm pursuant to generally-accepted good engineering practices for testing fugitive emissions and that, during the test, at no time leaked at greater than 500 ppm, and on average, leaked at less than 100 ppm; or

(b) Is an Extension of another valve that qualified as "Low-E" per the definition of "Extension" listed below.

Smith, Vanessa (A)

From: Ron Walters [ronw@TEADIT.com]
Sent: Monday, February 25, 2013 3:38 PM
To: Smith, Vanessa (A)
Cc: DeVine, Dan (DJ); 'Russ Christian'; Burdick, Matthew (MJ); Dahl, Kathy (KA); Joel Baulch; Chris Day
Subject: RE: Teadit: 2013 Low E Technology
Attachments: API 607 Fire Test - Teadit - Style 2237 Packing- May 2012.pdf; API 622 Fugitive Emission Test Report - Teadit Style 2237 - May 2012 (1).pdf; EF2013_001 2237 Valvula Q-Plus ISO 15848 Rev1 (1).pdf; EF055 Q-Plus Valve.pdf

Vanessa,

The answer to question 1 is yes.

The answer to question 2 is yes, we have developed a graphitic control valve packing, Teadit Style 2237, which I am attaching testing information for your evaluation. Please note the test uses 5 cut rings of spool stock packing without live-loading.

I am going to be at your plant Thursday, February 28th for installation training on our 2236. If you need to have any discussion on the 2237 let Dan know and we can schedule some time after the training session.

Teadit has also developed a PTFE braided packing that we are filing patent registration and will be able to discuss in the near future. It tested single digit PPM Method 21 up to 500 deg. F in our test lab in Rio. I am the leader of MSS task group that completed a Scope for Fugitive Emissions test for PTFE products. I submitted to the API SCOPV chair and he has submitted for development by API. We should put the API task group together at our Spring meeting in April. I will keep you updated as it develops.

Warmest Regards,

Ron Walters
North America Product Manager
Fugitive Emissions Products
Cell: 985-513-0986
www.teadit-na.com

From: Smith, Vanessa (A) [VNowak3@dow.com]
Sent: Friday, February 15, 2013 10:55 AM
To: Ron Walters
Cc: DeVine, Dan (DJ); 'Russ Christian'; Burdick, Matthew (MJ); Dahl, Kathy (KA)
Subject: Teadit: 2013 Low E Technology

Good Afternoon,

As you may recall, in late 2011 Dow Chemical Michigan Operations entered a Consent Decree requiring Low Emission valves and/or packing to be installed in the Covered Process Units. In early 2012, a questionnaire was sent to you to determine if your products met the specifications of the Consent Decree. Attached are the completed questionnaires and any supporting data that you provided.

Vanessa Smith
Environmental Delivery Specialist
Dow Automotive/Dow Pharma
Office: (989) 638-7774
Cell: (989) 213-7258

Fire Test Report

ANSI/API Standard 607, 6th Edition, 2010

ISO 10497: 2010

Performed for

Teadit, NA

http://www.teadit-na.com/

Style 2237 Graphite Packing

Project Number: 212112

May 3, 2012

Performed by

YARMOUTH RESEARCH AND TECHNOLOGY, LLC

434 Walnut Hill Road
North Yarmouth, ME 04097 USA
(207) 829-5359
info@yarmouthresearch.com
www.yarmouthresearch.com

Yarmouth Research and Technology, LLC

Customer:	Teadit, NA	**Date:**	5/3/2012
Specification:	ANSI/API Standard 607, Sixth Edition, 2010		
	ISO 10497: 2010		
Product Description:	Style 2237 Graphite Packing		
Project Number:	PN212112		
Comments:	Tested in 4 inch Class 300 gate valve		

Yarmouth Engineer: Matthew J. Wasielewski, P.E.

Equipment Confirmed to be in Calibration to NIST Standards: Yes

Burn and Cool Down Test

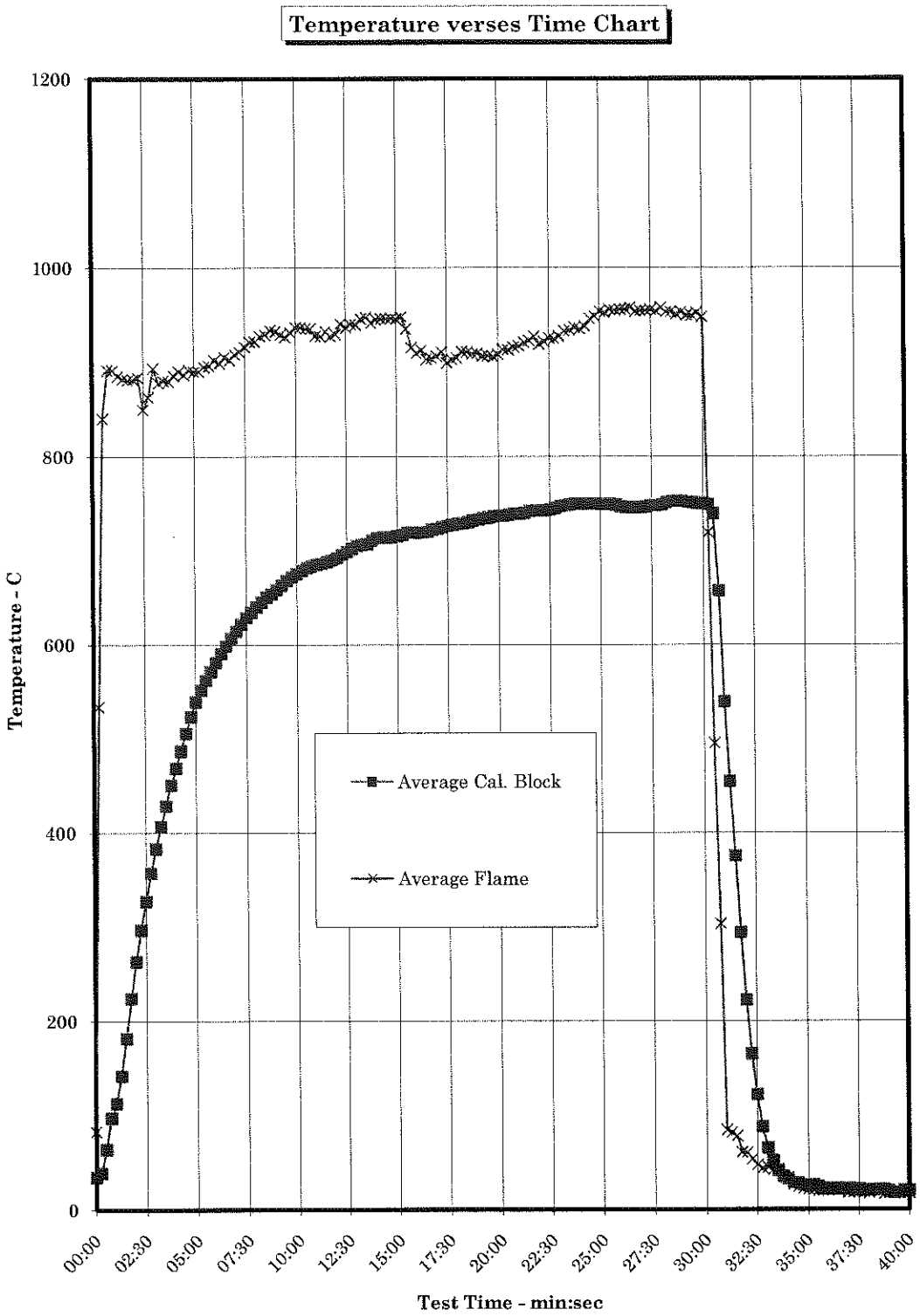
Burn Start Time:	11:53:00	
Average Pressure During Burn:	575	psig
External Leak Rate During Burn/Cool Down:	23.1	ml/min
Allowable External Leak Rate:	400	ml/min
Amount of Time of Avg. Cal. Blocks > 650 deg. C:	21.5	minutes
Were Test Conditions Within Compliance?	Yes	
Were the Valve Leakages Below the Allowables?	Yes	

Operational Test

Did Valve Unseat and Open Fully?:	Yes	
Average Pressure During Test:	551	psig
External Leak Rate After Operating:	58.0	ml/min
Allowable External Leak Rate:	100	ml/min
Was the Leakage Below the Allowable?	Yes	
Does Valve Pass or Fail the Test Standard?	**PASS**	

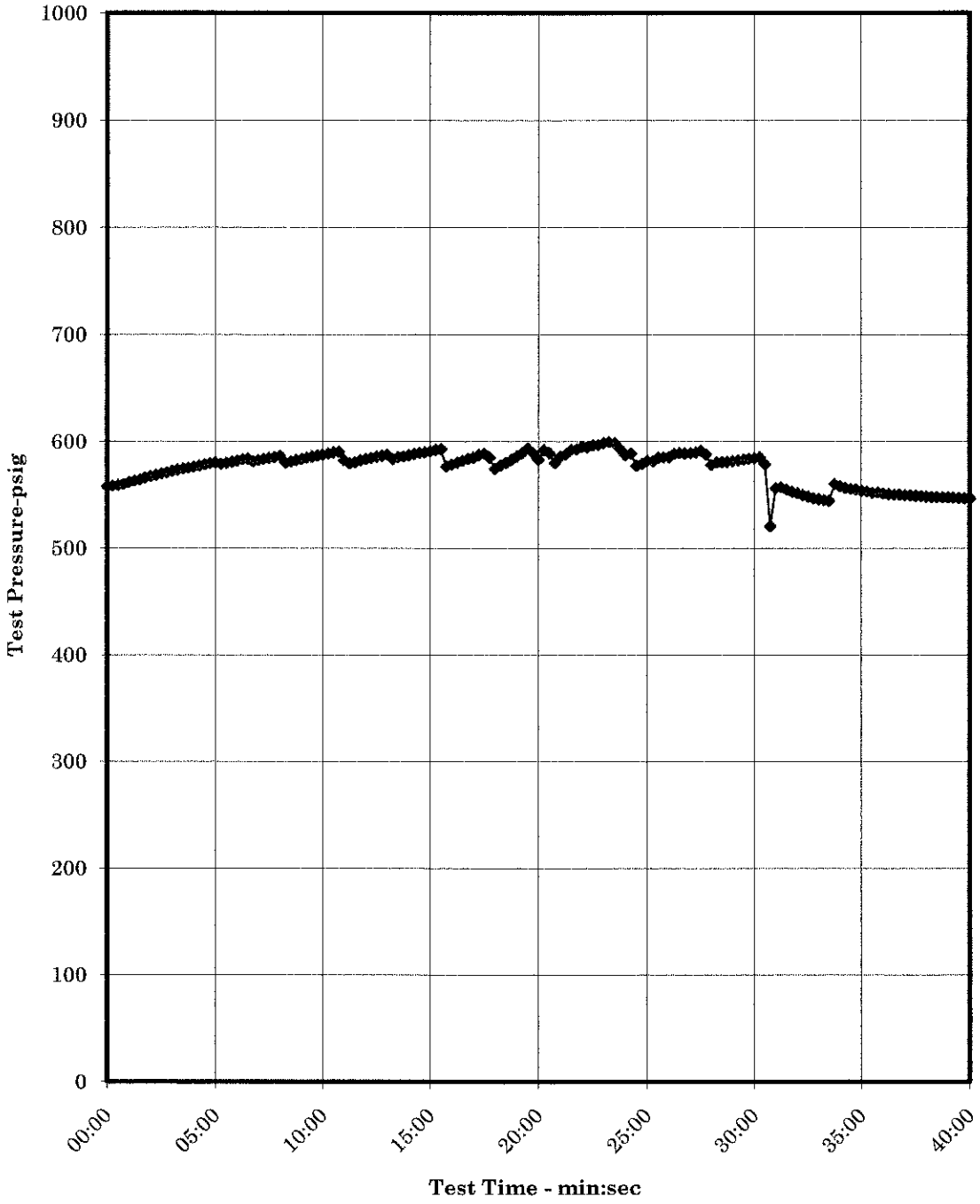
Witnesses

STATE OF MAINE
MATTHEW
J
WASIELEWSKI
No. 7437
LICENSED
PROFESSIONAL ENGINEER

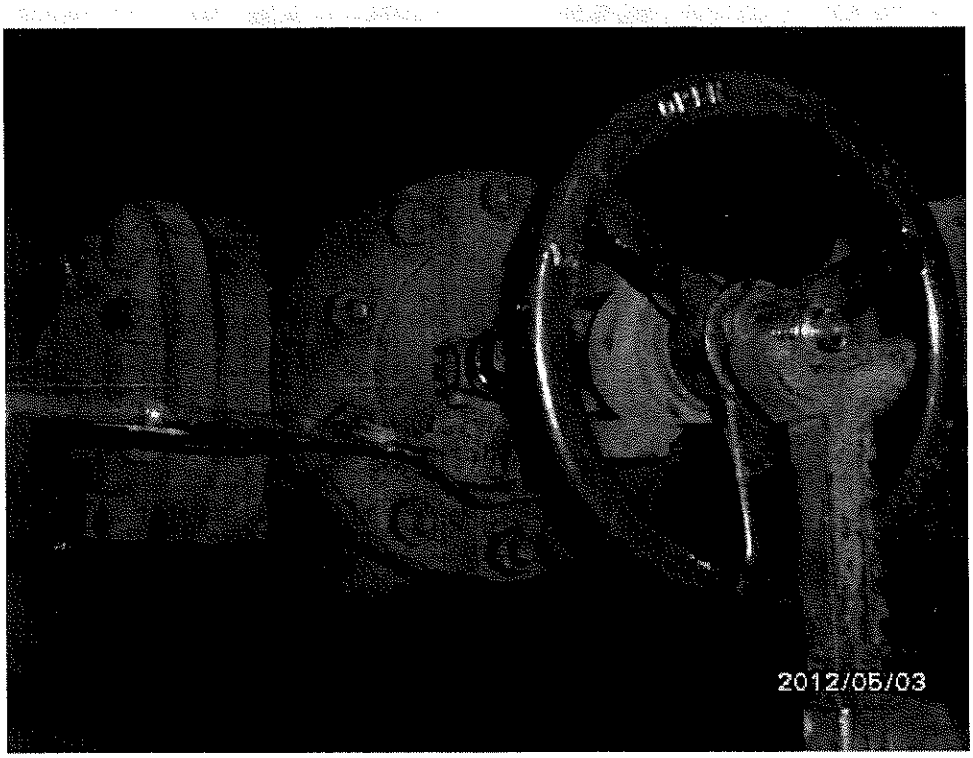

Temperature verses Time Chart
1200
1000
800
600
400
200
0
Temperature - C
Average Cal. Block
Average Flame
00:00
02:30
05:00
07:30
10:00
12:30
15:00
17:30
20:00
22:30
25:00
27:30
30:00
32:30
35:00
37:30
40:00
Test Time - min:sec

Yarmouth Research and Technology, LLC

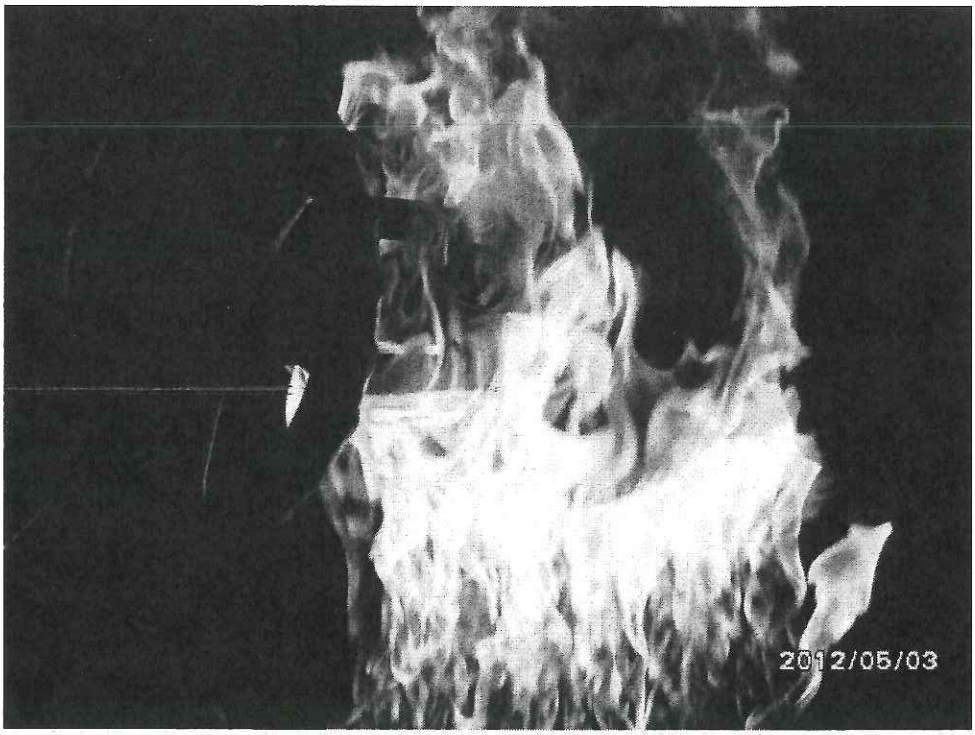
Pressure verses Time Chart



Packing Sample Prior to Burn



Test Setup Prior to Burn



Test During Burn

Yarmouth Research and Technology, LLC

Fire Test Information

Customer: Teadit, NA **Date:** 5/3/2012

Product Code: Style 2237 Graphite Packing

Project Number: PN212112

Fire Test Raw Data

Time	Pressure (psig)	Water Volume (mls)	Cal. Block 1 Temp-C	Cal. Block 2 Temp-C	Avg. Cal Block Temp-C	Bonnet Flame Temp-C	Body Flame Temp-C	Average Flame Temp-C
11:53:00	558	42076	39	31	35	86	79	83
11:53:15	558	42088	43	34	39	532	536	534
11:53:30	559	42067	59	69	64	846	834	840
11:53:45	560	42089	87	108	97	899	884	891
11:54:00	561	42056	114	111	113	896	887	891
11:54:15	563	42060	146	138	142	892	878	885
11:54:30	564	42102	179	184	182	890	874	882
11:54:45	566	42043	214	234	224	888	874	881
11:55:00	567	42052	248	278	263	888	875	882
11:55:15	568	42035	277	316	297	892	876	884
11:55:30	570	42059	304	350	327	821	878	849
11:55:45	571	42041	334	380	357	851	876	863
11:56:00	572	42009	359	407	383	908	879	893
11:56:15	573	42068	381	432	407	884	872	878
11:56:30	574	42023	403	454	429	885	876	880
11:56:45	575	42064	426	476	451	883	876	879
11:57:00	576	42098	443	495	469	891	882	886
11:57:15	577	42096	462	513	487	896	885	891
11:57:30	578	42067	483	529	506	891	883	887
11:57:45	579	42106	503	543	523	897	887	892
11:58:00	580	42137	522	557	540	896	884	890
11:58:15	579	42103	533	570	552	896	885	890
11:58:30	580	42135	542	582	562	901	889	895
11:58:45	581	42142	551	593	572	901	891	896
11:59:00	582	42137	559	603	581	908	896	902
11:59:15	583	42190	569	612	591	904	894	899
11:59:30	584	42168	577	621	599	909	901	905
11:59:45	581	42238	585	629	607	907	897	902
12:00:00	582	42213	592	637	614	912	904	908
12:00:15	583	42199	599	644	622	916	907	911
12:00:30	584	42171	607	650	629	918	913	916
12:00:45	585	42236	613	656	635	924	918	921
12:01:00	586	42249	619	662	640	922	921	921

Fire Test Data - continued

12:01:15	580	42293	623	667	645	927	927	927
12:01:30	581	42292	628	672	650	927	931	929
12:01:45	582	42330	632	676	654	936	931	934
12:02:00	583	42321	636	681	658	933	931	932
12:02:15	585	42311	642	684	663	930	928	929
12:02:30	585	42342	648	688	668	928	925	926
12:02:45	586	42324	652	692	672	932	931	931
12:03:00	587	42342	655	696	675	937	937	937
12:03:15	588	42366	658	699	679	934	938	936
12:03:30	589	42356	661	702	681	938	933	936
12:03:45	590	42390	663	704	684	932	938	935
12:04:00	582	42424	663	707	685	931	924	928
12:04:15	579	42470	664	708	686	924	930	927
12:04:30	580	42518	665	711	688	933	931	932
12:04:45	582	42458	667	713	690	930	924	927
12:05:00	583	42479	669	715	692	931	928	930
12:05:15	584	42461	674	717	696	941	941	941
12:05:30	585	42563	678	719	699	936	937	936
12:05:45	586	42498	683	721	702	942	938	940
12:06:00	587	42541	688	722	705	939	940	939
12:06:15	583	42617	689	723	706	945	946	946
12:06:30	585	42598	690	724	707	946	949	948
12:06:45	586	42547	697	725	711	939	943	941
12:07:00	587	42636	701	726	714	944	946	945
12:07:15	588	42516	701	727	714	943	948	946
12:07:30	589	42636	699	728	714	944	947	946
12:07:45	590	42634	698	730	714	946	947	946
12:08:00	591	42655	700	731	715	943	948	946
12:08:15	592	42642	702	731	717	944	951	948
12:08:30	593	42639	706	732	719	933	937	935
12:08:45	577	42783	706	733	719	918	913	915
12:09:00	578	42803	703	734	719	912	907	909
12:09:15	580	42834	704	734	719	914	911	912
12:09:30	582	42847	706	734	720	905	900	903
12:09:45	584	42870	709	735	722	907	901	904
12:10:00	585	42908	711	735	723	908	903	906
12:10:15	587	42887	713	736	725	913	908	911
12:10:30	588	42884	716	737	726	902	897	899
12:10:45	585	43066	717	737	727	906	899	903
12:11:00	574	43142	719	738	728	907	902	904
12:11:15	577	43174	719	738	729	914	908	911
12:11:30	580	43306	721	739	730	914	907	911
12:11:45	583	43368	723	741	732	910	907	909

Fire Test Data - continued

12:12:00	586	43439	724	742	733	914	904	909
12:12:15	589	43583	726	743	734	910	903	906
12:12:30	593	43748	727	743	735	911	902	907
12:12:45	589	44027	728	745	736	911	900	905
12:13:00	583	44454	728	746	737	913	903	908
12:13:15	592	44836	728	747	737	917	909	913
12:13:30	589	45661	729	747	738	917	908	913
12:13:45	580	46153	729	748	739	920	912	916
12:14:00	586	46038	728	750	739	920	913	917
12:14:15	588	44943	729	751	740	925	916	921
12:14:30	592	46459	732	752	742	926	919	923
12:14:45	592	47644	732	753	742	933	921	927
12:15:00	595	46099	731	754	742	923	914	919
12:15:15	594	47574	730	755	743	928	915	922
12:15:30	596	46234	731	756	743	931	921	926
12:15:45	597	48164	733	757	745	928	922	925
12:16:00	598	46465	736	758	747	930	924	927
12:16:15	599	48773	737	759	748	938	928	933
12:16:30	598	45021	738	760	749	939	928	934
12:16:45	593	49292	738	761	750	942	932	937
12:17:00	587	47653	737	762	749	938	932	935
12:17:15	589	47772	736	763	749	943	933	938
12:17:30	577	46445	736	763	750	948	943	946
12:17:45	579	48555	735	764	750	953	944	949
12:18:00	582	48142	733	766	749	957	950	954
12:18:15	581	47463	732	766	749	954	951	952
12:18:30	585	47819	731	768	749	959	952	956
12:18:45	585	48885	729	768	748	957	952	955
12:19:00	585	45844	726	768	747	955	956	955
12:19:15	588	48330	723	768	746	957	955	956
12:19:30	589	49434	722	769	746	961	954	958
12:19:45	589	48439	721	770	746	954	953	954
12:20:00	589	47374	721	771	746	954	954	954
12:20:15	589	47506	721	772	747	957	952	954
12:20:30	591	48397	722	774	748	959	952	956
12:20:45	588	49317	721	774	748	957	951	954
12:21:00	578	48639	721	776	748	961	954	958
12:21:15	580	48548	725	777	751	957	949	953
12:21:30	581	48887	727	778	752	956	950	953
12:21:45	581	47248	727	779	753	954	947	951
12:22:00	581	46978	726	779	753	954	951	953
12:22:15	582	46947	723	780	751	952	947	949
12:22:30	583	46884	720	781	751	953	946	949

Fire Test Data - continued

12:22:45	584	46970	717	783	750	956	948	952
12:23:00	584	46989	717	784	750	951	944	947
12:23:15	585	47794	714	784	749	740	698	719
12:23:30	579	47635	702	776	739	494	496	495
12:23:45	521	42621	567	748	657	303	302	303
12:24:00	556	42895	384	694	539	84	84	84
12:24:15	557	42946	271	638	454	77	85	81
12:24:30	555	42880	178	573	375	76	79	78
12:24:45	553	42737	117	471	294	52	69	61
12:25:00	551	42619	75	369	222	57	63	60
12:25:15	549	42528	51	278	165	51	56	53
12:25:30	548	42407	39	204	122	44	50	47
12:25:45	546	42325	32	143	88	42	46	44
12:26:00	546	42232	28	102	65	42	47	44
12:26:15	545	42127	26	78	52	42	42	42
12:26:30	544	42064	22	61	41	44	42	43
12:26:45	560	42029	21	49	35	34	37	35
12:27:00	558	41849	22	42	32	32	35	34
12:27:15	556	41864	21	35	28	23	30	26
12:27:30	555	41804	19	37	28	18	31	24
12:27:45	555	41660	19	33	26	17	27	22
12:28:00	554	41713	18	32	25	18	24	21
12:28:15	553	41645	21	32	26	14	26	20
12:28:30	552	41621	18	31	24	12	27	20
12:28:45	552	41586	18	25	21	14	25	20
12:29:00	551	41614	20	25	23	17	25	21
12:29:15	550	41575	19	23	21	15	27	21
12:29:30	550	41464	19	25	22	16	23	20
12:29:45	550	41448	18	24	21	17	24	21
12:30:00	549	41435	19	25	22	13	22	18
12:30:15	549	41383	19	22	21	12	23	18
12:30:30	549	41331	20	23	21	13	23	18
12:30:45	549	41305	17	22	20	12	23	18
12:31:00	548	41336	18	23	20	13	20	17
12:31:15	548	41298	17	24	21	15	23	19
12:31:30	548	41297	18	23	21	14	23	19
12:31:45	547	41220	19	22	21	13	19	16
12:32:00	547	41164	15	23	19	12	22	17
12:32:15	547	41147	17	18	18	15	22	18
12:32:30	547	41178	16	21	18	14	19	17
12:32:45	546	41111	18	22	20	13	19	16
12:33:00	547	41094	19	21	20	13	20	16

Yarmouth Research and Technology, LLC

Leakage Summary for Burn and Cool Down Periods

All pressure transducers and thermocouples are in calibration per YRT's QA program.
Seat leakages were collected manually. External leakage was collected electronically.

Total Water Volume Lost Over 40 Minute Burn and Cool Down:	982	mls
Water Collected in System Relief Valve:	60	mls
Calculated External Leakage During 40 Minute Duration:	922	mls
Average Leak Rate Over 40 Minute Duration:	23	ml/min
Allowable Leak Rate:	400	ml/min

Were the Valve Leakages Below the Allowables?	**Yes**

Yarmouth Research and Technology, LLC

Summary of Test Parameters During Burn and Cool Down Periods

Amount of Time Pressure Dropped Below 50%:	0.0	minutes
Maximum Allowable Low Pressure Time:	2.0	minutes
Maximum Pressure During Burn/Cool Down:	599	psig
Average Pressure During Burn/Cool Down:	575	psig
Minimum Pressure During Burn/Cool Down:	521	psig
Amount of Time of Avg. Cal Block > 650 deg.C:	21.5	minutes
Minimum Allowable Time at Temperature:	15.0	minutes
Maximum Avg Cal Block Temperature:	753	deg. C
Average Cal Block Temperature:	512	deg. C
Lowest Avg Cal. Block Temperature:	18	deg. C
Maximum Body Flame Temperature During Burn:	956	deg. C
Average Body Flame Temperature During Burn:	911	deg. C
Maximum Bonnet Flame Temperature During Burn:	961	deg. C
Average Bonnet Flame Temperature During Burn:	916	deg. C
Average of Both Flame Temperatures During Burn:	913	deg. C

Notes

Were Test Conditions Within Compliance?	**Yes**

Yarmouth Research and Technology, LLC

Operational Test Information

Customer: Teadit, NA **Date:** 5/3/2012

Product Code: Style 2237 Graphite Packing

Project Number: PN212112

Test Data

Time	Pressure (psig)	Cal Block Temp - C
12:37:52	550	23
12:38:07	550	23
12:38:22	550	22
12:38:37	549	22
12:38:52	549	22
12:39:07	549	23
12:39:22	551	23
12:39:37	554	23
12:39:52	554	23
12:40:07	553	24
12:40:22	553	26
12:40:37	553	24
12:40:52	552	25
12:41:07	553	23
12:41:22	552	23
12:41:37	552	24
12:41:52	552	24
12:42:07	552	23
12:42:22	551	24
12:42:37	551	24
12:42:52	551	24

Leakages were collected manually.

Total External Leakage Collected Over 5 Minute Duration:	290	mls
Average Leak Rate Over 5 Minute Duration:	58.0	ml/min
Allowable Leak Rate:	100	ml/min

Was the Valve Leakage Below the Allowable?	**Yes**

TEADIT

Teadit Research and Development

ISO 15848-1 Test Report

DATA SUMMARY

Start Date: 10-Jan-2013

Contact: Carlos Girão

Packing Description: Teadit Style 2237
5 rings of 1/4" cross section cut from spool and installed by Teadit

Test Valve: 2 inch Class 150 Q-Plus Control Valve **Project #:** EF.001/13

Installation Stress:	11	ksi
Packing Gland Bolt Torque:	24	ft-lb
Stem Diameter:	1/2	inches
Bore Diameter:	1	inches
Stem Travel During Cycling:	2/10	inches
Stroke Speed:	1/16	inches/s
Cycling Rate:	10	seconds per cycle
Maximum Allowable Leakage:	35	PPMv (stem static) (3,9 x 10^{-4} mg/s)
Test Pressure:	285/175	psig
Test Temperature:	77/480	°F
Test Media:	99%	Methane

RESULTS

Number of Mechanical Cycles Completed:	100000
Number of Thermal Cycles Completed:	4
Number of Packing Adjustments Required:	1

	Stem Seal Leakage Readings (PPMv)
	Static
	Reading
Average:	3
Maximum:	41

Does the packing meet the requirement of no more than three gland adjustments to maintain leakage less than 35PPMv over 100,000 mechanical cycles and 4 thermal cycles?	**Yes**

Packing aproved as: **ISO FE CM - CC3 - SSA1 - t(RT,200°C) - CL150 - ISO 15848-1**

Approved By: CG

TEADIT

Teadit Research and Development

ISO 15848-1 Test Report

Test Results:

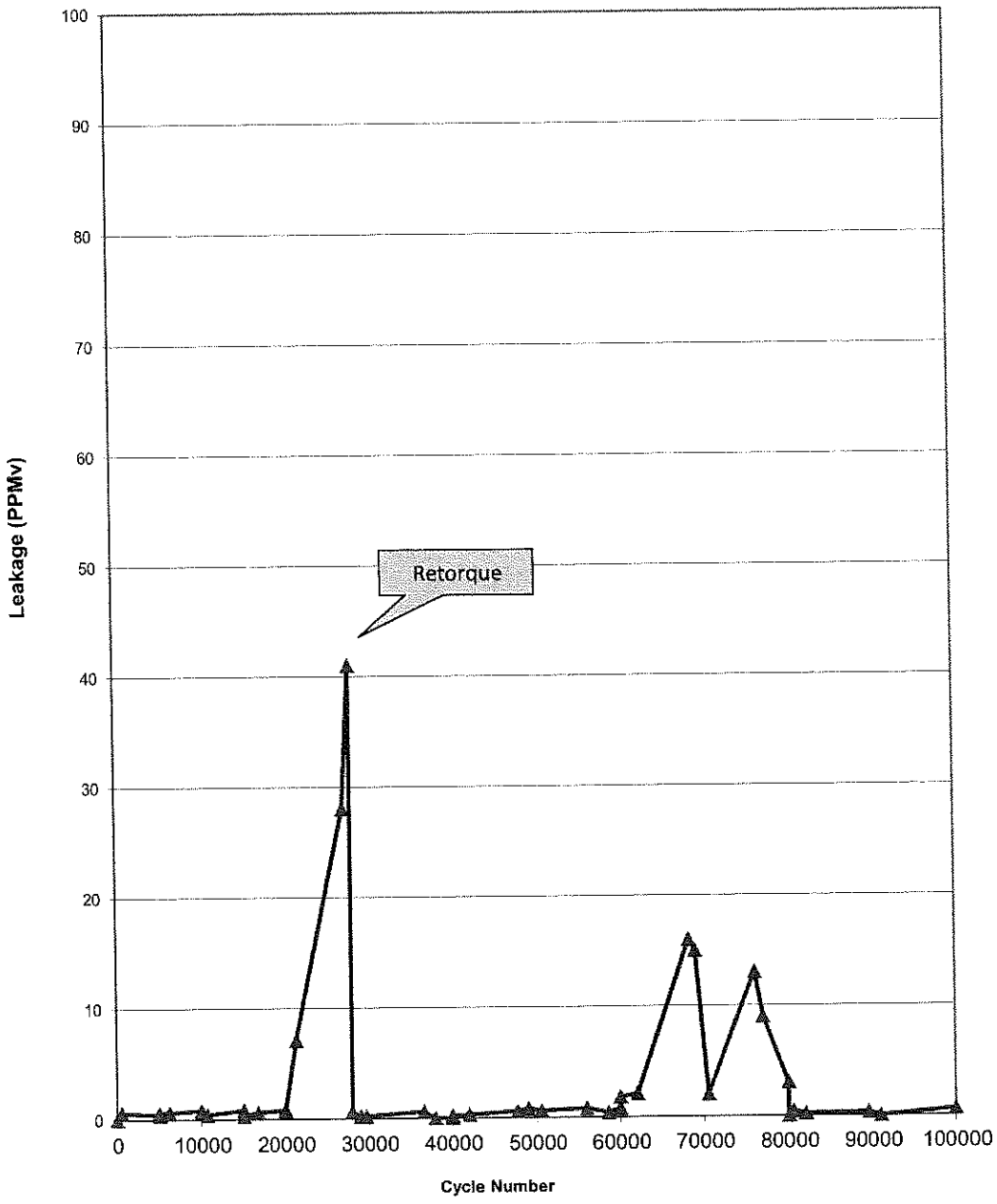
Cycle Number	Temp (°F)	Pressure (psig)	Stem Seal Leakage Readings (PPMv) Static Reading	Packing Retorque See Note
0	77	285	0	
537	77	285	1	
5000	77	285	0	
5000	480	175	1	
6161	480	175	1	
10000	480	175	1	
10000	77	285	1	
10680	77	285	0	
15000	77	285	1	
15000	480	175	0	
16725	480	175	1	
20000	480	175	1	
20000	77	285	1	
21362	77	285	7	
27124	77	285	28	
28000	77	285	41	1
28000	77	285	1	
29000	77	285	0	
29660	77	285	0	
36587	77	285	1	
37953	77	285	0	
40000	77	285	0	
40000	480	175	0	
42000	480	175	0	
47650	480	175	1	
49000	480	175	1	
50500	480	175	1	
56000	480	175	1	
58550	480	175	0	
60000	480	175	1	
60000	77	285	2	
62000	77	285	2	
68260	77	285	16	
69000	77	285	15	
70500	77	285	2	
76050	77	285	13	
77000	77	285	9	
80000	77	285	3	
80000	480	175	0	
80588	480	175	0	
82000	480	175	0	
89550	480	175	0	
91000	480	175	0	
100000	480	175	1	
		Averages ->	**3**	
		Maximums ->	**41**	

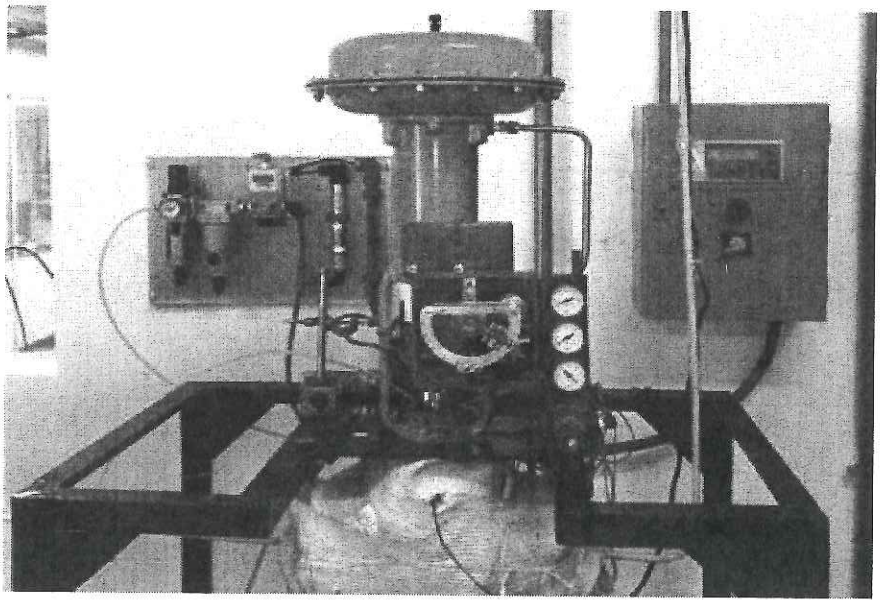
Test Notes: *RETORQUE OF 24 FT.LB APPLIED WITH 28,000 CYLCES.*

Teadit Research and Development

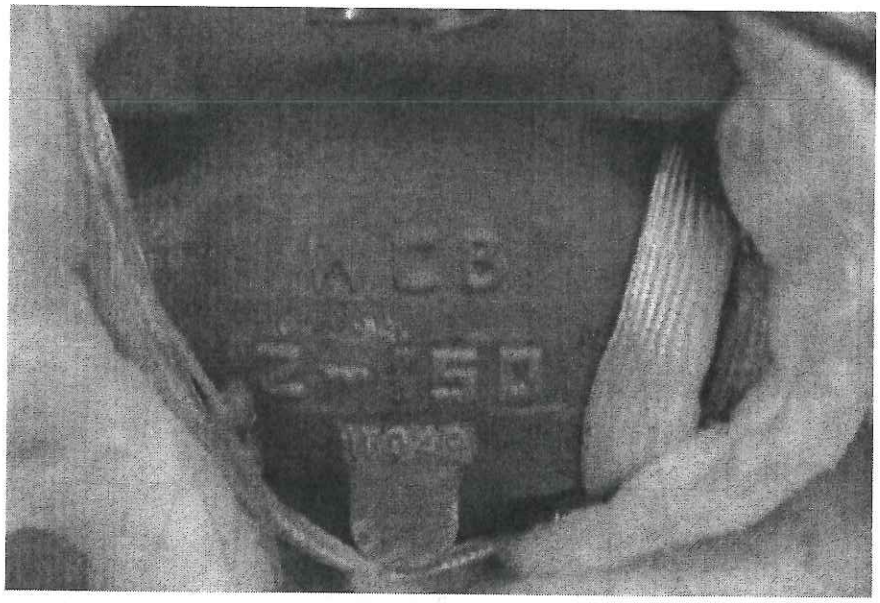
ISO 15848-1 Test Report

Static Stem Leakage Chart Reading

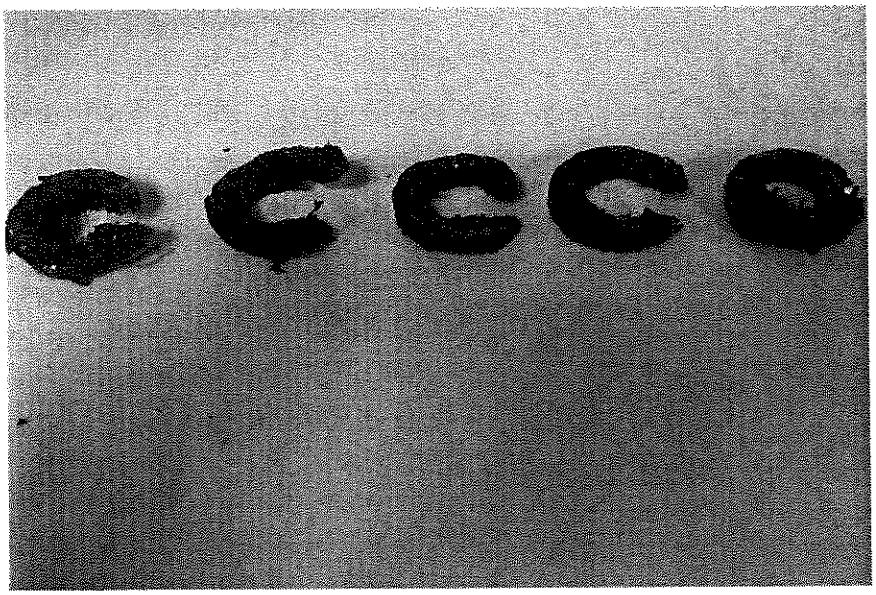


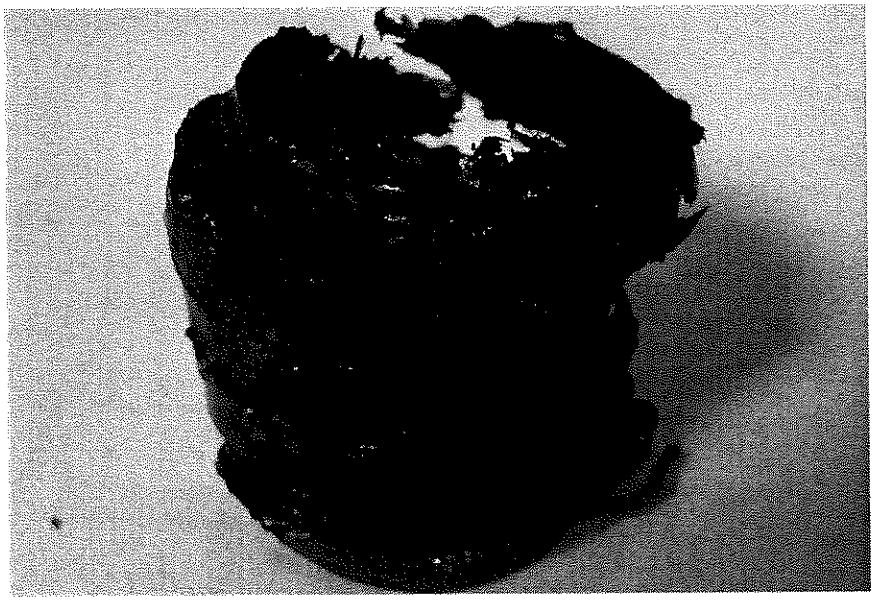


Test Stand



Valve Size and Pressure Rating





Packing Rings at the End of the Test

Teadit Research and Development

Q-Plus Control Valve Test Report

DATA SUMMARY

Start Date: 26-Nov-12

Contact: Ron Walters

Packing Description: Teadit Style 2237

5 rings of 1/4" cross section cut from spool and installed by Teadit

Test Valve: 2 inch Class 150 Q-Plus Control Valve **Project #:** EF.055/12

Stem Diameter:	1/2	inches
Bore Diameter:	1	inches
Stem Travel During Cycling:	1/10	inches
Stroke Speed:	1/16	inches/s
Cycling Rate:	12	seconds per cycle
Maximum Allowable Leakage:	100	PPMv (stem static)
Test Pressure:	600	psig
Test Media:	99%	Methane

RESULTS

Number of Mechanical Cycles Completed:	7,200
Number of Thermal Cycles Completed:	5
Number of Packing Adjustments Required:	1

	Stem Seal Leakage Readings (PPMv)
	Static
	Reading
Average:	12
Maximum:	190

Does the packing meet the requirement of one gland adjustment to maintain leakage less than 100PPMv over 7,200 mechanical cycles and 5 thermal cycles?	Yes

Approved By: CG

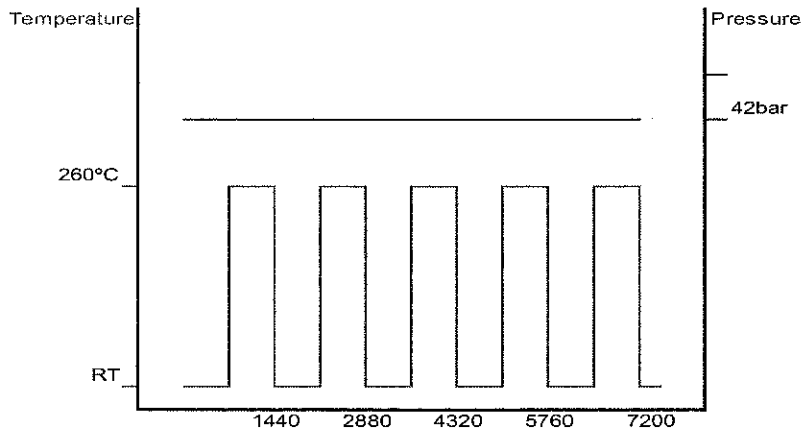
Teadit Research and Development

Q-Plus Control Valve Test Report

Test Procedure:
This test will provide a series of oscillations across the face of the packing at different intervals. It's intended to mimic the type of cycling a process control valve would experience with changing control position points over the life of the packing. This valve would normally operate in the 20% to 80% range of it's stroke length, with this test representing 20-90%.

Test Fluid :
The test fluid used was dry methane gas, 99% minimum purity, subjected to a temperature range from ambient to 260°C (500°F) and 42bar (600 psig) pressure requested by the valve supplier. The test pressure and temperature exceed the pressure/ temperature charts for standard class valves as shown in ASME B16.34 and series of security measures had to be taken to avoid personnel injury.

Figure 1 – Mechanical and Thermal Cycle



Mechanical and Thermal Cycling:
Packing in the test valve was subjected to a total of 7,200 mechanical cycles and 5 thermal cycles. Mechanical and thermal cycling began with the test valve at ambient temperature. The testing was performed as described below.

Test Profile:

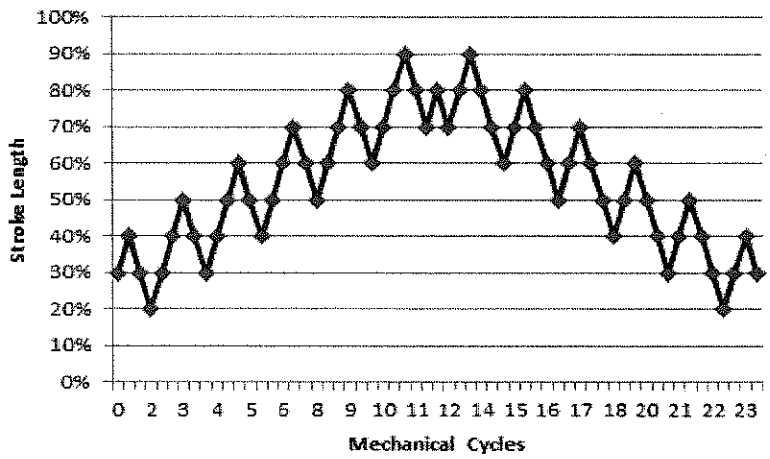
a) Test duration of five days.
b) 1,440 mechanical cycles per day.
c) 1 temperature cycle per day:
- Pressure stayed at 42 bar (600 psig ±5 psig);
- 720 cycles at room temperature;
- 720 cycles at 260°C ±3°C (500°F ±5°F);

d) Minimum daily cycling was divided up as follows:
- 3 hours for ambient cycling;
- Max. 3 hours to bring up to temperature (no cycling during this time);
- 3 hours at elevated temperature cycling;
- Daytime or Overnight cool down with no cycling during this period.

e) Mechanical Cycle Profile:

- The cycling profile was developed with the valve oscillating +/-10% across its operational range going from 10% of its stroke length to 90% and back to 10% as shown in Figure 2. Each profile is composed of 24 mechanical cycles. During a thermal cycle this profile is repeated 30 times with a total of 720 cycles.

Figure 2 – Cycling Profile



Leak Measurement:

- Leak measurements shall be conducted initially at the start of each day and at the completion of every 720 cycles. For each measurement, a minimum of ten (10) readings were taken over a one (1) minute duration. The average reading was calculated and recorded. If any reading is more than fifty percent (50%) greater than the average, except for when the average leakage rates are less than 10 PPMv, the readings shall be repeated;
- The leak measurement were conducted using fixed detection probes located at potential leak points;
- Leak measurements were taken while the stem is in the static condition;
- The connections to the fixture and methane leak detector shall be made using tubing having the same inside diameter as the standard leak probe.

Test Notes: *We strongly advice the testing pressure to be equal or lower than the maximum allowed pressure according to the valve rating for each thermal cycle as shown in ASME B16.34. We propose to reduce cycling rate to 6 seconds/cycle and increase the number of daily mechanical cycles from 1,440 to 2,880. This will give a total 14,400 cycles in a 5 day testing period.*

Teadit Research and Development

Q-Plus Control Valve Test Report

Test Results:

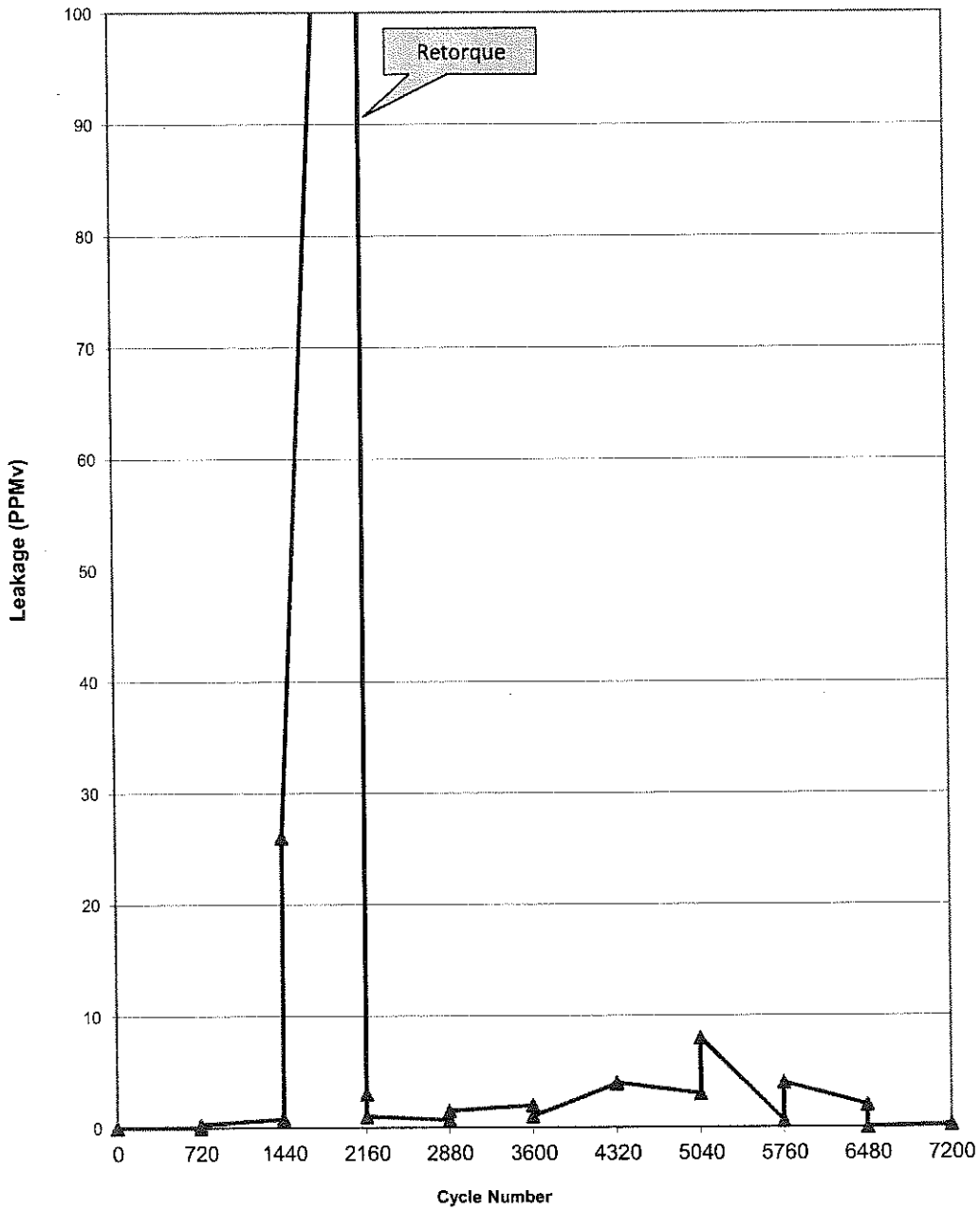
Cycle Number	Temp (°C)	Stem Seal Leakage Readings (PPMv) Static Reading	Packing Retorque See Note
0	25	0	
720	25	0	
720	260	0	
1440	260	1	
1440	25	26	
2160	25	190	
2160	25	3	
2160	260	1	
2880	260	1	
2880	25	2	
3600	25	2	
3600	260	1	
4320	260	4	
4320	25	4	
5040	25	3	
5040	260	8	
5760	260	1	
5760	25	4	
6480	25	2	
6480	260	0	
7200	260	0	
	Averages ->	**12**	
	Maximums ->	**190**	

Test Notes: *RETORQUE APPLIED WITH 2,160 CYLCES.*

Teadit Research and Development

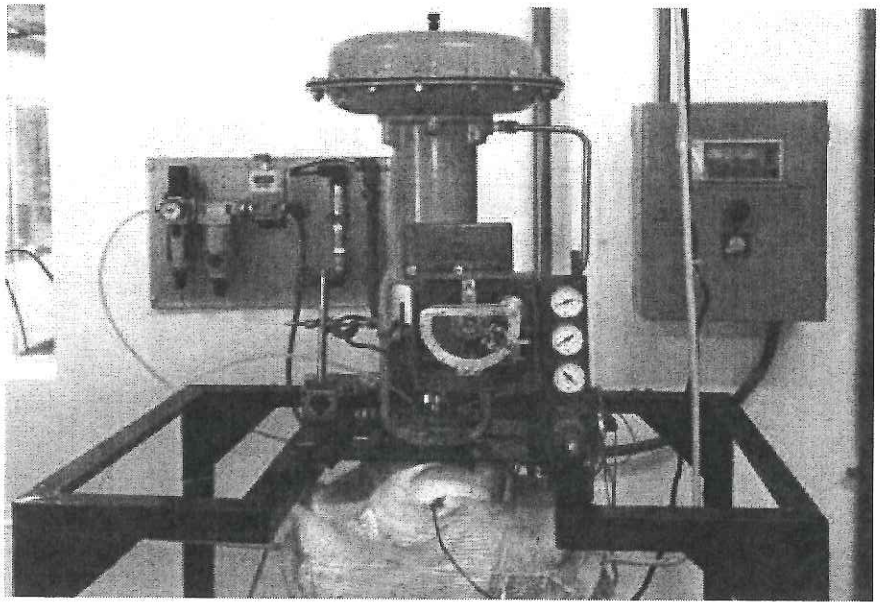
Q-Plus Control Valve Test Report

Static Stem Leakage Chart Reading

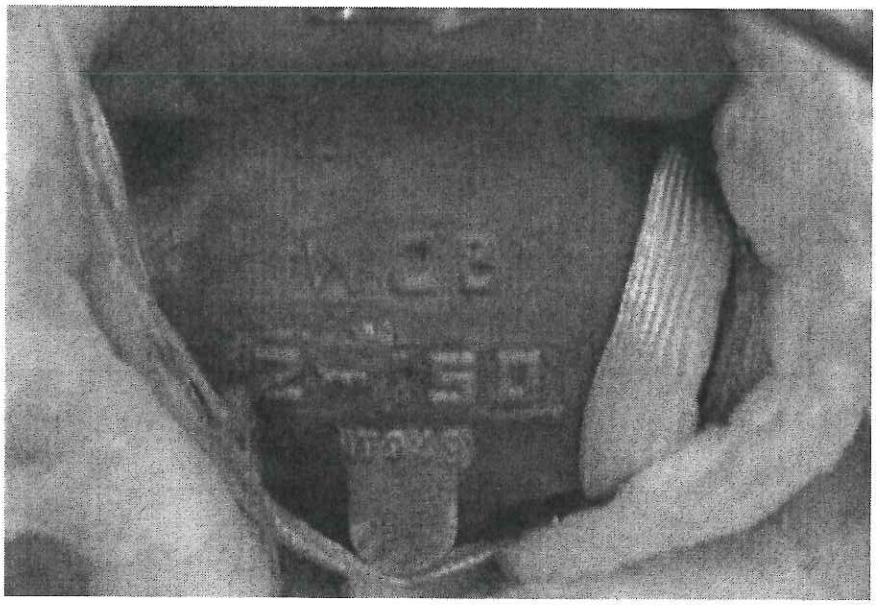


Teadit Research and Development

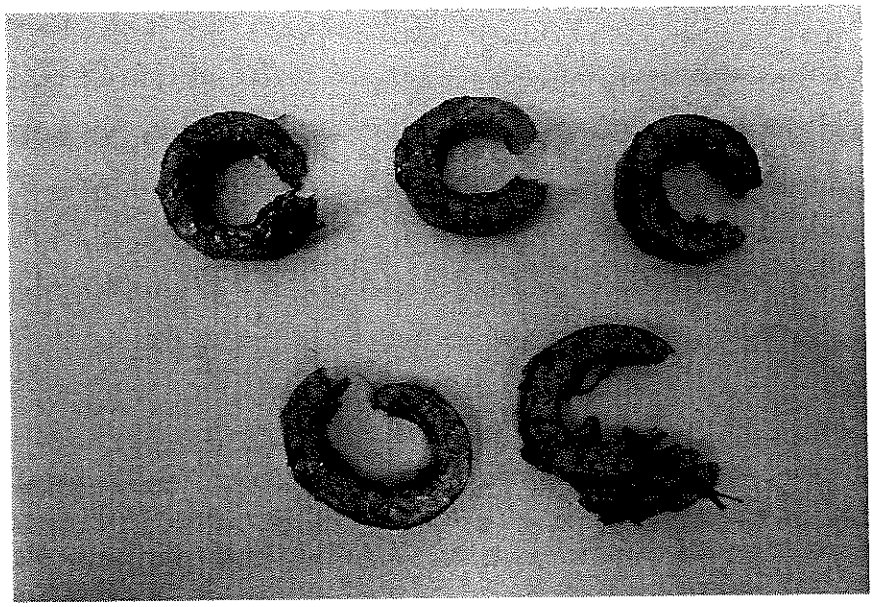
Q-Plus Control Valve Test Report

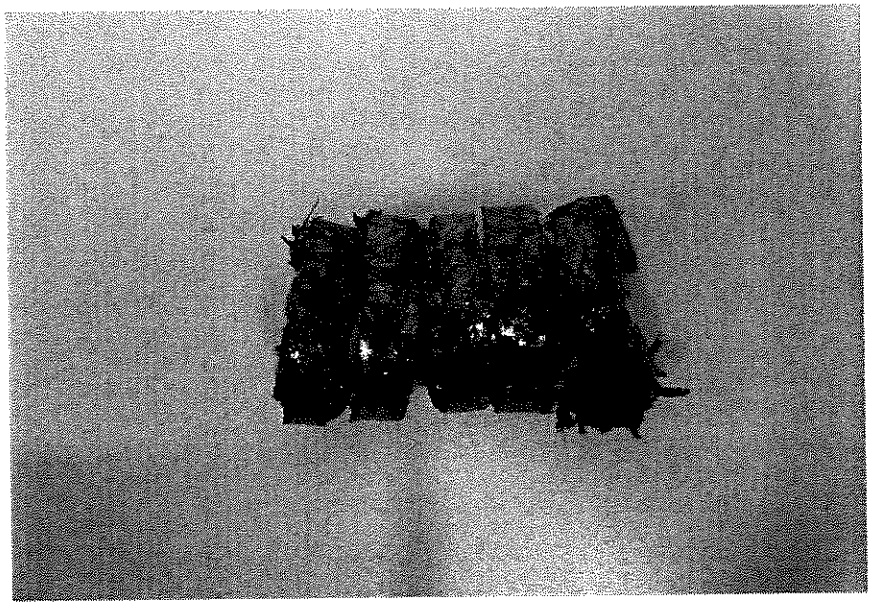


Test Stand



Valve Size and Pressure Rating





Packing Rings at the End of the Test

API Standard 622 Test Report

"Type Testing of Process Valve Packing for Fugitive Emissions"
Second Edition, 2011

Performed for

Teadit NA

http://www.teadit.com

Teadit Style 2237 Packing

Project Number: 212111
Test Start Date: May 17, 2012

Performed by

YARMOUTH RESEARCH AND TECHNOLOGY, LLC

434 Walnut Hill Road
North Yarmouth, ME 04097 USA
(207) 829-5359
info@yarmouthresearch.com
www.yarmouthresearch.com

Yarmouth Research and Technology, LLC

API 622 PROJECT SUMMARY

Customer: Teadit NA | **Start Date:** 17-May-12

Project #: 212111

Valve Information

Packing Description: Teadit Style 2237 Packing

Source of Sample:	Customer	
Packing Cross Section:	1/4 inch	nominal
Packing Free Ht:	1.44	inches - measured

Test Conditions

Specification:	API 622, 2nd Edition, 2011			
Test Media:	99% Methane	**Test Pressure:**	600	psig
Recommended Packing Nut Torque:		60	ft-lb	
Maximum Allowable Leakage:		100	PPMv	
Cycling Rate:		45	seconds per cycle	
Cycle Stroke:		4.0	inches	

Dimensions (inches)

Stem Diameter:	1.000	**Bore Diameter:**	1.500
Follower Height:	1.059	**Bore Depth:**	1.365
Gland Ht at Start:	0.696	**% Compression:**	30%
Gland Ht at End:	0.655	**% Compression:**	33%
Gland Bolt Diameter:	5/8		

Results

Average Test Pressure:	600	psig
Number of Mechanical Cycles Completed:	1510	
Number of Thermal Cycles Completed:	5	
Number of Packing Adjustments Required:	1	
Cycle Number(s) of Packing Adjustments:	300	
Average Leakage Throughout Test:	8	PPMv
Maximum Leakage Throughout Test:	184	PPMv

Witness

Matthew J Wasielewski, PE

President, Yarmouth Research

STATE OF MAINE
MATTHEW J WASIELEWSKI
No. 7437
LICENSED PROFESSIONAL ENGINEER

Yarmouth Research and Technology, LLC

Customer: Teadit NA **Start Date:** 17-May-12

Project #: 212111

Packing Description: Teadit Style 2237 Packing

Cycle Number	Inside Temp (F)	Bonnet Temp - (F)	Pressure (psig)	Stem Seal Leakage (PPMv) Avg.	Stem Seal Leakage (PPMv) Max.	Packing Retorque See Note
0	72	73	600	2	2	
50	77	82	600	5	5	
100	79	86	600	5	5	
150	81	86	600	4	4	
150	492	499	600	9	9	
200	498	499	600	9	10	
250	498	498	600	4	5	
300	498	499	600	4	4	
300	81	79	600	8	8	
350	**82**	**82**	**600**	**178**	**184**	**1**
350	81	81	600	2	2	
400	82	87	600	2	2	
450	84	89	600	1	1	
450	489	499	600	5	5	
500	496	499	600	5	5	
550	496	499	600	7	7	
600	497	499	600	7	7	
600	73	73	600	2	3	
650	78	83	600	2	3	
700	80	86	600	3	3	
750	84	86	600	1	1	
750	497	499	600	2	3	
800	499	483	600	3	3	
850	499	476	600	3	3	
900	500	476	600	3	4	
900	76	76	600	1	1	
950	81	84	600	3	4	
1000	82	87	600	1	2	
1050	83	87	600	3	3	
1050	491	499	600	2	2	
1100	499	499	600	3	4	
1150	500	497	600	3	3	
1200	499	498	600	4	4	
1200	94	91	600	4	4	
1250	84	86	600	1	1	

Yarmouth Research and Technology, LLC

1300	87	91	600	5	7	
1350	87	91	600	6	6	
1350	484	502	600	2	3	
1400	492	502	600	3	3	
1450	495	502	600	3	3	
1500	497	502	600	3	3	
1500	70	70	600	1	2	
1510	70	70	600	4	4	
		Averages ->	**600**	**8**	**8**	
		Maximums ->	**600**	**178**	**184**	

Packing Retorque Notes:

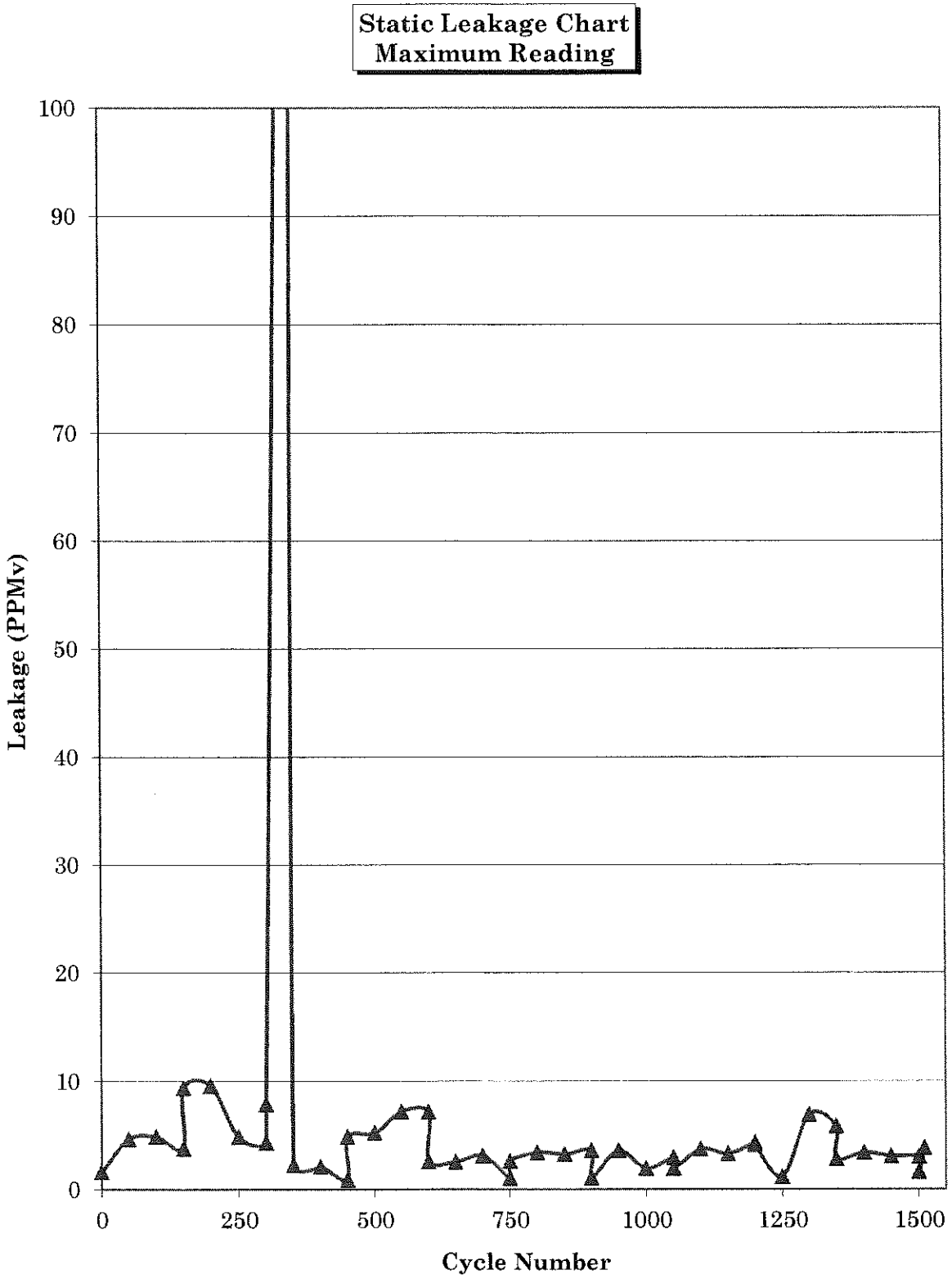
	Before Adjustment		*After Adjustment*			
	Nut Torque		*Nut Torque*		*Number of Flats*	*Gland Height*
	Side 1	*Side 2*	*Side 1*	*Side 2*		
1	15	15	60	60	3	0.66
2						

Nut Torque at End of Test: (ft-lb)	22	*<-Side 1*	24	*<-Side 2*

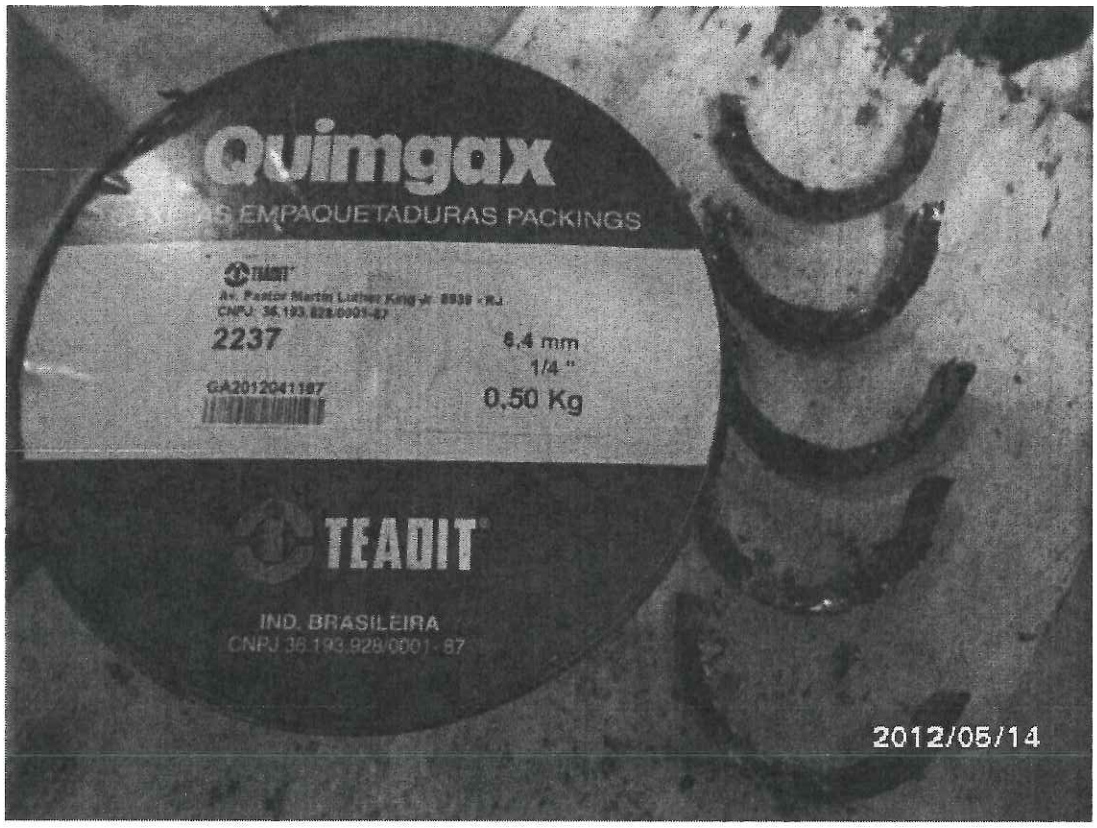
Test Notes:

Test Results: The average and maximum leakage results shown below were calculated from 60 readings measured during a minute duration. *See data sheets for more detailed information.*

Yarmouth Research and Technology, LLC



PHOTOGRAPHS



Packing Material

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 0 **Date** 5/17/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
9:15:48 AM	600	72	73	1.6
9:15:49 AM	600	73	72	1.6
9:15:50 AM	600	70	75	1.6
9:15:51 AM	600	74	71	1.6
9:15:52 AM	600	74	70	1.6
9:15:53 AM	600	74	69	1.6
9:15:54 AM	600	71	71	1.6
9:15:55 AM	600	71	74	1.6
9:15:56 AM	600	75	74	1.6
9:15:57 AM	600	72	73	1.5
9:15:58 AM	600	73	72	1.6
9:15:59 AM	600	73	74	1.6
9:16:00 AM	600	77	69	1.6
9:16:01 AM	600	74	71	1.6
9:16:02 AM	600	76	70	1.6
9:16:03 AM	600	71	73	1.6
9:16:04 AM	600	68	74	1.6
9:16:05 AM	600	74	71	1.6
9:16:06 AM	600	75	72	1.6
9:16:07 AM	600	75	72	1.6
9:16:08 AM	600	73	71	1.6
9:16:09 AM	600	74	74	1.6
9:16:10 AM	600	73	72	1.6
9:16:11 AM	600	73	73	1.6
9:16:12 AM	600	73	72	1.6
9:16:13 AM	600	75	71	1.6
9:16:14 AM	600	74	68	1.6
9:16:15 AM	600	75	71	1.6
9:16:16 AM	600	72	77	1.6
9:16:17 AM	600	71	72	1.6
9:16:18 AM	600	72	73	1.6
9:16:19 AM	600	73	72	1.5
9:16:20 AM	600	73	76	1.5
9:16:21 AM	600	71	73	1.5
9:16:22 AM	600	73	72	1.5
9:16:23 AM	600	74	74	1.6
9:16:24 AM	600	74	74	1.6
9:16:25 AM	600	69	74	1.6
9:16:26 AM	600	72	73	1.6
9:16:27 AM	600	71	69	1.6
9:16:28 AM	600	73	73	1.6
9:16:28 AM	600	73	74	1.6
9:16:29 AM	600	71	75	1.6
9:16:30 AM	600	73	73	1.6
9:16:31 AM	600	71	71	1.6
9:16:32 AM	600	73	74	1.6
9:16:33 AM	600	73	71	1.6
9:16:34 AM	600	73	73	1.6
9:16:35 AM	600	72	72	1.6
9:16:36 AM	600	72	73	1.5
9:16:37 AM	600	72	69	1.6
9:16:38 AM	600	74	73	1.5
9:16:39 AM	600	73	72	1.6
9:16:40 AM	600	73	72	1.5
9:16:41 AM	600	73	74	1.5
9:16:42 AM	600	72	71	1.5
9:16:43 AM	600	70	71	1.5
9:16:44 AM	600	70	72	1.5
9:16:45 AM	600	74	74	1.6
9:16:46 AM	600	71	71	1.6
Averages ->	**600**	**73**	**72**	**1.6**
			Maximum ->	**1.6**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 50 **Date** 5/17/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
9:59:15 AM	600	81	79	4.6
9:59:16 AM	600	81	79	4.6
9:59:17 AM	600	81	80	4.6
9:59:18 AM	600	83	78	4.6
9:59:19 AM	600	81	77	4.5
9:59:20 AM	600	79	77	4.6
9:59:21 AM	600	81	75	4.6
9:59:22 AM	600	81	82	4.5
9:59:23 AM	600	79	78	4.5
9:59:24 AM	600	83	78	4.6
9:59:25 AM	600	84	79	4.6
9:59:26 AM	600	83	78	4.6
9:59:27 AM	600	84	77	4.6
9:59:28 AM	600	82	78	4.6
9:59:29 AM	600	85	78	4.6
9:59:30 AM	600	82	74	4.6
9:59:31 AM	600	84	79	4.6
9:59:32 AM	600	81	76	4.6
9:59:33 AM	600	83	76	4.6
9:59:34 AM	600	83	78	4.6
9:59:35 AM	600	82	76	4.6
9:59:36 AM	600	78	77	4.6
9:59:37 AM	600	82	75	4.6
9:59:38 AM	600	80	79	4.6
9:59:39 AM	600	80	79	4.6
9:59:40 AM	600	83	80	4.6
9:59:41 AM	600	83	78	4.6
9:59:42 AM	600	81	79	4.6
9:59:42 AM	600	81	80	4.6
9:59:43 AM	600	82	78	4.6
9:59:44 AM	600	81	80	4.6
9:59:45 AM	600	82	78	4.5
9:59:46 AM	600	82	30	4.6
9:59:47 AM	600	83	77	4.6
9:59:48 AM	600	81	78	4.6
9:59:49 AM	600	82	76	4.5
9:59:50 AM	600	84	79	4.5
9:59:51 AM	600	83	79	4.5
9:59:52 AM	600	83	78	4.5
9:59:53 AM	600	81	79	4.5
9:59:54 AM	600	83	75	4.5
9:59:55 AM	600	85	77	4.5
9:59:56 AM	600	79	79	4.5
9:59:57 AM	600	82	76	4.5
9:59:58 AM	600	82	78	4.5
9:59:59 AM	600	82	79	4.5
10:00:00 AM	600	83	77	4.5
10:00:01 AM	600	81	79	4.5
10:00:02 AM	600	83	78	4.5
10:00:03 AM	600	82	79	4.5
10:00:04 AM	600	81	79	4.5
10:00:05 AM	600	80	77	4.5
10:00:06 AM	600	82	78	4.5
10:00:07 AM	600	82	75	4.5
10:00:08 AM	600	82	78	4.5
10:00:09 AM	600	81	77	4.5
10:00:10 AM	600	80	79	4.5
10:00:11 AM	600	83	79	4.5
10:00:12 AM	600	83	80	4.5
10:00:13 AM	600	80	80	4.5
Averages ->	**600**	**82**	**77**	**4.5**
			Maximum ->	**4.6**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 100 **Date** 5/17/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
10:38:25 AM	600	83	80	4.7
10:38:26 AM	600	87	82	4.7
10:38:27 AM	600	84	80	4.7
10:38:28 AM	600	82	79	4.6
10:38:29 AM	600	86	78	4.6
10:38:30 AM	600	81	76	4.6
10:38:31 AM	600	84	78	4.6
10:38:32 AM	600	86	79	4.6
10:38:33 AM	600	83	77	4.6
10:38:34 AM	600	89	76	4.6
10:38:35 AM	600	85	78	4.6
10:38:36 AM	600	86	71	4.6
10:38:37 AM	600	84	75	4.5
10:38:38 AM	600	84	75	4.5
10:38:39 AM	600	87	82	4.6
10:38:40 AM	600	86	76	4.6
10:38:41 AM	600	88	80	4.6
10:38:42 AM	600	88	82	4.6
10:38:43 AM	600	83	81	4.5
10:38:44 AM	600	80	85	4.7
10:38:45 AM	600	87	81	4.6
10:38:46 AM	600	86	79	4.6
10:38:47 AM	600	86	81	4.6
10:38:48 AM	600	84	81	4.6
10:38:49 AM	600	86	82	4.6
10:38:50 AM	600	87	84	4.6
10:38:51 AM	600	83	82	4.6
10:38:52 AM	600	91	79	4.7
10:38:53 AM	600	86	81	4.6
10:38:54 AM	600	84	79	4.7
10:38:55 AM	600	85	75	4.6
10:38:56 AM	600	87	81	4.7
10:38:57 AM	600	87	79	4.6
10:38:58 AM	600	82	84	4.7
10:38:59 AM	600	86	83	4.7
10:39:00 AM	600	87	77	4.7
10:39:01 AM	600	82	77	4.7
10:39:02 AM	600	85	77	4.7
10:39:03 AM	600	83	78	4.6
10:39:04 AM	600	85	79	4.8
10:39:05 AM	600	85	76	4.7
10:39:06 AM	600	87	80	4.7
10:39:07 AM	600	83	80	4.7
10:39:08 AM	600	84	81	4.8
10:39:09 AM	600	80	77	4.8
10:39:09 AM	600	88	77	4.8
10:39:10 AM	600	91	77	4.8
10:39:11 AM	600	89	81	4.9
10:39:12 AM	600	85	84	4.7
10:39:13 AM	600	87	79	4.8
10:39:14 AM	600	87	79	4.8
10:39:15 AM	600	85	85	4.8
10:39:16 AM	600	89	78	4.8
10:39:17 AM	600	86	82	4.8
10:39:18 AM	600	88	82	4.8
10:39:19 AM	600	86	82	4.8
10:39:20 AM	600	84	81	4.7
10:39:21 AM	600	88	78	4.8
10:39:22 AM	600	87	74	4.9
10:39:23 AM	600	89	81	4.9
Averages ->	**600**	**86**	**79**	**4.7**
			Maximum ->	**4.9**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 150 **Date** 5/17/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
11:20:28 AM	600	86	79	3.6
11:20:29 AM	600	84	81	3.7
11:20:30 AM	600	91	77	3.6
11:20:31 AM	600	88	81	3.7
11:20:32 AM	600	86	81	3.6
11:20:33 AM	600	87	80	3.7
11:20:33 AM	600	86	87	3.6
11:20:34 AM	600	87	77	3.7
11:20:35 AM	600	86	83	3.6
11:20:36 AM	600	88	83	3.7
11:20:37 AM	600	85	78	3.7
11:20:38 AM	600	87	80	3.6
11:20:39 AM	600	88	78	3.7
11:20:40 AM	600	88	84	3.6
11:20:41 AM	600	84	78	3.6
11:20:42 AM	600	86	81	3.7
11:20:43 AM	600	85	80	3.5
11:20:44 AM	600	80	73	3.7
11:20:45 AM	600	85	88	3.6
11:20:46 AM	600	88	80	3.6
11:20:47 AM	600	81	80	3.7
11:20:48 AM	600	87	83	3.7
11:20:49 AM	600	81	85	3.6
11:20:50 AM	600	86	78	3.7
11:20:51 AM	600	87	78	3.6
11:20:52 AM	600	86	83	3.6
11:20:53 AM	600	87	80	3.6
11:20:54 AM	600	86	81	3.6
11:20:55 AM	600	87	82	3.7
11:20:56 AM	600	86	79	3.7
11:20:57 AM	600	90	83	3.6
11:20:58 AM	600	85	80	3.7
11:20:59 AM	600	86	81	3.7
11:21:00 AM	600	85	81	3.7
11:21:01 AM	600	85	81	3.7
11:21:02 AM	600	83	80	3.7
11:21:03 AM	600	86	81	3.8
11:21:04 AM	600	87	83	3.7
11:21:05 AM	600	85	78	3.7
11:21:06 AM	600	86	80	3.7
11:21:07 AM	600	83	84	3.7
11:21:08 AM	600	87	77	3.7
11:21:09 AM	600	86	83	3.7
11:21:10 AM	600	85	79	3.7
11:21:11 AM	600	84	79	3.6
11:21:12 AM	600	85	79	3.7
11:21:13 AM	600	86	84	3.6
11:21:14 AM	600	86	81	3.6
11:21:15 AM	600	84	79	3.7
11:21:16 AM	600	85	80	3.5
11:21:17 AM	600	85	79	3.6
11:21:18 AM	600	90	78	3.6
11:21:19 AM	600	86	85	3.6
11:21:20 AM	600	88	79	3.6
11:21:21 AM	600	86	81	3.6
11:21:22 AM	600	87	85	3.7
11:21:23 AM	600	84	79	3.6
11:21:24 AM	600	90	80	3.6
11:21:25 AM	600	86	80	3.7
11:21:26 AM	600	80	79	3.6
Averages ->	**600**	**86**	**81**	**3.6**
			Maximum ->	**3.8**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 150 **Date** 5/17/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
2:59:50 PM	600	498	487	9.3
2:59:51 PM	600	496	492	9.4
2:59:52 PM	600	501	492	9.3
2:59:53 PM	600	495	495	9.2
2:59:54 PM	600	499	491	9.2
2:59:55 PM	600	502	492	9.1
2:59:55 PM	600	499	491	9.1
2:59:56 PM	600	503	496	9.1
2:59:57 PM	600	503	496	9.1
2:59:58 PM	600	499	491	9.0
2:59:59 PM	600	500	493	9.1
3:00:00 PM	600	496	490	9.0
3:00:01 PM	600	500	494	8.9
3:00:02 PM	600	499	496	8.9
3:00:03 PM	600	498	492	8.9
3:00:04 PM	600	500	491	8.8
3:00:05 PM	600	499	492	8.8
3:00:06 PM	600	501	493	8.7
3:00:07 PM	600	494	490	8.7
3:00:08 PM	600	498	491	8.6
3:00:09 PM	600	498	493	8.7
3:00:10 PM	600	500	495	8.6
3:00:11 PM	600	501	490	8.6
3:00:12 PM	600	500	492	8.7
3:00:13 PM	600	501	493	8.6
3:00:14 PM	600	497	489	8.6
3:00:15 PM	600	501	491	8.5
3:00:16 PM	600	499	491	8.5
3:00:17 PM	600	499	492	8.4
3:00:18 PM	600	502	496	8.5
3:00:19 PM	600	501	489	8.4
3:00:20 PM	600	502	497	8.5
3:00:21 PM	600	500	492	8.4
3:00:22 PM	600	494	488	8.4
3:00:23 PM	600	499	493	8.4
3:00:24 PM	600	494	492	8.4
3:00:25 PM	600	499	495	8.3
3:00:26 PM	600	502	492	8.4
3:00:27 PM	600	497	490	8.4
3:00:28 PM	600	499	491	8.3
3:00:29 PM	600	496	490	8.4
3:00:30 PM	600	498	494	8.3
3:00:31 PM	600	495	493	8.4
3:00:32 PM	600	500	494	8.3
3:00:33 PM	600	498	490	8.3
3:00:34 PM	600	496	490	8.3
3:00:35 PM	600	501	492	8.3
3:00:36 PM	600	499	493	8.3
3:00:37 PM	600	498	495	8.3
3:00:38 PM	600	497	494	8.3
3:00:39 PM	600	501	492	8.3
3:00:40 PM	600	498	496	8.3
3:00:41 PM	600	494	496	8.3
3:00:42 PM	600	499	492	8.3
3:00:43 PM	600	498	492	8.3
3:00:44 PM	600	500	492	8.2
3:00:45 PM	600	498	491	8.3
3:00:46 PM	600	496	492	8.2
3:00:47 PM	600	494	497	8.3
3:00:48 PM	600	498	488	8.2
Averages ->	**600**	**499**	**492**	**8.6**
			Maximum ->	**9.4**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 200 **Date** 5/17/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
3:39:23 PM	600	500	495	9.4
3:39:24 PM	600	499	497	9.5
3:39:25 PM	600	502	494	9.5
3:39:26 PM	600	497	497	9.5
3:39:27 PM	600	500	501	9.5
3:39:28 PM	600	500	499	9.5
3:39:29 PM	600	498	497	9.5
3:39:30 PM	600	496	496	9.6
3:39:31 PM	600	503	499	9.5
3:39:32 PM	600	498	497	9.5
3:39:33 PM	600	501	492	9.6
3:39:34 PM	600	502	495	9.4
3:39:35 PM	600	499	499	9.5
3:39:36 PM	600	497	502	9.5
3:39:37 PM	600	497	501	9.5
3:39:38 PM	600	495	501	9.5
3:39:39 PM	600	498	496	9.5
3:39:40 PM	600	503	498	9.5
3:39:41 PM	600	498	497	9.6
3:39:42 PM	600	499	494	9.5
3:39:43 PM	600	499	494	9.5
3:39:44 PM	600	501	497	9.5
3:39:45 PM	600	501	498	9.5
3:39:46 PM	600	499	497	9.5
3:39:47 PM	600	498	498	9.5
3:39:48 PM	600	501	496	9.4
3:39:49 PM	600	497	494	9.5
3:39:50 PM	600	497	494	9.5
3:39:51 PM	600	501	500	9.5
3:39:52 PM	600	497	495	9.5
3:39:53 PM	600	498	497	9.5
3:39:54 PM	600	500	497	9.5
3:39:55 PM	600	500	497	9.5
3:39:55 PM	600	499	500	9.4
3:39:56 PM	600	499	498	9.5
3:39:57 PM	600	493	498	9.5
3:39:58 PM	600	499	496	9.5
3:39:59 PM	600	501	496	9.5
3:40:00 PM	600	501	499	9.5
3:40:01 PM	600	499	499	9.4
3:40:02 PM	600	499	498	9.6
3:40:03 PM	600	499	504	9.5
3:40:04 PM	600	499	496	9.4
3:40:05 PM	600	498	499	9.5
3:40:06 PM	600	494	499	9.5
3:40:07 PM	600	504	500	9.4
3:40:08 PM	600	494	501	9.5
3:40:09 PM	600	496	500	9.4
3:40:10 PM	600	501	493	9.4
3:40:11 PM	600	502	497	9.4
3:40:12 PM	600	502	497	9.4
3:40:13 PM	600	498	499	9.3
3:40:14 PM	600	496	502	9.4
3:40:15 PM	600	501	498	9.4
3:40:16 PM	600	500	499	9.3
3:40:17 PM	600	501	498	9.3
3:40:18 PM	600	501	500	9.3
3:40:19 PM	600	499	495	9.4
3:40:20 PM	600	494	499	9.3
3:40:21 PM	600	495	501	9.3
Averages ->	**600**	**499**	**498**	**9.5**
			Maximum ->	**9.6**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 250 **Date** 5/17/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
4:12:48 PM	600	500	501	4.5
4:12:49 PM	600	496	498	4.7
4:12:50 PM	600	499	498	4.8
4:12:51 PM	600	500	500	4.8
4:12:52 PM	600	496	497	4.7
4:12:53 PM	600	501	498	4.6
4:12:54 PM	600	499	498	4.5
4:12:55 PM	600	502	495	4.4
4:12:56 PM	600	498	499	4.4
4:12:57 PM	600	500	497	4.5
4:12:58 PM	600	495	502	4.8
4:12:59 PM	600	497	500	4.7
4:13:00 PM	600	500	498	4.4
4:13:01 PM	600	496	497	4.5
4:13:02 PM	600	497	499	4.7
4:13:03 PM	600	499	501	4.5
4:13:04 PM	600	500	496	4.4
4:13:05 PM	600	498	501	4.5
4:13:06 PM	600	500	499	4.8
4:13:07 PM	600	500	499	4.7
4:13:08 PM	600	498	498	4.5
4:13:09 PM	600	498	496	4.3
4:13:10 PM	600	497	498	4.3
4:13:11 PM	600	496	498	4.3
4:13:12 PM	600	501	498	4.7
4:13:13 PM	600	495	500	4.6
4:13:14 PM	600	498	499	4.4
4:13:15 PM	600	500	499	4.3
4:13:16 PM	600	498	498	4.6
4:13:17 PM	600	498	497	4.5
4:13:18 PM	600	500	500	4.3
4:13:19 PM	600	499	502	4.3
4:13:20 PM	600	499	496	4.6
4:13:21 PM	600	499	495	4.6
4:13:22 PM	600	498	496	4.3
4:13:23 PM	600	500	497	4.3
4:13:24 PM	600	498	502	4.6
4:13:25 PM	600	499	495	4.3
4:13:26 PM	600	498	497	4.4
4:13:27 PM	600	498	496	4.6
4:13:28 PM	600	498	496	4.6
4:13:29 PM	600	497	495	4.4
4:13:30 PM	600	497	500	4.3
4:13:31 PM	600	498	496	4.6
4:13:32 PM	600	497	499	4.3
4:13:33 PM	600	497	495	4.3
4:13:34 PM	600	498	498	4.5
4:13:35 PM	600	497	498	4.2
4:13:36 PM	600	499	498	4.4
4:13:37 PM	600	499	497	4.4
4:13:38 PM	600	497	498	4.2
4:13:39 PM	600	500	498	4.5
4:13:40 PM	600	497	498	4.4
4:13:41 PM	600	499	497	4.2
4:13:42 PM	600	499	499	4.4
4:13:43 PM	600	496	497	4.2
4:13:44 PM	600	498	498	4.4
4:13:45 PM	600	497	502	4.3
4:13:46 PM	600	499	499	4.2
4:13:47 PM	600	497	497	4.4
Averages ->	**600**	**498**	**498**	**4.5**
			Maximum ->	**4.8**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 300 **Date** 5/17/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
4:54:11 PM	600	501	500	4.3
4:54:12 PM	600	501	499	4.0
4:54:13 PM	600	499	499	4.1
4:54:14 PM	600	501	501	4.3
4:54:15 PM	600	500	498	4.1
4:54:16 PM	600	498	499	3.9
4:54:17 PM	600	500	498	4.2
4:54:18 PM	600	498	496	4.2
4:54:19 PM	600	502	499	3.9
4:54:20 PM	600	501	500	4.2
4:54:21 PM	600	498	497	4.0
4:54:22 PM	600	501	499	4.0
4:54:23 PM	600	501	498	4.2
4:54:24 PM	600	497	496	3.9
4:54:25 PM	600	499	499	4.2
4:54:26 PM	600	500	501	4.1
4:54:27 PM	600	499	496	4.0
4:54:28 PM	600	502	496	4.2
4:54:29 PM	600	499	496	4.2
4:54:30 PM	600	498	496	4.0
4:54:31 PM	600	500	500	4.0
4:54:32 PM	600	502	500	4.3
4:54:33 PM	600	498	496	4.2
4:54:34 PM	600	497	496	3.9
4:54:35 PM	600	500	499	4.3
4:54:36 PM	600	497	496	4.2
4:54:37 PM	600	497	494	4.0
4:54:38 PM	600	498	496	3.9
4:54:39 PM	600	498	496	3.9
4:54:40 PM	600	500	499	4.2
4:54:41 PM	600	498	496	4.3
4:54:42 PM	600	497	498	4.0
4:54:43 PM	600	499	499	4.0
4:54:44 PM	600	498	499	4.2
4:54:45 PM	600	498	500	3.9
4:54:46 PM	600	499	502	3.9
4:54:47 PM	600	498	495	4.2
4:54:48 PM	600	500	496	4.0
4:54:49 PM	600	500	500	4.0
4:54:50 PM	600	499	496	4.1
4:54:51 PM	600	502	497	3.8
4:54:52 PM	600	500	497	4.1
4:54:53 PM	600	500	499	4.1
4:54:54 PM	600	497	500	3.8
4:54:55 PM	600	499	499	4.1
4:54:56 PM	600	500	499	4.0
4:54:57 PM	600	499	497	3.9
4:54:58 PM	600	498	497	4.2
4:54:59 PM	600	499	497	3.9
4:55:00 PM	600	498	496	4.1
4:55:01 PM	600	498	501	4.0
4:55:02 PM	600	501	497	3.8
4:55:03 PM	600	499	496	4.1
4:55:04 PM	600	500	494	4.0
4:55:05 PM	600	503	500	3.9
4:55:06 PM	600	498	498	4.2
4:55:06 PM	600	501	500	3.9
4:55:07 PM	600	503	500	4.2
4:55:08 PM	600	500	498	4.0
4:55:09 PM	600	500	497	3.9
Averages ->	**600**	**499**	**498**	**4.1**
			Maximum ->	**4.3**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 300 **Date** 5/18/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
8:31:46 AM	600	81	83	7.8
8:31:47 AM	600	79	82	7.8
8:31:48 AM	600	78	81	7.8
8:31:49 AM	600	76	79	7.8
8:31:50 AM	600	80	81	7.8
8:31:51 AM	600	80	81	7.8
8:31:52 AM	600	76	81	7.7
8:31:53 AM	600	78	80	7.7
8:31:54 AM	600	75	82	7.7
8:31:55 AM	600	78	80	7.6
8:31:56 AM	600	82	83	7.7
8:31:57 AM	600	79	81	7.7
8:31:58 AM	600	78	80	7.7
8:31:59 AM	600	76	81	7.7
8:32:00 AM	600	76	77	7.6
8:32:01 AM	600	81	80	7.7
8:32:02 AM	600	79	78	7.7
8:32:03 AM	600	78	83	7.7
8:32:04 AM	600	75	77	7.6
8:32:05 AM	600	80	83	7.7
8:32:06 AM	600	80	83	7.7
8:32:07 AM	600	75	83	7.6
8:32:07 AM	600	79	83	7.6
8:32:08 AM	600	84	82	7.6
8:32:09 AM	600	80	83	7.6
8:32:10 AM	600	80	83	7.7
8:32:11 AM	600	82	84	7.7
8:32:12 AM	600	80	80	7.6
8:32:13 AM	600	82	79	7.6
8:32:14 AM	600	82	81	7.6
8:32:15 AM	600	80	81	7.6
8:32:16 AM	600	79	81	7.6
8:32:17 AM	600	78	81	7.6
8:32:18 AM	600	75	78	7.6
8:32:19 AM	600	78	82	7.6
8:32:20 AM	600	82	83	7.6
8:32:21 AM	600	81	84	7.6
8:32:22 AM	600	79	80	7.5
8:32:23 AM	600	81	81	7.6
8:32:24 AM	600	78	82	7.6
8:32:25 AM	600	77	81	7.6
8:32:26 AM	600	80	83	7.7
8:32:27 AM	600	78	79	7.6
8:32:28 AM	600	77	82	7.6
8:32:29 AM	600	78	82	7.6
8:32:30 AM	600	83	81	7.6
8:32:31 AM	600	83	81	7.5
8:32:32 AM	600	78	80	7.5
8:32:33 AM	600	80	82	7.6
8:32:34 AM	600	81	82	7.6
8:32:35 AM	600	78	81	7.6
8:32:36 AM	600	78	81	7.6
8:32:37 AM	600	79	79	7.6
8:32:38 AM	600	79	83	7.6
8:32:39 AM	600	79	82	7.6
8:32:40 AM	600	76	82	7.5
8:32:41 AM	600	79	77	7.6
8:32:42 AM	600	77	83	7.6
8:32:43 AM	600	76	80	7.6
8:32:44 AM	600	78	81	7.7
Averages ->	**600**	**79**	**81**	**7.6**
			Maximum ->	**7.8**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 350 **Date** 5/18/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
9:22:09 AM	600	81	77	2.3
9:22:10 AM	600	78	82	2.2
9:22:11 AM	600	82	79	2.2
9:22:12 AM	600	82	79	2.2
9:22:13 AM	600	83	84	2.1
9:22:14 AM	600	82	84	2.1
9:22:15 AM	600	82	81	2.0
9:22:16 AM	600	80	79	2.1
9:22:17 AM	600	79	79	2.1
9:22:18 AM	600	80	81	2.0
9:22:19 AM	600	81	81	2.1
9:22:20 AM	600	82	81	2.0
9:22:21 AM	600	84	83	2.0
9:22:22 AM	600	83	81	1.9
9:22:23 AM	600	80	81	1.9
9:22:24 AM	600	83	79	1.9
9:22:25 AM	600	80	81	1.9
9:22:26 AM	600	81	81	1.8
9:22:27 AM	600	79	81	1.9
9:22:28 AM	600	82	84	1.9
9:22:29 AM	600	81	81	1.8
9:22:30 AM	600	82	82	1.8
9:22:31 AM	600	81	79	1.8
9:22:32 AM	600	80	83	1.8
9:22:33 AM	600	80	83	1.8
9:22:34 AM	600	81	82	1.8
9:22:35 AM	600	80	79	1.8
9:22:36 AM	600	81	83	1.8
9:22:37 AM	600	84	80	1.8
9:22:38 AM	600	80	79	1.8
9:22:39 AM	600	85	80	1.8
9:22:40 AM	600	79	83	1.8
9:22:40 AM	600	85	83	1.8
9:22:41 AM	600	78	77	1.8
9:22:42 AM	600	82	79	1.8
9:22:43 AM	600	81	81	1.8
9:22:44 AM	600	81	78	1.8
9:22:45 AM	600	82	81	1.8
9:22:46 AM	600	81	81	1.8
9:22:47 AM	600	76	81	1.8
9:22:48 AM	600	80	79	1.7
9:22:49 AM	600	80	80	1.7
9:22:50 AM	600	81	79	1.8
9:22:51 AM	600	80	79	1.7
9:22:52 AM	600	83	81	1.7
9:22:53 AM	600	83	79	1.7
9:22:54 AM	600	82	82	1.7
9:22:55 AM	600	82	80	1.7
9:22:56 AM	600	85	82	1.7
9:22:57 AM	600	79	79	1.8
9:22:58 AM	600	82	80	1.8
9:22:59 AM	600	82	80	1.7
9:23:00 AM	600	82	81	1.7
9:23:01 AM	600	81	78	1.7
9:23:02 AM	600	81	82	1.7
9:23:03 AM	600	83	81	1.6
9:23:04 AM	600	84	82	1.7
9:23:05 AM	600	82	78	1.7
9:23:06 AM	600	82	79	1.7
9:23:07 AM	600	84	77	1.7
Averages ->	**600**	**81**	**81**	**1.9**
			Maximum ->	**2.3**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 400 **Date** 5/18/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
10:08:15 AM	600	84	78	1.7
10:08:16 AM	600	88	87	1.8
10:08:17 AM	600	88	82	1.9
10:08:18 AM	600	87	85	1.9
10:08:19 AM	600	85	83	1.9
10:08:20 AM	600	84	80	1.9
10:08:21 AM	600	90	87	2.0
10:08:22 AM	600	84	89	1.9
10:08:23 AM	600	84	82	1.9
10:08:24 AM	600	86	84	1.9
10:08:25 AM	600	87	81	1.9
10:08:26 AM	600	89	83	2.0
10:08:27 AM	600	88	82	2.0
10:08:28 AM	600	89	85	2.0
10:08:29 AM	600	83	85	2.0
10:08:30 AM	600	86	84	2.0
10:08:31 AM	600	84	81	2.0
10:08:32 AM	600	89	79	2.0
10:08:33 AM	600	87	82	2.0
10:08:34 AM	600	80	80	2.0
10:08:35 AM	600	89	86	2.0
10:08:36 AM	600	86	82	2.0
10:08:37 AM	600	87	85	2.0
10:08:38 AM	600	87	79	2.0
10:08:39 AM	600	87	85	2.0
10:08:40 AM	600	88	85	2.0
10:08:41 AM	600	90	83	2.0
10:08:42 AM	600	82	86	2.0
10:08:43 AM	600	90	82	2.0
10:08:44 AM	600	84	84	1.9
10:08:45 AM	600	86	79	1.9
10:08:46 AM	600	86	81	1.9
10:08:47 AM	600	84	81	1.9
10:08:48 AM	600	86	81	1.9
10:08:49 AM	600	85	83	1.9
10:08:50 AM	600	87	83	1.9
10:08:51 AM	600	87	80	1.9
10:08:52 AM	600	84	81	1.8
10:08:53 AM	600	89	83	1.9
10:08:54 AM	600	89	83	1.9
10:08:55 AM	600	83	83	1.9
10:08:56 AM	600	88	81	1.9
10:08:57 AM	600	85	81	1.9
10:08:58 AM	600	87	84	1.9
10:08:59 AM	600	90	88	1.9
10:09:00 AM	600	88	82	2.0
10:09:01 AM	600	86	81	2.0
10:09:02 AM	600	87	82	2.1
10:09:03 AM	600	87	84	2.1
10:09:04 AM	600	85	85	2.1
10:09:05 AM	600	91	79	2.1
10:09:06 AM	600	89	82	2.1
10:09:07 AM	600	84	77	2.1
10:09:07 AM	600	87	81	2.1
10:09:08 AM	600	87	78	2.1
10:09:09 AM	600	92	88	2.1
10:09:10 AM	600	82	81	2.1
10:09:11 AM	600	87	81	2.1
10:09:12 AM	600	86	80	2.1
10:09:13 AM	600	84	76	2.1
Averages ->	**600**	**87**	**82**	**2.0**
			Maximum ->	**2.1**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 450 **Date** 5/18/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
10:55:02 AM	600	90	85	0.6
10:55:03 AM	600	90	84	0.6
10:55:04 AM	600	88	84	0.7
10:55:05 AM	600	89	83	0.7
10:55:06 AM	600	87	85	0.7
10:55:07 AM	600	87	85	0.7
10:55:08 AM	600	87	86	0.7
10:55:09 AM	600	90	84	0.7
10:55:10 AM	600	87	81	0.7
10:55:11 AM	600	89	84	0.7
10:55:12 AM	600	89	86	0.6
10:55:13 AM	600	88	85	0.6
10:55:14 AM	600	90	81	0.7
10:55:15 AM	600	90	83	0.7
10:55:16 AM	600	90	82	0.7
10:55:17 AM	600	88	89	0.7
10:55:18 AM	600	90	83	0.7
10:55:19 AM	600	88	82	0.7
10:55:20 AM	600	89	87	0.7
10:55:20 AM	600	88	79	0.8
10:55:21 AM	600	87	86	0.8
10:55:22 AM	600	93	82	0.8
10:55:23 AM	600	85	86	0.9
10:55:24 AM	600	89	82	0.9
10:55:25 AM	600	89	81	0.8
10:55:26 AM	600	90	87	0.8
10:55:27 AM	600	88	84	0.8
10:55:28 AM	600	89	87	0.8
10:55:29 AM	600	93	84	0.8
10:55:30 AM	600	90	81	0.8
10:55:31 AM	600	92	78	0.8
10:55:32 AM	600	89	87	0.7
10:55:33 AM	600	89	84	0.7
10:55:34 AM	600	89	79	0.7
10:55:35 AM	600	83	85	0.7
10:55:36 AM	600	91	79	0.7
10:55:37 AM	600	90	84	0.7
10:55:38 AM	600	86	82	0.7
10:55:39 AM	600	84	95	0.7
10:55:40 AM	600	86	85	0.7
10:55:41 AM	600	90	84	0.7
10:55:42 AM	600	86	87	0.7
10:55:43 AM	600	88	82	0.6
10:55:44 AM	600	90	82	0.7
10:55:45 AM	600	86	84	0.7
10:55:46 AM	600	88	84	0.7
10:55:47 AM	600	89	84	0.6
10:55:48 AM	600	90	85	0.7
10:55:49 AM	600	90	85	0.7
10:55:50 AM	600	88	86	0.7
10:55:51 AM	600	90	85	0.7
10:55:52 AM	600	89	85	0.7
10:55:53 AM	600	88	82	0.7
10:55:54 AM	600	90	85	0.7
10:55:55 AM	600	90	84	0.7
10:55:56 AM	600	88	81	0.6
10:55:57 AM	600	92	85	0.7
10:55:58 AM	600	88	84	0.7
10:55:59 AM	600	88	85	0.6
10:56:00 AM	600	90	81	0.6
Averages ->	**600**	**89**	**84**	**0.7**
			Maximum ->	**0.9**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 450 **Date** 5/18/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
2:00:49 PM	600	501	486	4.8
2:00:50 PM	600	494	491	4.7
2:00:51 PM	600	498	487	4.8
2:00:52 PM	600	501	492	4.8
2:00:53 PM	600	501	489	4.8
2:00:54 PM	600	501	490	4.7
2:00:55 PM	600	502	488	4.8
2:00:56 PM	600	501	492	4.8
2:00:57 PM	600	497	491	4.8
2:00:58 PM	600	496	489	4.7
2:00:59 PM	600	499	487	4.8
2:01:00 PM	600	499	487	4.8
2:01:01 PM	600	499	490	4.8
2:01:02 PM	600	499	489	4.8
2:01:03 PM	600	498	489	4.7
2:01:04 PM	600	499	488	4.8
2:01:05 PM	600	497	490	4.9
2:01:06 PM	600	502	485	4.7
2:01:07 PM	600	497	490	4.8
2:01:08 PM	600	502	486	4.8
2:01:09 PM	600	500	486	4.8
2:01:10 PM	600	501	489	4.8
2:01:11 PM	600	498	490	4.8
2:01:12 PM	600	499	493	4.7
2:01:13 PM	600	497	491	4.8
2:01:14 PM	600	500	489	4.7
2:01:15 PM	600	500	491	4.7
2:01:16 PM	600	499	490	4.8
2:01:17 PM	600	500	487	4.8
2:01:18 PM	600	502	487	4.8
2:01:19 PM	600	499	488	4.8
2:01:20 PM	600	497	491	4.8
2:01:21 PM	600	500	488	4.8
2:01:22 PM	600	497	493	4.8
2:01:23 PM	600	497	492	4.8
2:01:24 PM	600	501	488	4.8
2:01:25 PM	600	498	489	4.8
2:01:26 PM	600	500	489	4.8
2:01:27 PM	600	500	488	4.8
2:01:28 PM	600	499	491	4.8
2:01:29 PM	600	501	490	4.8
2:01:30 PM	600	501	487	4.7
2:01:31 PM	600	497	491	4.7
2:01:32 PM	600	497	493	4.7
2:01:33 PM	600	497	491	4.8
2:01:34 PM	600	500	488	4.7
2:01:35 PM	600	497	492	4.8
2:01:36 PM	600	499	489	4.8
2:01:37 PM	600	498	491	4.7
2:01:38 PM	600	500	488	4.7
2:01:39 PM	600	497	490	4.7
2:01:40 PM	600	500	487	4.8
2:01:40 PM	600	500	491	4.7
2:01:41 PM	600	498	490	4.7
2:01:42 PM	600	497	488	4.8
2:01:43 PM	600	499	490	4.7
2:01:44 PM	600	500	489	4.7
2:01:45 PM	600	496	490	4.8
2:01:46 PM	600	500	488	4.7
2:01:47 PM	600	499	488	4.7
Averages ->	**600**	**499**	**489**	**4.8**
			Maximum ->	**4.9**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 500 **Date** 5/18/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
2:44:07 PM	600	500	497	5.0
2:44:08 PM	600	501	494	5.1
2:44:09 PM	600	501	498	5.1
2:44:10 PM	600	495	491	5.0
2:44:11 PM	600	493	494	5.0
2:44:12 PM	600	500	496	5.1
2:44:13 PM	600	498	492	5.1
2:44:14 PM	600	508	501	5.0
2:44:15 PM	600	503	491	5.0
2:44:16 PM	600	498	492	5.1
2:44:17 PM	600	503	497	5.0
2:44:18 PM	600	496	496	5.0
2:44:19 PM	600	500	498	5.1
2:44:20 PM	600	498	497	5.0
2:44:21 PM	600	502	501	5.0
2:44:22 PM	600	496	496	5.1
2:44:23 PM	600	504	496	5.0
2:44:24 PM	600	502	497	5.1
2:44:25 PM	600	500	496	5.0
2:44:26 PM	600	498	495	5.2
2:44:27 PM	600	502	497	5.1
2:44:28 PM	600	494	494	5.2
2:44:29 PM	600	495	495	5.0
2:44:30 PM	600	498	498	5.2
2:44:31 PM	600	497	494	5.0
2:44:32 PM	600	501	494	5.1
2:44:33 PM	600	500	490	5.0
2:44:34 PM	600	497	496	5.0
2:44:35 PM	600	496	494	5.1
2:44:36 PM	600	497	500	5.0
2:44:37 PM	600	503	500	5.1
2:44:38 PM	600	496	494	5.0
2:44:39 PM	600	500	501	4.9
2:44:40 PM	600	496	494	5.1
2:44:41 PM	600	500	501	5.0
2:44:42 PM	600	498	492	4.9
2:44:43 PM	600	499	494	5.1
2:44:43 PM	600	499	494	5.1
2:44:44 PM	600	500	500	5.0
2:44:45 PM	600	496	492	5.1
2:44:46 PM	600	502	499	4.9
2:44:47 PM	600	493	494	5.2
2:44:48 PM	600	498	497	5.0
2:44:49 PM	600	496	496	5.1
2:44:50 PM	600	502	496	5.1
2:44:51 PM	600	496	490	5.0
2:44:52 PM	600	502	502	5.2
2:44:53 PM	600	498	495	5.1
2:44:54 PM	600	494	492	5.1
2:44:55 PM	600	500	496	5.1
2:44:56 PM	600	497	491	5.1
2:44:57 PM	600	499	496	5.1
2:44:58 PM	600	500	498	5.1
2:44:59 PM	600	495	493	5.2
2:45:00 PM	600	502	499	5.2
2:45:01 PM	600	502	499	5.2
2:45:02 PM	600	500	496	5.1
2:45:03 PM	600	499	494	5.2
2:45:04 PM	600	499	497	5.1
2:45:05 PM	600	498	496	5.1
Averages ->	**600**	**499**	**496**	**5.1**
			Maximum ->	**5.2**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 550 **Date** 5/18/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
3:26:41 PM	600	497	497	7.1
3:26:42 PM	600	502	496	6.8
3:26:43 PM	600	495	494	7.0
3:26:44 PM	600	497	496	6.9
3:26:45 PM	600	497	496	6.9
3:26:46 PM	600	498	499	7.1
3:26:47 PM	600	494	494	6.9
3:26:48 PM	600	498	498	7.1
3:26:49 PM	600	497	497	6.9
3:26:50 PM	600	498	495	7.1
3:26:51 PM	600	497	497	6.9
3:26:52 PM	600	499	497	7.1
3:26:53 PM	600	497	496	6.8
3:26:54 PM	600	500	496	7.1
3:26:55 PM	600	501	497	6.9
3:26:56 PM	600	500	493	7.1
3:26:57 PM	600	497	496	6.9
3:26:58 PM	600	498	495	7.0
3:26:59 PM	600	501	495	7.0
3:27:00 PM	600	496	493	6.8
3:27:01 PM	600	498	490	7.1
3:27:02 PM	600	496	495	6.9
3:27:03 PM	600	498	493	7.1
3:27:03 PM	600	496	495	6.9
3:27:04 PM	600	501	496	7.1
3:27:05 PM	600	496	495	6.8
3:27:06 PM	600	503	494	7.1
3:27:07 PM	600	498	493	6.9
3:27:08 PM	600	500	496	7.0
3:27:09 PM	600	501	497	6.9
3:27:10 PM	600	502	495	7.0
3:27:11 PM	600	499	495	6.8
3:27:12 PM	600	501	496	7.1
3:27:13 PM	600	498	494	6.8
3:27:14 PM	600	502	496	7.1
3:27:15 PM	600	501	492	6.9
3:27:16 PM	600	500	497	7.1
3:27:17 PM	600	499	498	6.9
3:27:18 PM	600	500	497	7.1
3:27:19 PM	600	500	496	7.0
3:27:20 PM	600	501	495	6.9
3:27:21 PM	600	498	497	7.1
3:27:22 PM	600	499	498	7.0
3:27:23 PM	600	497	495	7.1
3:27:24 PM	600	500	498	7.0
3:27:25 PM	600	505	498	6.9
3:27:26 PM	600	496	493	7.2
3:27:27 PM	600	505	496	6.9
3:27:28 PM	600	499	494	7.2
3:27:29 PM	600	501	495	7.0
3:27:30 PM	600	499	494	7.0
3:27:31 PM	600	499	494	7.0
3:27:32 PM	600	497	494	7.0
3:27:33 PM	600	499	491	7.1
3:27:34 PM	600	501	497	6.9
3:27:35 PM	600	497	496	7.1
3:27:36 PM	600	499	498	7.0
3:27:37 PM	600	499	497	7.0
3:27:38 PM	600	499	494	7.1
3:27:39 PM	600	497	498	6.8
Averages ->	**600**	**499**	**496**	**7.0**
			Maximum ->	**7.2**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 600 **Date** 5/18/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
3:58:32 PM	600	499	503	7.1
3:58:33 PM	600	499	503	7.1
3:58:34 PM	600	494	497	7.0
3:58:35 PM	600	503	499	7.0
3:58:36 PM	600	502	500	7.1
3:58:37 PM	600	500	499	7.1
3:58:38 PM	600	502	498	7.0
3:58:39 PM	600	510	499	7.0
3:58:40 PM	600	497	496	7.0
3:58:41 PM	600	499	498	7.1
3:58:42 PM	600	492	498	7.1
3:58:43 PM	600	499	498	7.1
3:58:44 PM	600	505	496	7.1
3:58:45 PM	600	500	497	7.1
3:58:46 PM	600	498	497	7.0
3:58:47 PM	600	497	495	7.0
3:58:48 PM	600	499	496	7.0
3:58:49 PM	600	499	498	7.1
3:58:50 PM	600	499	500	7.0
3:58:51 PM	600	502	497	7.0
3:58:52 PM	600	502	496	7.0
3:58:53 PM	600	497	493	7.1
3:58:54 PM	600	503	498	7.1
3:58:55 PM	600	499	498	7.1
3:58:56 PM	600	496	495	7.0
3:58:57 PM	600	499	497	7.1
3:58:58 PM	600	500	496	7.0
3:58:59 PM	600	501	497	7.0
3:59:00 PM	600	500	497	7.1
3:59:01 PM	600	502	496	7.1
3:59:02 PM	600	498	495	7.1
3:59:03 PM	600	500	498	7.1
3:59:04 PM	600	496	494	7.1
3:59:05 PM	600	501	499	7.1
3:59:06 PM	600	501	497	7.1
3:59:07 PM	600	505	499	7.0
3:59:08 PM	600	499	497	7.1
3:59:09 PM	600	504	498	7.1
3:59:10 PM	600	494	500	7.1
3:59:11 PM	600	498	499	7.1
3:59:12 PM	600	498	496	7.1
3:59:13 PM	600	497	494	7.1
3:59:14 PM	600	499	499	7.1
3:59:15 PM	600	492	493	7.1
3:59:16 PM	600	500	495	7.0
3:59:17 PM	600	496	497	7.1
3:59:18 PM	600	499	495	7.1
3:59:19 PM	600	499	497	7.1
3:59:20 PM	600	503	499	7.1
3:59:21 PM	600	498	495	7.1
3:59:22 PM	600	499	493	7.1
3:59:23 PM	600	498	497	7.1
3:59:24 PM	600	498	497	7.1
3:59:25 PM	600	501	499	7.1
3:59:26 PM	600	498	497	7.0
3:59:27 PM	600	498	495	7.0
3:59:28 PM	600	499	497	7.0
3:59:29 PM	600	498	496	7.1
3:59:30 PM	600	499	495	7.1
3:59:31 PM	600	498	498	7.1
Averages ->	**600**	**499**	**497**	**7.1**
			Maximum ->	**7.1**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 600 **Date** 5/21/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
8:39:51 AM	600	81	74	2.3
8:39:52 AM	600	70	70	2.3
8:39:53 AM	600	71	72	2.4
8:39:54 AM	600	75	70	2.4
8:39:55 AM	600	79	73	2.5
8:39:56 AM	600	73	73	2.6
8:39:57 AM	600	70	73	2.6
8:39:58 AM	600	73	71	2.6
8:39:59 AM	600	68	72	2.5
8:40:00 AM	600	68	69	2.4
8:40:01 AM	600	74	77	2.4
8:40:02 AM	600	76	75	2.4
8:40:03 AM	600	72	70	2.3
8:40:04 AM	600	75	70	2.3
8:40:05 AM	600	70	70	2.3
8:40:06 AM	600	72	70	2.4
8:40:07 AM	600	78	71	2.4
8:40:08 AM	600	65	72	2.4
8:40:09 AM	600	73	72	2.4
8:40:10 AM	600	73	72	2.4
8:40:11 AM	600	74	74	2.4
8:40:12 AM	600	70	73	2.4
8:40:13 AM	600	73	72	2.4
8:40:14 AM	600	77	73	2.4
8:40:15 AM	600	66	72	2.4
8:40:16 AM	600	72	72	2.4
8:40:17 AM	600	75	70	2.4
8:40:18 AM	600	75	74	2.4
8:40:19 AM	600	74	76	2.4
8:40:20 AM	600	73	73	2.4
8:40:21 AM	600	77	75	2.4
8:40:22 AM	600	71	68	2.4
8:40:23 AM	600	72	67	2.4
8:40:23 AM	600	69	72	2.4
8:40:24 AM	600	72	73	2.4
8:40:25 AM	600	75	74	2.4
8:40:26 AM	600	70	73	2.4
8:40:27 AM	600	75	70	2.4
8:40:28 AM	600	72	74	2.3
8:40:29 AM	600	74	71	2.3
8:40:30 AM	600	71	67	2.3
8:40:31 AM	600	74	69	2.3
8:40:32 AM	600	68	73	2.3
8:40:33 AM	600	75	79	2.3
8:40:34 AM	600	70	79	2.3
8:40:35 AM	600	74	79	2.3
8:40:36 AM	600	78	73	2.3
8:40:37 AM	600	69	74	2.3
8:40:38 AM	600	72	75	2.3
8:40:39 AM	600	73	76	2.3
8:40:40 AM	600	74	77	2.3
8:40:41 AM	600	75	72	2.3
8:40:42 AM	600	71	71	2.3
8:40:43 AM	600	70	73	2.3
8:40:44 AM	600	73	72	2.3
8:40:45 AM	600	75	74	2.3
8:40:46 AM	600	72	74	2.3
8:40:47 AM	600	73	80	2.3
8:40:48 AM	600	75	71	2.3
8:40:49 AM	600	70	72	2.3
Averages ->	**600**	**73**	**73**	**2.4**
			Maximum ->	**2.6**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 650 **Date** 5/21/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
9:25:27 AM	600	82	80	2.5
9:25:28 AM	600	84	74	2.5
9:25:29 AM	600	82	81	2.5
9:25:30 AM	600	87	73	2.5
9:25:31 AM	600	86	76	2.5
9:25:32 AM	600	81	81	2.5
9:25:33 AM	600	81	78	2.5
9:25:34 AM	600	86	75	2.4
9:25:35 AM	600	85	75	2.4
9:25:36 AM	600	83	77	2.4
9:25:37 AM	600	82	79	2.4
9:25:38 AM	600	78	81	2.4
9:25:39 AM	600	80	78	2.4
9:25:40 AM	600	80	82	2.4
9:25:41 AM	600	85	78	2.4
9:25:42 AM	600	83	79	2.4
9:25:43 AM	600	83	79	2.4
9:25:44 AM	600	87	76	2.4
9:25:45 AM	600	84	82	2.4
9:25:46 AM	600	82	81	2.4
9:25:47 AM	600	83	77	2.4
9:25:48 AM	600	83	78	2.4
9:25:49 AM	600	84	78	2.4
9:25:50 AM	600	85	78	2.4
9:25:51 AM	600	83	79	2.4
9:25:52 AM	600	81	80	2.4
9:25:53 AM	600	83	77	2.3
9:25:54 AM	600	84	76	2.3
9:25:55 AM	600	87	76	2.3
9:25:56 AM	600	80	84	2.3
9:25:57 AM	600	84	73	2.3
9:25:58 AM	600	82	78	2.4
9:25:59 AM	600	79	82	2.4
9:26:00 AM	600	79	78	2.4
9:26:01 AM	600	84	78	2.4
9:26:02 AM	600	82	80	2.4
9:26:02 AM	600	85	78	2.4
9:26:03 AM	600	83	77	2.4
9:26:04 AM	600	86	75	2.3
9:26:05 AM	600	81	77	2.3
9:26:06 AM	600	86	75	2.3
9:26:07 AM	600	85	76	2.3
9:26:08 AM	600	79	80	2.3
9:26:09 AM	600	81	77	2.3
9:26:10 AM	600	85	73	2.3
9:26:11 AM	600	84	77	2.3
9:26:12 AM	600	78	81	2.3
9:26:13 AM	600	85	77	2.3
9:26:14 AM	600	82	80	2.3
9:26:15 AM	600	84	79	2.3
9:26:16 AM	600	84	79	2.3
9:26:17 AM	600	85	76	2.3
9:26:18 AM	600	82	80	2.3
9:26:19 AM	600	86	77	2.3
9:26:20 AM	600	82	80	2.3
9:26:21 AM	600	84	79	2.3
9:26:22 AM	600	81	79	2.3
9:26:23 AM	600	84	73	2.3
9:26:24 AM	600	87	73	2.3
9:26:25 AM	600	79	81	2.3
Averages ->	**600**	**83**	**78**	**2.4**
			Maximum ->	**2.5**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 700 **Date** 5/21/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
10:13:20 AM	600	85	79	2.8
10:13:21 AM	600	86	80	2.9
10:13:22 AM	600	88	81	3.0
10:13:23 AM	600	84	79	3.0
10:13:24 AM	600	88	81	3.0
10:13:25 AM	600	87	81	3.0
10:13:26 AM	600	88	78	3.0
10:13:27 AM	600	85	83	3.0
10:13:28 AM	600	84	81	3.0
10:13:29 AM	600	86	81	3.0
10:13:30 AM	600	85	80	3.1
10:13:31 AM	600	87	81	3.1
10:13:32 AM	600	86	82	3.1
10:13:33 AM	600	88	79	3.1
10:13:34 AM	600	88	80	3.0
10:13:35 AM	600	84	81	3.0
10:13:36 AM	600	85	80	3.0
10:13:37 AM	600	85	80	2.9
10:13:38 AM	600	86	81	2.9
10:13:39 AM	600	86	80	2.9
10:13:40 AM	600	88	84	2.9
10:13:41 AM	600	88	79	3.0
10:13:41 AM	600	87	82	2.9
10:13:42 AM	600	88	79	2.9
10:13:43 AM	600	86	81	2.9
10:13:44 AM	600	84	79	2.9
10:13:45 AM	600	81	78	2.9
10:13:46 AM	600	85	78	2.9
10:13:47 AM	600	82	83	2.9
10:13:48 AM	600	84	75	2.8
10:13:49 AM	600	84	82	2.8
10:13:50 AM	600	87	83	2.8
10:13:51 AM	600	88	76	2.8
10:13:52 AM	600	88	76	2.8
10:13:53 AM	600	89	72	2.8
10:13:54 AM	600	87	85	2.9
10:13:55 AM	600	83	83	2.9
10:13:56 AM	600	86	81	2.9
10:13:57 AM	600	86	84	2.9
10:13:58 AM	600	86	78	2.9
10:13:59 AM	600	86	80	2.9
10:14:00 AM	600	86	81	2.8
10:14:01 AM	600	85	75	2.8
10:14:02 AM	600	86	81	2.9
10:14:03 AM	600	86	78	2.9
10:14:04 AM	600	85	82	2.9
10:14:05 AM	600	87	78	2.9
10:14:06 AM	600	89	80	2.9
10:14:07 AM	600	85	87	2.8
10:14:08 AM	600	84	79	2.8
10:14:09 AM	600	84	81	2.8
10:14:10 AM	600	86	81	2.8
10:14:11 AM	600	83	87	2.8
10:14:12 AM	600	89	84	2.8
10:14:13 AM	600	82	80	2.8
10:14:14 AM	600	90	81	2.8
10:14:15 AM	600	86	77	2.8
10:14:16 AM	600	82	86	2.8
10:14:17 AM	600	83	82	2.8
10:14:18 AM	600	85	77	2.8
Averages ->	**600**	**86**	**80**	**2.9**
			Maximum ->	**3.1**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 750 **Date** 5/21/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
11:03:35 AM	600	85	85	0.8
11:03:36 AM	600	89	77	0.8
11:03:37 AM	600	85	82	0.8
11:03:38 AM	600	76	84	0.9
11:03:39 AM	600	85	79	0.9
11:03:40 AM	600	85	79	0.9
11:03:41 AM	600	85	83	1.0
11:03:42 AM	600	89	81	1.0
11:03:43 AM	600	88	80	1.0
11:03:44 AM	600	90	81	1.0
11:03:45 AM	600	89	78	1.0
11:03:46 AM	600	87	88	1.0
11:03:47 AM	600	82	89	1.0
11:03:48 AM	600	83	88	1.0
11:03:49 AM	600	82	82	1.0
11:03:50 AM	600	83	80	1.0
11:03:51 AM	600	84	87	0.9
11:03:52 AM	600	88	81	0.9
11:03:53 AM	600	88	84	0.9
11:03:54 AM	600	79	87	0.9
11:03:55 AM	600	89	81	0.8
11:03:56 AM	600	89	83	0.8
11:03:57 AM	600	82	86	0.8
11:03:58 AM	600	88	80	0.8
11:03:59 AM	600	92	84	0.8
11:04:00 AM	600	87	86	0.8
11:04:01 AM	600	87	82	0.8
11:04:02 AM	600	84	86	0.8
11:04:03 AM	600	88	82	0.8
11:04:04 AM	600	91	80	0.8
11:04:05 AM	600	87	83	0.7
11:04:06 AM	600	82	90	0.7
11:04:07 AM	600	84	88	0.7
11:04:08 AM	600	89	84	0.7
11:04:09 AM	600	81	83	0.7
11:04:10 AM	600	92	80	0.7
11:04:10 AM	600	89	80	0.7
11:04:11 AM	600	86	86	0.7
11:04:12 AM	600	87	85	0.7
11:04:13 AM	600	86	79	0.7
11:04:14 AM	600	87	85	0.7
11:04:15 AM	600	81	82	0.7
11:04:16 AM	600	84	86	0.7
11:04:17 AM	600	86	85	0.7
11:04:18 AM	600	91	82	0.6
11:04:19 AM	600	89	84	0.6
11:04:20 AM	600	88	84	0.6
11:04:21 AM	600	85	79	0.6
11:04:22 AM	600	87	84	0.6
11:04:23 AM	600	88	79	0.6
11:04:24 AM	600	86	85	0.6
11:04:25 AM	600	88	86	0.6
11:04:26 AM	600	83	90	0.6
11:04:27 AM	600	84	84	0.6
11:04:28 AM	600	83	79	0.6
11:04:29 AM	600	82	91	0.6
11:04:30 AM	600	81	90	0.7
11:04:31 AM	600	83	86	0.7
11:04:32 AM	600	90	85	0.6
11:04:33 AM	600	84	85	0.6
Averages ->	**600**	**86**	**84**	**0.8**
			Maximum ->	**1.0**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 750 **Date** 5/21/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
1:32:57 PM	600	499	495	2.4
1:32:58 PM	600	499	496	2.4
1:32:59 PM	600	498	495	2.5
1:33:00 PM	600	498	496	2.5
1:33:01 PM	600	500	497	2.6
1:33:02 PM	600	502	498	2.5
1:33:03 PM	600	497	492	2.6
1:33:04 PM	600	496	494	2.5
1:33:05 PM	600	500	495	2.5
1:33:06 PM	600	495	498	2.5
1:33:07 PM	600	498	495	2.4
1:33:08 PM	600	504	500	2.5
1:33:09 PM	600	499	497	2.5
1:33:10 PM	600	498	497	2.3
1:33:11 PM	600	499	498	2.3
1:33:12 PM	600	500	498	2.4
1:33:13 PM	600	500	495	2.4
1:33:14 PM	600	501	497	2.3
1:33:14 PM	600	497	499	2.3
1:33:15 PM	600	497	497	2.3
1:33:16 PM	600	498	496	2.3
1:33:17 PM	600	500	498	2.3
1:33:18 PM	600	500	497	2.2
1:33:19 PM	600	498	499	2.2
1:33:20 PM	600	498	497	2.3
1:33:21 PM	600	497	497	2.2
1:33:22 PM	600	497	493	2.2
1:33:23 PM	600	499	495	2.1
1:33:24 PM	600	500	498	2.2
1:33:25 PM	600	500	497	2.2
1:33:26 PM	600	498	497	2.1
1:33:27 PM	600	501	496	2.1
1:33:28 PM	600	499	500	2.1
1:33:29 PM	600	499	500	2.1
1:33:30 PM	600	498	499	2.2
1:33:31 PM	600	500	497	2.1
1:33:32 PM	600	500	497	2.1
1:33:33 PM	600	499	495	2.2
1:33:34 PM	600	500	498	2.1
1:33:35 PM	600	500	499	2.1
1:33:36 PM	600	499	495	2.2
1:33:37 PM	600	499	498	2.1
1:33:38 PM	600	498	495	2.1
1:33:39 PM	600	498	500	2.2
1:33:40 PM	600	499	498	2.2
1:33:41 PM	600	497	495	2.2
1:33:42 PM	600	498	496	2.2
1:33:43 PM	600	499	498	2.2
1:33:44 PM	600	498	497	2.1
1:33:45 PM	600	499	497	2.2
1:33:46 PM	600	501	496	2.2
1:33:47 PM	600	503	495	2.2
1:33:48 PM	600	501	498	2.3
1:33:49 PM	600	500	496	2.2
1:33:50 PM	600	499	497	2.2
1:33:51 PM	600	502	499	2.3
1:33:52 PM	600	501	501	2.2
1:33:53 PM	600	500	495	2.4
1:33:54 PM	600	501	502	2.3
1:33:55 PM	600	499	496	2.4
Averages ->	**600**	**499**	**497**	**2.3**
			Maximum ->	**2.6**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 800 **Date** 5/21/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
2:24:46 PM	600	486	499	3.3
2:24:47 PM	600	485	500	3.2
2:24:48 PM	600	482	500	3.2
2:24:49 PM	600	485	499	3.3
2:24:50 PM	600	482	499	3.3
2:24:51 PM	600	483	499	3.4
2:24:52 PM	600	484	498	3.4
2:24:53 PM	600	485	496	3.4
2:24:54 PM	600	485	496	3.4
2:24:55 PM	600	486	498	3.3
2:24:56 PM	600	485	498	3.3
2:24:57 PM	600	486	501	3.3
2:24:58 PM	600	482	500	3.3
2:24:59 PM	600	484	500	3.3
2:25:00 PM	600	483	499	3.3
2:25:01 PM	600	484	499	3.3
2:25:02 PM	600	481	500	3.3
2:25:03 PM	600	484	499	3.3
2:25:04 PM	600	482	499	3.4
2:25:05 PM	600	485	500	3.3
2:25:06 PM	600	485	500	3.3
2:25:07 PM	600	483	499	3.4
2:25:08 PM	600	482	501	3.3
2:25:09 PM	600	486	498	3.3
2:25:10 PM	600	482	502	3.3
2:25:11 PM	600	483	499	3.3
2:25:12 PM	600	484	496	3.3
2:25:13 PM	600	484	499	3.3
2:25:14 PM	600	484	501	3.3
2:25:15 PM	600	480	497	3.3
2:25:16 PM	600	485	501	3.3
2:25:17 PM	600	485	499	3.3
2:25:18 PM	600	482	498	3.3
2:25:19 PM	600	481	497	3.3
2:25:20 PM	600	483	499	3.3
2:25:21 PM	600	484	499	3.3
2:25:22 PM	600	480	498	3.3
2:25:23 PM	600	487	507	3.3
2:25:24 PM	600	486	500	3.3
2:25:25 PM	600	483	500	3.3
2:25:26 PM	600	481	501	3.3
2:25:27 PM	600	486	501	3.3
2:25:28 PM	600	486	502	3.3
2:25:29 PM	600	484	500	3.3
2:25:30 PM	600	484	500	3.3
2:25:31 PM	600	482	499	3.3
2:25:32 PM	600	482	500	3.2
2:25:33 PM	600	477	495	3.3
2:25:34 PM	600	483	499	3.3
2:25:35 PM	600	479	498	3.2
2:25:36 PM	600	483	500	3.3
2:25:37 PM	600	482	499	3.3
2:25:38 PM	600	483	498	3.3
2:25:39 PM	600	484	498	3.2
2:25:40 PM	600	486	501	3.2
2:25:41 PM	600	480	498	3.2
2:25:42 PM	600	482	499	3.2
2:25:43 PM	600	480	500	3.2
2:25:44 PM	600	484	501	3.3
2:25:45 PM	600	483	501	3.3
Averages ->	**600**	**483**	**499**	**3.3**
			Maximum ->	**3.4**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 850 **Date** 5/21/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
3:17:57 PM	600	477	499	3.1
3:17:58 PM	600	477	498	3.2
3:17:59 PM	600	478	497	3.2
3:18:00 PM	600	477	501	3.1
3:18:01 PM	600	475	497	3.1
3:18:02 PM	600	476	499	3.2
3:18:03 PM	600	476	499	3.2
3:18:04 PM	600	478	500	3.2
3:18:05 PM	600	477	498	3.2
3:18:06 PM	600	473	499	3.2
3:18:07 PM	600	471	498	3.2
3:18:08 PM	600	472	496	3.2
3:18:09 PM	600	476	501	3.2
3:18:10 PM	600	478	498	3.2
3:18:11 PM	600	476	498	3.2
3:18:12 PM	600	476	503	3.2
3:18:13 PM	600	478	501	3.2
3:18:14 PM	600	473	494	3.2
3:18:15 PM	600	471	494	3.2
3:18:16 PM	600	474	499	3.2
3:18:17 PM	600	476	496	3.2
3:18:18 PM	600	479	497	3.2
3:18:19 PM	600	477	499	3.2
3:18:20 PM	600	477	501	3.2
3:18:21 PM	600	476	499	3.2
3:18:22 PM	600	474	498	3.2
3:18:23 PM	600	475	501	3.2
3:18:24 PM	600	477	497	3.2
3:18:25 PM	600	473	497	3.1
3:18:26 PM	600	478	500	3.2
3:18:27 PM	600	475	500	3.2
3:18:28 PM	600	476	500	3.2
3:18:29 PM	600	479	499	3.2
3:18:30 PM	600	475	500	3.1
3:18:31 PM	600	476	497	3.2
3:18:32 PM	600	476	498	3.2
3:18:33 PM	600	476	499	3.2
3:18:34 PM	600	475	498	3.2
3:18:35 PM	600	473	498	3.2
3:18:36 PM	600	477	499	3.1
3:18:37 PM	600	480	497	3.1
3:18:38 PM	600	475	497	3.1
3:18:38 PM	600	477	501	3.2
3:18:39 PM	600	475	498	3.2
3:18:40 PM	600	477	497	3.2
3:18:41 PM	600	477	499	3.2
3:18:42 PM	600	477	499	3.2
3:18:43 PM	600	475	496	3.2
3:18:44 PM	600	476	499	3.2
3:18:45 PM	600	478	501	3.1
3:18:46 PM	600	480	499	3.1
3:18:47 PM	600	477	501	3.1
3:18:48 PM	600	478	502	3.1
3:18:49 PM	600	480	497	3.1
3:18:50 PM	600	477	498	3.1
3:18:51 PM	600	478	498	3.1
3:18:52 PM	600	476	496	3.2
3:18:53 PM	600	475	498	3.1
3:18:54 PM	600	479	502	3.1
3:18:55 PM	600	477	501	3.1
Averages ->	**600**	**476**	**499**	**3.2**
			Maximum ->	**3.2**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 900 **Date** 5/21/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
4:10:44 PM	600	478	501	3.6
4:10:45 PM	600	478	497	3.6
4:10:46 PM	600	478	501	3.5
4:10:47 PM	600	476	500	3.4
4:10:48 PM	600	477	499	3.4
4:10:49 PM	600	479	500	3.3
4:10:50 PM	600	473	501	3.3
4:10:51 PM	600	477	499	3.3
4:10:52 PM	600	475	503	3.2
4:10:53 PM	600	478	500	3.3
4:10:54 PM	600	479	498	3.3
4:10:55 PM	600	476	502	3.3
4:10:56 PM	600	481	502	3.3
4:10:57 PM	600	478	500	3.4
4:10:58 PM	600	477	502	3.4
4:10:59 PM	600	478	502	3.3
4:11:00 PM	600	476	502	3.4
4:11:01 PM	600	474	498	3.4
4:11:02 PM	600	478	498	3.4
4:11:03 PM	600	478	501	3.4
4:11:04 PM	600	474	498	3.4
4:11:05 PM	600	478	503	3.4
4:11:06 PM	600	475	498	3.4
4:11:07 PM	600	476	500	3.3
4:11:08 PM	600	476	501	3.4
4:11:09 PM	600	474	498	3.3
4:11:10 PM	600	474	498	3.3
4:11:11 PM	600	481	502	3.3
4:11:11 PM	600	477	499	3.3
4:11:12 PM	600	478	501	3.4
4:11:13 PM	600	476	500	3.4
4:11:14 PM	600	476	501	3.3
4:11:15 PM	600	473	499	3.4
4:11:16 PM	600	475	506	3.4
4:11:17 PM	600	481	497	3.3
4:11:18 PM	600	475	498	3.4
4:11:19 PM	600	473	497	3.4
4:11:20 PM	600	475	497	3.4
4:11:21 PM	600	474	497	3.4
4:11:22 PM	600	478	501	3.4
4:11:23 PM	600	474	501	3.4
4:11:24 PM	600	475	503	3.4
4:11:25 PM	600	474	501	3.4
4:11:26 PM	600	478	499	3.4
4:11:27 PM	600	473	500	3.4
4:11:28 PM	600	479	499	3.4
4:11:29 PM	600	476	499	3.4
4:11:30 PM	600	475	500	3.3
4:11:31 PM	600	477	499	3.4
4:11:32 PM	600	476	499	3.4
4:11:33 PM	600	476	500	3.4
4:11:34 PM	600	477	500	3.4
4:11:35 PM	600	477	504	3.5
4:11:36 PM	600	476	496	3.5
4:11:37 PM	600	478	498	3.5
4:11:38 PM	600	475	503	3.6
4:11:39 PM	600	478	501	3.5
4:11:40 PM	600	475	501	3.5
4:11:41 PM	600	475	501	3.5
4:11:42 PM	600	476	502	3.5
Averages ->	**600**	**476**	**500**	**3.4**
			Maximum ->	**3.6**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 900 **Date** 5/22/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
9:00:43 AM	600	76	78	0.9
9:00:44 AM	600	75	76	0.9
9:00:44 AM	600	77	75	0.9
9:00:45 AM	600	74	74	1.0
9:00:46 AM	600	75	76	1.1
9:00:47 AM	600	73	77	1.0
9:00:48 AM	600	80	76	1.0
9:00:49 AM	600	78	75	1.0
9:00:50 AM	600	69	72	1.1
9:00:51 AM	600	78	80	1.0
9:00:52 AM	600	75	74	1.0
9:00:53 AM	600	76	80	0.9
9:00:54 AM	600	77	78	0.9
9:00:55 AM	600	73	73	0.9
9:00:56 AM	600	74	76	0.9
9:00:57 AM	600	74	76	0.9
9:00:58 AM	600	78	76	0.9
9:00:59 AM	600	78	79	0.9
9:01:00 AM	600	74	73	1.0
9:01:01 AM	600	77	76	0.9
9:01:02 AM	600	73	75	0.9
9:01:03 AM	600	78	78	0.9
9:01:04 AM	600	75	78	1.0
9:01:05 AM	600	78	77	1.0
9:01:06 AM	600	78	76	0.8
9:01:07 AM	600	76	76	0.9
9:01:08 AM	600	74	78	0.9
9:01:09 AM	600	76	76	0.9
9:01:10 AM	600	77	80	1.0
9:01:11 AM	600	72	78	0.9
9:01:12 AM	600	78	77	0.8
9:01:13 AM	600	74	78	0.9
9:01:14 AM	600	76	73	0.9
9:01:15 AM	600	77	75	0.9
9:01:16 AM	600	74	76	0.9
9:01:17 AM	600	77	73	0.9
9:01:18 AM	600	74	76	0.9
9:01:19 AM	600	75	74	0.9
9:01:20 AM	600	79	78	0.9
9:01:21 AM	600	73	77	0.8
9:01:22 AM	600	76	75	0.9
9:01:23 AM	600	77	75	1.0
9:01:24 AM	600	75	75	0.9
9:01:25 AM	600	77	75	0.9
9:01:26 AM	600	75	78	1.0
9:01:27 AM	600	74	76	0.8
9:01:28 AM	600	73	73	0.9
9:01:29 AM	600	77	77	0.9
9:01:30 AM	600	77	74	0.9
9:01:31 AM	600	74	76	0.8
9:01:32 AM	600	78	75	0.8
9:01:33 AM	600	75	78	0.8
9:01:34 AM	600	78	76	0.8
9:01:35 AM	600	73	76	0.8
9:01:36 AM	600	75	77	0.8
9:01:37 AM	600	76	78	0.9
9:01:38 AM	600	75	76	0.7
9:01:39 AM	600	77	75	0.8
9:01:40 AM	600	75	74	0.9
9:01:41 AM	600	77	75	0.9
Averages ->	**600**	**76**	**76**	**0.9**
			Maximum ->	**1.1**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 950 **Date** 5/22/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
9:44:13 AM	600	81	82	3.4
9:44:14 AM	600	84	78	3.6
9:44:15 AM	600	87	81	3.4
9:44:16 AM	600	82	79	3.4
9:44:17 AM	600	85	82	3.3
9:44:18 AM	600	87	82	3.2
9:44:19 AM	600	86	81	3.2
9:44:20 AM	600	82	86	3.1
9:44:21 AM	600	87	81	3.2
9:44:22 AM	600	85	83	3.3
9:44:23 AM	600	86	82	3.4
9:44:24 AM	600	89	75	3.5
9:44:25 AM	600	84	81	3.4
9:44:26 AM	600	86	82	3.1
9:44:27 AM	600	83	78	3.0
9:44:28 AM	600	84	81	3.0
9:44:29 AM	600	85	77	3.1
9:44:30 AM	600	80	81	3.3
9:44:31 AM	600	79	84	3.3
9:44:32 AM	600	88	81	3.2
9:44:33 AM	600	84	80	2.9
9:44:34 AM	600	83	84	2.9
9:44:35 AM	600	86	77	3.0
9:44:36 AM	600	83	83	3.2
9:44:37 AM	600	80	81	3.1
9:44:38 AM	600	87	82	2.9
9:44:39 AM	600	82	86	3.0
9:44:40 AM	600	81	82	3.1
9:44:41 AM	600	85	78	2.9
9:44:42 AM	600	83	79	3.1
9:44:43 AM	600	85	79	3.2
9:44:44 AM	600	79	81	2.8
9:44:45 AM	600	87	78	3.0
9:44:46 AM	600	81	84	3.2
9:44:47 AM	600	84	84	2.8
9:44:48 AM	600	81	81	3.0
9:44:49 AM	600	89	81	2.9
9:44:50 AM	600	87	80	2.9
9:44:51 AM	600	85	82	2.9
9:44:52 AM	600	86	81	2.8
9:44:53 AM	600	85	83	3.0
9:44:54 AM	600	81	79	2.7
9:44:55 AM	600	82	81	3.0
9:44:56 AM	600	87	79	2.7
9:44:57 AM	600	84	82	3.0
9:44:58 AM	600	80	80	2.8
9:44:59 AM	600	83	80	2.8
9:45:00 AM	600	82	81	3.1
9:45:01 AM	600	82	80	2.9
9:45:02 AM	600	82	84	2.7
9:45:03 AM	600	85	77	3.0
9:45:04 AM	600	83	82	2.8
9:45:05 AM	600	81	82	2.9
9:45:05 AM	600	85	82	3.1
9:45:06 AM	600	85	84	2.7
9:45:07 AM	600	80	82	2.8
9:45:08 AM	600	84	79	3.0
9:45:09 AM	600	81	84	2.7
9:45:10 AM	600	85	80	2.7
9:45:11 AM	600	81	82	3.0
Averages ->	**600**	**84**	**81**	**3.0**
			Maximum ->	**3.6**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 1000 **Date** 5/22/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
10:31:41 AM	600	87	82	1.2
10:31:42 AM	600	91	82	1.3
10:31:43 AM	600	85	80	1.9
10:31:44 AM	600	83	76	1.4
10:31:45 AM	600	89	84	1.5
10:31:46 AM	600	89	83	1.6
10:31:47 AM	600	87	80	1.4
10:31:48 AM	600	88	81	1.6
10:31:49 AM	600	90	86	1.4
10:31:50 AM	600	88	82	1.7
10:31:51 AM	600	85	83	1.4
10:31:52 AM	600	88	83	1.6
10:31:53 AM	600	84	80	1.4
10:31:54 AM	600	88	77	1.5
10:31:55 AM	600	86	83	1.5
10:31:56 AM	600	89	82	1.4
10:31:57 AM	600	85	79	1.6
10:31:58 AM	600	89	82	1.3
10:31:59 AM	600	88	80	1.4
10:32:00 AM	600	89	82	1.4
10:32:01 AM	600	89	83	1.4
10:32:01 AM	600	85	80	1.4
10:32:02 AM	600	88	81	1.4
10:32:03 AM	600	88	86	1.4
10:32:04 AM	600	88	86	1.4
10:32:05 AM	600	89	80	1.4
10:32:06 AM	600	87	81	1.5
10:32:07 AM	600	87	82	1.2
10:32:08 AM	600	86	80	1.6
10:32:09 AM	600	89	83	1.3
10:32:10 AM	600	85	82	1.5
10:32:11 AM	600	84	83	1.5
10:32:12 AM	600	86	84	1.4
10:32:13 AM	600	86	82	1.6
10:32:14 AM	600	85	84	1.4
10:32:15 AM	600	86	84	1.5
10:32:16 AM	600	89	83	1.7
10:32:17 AM	600	86	79	1.3
10:32:18 AM	600	85	82	1.4
10:32:19 AM	600	87	85	1.6
10:32:20 AM	600	87	84	1.6
10:32:21 AM	600	85	82	1.7
10:32:22 AM	600	87	84	1.7
10:32:23 AM	600	85	80	1.5
10:32:24 AM	600	87	80	1.3
10:32:25 AM	600	86	83	1.4
10:32:26 AM	600	87	81	1.5
10:32:27 AM	600	87	79	1.5
10:32:28 AM	600	87	84	1.6
10:32:29 AM	600	87	83	1.6
10:32:30 AM	600	88	81	1.2
10:32:31 AM	600	86	81	1.3
10:32:32 AM	600	87	82	1.5
10:32:33 AM	600	89	84	1.5
10:32:34 AM	600	86	83	1.4
10:32:35 AM	600	86	83	1.0
10:32:36 AM	600	84	83	1.2
10:32:37 AM	600	85	82	1.3
10:32:38 AM	600	87	80	1.4
10:32:39 AM	600	87	82	1.4
Averages ->	**600**	**87**	**82**	**1.5**
			Maximum ->	**1.9**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 1050 **Date** 5/22/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
11:23:42 AM	600	89	86	2.9
11:23:43 AM	600	85	81	2.9
11:23:44 AM	600	88	82	2.8
11:23:45 AM	600	89	79	2.9
11:23:46 AM	600	87	84	2.8
11:23:47 AM	600	89	80	2.8
11:23:48 AM	600	89	85	2.8
11:23:49 AM	600	84	84	2.7
11:23:50 AM	600	87	81	2.7
11:23:51 AM	600	91	83	2.7
11:23:52 AM	600	88	86	2.7
11:23:53 AM	600	88	84	2.7
11:23:54 AM	600	86	82	2.7
11:23:55 AM	600	89	82	2.7
11:23:56 AM	600	90	81	2.7
11:23:57 AM	600	88	85	2.7
11:23:58 AM	600	88	81	2.6
11:23:59 AM	600	87	80	2.7
11:24:00 AM	600	90	81	2.6
11:24:01 AM	600	88	81	2.7
11:24:02 AM	600	86	85	2.6
11:24:03 AM	600	88	82	2.7
11:24:04 AM	600	87	84	2.7
11:24:05 AM	600	89	83	2.6
11:24:06 AM	600	88	80	2.6
11:24:07 AM	600	86	85	2.6
11:24:08 AM	600	84	86	2.6
11:24:09 AM	600	88	78	2.6
11:24:10 AM	600	85	80	2.6
11:24:11 AM	600	87	85	2.6
11:24:12 AM	600	87	83	2.5
11:24:13 AM	600	88	84	2.6
11:24:14 AM	600	88	84	2.6
11:24:15 AM	600	91	81	2.6
11:24:16 AM	600	86	82	2.6
11:24:16 AM	600	89	85	2.6
11:24:17 AM	600	84	87	2.6
11:24:18 AM	600	91	84	2.6
11:24:19 AM	600	85	84	2.6
11:24:20 AM	600	86	83	2.5
11:24:21 AM	600	83	81	2.6
11:24:22 AM	600	87	80	2.5
11:24:23 AM	600	88	80	2.5
11:24:24 AM	600	85	84	2.5
11:24:25 AM	600	90	83	2.5
11:24:26 AM	600	90	82	2.4
11:24:27 AM	600	85	83	2.4
11:24:28 AM	600	90	86	2.5
11:24:29 AM	600	91	80	2.5
11:24:30 AM	600	88	85	2.4
11:24:31 AM	600	88	79	2.4
11:24:32 AM	600	87	84	2.3
11:24:33 AM	600	87	84	2.4
11:24:34 AM	600	82	84	2.5
11:24:35 AM	600	88	78	2.3
11:24:36 AM	600	89	82	2.4
11:24:37 AM	600	87	83	2.4
11:24:38 AM	600	89	87	2.4
11:24:39 AM	600	84	85	2.3
11:24:40 AM	600	87	86	2.4
Averages ->	**600**	**87**	**83**	**2.6**
			Maximum ->	**2.9**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 1050 **Date** 5/23/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
11:54:38 AM	600	499	492	1.8
11:54:39 AM	600	499	491	1.7
11:54:40 AM	600	498	492	1.8
11:54:41 AM	600	502	491	1.9
11:54:42 AM	600	500	490	1.8
11:54:43 AM	600	498	490	1.8
11:54:44 AM	600	499	491	1.9
11:54:45 AM	600	498	492	1.9
11:54:46 AM	600	499	491	1.8
11:54:47 AM	600	501	490	1.9
11:54:48 AM	600	500	491	1.8
11:54:48 AM	600	498	492	1.9
11:54:49 AM	600	498	491	1.9
11:54:50 AM	600	498	491	1.9
11:54:51 AM	600	498	491	1.8
11:54:52 AM	600	501	491	1.9
11:54:53 AM	600	499	491	1.8
11:54:54 AM	600	500	492	1.7
11:54:55 AM	600	500	490	1.8
11:54:56 AM	600	500	491	1.7
11:54:57 AM	600	500	491	1.8
11:54:58 AM	600	499	491	1.8
11:54:59 AM	600	498	489	1.8
11:55:00 AM	600	500	491	1.8
11:55:01 AM	600	500	491	1.8
11:55:02 AM	600	501	491	1.8
11:55:03 AM	600	498	490	1.8
11:55:04 AM	600	498	491	1.8
11:55:05 AM	600	499	491	1.9
11:55:06 AM	600	498	490	1.8
11:55:07 AM	600	500	492	1.9
11:55:08 AM	600	499	490	1.8
11:55:09 AM	600	498	491	1.9
11:55:10 AM	600	501	493	1.9
11:55:11 AM	600	500	492	1.8
11:55:12 AM	600	498	491	1.9
11:55:13 AM	600	499	492	1.7
11:55:14 AM	600	500	492	1.8
11:55:15 AM	600	501	490	1.7
11:55:16 AM	600	499	492	1.8
11:55:17 AM	600	500	493	1.7
11:55:18 AM	600	498	490	1.8
11:55:19 AM	600	500	490	1.8
11:55:20 AM	600	499	492	1.8
11:55:21 AM	600	499	492	1.8
11:55:22 AM	600	501	493	1.8
11:55:23 AM	600	500	490	1.8
11:55:24 AM	600	501	491	1.7
11:55:25 AM	600	499	492	1.8
11:55:26 AM	600	500	491	1.8
11:55:27 AM	600	500	491	1.8
11:55:28 AM	600	500	491	1.8
11:55:29 AM	600	500	491	1.8
11:55:30 AM	600	500	491	1.7
11:55:31 AM	600	499	492	1.8
11:55:32 AM	600	499	491	1.7
11:55:33 AM	600	499	492	1.7
11:55:34 AM	600	499	492	1.7
11:55:35 AM	600	500	492	1.7
11:55:36 AM	600	499	492	1.7
Averages ->	**600**	**499**	**491**	**1.8**
			Maximum ->	**1.9**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 1100 **Date** 5/23/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
12:56:09 PM	600	498	496	3.3
12:56:10 PM	600	500	497	3.3
12:56:11 PM	600	497	496	3.3
12:56:12 PM	600	498	498	3.3
12:56:13 PM	600	500	497	3.4
12:56:14 PM	600	498	499	3.3
12:56:15 PM	600	500	500	3.4
12:56:16 PM	600	500	499	3.3
12:56:17 PM	600	500	499	3.4
12:56:18 PM	600	501	498	3.3
12:56:19 PM	600	499	497	3.3
12:56:20 PM	600	501	496	3.3
12:56:21 PM	600	500	498	3.4
12:56:22 PM	600	499	500	3.3
12:56:23 PM	600	497	500	3.4
12:56:24 PM	600	499	499	3.4
12:56:25 PM	600	499	499	3.4
12:56:26 PM	600	501	500	3.3
12:56:27 PM	600	498	496	3.4
12:56:28 PM	600	501	500	3.4
12:56:29 PM	600	501	499	3.4
12:56:30 PM	600	497	499	3.4
12:56:31 PM	600	499	501	3.4
12:56:32 PM	600	497	499	3.3
12:56:33 PM	600	501	499	3.4
12:56:34 PM	600	501	497	3.4
12:56:35 PM	600	499	499	3.4
12:56:36 PM	600	501	500	3.5
12:56:37 PM	600	499	497	3.6
12:56:38 PM	600	500	500	3.5
12:56:39 PM	600	500	500	3.5
12:56:40 PM	600	500	500	3.6
12:56:41 PM	600	500	500	3.6
12:56:42 PM	600	500	500	3.5
12:56:43 PM	600	500	497	3.6
12:56:44 PM	600	502	500	3.6
12:56:45 PM	600	499	502	3.5
12:56:45 PM	600	499	500	3.5
12:56:46 PM	600	500	501	3.6
12:56:47 PM	600	498	499	3.5
12:56:48 PM	600	499	501	3.5
12:56:49 PM	600	500	498	3.5
12:56:50 PM	600	498	500	3.5
12:56:51 PM	600	500	498	3.6
12:56:52 PM	600	501	500	3.5
12:56:53 PM	600	498	502	3.6
12:56:54 PM	600	498	500	3.6
12:56:55 PM	600	499	501	3.6
12:56:56 PM	600	500	499	3.6
12:56:57 PM	600	498	502	3.6
12:56:58 PM	600	499	500	3.5
12:56:59 PM	600	499	500	3.6
12:57:00 PM	600	501	500	3.6
12:57:01 PM	600	500	501	3.6
12:57:02 PM	600	499	500	3.7
12:57:03 PM	600	499	500	3.6
12:57:04 PM	600	498	500	3.7
12:57:05 PM	600	498	501	3.6
12:57:06 PM	600	502	499	3.6
12:57:07 PM	600	500	502	3.6
Averages ->	**600**	**499**	**499**	**3.5**
			Maximum ->	**3.7**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 1150 **Date** 5/23/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
1:47:34 PM	600	496	500	3.0
1:47:35 PM	600	500	500	3.0
1:47:36 PM	600	499	500	2.9
1:47:37 PM	600	498	501	2.9
1:47:38 PM	600	498	500	3.0
1:47:39 PM	600	498	499	3.0
1:47:40 PM	600	497	499	3.1
1:47:41 PM	600	495	503	3.0
1:47:42 PM	600	497	499	3.0
1:47:43 PM	600	499	499	3.0
1:47:44 PM	600	497	500	3.0
1:47:45 PM	600	499	500	3.0
1:47:46 PM	600	497	500	3.0
1:47:47 PM	600	498	500	3.1
1:47:48 PM	600	497	499	3.1
1:47:49 PM	600	497	500	3.0
1:47:50 PM	600	498	499	3.0
1:47:51 PM	600	497	500	3.1
1:47:52 PM	600	496	499	3.1
1:47:53 PM	600	495	500	3.0
1:47:54 PM	600	498	501	3.0
1:47:55 PM	600	497	499	3.0
1:47:55 PM	600	497	500	3.0
1:47:56 PM	600	498	499	3.1
1:47:57 PM	600	498	500	3.1
1:47:58 PM	600	498	500	3.1
1:47:59 PM	600	498	498	3.1
1:48:00 PM	600	498	501	3.2
1:48:01 PM	600	498	497	3.2
1:48:02 PM	600	494	499	3.1
1:48:03 PM	600	498	501	3.1
1:48:04 PM	600	495	500	3.2
1:48:05 PM	600	498	499	3.1
1:48:06 PM	600	497	499	3.1
1:48:07 PM	600	497	498	3.1
1:48:08 PM	600	497	499	3.1
1:48:09 PM	600	497	499	3.1
1:48:10 PM	600	499	498	3.1
1:48:11 PM	600	495	501	3.1
1:48:12 PM	600	495	501	3.2
1:48:13 PM	600	497	499	3.1
1:48:14 PM	600	496	498	3.1
1:48:15 PM	600	496	500	3.2
1:48:16 PM	600	498	502	3.1
1:48:17 PM	600	497	499	3.2
1:48:18 PM	600	498	500	3.2
1:48:19 PM	600	497	500	3.1
1:48:20 PM	600	495	499	3.1
1:48:21 PM	600	497	498	3.1
1:48:22 PM	600	497	500	3.2
1:48:23 PM	600	497	499	3.2
1:48:24 PM	600	498	499	3.2
1:48:25 PM	600	498	499	3.2
1:48:26 PM	600	496	500	3.2
1:48:27 PM	600	496	501	3.3
1:48:28 PM	600	497	499	3.2
1:48:29 PM	600	496	499	3.2
1:48:30 PM	600	497	500	3.2
1:48:31 PM	600	497	500	3.3
1:48:32 PM	600	498	500	3.3
Averages ->	**600**	**497**	**500**	**3.1**
			Maximum ->	**3.3**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 1150 **Date** 5/23/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
3:01:55 PM	600	498	500	4.3
3:01:56 PM	600	498	499	4.2
3:01:57 PM	600	498	497	4.3
3:01:58 PM	600	497	498	4.3
3:01:59 PM	600	497	498	4.3
3:02:00 PM	600	498	500	4.3
3:02:01 PM	600	497	498	4.3
3:02:02 PM	600	498	499	4.3
3:02:03 PM	600	498	500	4.2
3:02:04 PM	600	498	497	4.2
3:02:05 PM	600	498	499	4.2
3:02:06 PM	600	496	500	4.2
3:02:07 PM	600	497	499	4.2
3:02:08 PM	600	498	499	4.2
3:02:09 PM	600	498	499	4.3
3:02:10 PM	600	498	498	4.3
3:02:11 PM	600	499	498	4.2
3:02:12 PM	600	497	499	4.2
3:02:13 PM	600	497	500	4.2
3:02:14 PM	600	498	500	4.3
3:02:14 PM	600	498	498	4.3
3:02:15 PM	600	499	499	4.3
3:02:16 PM	600	498	501	4.2
3:02:17 PM	600	499	502	4.2
3:02:18 PM	600	499	498	4.3
3:02:19 PM	600	497	498	4.3
3:02:20 PM	600	498	498	4.3
3:02:21 PM	600	496	498	4.2
3:02:22 PM	600	498	497	4.2
3:02:23 PM	600	498	498	4.1
3:02:24 PM	600	499	498	4.1
3:02:25 PM	600	499	500	4.2
3:02:26 PM	600	500	498	4.1
3:02:27 PM	600	498	500	4.1
3:02:28 PM	600	499	497	4.1
3:02:29 PM	600	498	498	4.1
3:02:30 PM	600	498	499	4.1
3:02:31 PM	600	499	498	4.2
3:02:32 PM	600	497	499	4.1
3:02:33 PM	600	497	499	4.1
3:02:34 PM	600	497	498	4.2
3:02:35 PM	600	499	498	4.2
3:02:36 PM	600	499	498	4.1
3:02:37 PM	600	498	498	4.1
3:02:38 PM	600	499	499	4.1
3:02:39 PM	600	499	499	4.1
3:02:40 PM	600	499	501	4.2
3:02:41 PM	600	499	500	4.1
3:02:42 PM	600	499	500	4.1
3:02:43 PM	600	499	500	4.1
3:02:44 PM	600	498	499	4.1
3:02:45 PM	600	497	498	4.1
3:02:46 PM	600	499	499	4.1
3:02:47 PM	600	501	499	4.1
3:02:48 PM	600	500	498	4.1
3:02:49 PM	600	498	499	4.1
3:02:50 PM	600	499	499	4.1
3:02:51 PM	600	499	497	4.0
3:02:52 PM	600	501	497	4.1
3:02:53 PM	600	499	500	4.0
Averages ->	**600**	**498**	**499**	**4.2**
			Maximum ->	**4.3**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 1200 **Date** 5/24/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
8:10:13 AM	600	92	93	4.0
8:10:14 AM	600	93	94	4.1
8:10:15 AM	600	91	95	4.0
8:10:16 AM	600	91	94	4.0
8:10:17 AM	600	92	96	4.1
8:10:18 AM	600	93	94	4.0
8:10:19 AM	600	92	95	4.0
8:10:19 AM	600	91	94	3.9
8:10:20 AM	600	91	95	3.8
8:10:21 AM	600	92	95	4.0
8:10:22 AM	600	92	94	4.1
8:10:23 AM	600	92	93	3.9
8:10:24 AM	600	91	93	3.9
8:10:25 AM	600	92	93	4.0
8:10:26 AM	600	90	96	4.0
8:10:27 AM	600	92	93	3.9
8:10:28 AM	600	91	94	3.9
8:10:29 AM	600	91	93	3.8
8:10:30 AM	600	92	93	4.0
8:10:31 AM	600	89	93	3.8
8:10:32 AM	600	91	93	3.7
8:10:33 AM	600	89	95	3.9
8:10:34 AM	600	90	93	3.9
8:10:35 AM	600	91	94	3.8
8:10:36 AM	600	91	93	3.7
8:10:37 AM	600	92	95	3.8
8:10:38 AM	600	92	93	3.9
8:10:39 AM	600	91	94	3.8
8:10:40 AM	600	92	96	4.0
8:10:41 AM	600	92	94	3.8
8:10:42 AM	600	90	94	3.9
8:10:43 AM	600	92	95	3.8
8:10:44 AM	600	90	95	3.9
8:10:45 AM	600	91	93	3.9
8:10:46 AM	600	90	93	3.8
8:10:47 AM	600	90	95	4.0
8:10:48 AM	600	90	94	4.0
8:10:49 AM	600	91	94	3.9
8:10:50 AM	600	92	96	4.0
8:10:51 AM	600	92	96	4.0
8:10:52 AM	600	91	93	4.0
8:10:53 AM	600	91	95	4.0
8:10:54 AM	600	94	94	3.9
8:10:55 AM	600	91	93	3.7
8:10:56 AM	600	91	94	3.7
8:10:57 AM	600	91	95	3.7
8:10:58 AM	600	91	92	3.6
8:10:59 AM	600	92	94	3.5
8:11:00 AM	600	92	94	3.8
8:11:01 AM	600	90	92	3.7
8:11:02 AM	600	91	93	3.7
8:11:03 AM	600	92	94	3.5
8:11:04 AM	600	91	93	3.6
8:11:05 AM	600	91	94	3.7
8:11:06 AM	600	92	94	3.5
8:11:07 AM	600	91	92	3.4
8:11:08 AM	600	92	93	3.4
8:11:09 AM	600	92	94	3.5
8:11:10 AM	600	91	93	3.4
8:11:11 AM	600	91	93	3.4
Averages ->	**600**	**91**	**94**	**3.8**
			Maximum ->	**4.1**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 1250 **Date** 5/24/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
9:02:50 AM	600	88	85	1.1
9:02:51 AM	600	84	86	1.1
9:02:52 AM	600	85	85	1.1
9:02:53 AM	600	87	83	1.0
9:02:54 AM	600	85	85	1.1
9:02:55 AM	600	86	85	1.1
9:02:56 AM	600	85	86	1.0
9:02:57 AM	600	84	84	1.1
9:02:58 AM	600	87	84	1.1
9:02:59 AM	600	84	86	1.0
9:03:00 AM	600	87	82	1.0
9:03:01 AM	600	84	86	1.1
9:03:02 AM	600	84	85	1.1
9:03:03 AM	600	85	85	1.0
9:03:04 AM	600	86	85	1.1
9:03:05 AM	600	84	85	1.2
9:03:06 AM	600	86	84	1.1
9:03:07 AM	600	84	84	1.1
9:03:08 AM	600	85	84	1.1
9:03:09 AM	600	85	85	1.1
9:03:10 AM	600	86	84	1.0
9:03:11 AM	600	86	82	1.1
9:03:12 AM	600	85	83	1.1
9:03:13 AM	600	84	84	1.0
9:03:14 AM	600	88	82	1.0
9:03:15 AM	600	87	85	1.1
9:03:16 AM	600	87	84	1.1
9:03:17 AM	600	86	84	1.1
9:03:18 AM	600	85	85	1.1
9:03:19 AM	600	87	83	1.0
9:03:20 AM	600	86	86	1.1
9:03:21 AM	600	87	84	1.1
9:03:21 AM	600	84	83	1.1
9:03:22 AM	600	86	84	1.1
9:03:23 AM	600	88	84	1.1
9:03:24 AM	600	87	85	1.1
9:03:25 AM	600	85	84	1.0
9:03:26 AM	600	86	84	1.1
9:03:27 AM	600	86	83	1.1
9:03:28 AM	600	87	87	1.1
9:03:29 AM	600	86	83	1.1
9:03:30 AM	600	85	85	1.1
9:03:31 AM	600	87	86	1.1
9:03:32 AM	600	85	85	1.1
9:03:33 AM	600	86	84	1.1
9:03:34 AM	600	85	86	1.2
9:03:35 AM	600	86	84	1.1
9:03:36 AM	600	86	85	1.1
9:03:37 AM	600	86	84	1.1
9:03:38 AM	600	86	84	1.1
9:03:39 AM	600	85	84	1.0
9:03:40 AM	600	85	85	1.1
9:03:41 AM	600	86	84	1.1
9:03:42 AM	600	87	84	1.1
9:03:43 AM	600	85	86	1.1
9:03:44 AM	600	87	85	1.1
9:03:45 AM	600	86	86	1.0
9:03:46 AM	600	85	84	1.2
9:03:47 AM	600	85	84	1.2
9:03:48 AM	600	87	85	1.1
Averages ->	**600**	**86**	**84**	**1.1**
			Maximum ->	**1.2**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 1300 **Date** 5/24/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
9:41:41 AM	600	92	86	6.9
9:41:42 AM	600	92	88	6.8
9:41:43 AM	600	90	85	6.7
9:41:44 AM	600	91	86	6.7
9:41:45 AM	600	91	85	6.5
9:41:46 AM	600	92	87	6.5
9:41:47 AM	600	94	86	6.3
9:41:47 AM	600	91	88	6.3
9:41:48 AM	600	91	86	6.2
9:41:49 AM	600	92	88	6.1
9:41:50 AM	600	94	88	6.0
9:41:51 AM	600	90	86	6.0
9:41:52 AM	600	92	87	5.9
9:41:53 AM	600	92	86	5.8
9:41:54 AM	600	89	88	5.7
9:41:55 AM	600	91	87	5.7
9:41:56 AM	600	91	90	5.6
9:41:57 AM	600	92	87	5.6
9:41:58 AM	600	93	87	5.4
9:41:59 AM	600	92	86	5.4
9:42:00 AM	600	92	87	5.3
9:42:01 AM	600	91	87	5.2
9:42:02 AM	600	92	87	5.1
9:42:03 AM	600	91	87	5.2
9:42:04 AM	600	92	87	5.1
9:42:05 AM	600	93	87	5.0
9:42:06 AM	600	93	87	5.0
9:42:07 AM	600	91	88	4.9
9:42:08 AM	600	91	89	5.0
9:42:09 AM	600	91	89	5.0
9:42:10 AM	600	91	88	4.8
9:42:11 AM	600	93	86	4.9
9:42:12 AM	600	92	87	4.8
9:42:13 AM	600	92	89	4.8
9:42:14 AM	600	92	89	4.8
9:42:15 AM	600	89	86	4.7
9:42:16 AM	600	92	86	4.7
9:42:17 AM	600	92	84	4.5
9:42:18 AM	600	90	88	4.6
9:42:19 AM	600	92	86	4.5
9:42:20 AM	600	92	86	4.6
9:42:21 AM	600	90	86	4.5
9:42:22 AM	600	90	86	4.5
9:42:23 AM	600	90	86	4.5
9:42:24 AM	600	92	86	4.6
9:42:25 AM	600	92	87	4.6
9:42:26 AM	600	90	86	4.6
9:42:27 AM	600	92	87	4.4
9:42:28 AM	600	92	86	4.4
9:42:29 AM	600	91	85	4.4
9:42:30 AM	600	91	87	4.3
9:42:31 AM	600	91	87	4.3
9:42:32 AM	600	89	86	4.3
9:42:33 AM	600	90	89	4.3
9:42:34 AM	600	91	87	4.2
9:42:35 AM	600	92	86	4.2
9:42:36 AM	600	89	87	4.2
9:42:37 AM	600	90	86	4.2
9:42:38 AM	600	91	86	4.1
9:42:39 AM	600	90	87	4.1
Averages ->	**600**	**91**	**87**	**5.1**
			Maximum ->	**6.9**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 1350 **Date** 5/24/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
10:29:26 AM	600	90	87	5.4
10:29:27 AM	600	91	86	5.4
10:29:28 AM	600	92	90	5.4
10:29:29 AM	600	90	88	5.4
10:29:30 AM	600	93	88	5.4
10:29:31 AM	600	90	86	5.4
10:29:32 AM	600	92	87	5.5
10:29:33 AM	600	92	89	5.5
10:29:34 AM	600	93	88	5.5
10:29:35 AM	600	92	88	5.6
10:29:36 AM	600	93	89	5.8
10:29:37 AM	600	92	87	5.5
10:29:38 AM	600	90	88	5.5
10:29:39 AM	600	92	88	5.6
10:29:40 AM	600	93	86	5.8
10:29:41 AM	600	91	89	5.4
10:29:42 AM	600	91	89	5.6
10:29:43 AM	600	91	86	5.7
10:29:44 AM	600	91	88	5.5
10:29:45 AM	600	93	87	5.5
10:29:46 AM	600	89	84	5.7
10:29:47 AM	600	92	87	5.6
10:29:48 AM	600	92	86	5.5
10:29:49 AM	600	94	86	5.7
10:29:50 AM	600	90	85	5.8
10:29:51 AM	600	92	89	5.5
10:29:52 AM	600	92	87	5.6
10:29:53 AM	600	90	84	5.7
10:29:54 AM	600	87	91	5.4
10:29:55 AM	600	89	90	5.6
10:29:56 AM	600	91	85	5.8
10:29:57 AM	600	93	88	5.5
10:29:58 AM	600	93	87	5.6
10:29:59 AM	600	91	85	5.7
10:30:00 AM	600	90	87	5.7
10:30:01 AM	600	90	86	5.4
10:30:02 AM	600	94	86	5.6
10:30:03 AM	600	90	86	5.7
10:30:04 AM	600	94	87	5.7
10:30:05 AM	600	92	86	5.8
10:30:06 AM	600	91	85	5.5
10:30:06 AM	600	91	86	5.3
10:30:07 AM	600	92	88	5.4
10:30:08 AM	600	89	87	5.6
10:30:09 AM	600	91	87	5.6
10:30:10 AM	600	91	87	5.8
10:30:11 AM	600	90	89	5.4
10:30:12 AM	600	92	88	5.4
10:30:13 AM	600	91	87	5.4
10:30:14 AM	600	90	84	5.4
10:30:15 AM	600	90	87	5.6
10:30:16 AM	600	93	87	5.6
10:30:17 AM	600	91	88	5.6
10:30:18 AM	600	91	87	5.5
10:30:19 AM	600	91	86	5.4
10:30:20 AM	600	90	88	5.4
10:30:21 AM	600	91	88	5.5
10:30:22 AM	600	91	88	5.5
10:30:23 AM	600	91	88	5.5
10:30:24 AM	600	91	88	5.6
Averages ->	**600**	**91**	**87**	**5.6**
			Maximum ->	**5.8**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 1350 **Date** 5/24/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
1:26:20 PM	600	503	482	2.4
1:26:21 PM	600	499	483	2.3
1:26:22 PM	600	502	483	2.3
1:26:23 PM	600	503	485	2.3
1:26:24 PM	600	500	484	2.3
1:26:25 PM	600	502	484	2.6
1:26:26 PM	600	502	484	2.8
1:26:27 PM	600	502	484	2.7
1:26:28 PM	600	502	484	2.8
1:26:29 PM	600	500	483	2.7
1:26:30 PM	600	501	481	2.6
1:26:31 PM	600	503	484	2.5
1:26:32 PM	600	502	482	2.5
1:26:33 PM	600	501	485	2.4
1:26:34 PM	600	501	483	2.3
1:26:35 PM	600	500	484	2.6
1:26:36 PM	600	501	484	2.5
1:26:37 PM	600	502	484	2.5
1:26:38 PM	600	502	485	2.5
1:26:39 PM	600	501	484	2.4
1:26:40 PM	600	501	486	2.4
1:26:41 PM	600	500	483	2.3
1:26:42 PM	600	503	485	2.3
1:26:43 PM	600	501	484	2.2
1:26:44 PM	600	502	486	2.2
1:26:45 PM	600	504	485	2.2
1:26:46 PM	600	501	485	2.2
1:26:47 PM	600	502	485	2.2
1:26:48 PM	600	501	483	2.2
1:26:49 PM	600	500	482	2.2
1:26:50 PM	600	502	483	2.3
1:26:51 PM	600	503	485	2.7
1:26:52 PM	600	502	483	2.5
1:26:53 PM	600	502	485	2.4
1:26:54 PM	600	502	485	2.4
1:26:55 PM	600	501	483	2.3
1:26:56 PM	600	503	484	2.2
1:26:57 PM	600	504	485	2.6
1:26:57 PM	600	501	484	2.5
1:26:58 PM	600	504	482	2.4
1:26:59 PM	600	501	484	2.3
1:27:00 PM	600	500	483	2.3
1:27:01 PM	600	502	483	2.7
1:27:02 PM	600	501	485	2.6
1:27:03 PM	600	500	484	2.5
1:27:04 PM	600	501	482	2.4
1:27:05 PM	600	505	486	2.3
1:27:06 PM	600	501	485	2.3
1:27:07 PM	600	505	484	2.2
1:27:08 PM	600	504	483	2.3
1:27:09 PM	600	501	484	2.3
1:27:10 PM	600	502	484	2.5
1:27:11 PM	600	502	485	2.7
1:27:12 PM	600	502	485	2.6
1:27:13 PM	600	501	483	2.6
1:27:14 PM	600	502	485	2.5
1:27:15 PM	600	501	484	2.5
1:27:16 PM	600	502	485	2.4
1:27:17 PM	600	502	482	2.3
1:27:18 PM	600	501	484	2.3
Averages ->	**600**	**502**	**484**	**2.4**
			Maximum ->	**2.8**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 1400 **Date** 5/24/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
2:09:30 PM	600	502	495	3.1
2:09:31 PM	600	502	491	3.0
2:09:32 PM	600	502	492	2.9
2:09:33 PM	600	503	492	2.9
2:09:34 PM	600	501	492	2.9
2:09:35 PM	600	502	491	3.2
2:09:36 PM	600	500	491	3.2
2:09:37 PM	600	503	490	3.2
2:09:38 PM	600	503	492	3.2
2:09:39 PM	600	503	492	3.2
2:09:40 PM	600	502	494	3.1
2:09:41 PM	600	503	490	3.0
2:09:42 PM	600	500	491	3.0
2:09:43 PM	600	501	494	3.0
2:09:44 PM	600	502	491	3.0
2:09:45 PM	600	501	494	3.0
2:09:46 PM	600	501	493	3.0
2:09:47 PM	600	502	492	3.1
2:09:47 PM	600	504	491	3.1
2:09:48 PM	600	502	492	3.1
2:09:49 PM	600	499	492	3.0
2:09:50 PM	600	500	490	3.0
2:09:51 PM	600	502	493	3.0
2:09:52 PM	600	502	490	3.0
2:09:53 PM	600	502	491	3.0
2:09:54 PM	600	502	493	3.0
2:09:55 PM	600	503	491	2.9
2:09:56 PM	600	502	491	2.9
2:09:57 PM	600	502	492	2.9
2:09:58 PM	600	503	491	2.8
2:09:59 PM	600	501	491	2.9
2:10:00 PM	600	501	491	3.2
2:10:01 PM	600	502	494	3.3
2:10:02 PM	600	498	491	3.2
2:10:03 PM	600	503	493	3.1
2:10:04 PM	600	502	493	3.1
2:10:05 PM	600	503	491	3.3
2:10:06 PM	600	502	496	3.2
2:10:07 PM	600	502	493	3.1
2:10:08 PM	600	501	494	3.0
2:10:09 PM	600	499	492	2.9
2:10:10 PM	600	501	492	2.9
2:10:11 PM	600	500	491	2.9
2:10:12 PM	600	502	490	3.4
2:10:13 PM	600	502	491	3.3
2:10:14 PM	600	503	491	3.3
2:10:15 PM	600	505	488	3.0
2:10:16 PM	600	497	495	2.9
2:10:17 PM	600	502	490	2.9
2:10:18 PM	600	504	490	3.3
2:10:19 PM	600	501	492	3.3
2:10:20 PM	600	501	491	3.3
2:10:21 PM	600	502	493	3.2
2:10:22 PM	600	501	492	3.3
2:10:23 PM	600	502	491	3.3
2:10:24 PM	600	500	491	3.3
2:10:25 PM	600	500	490	3.3
2:10:26 PM	600	501	492	3.2
2:10:27 PM	600	500	492	3.2
2:10:28 PM	600	500	494	3.2
Averages ->	**600**	**502**	**492**	**3.1**
			Maximum ->	**3.4**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 1450 **Date** 5/24/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
2:50:21 PM	600	505	495	2.9
2:50:22 PM	600	500	496	2.9
2:50:23 PM	600	502	496	2.9
2:50:24 PM	600	503	495	2.9
2:50:25 PM	600	502	497	2.9
2:50:26 PM	600	501	495	2.9
2:50:27 PM	600	502	495	2.9
2:50:28 PM	600	501	496	2.9
2:50:29 PM	600	501	496	2.9
2:50:30 PM	600	503	495	2.9
2:50:31 PM	600	501	495	2.9
2:50:32 PM	600	502	497	2.9
2:50:33 PM	600	500	495	2.9
2:50:33 PM	600	502	496	2.8
2:50:34 PM	600	503	494	2.9
2:50:35 PM	600	500	495	2.9
2:50:36 PM	600	501	495	2.9
2:50:37 PM	600	503	494	3.0
2:50:38 PM	600	502	494	2.9
2:50:39 PM	600	502	494	2.9
2:50:40 PM	600	502	496	2.9
2:50:41 PM	600	503	496	2.9
2:50:42 PM	600	500	498	2.9
2:50:43 PM	600	502	497	2.9
2:50:44 PM	600	502	494	2.9
2:50:45 PM	600	501	496	2.9
2:50:46 PM	600	502	495	2.9
2:50:47 PM	600	503	495	2.9
2:50:48 PM	600	502	496	2.9
2:50:49 PM	600	501	497	2.9
2:50:50 PM	600	500	496	3.0
2:50:51 PM	600	502	496	3.0
2:50:52 PM	600	503	495	3.0
2:50:53 PM	600	502	494	3.0
2:50:54 PM	600	502	496	2.9
2:50:55 PM	600	502	496	2.9
2:50:56 PM	600	500	495	3.0
2:50:57 PM	600	500	496	3.1
2:50:58 PM	600	502	496	3.0
2:50:59 PM	600	502	494	3.0
2:51:00 PM	600	501	496	3.0
2:51:01 PM	600	500	496	3.0
2:51:02 PM	600	502	494	2.9
2:51:03 PM	600	503	495	2.9
2:51:04 PM	600	502	496	2.9
2:51:05 PM	600	501	497	2.9
2:51:06 PM	600	501	495	2.9
2:51:07 PM	600	502	494	2.9
2:51:08 PM	600	501	497	2.9
2:51:09 PM	600	500	495	3.0
2:51:10 PM	600	503	495	3.0
2:51:11 PM	600	502	495	3.0
2:51:12 PM	600	500	496	2.9
2:51:13 PM	600	503	495	2.9
2:51:14 PM	600	501	496	3.0
2:51:15 PM	600	501	496	3.0
2:51:16 PM	600	500	494	2.9
2:51:17 PM	600	502	495	2.9
2:51:18 PM	600	501	494	2.9
2:51:19 PM	600	499	496	2.9
Averages ->	**600**	**502**	**495**	**2.9**
			Maximum ->	**3.1**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 1500 **Date** 5/24/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
3:38:16 PM	600	501	497	3.0
3:38:17 PM	600	501	497	3.0
3:38:18 PM	600	502	497	2.9
3:38:19 PM	600	502	497	2.9
3:38:20 PM	600	501	497	2.9
3:38:21 PM	600	501	498	2.9
3:38:22 PM	600	501	498	2.9
3:38:23 PM	600	501	496	2.9
3:38:24 PM	600	501	498	2.9
3:38:25 PM	600	502	497	2.9
3:38:26 PM	600	500	497	2.9
3:38:27 PM	600	501	498	2.9
3:38:28 PM	600	501	499	2.9
3:38:29 PM	600	501	499	2.9
3:38:30 PM	600	502	497	3.0
3:38:31 PM	600	501	498	2.9
3:38:32 PM	600	503	496	3.0
3:38:33 PM	600	500	497	2.9
3:38:34 PM	600	501	497	2.9
3:38:35 PM	600	502	496	2.9
3:38:36 PM	600	503	498	2.9
3:38:37 PM	600	502	497	3.0
3:38:38 PM	600	502	495	2.9
3:38:39 PM	600	501	497	2.9
3:38:40 PM	600	503	497	2.9
3:38:41 PM	600	502	497	2.9
3:38:42 PM	600	502	497	2.9
3:38:43 PM	600	501	498	2.9
3:38:44 PM	600	501	498	2.9
3:38:45 PM	600	502	497	2.9
3:38:46 PM	600	501	498	2.9
3:38:47 PM	600	503	498	2.9
3:38:48 PM	600	502	497	2.8
3:38:49 PM	600	501	497	2.9
3:38:50 PM	600	502	497	2.9
3:38:51 PM	600	502	497	2.9
3:38:52 PM	600	504	497	2.9
3:38:53 PM	600	503	498	2.9
3:38:54 PM	600	502	496	3.0
3:38:55 PM	600	501	497	2.9
3:38:56 PM	600	503	498	2.9
3:38:57 PM	600	502	498	2.9
3:38:58 PM	600	504	497	2.9
3:38:59 PM	600	503	497	2.9
3:39:00 PM	600	501	497	2.9
3:39:00 PM	600	502	497	2.9
3:39:01 PM	600	502	498	2.8
3:39:02 PM	600	502	497	2.9
3:39:03 PM	600	502	497	2.9
3:39:04 PM	600	502	498	2.8
3:39:05 PM	600	502	497	2.9
3:39:06 PM	600	503	498	2.8
3:39:07 PM	600	501	498	2.9
3:39:08 PM	600	502	496	2.9
3:39:09 PM	600	502	499	2.8
3:39:10 PM	600	501	498	2.9
3:39:11 PM	600	503	497	2.8
3:39:12 PM	600	502	498	2.8
3:39:13 PM	600	501	498	2.8
3:39:14 PM	600	501	498	2.9
Averages ->	**600**	**502**	**497**	**2.9**
			Maximum ->	**3.0**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 1500 **Date** 5/25/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
9:32:08 AM	600	70	70	1.0
9:32:09 AM	600	69	70	1.1
9:32:10 AM	600	70	70	1.1
9:32:11 AM	600	71	70	1.1
9:32:12 AM	600	70	70	1.1
9:32:13 AM	600	69	70	1.1
9:32:14 AM	600	70	70	1.1
9:32:15 AM	600	70	70	1.1
9:32:16 AM	600	71	70	1.1
9:32:17 AM	600	70	70	1.1
9:32:18 AM	600	71	70	1.0
9:32:19 AM	600	70	70	1.0
9:32:20 AM	600	70	70	1.0
9:32:21 AM	600	70	70	1.0
9:32:22 AM	600	69	70	1.0
9:32:23 AM	600	70	70	1.0
9:32:24 AM	600	70	70	1.0
9:32:25 AM	600	70	70	1.1
9:32:26 AM	600	71	70	1.1
9:32:27 AM	600	70	70	1.1
9:32:28 AM	600	69	70	1.1
9:32:29 AM	600	70	70	1.1
9:32:30 AM	600	70	70	1.1
9:32:31 AM	600	71	70	1.2
9:32:32 AM	600	71	70	1.1
9:32:33 AM	600	70	70	1.1
9:32:34 AM	600	71	70	1.2
9:32:35 AM	600	69	70	1.2
9:32:36 AM	600	70	70	1.2
9:32:37 AM	600	70	70	1.2
9:32:38 AM	600	72	70	1.2
9:32:39 AM	600	72	70	1.1
9:32:39 AM	600	68	70	1.1
9:32:40 AM	600	70	70	1.1
9:32:41 AM	600	70	70	1.2
9:32:42 AM	600	69	70	1.2
9:32:43 AM	600	71	71	1.2
9:32:44 AM	600	70	71	1.2
9:32:45 AM	600	69	70	1.2
9:32:46 AM	600	71	70	1.2
9:32:47 AM	600	70	70	1.3
9:32:48 AM	600	70	70	1.3
9:32:49 AM	600	70	71	1.3
9:32:50 AM	600	70	70	1.3
9:32:51 AM	600	70	70	1.3
9:32:52 AM	600	70	70	1.4
9:32:53 AM	600	70	71	1.5
9:32:54 AM	600	69	70	1.6
9:32:55 AM	600	70	70	1.6
9:32:56 AM	600	69	70	1.6
9:32:57 AM	600	69	70	1.5
9:32:58 AM	600	69	70	1.4
9:32:59 AM	600	70	71	1.2
9:33:00 AM	600	70	70	1.2
9:33:01 AM	600	70	70	1.1
9:33:02 AM	600	71	70	1.1
9:33:03 AM	600	70	70	1.1
9:33:04 AM	600	71	70	1.1
9:33:05 AM	600	71	70	1.0
9:33:06 AM	600	70	70	1.0
Averages ->	**600**	**70**	**70**	**1.2**
			Maximum ->	**1.6**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 1510 **Date** 5/25/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
9:43:34 AM	600	70	70	3.8
9:43:35 AM	600	70	70	3.8
9:43:36 AM	600	69	70	3.8
9:43:37 AM	600	70	70	3.8
9:43:38 AM	600	71	70	3.8
9:43:39 AM	600	69	71	3.8
9:43:40 AM	600	70	70	3.7
9:43:41 AM	600	70	70	3.7
9:43:42 AM	600	70	70	3.7
9:43:43 AM	600	70	70	3.6
9:43:44 AM	600	71	70	3.6
9:43:45 AM	600	70	70	3.6
9:43:46 AM	600	70	70	3.7
9:43:47 AM	600	69	70	3.7
9:43:48 AM	600	70	70	3.6
9:43:49 AM	600	69	71	3.6
9:43:50 AM	600	70	70	3.6
9:43:51 AM	600	69	70	3.6
9:43:52 AM	600	67	70	3.5
9:43:53 AM	600	70	70	3.5
9:43:54 AM	600	70	70	3.5
9:43:55 AM	600	70	70	3.5
9:43:56 AM	600	70	70	3.5
9:43:57 AM	600	70	70	3.5
9:43:58 AM	600	70	70	3.5
9:43:59 AM	600	71	70	3.5
9:44:00 AM	600	71	70	3.5
9:44:01 AM	600	71	70	3.5
9:44:02 AM	600	70	70	3.5
9:44:03 AM	600	70	70	3.5
9:44:04 AM	600	72	70	3.5
9:44:05 AM	600	69	70	3.5
9:44:06 AM	600	70	71	3.5
9:44:07 AM	600	71	70	3.5
9:44:08 AM	600	70	70	3.5
9:44:09 AM	600	69	70	3.5
9:44:10 AM	600	70	70	3.5
9:44:11 AM	600	71	70	3.5
9:44:12 AM	600	69	70	3.5
9:44:13 AM	600	68	70	3.5
9:44:14 AM	600	68	70	3.5
9:44:15 AM	600	70	70	3.4
9:44:16 AM	600	71	70	3.4
9:44:17 AM	600	70	70	3.4
9:44:18 AM	600	70	70	3.4
9:44:19 AM	600	68	70	3.4
9:44:20 AM	600	70	70	3.4
9:44:21 AM	600	68	70	3.4
9:44:22 AM	600	69	70	3.4
9:44:23 AM	600	71	70	3.4
9:44:24 AM	600	71	70	3.4
9:44:25 AM	600	69	70	3.4
9:44:26 AM	600	69	70	3.4
9:44:27 AM	600	69	70	3.4
9:44:28 AM	600	69	70	3.4
9:44:29 AM	600	70	70	3.4
9:44:30 AM	600	71	70	3.4
9:44:31 AM	600	69	70	3.4
9:44:32 AM	600	70	70	3.4
9:44:33 AM	600	70	70	3.4
Averages ->	**600**	**70**	**70**	**3.5**
			Maximum ->	**3.8**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2237 Packing

Cycle Number: 350 **Date** 5/18/2012

Time (EST)	Pressure (psig)	Bonnet Temp. (deg. F)	Body Temp. (deg. F)	Leakage (PPMv)
9:16:12 AM	600	80	83	184
9:16:13 AM	600	84	79	183
9:16:14 AM	600	83	81	182
9:16:15 AM	600	81	82	184
9:16:16 AM	600	82	78	184
9:16:17 AM	600	83	80	183
9:16:18 AM	600	80	83	182
9:16:19 AM	600	82	84	181
9:16:20 AM	600	82	82	182
9:16:21 AM	600	78	79	184
9:16:22 AM	600	81	76	184
9:16:23 AM	600	85	83	183
9:16:24 AM	600	83	83	182
9:16:25 AM	600	85	83	180
9:16:26 AM	600	79	85	182
9:16:27 AM	600	83	80	182
9:16:28 AM	600	81	79	181
9:16:29 AM	600	82	81	182
9:16:30 AM	600	85	79	184
9:16:31 AM	600	81	85	184
9:16:32 AM	600	84	78	183
9:16:33 AM	600	83	83	183
9:16:34 AM	600	80	83	182
9:16:35 AM	600	83	80	181
9:16:36 AM	600	81	85	180
9:16:37 AM	600	83	79	181
9:16:38 AM	600	82	81	181
9:16:39 AM	600	80	83	181
9:16:40 AM	600	79	83	180
9:16:41 AM	600	80	83	181
9:16:42 AM	600	80	83	179
9:16:43 AM	600	81	84	181
9:16:44 AM	600	84	82	179
9:16:45 AM	600	83	81	178
9:16:46 AM	600	80	81	176
9:16:47 AM	600	81	80	176
9:16:48 AM	600	82	83	176
9:16:49 AM	600	82	82	176
9:16:50 AM	600	80	82	177
9:16:51 AM	600	79	84	175
9:16:52 AM	600	81	82	176
9:16:53 AM	600	81	81	175
9:16:54 AM	600	82	80	172
9:16:55 AM	600	83	80	172
9:16:56 AM	600	83	80	172
9:16:57 AM	600	82	81	172
9:16:58 AM	600	82	83	172
9:16:59 AM	600	80	83	171
9:17:00 AM	600	81	83	170
9:17:01 AM	600	80	82	171
9:17:02 AM	600	83	82	172
9:17:03 AM	600	80	84	172
9:17:03 AM	600	82	84	173
9:17:04 AM	600	81	82	172
9:17:05 AM	600	85	79	173
9:17:06 AM	600	81	80	172
9:17:07 AM	600	81	84	172
9:17:08 AM	600	83	82	171
9:17:09 AM	600	78	78	172
9:17:10 AM	600	81	84	172
Averages ->	**600**	**82**	**82**	**178**
			Maximum ->	**184**

Smith, Vanessa (A)

From:	Ron Walters [ronw@TEADIT.com]
Sent:	Sunday, March 03, 2013 9:24 PM
To:	Smith, Vanessa (A)
Cc:	DeVine, Dan (DJ); 'Russ Christian'; Burdick, Matthew (MJ); Dahl, Kathy (KA); Dennis Kuehne; Joel Baulch; Chris Day
Subject:	RE: Teadit: 2013 Low E Technology
Attachments:	Teadit Packing Installation Torqe Calculation_APP_Rev4.xlsx; 2645_Rev1.pdf; Dow Midland Exotic Automation Teadit 2236 FE Packing Inv.xlsx

Vanessa & Dan,

Thank you again for allowing Dennis and myself to do the packing installation training Thursday, February 28th. Please find attached the specifications for the 2645 Spacer Bushing Spool Stock and the 2236 Installation Torque Calculator. I am also attaching the suggested inventory for Exotic Automation to have on-hand for Jon to pull from for repair. Please let Dennis and myself know if there is anything else you need for suport from us.

Warmest Regards,

Ron Walters
North America Product Manager
Fugitive Emissions Products
Cell: 985-513-0986
w.teadit-na.com

Sealing for a Safer and Greener Tomorrow

From: Smith, Vanessa (A) [VNowak3@dow.com]
Sent: Friday, February 15, 2013 10:55 AM
To: Ron Walters
Cc: DeVine, Dan (DJ); 'Russ Christian'; Burdick, Matthew (MJ); Dahl, Kathy (KA)
Subject: Teadit: 2013 Low E Technology

Good Afternoon,

As you may recall, in late 2011 Dow Chemical Michigan Operations entered a Consent Decree requiring Low Emission valves and/or packing to be installed in the Covered Process Units. In early 2012, a questionnaire was sent to you to determine if your products met the specifications of the Consent Decree. Attached are the completed questionnaires and any supporting data that you provided.

Per the Consent Decree, each year we must revalidate the Low Emission valves and/or packing determinations. Please review the attached information that you provided in 2012 upon which we based our original determination. Once reviewed, please reply to the questions below:

1. Are the valves or packing that met the Low-E definition per the Dow Chemical Consent Decree in 2012 last year still Low-E? See definition below.

2. Do you have any valves or packing that qualify as Low-E per the definitions below since the last time the questionnaire was answered? If yes, please include the testing data.

"Low-Emissions Valve" or "Low-E Valve" shall mean either (i) or (ii) as follows:

(i) A valve (including its specific packing assembly) for which the manufacturer has issued a written warranty that it will not emit fugitives at greater than 100 ppm, and that, if it does so emit at any time in the first five years, the manufacturer will replace the valve; provided however, that no valve shall qualify as "Low-E" by reason of written warranty unless the valve (including its specific packing assembly) either:

(a) first was tested by the manufacturer or a qualified testing firm pursuant to generally-accepted good engineering practices for testing fugitive emissions and the results of the testing reasonably support the warranty; or

(b) is as an Extension of another valve that qualified as "Low-E" per the definition of "Extension" listed below.

Or

(ii) A valve (including its specific packing assembly) that:

(a) Has been tested by the manufacturer or a qualified testing firm pursuant to generally-accepted good engineering practices for testing fugitive emissions and that, during the test, at no time leaked at greater than 500 ppm, and on average, leaked at less than 100 ppm; or

(b) Is an Extension of another valve that qualified as "Low-E" per the definition of "Extension" listed below.

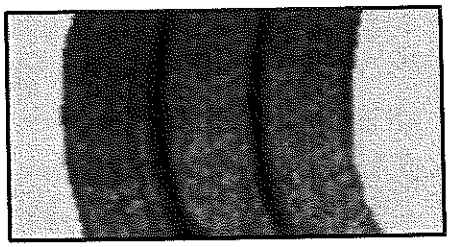
NOTE: "Extension" shall mean that: (i) the tested and untested valves were produced by the same manufacturer to the same or essentially equivalent quality requirements; (ii) the characteristics of the valve that affect sealing performance (e.g., type of valve, stem motion, tolerances, surface finishes, loading arrangement, and stem and body seal material, design, and construction) are the same or essentially equivalent as between the tested valve and the untested valve; and (iii) the temperature and pressure ratings of the tested valve are at least as high as the temperature and pressure ratings of the untested valve.

Thank you for your time and assistance with this matter. All responses must be received by February 28th in order for us to review and make our 2013 determinations.
Sincerely,

Vanessa Smith
Environmental Delivery Specialist
Dow Automotive/Dow Pharma
Office: (989) 638-7774
Cell: (989) 213-7258

TEADIT®

"Sealing for a Safer and Greener Tomorrow"



STYLE 2645 SBSS

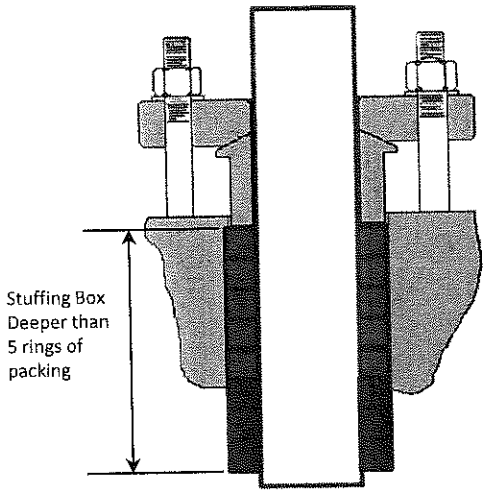
SPACER BUSHING SPOOL STOCK

STYLE 2645 SBSS *utilizes carbonized fiber with Inconel® reinforcement to create an ideal packing for a spacer bushing in deep valve stuffing boxes. Thermogravimetric Analysis (TGA) has shown consistent weight loss characteristics at temperatures as high as 1832°F*

APPLICATIONS:

Most valve packing applications recommend the use of a 5 ring packing set; however, many stuffing boxes have more depth available for packing material. The industry has commonly supplied carbon bushing to fill the extra space. ***STYLE 2645*** *replaces the need for carbon bushings and provides an efficient spacer from a single braided spool. It is recommended that* ***STYLE 2645*** *be used in conjunction with one of Teadit's premium packing materials such as our certified low leaking technology Style 2236 to achieve excellent sealability.*

Installation Example: 2236 & 2645



Style 2236: Sealing Elements
Style 2645 SBSS: Spacer Bushing Spool Stock

SERVICE LIMITS		
TYPE	DESCRIPTION	LIMITS
TEMPERATURE*	MAXIMUM	1400°F
pH	RANGE	3-13
PRESSURE*	SEE PRESSURE LIMIT OF PRIMARY SEALING ELEMENT	

*Temperature and Pressure limitations of other packing materials should be considered when reviewing an application

Properties and application parameters shown throughout this datasheet are typical. Your specific application should not be undertaken without independent study and evaluation for suitability. For specific application recommendations consult TEADIT. Failure to select proper sealing products could result in property damage and/or serious personal injury. Specifications are subject to change without notice. This edition supersedes all previous issues.

Smith, Vanessa (A)

From: Ron Walters [ronw@TEADIT.com]
Sent: Wednesday, March 20, 2013 5:00 PM
To: Smith, Vanessa (A)
Cc: DeVine, Dan (DJ); Burdick, Matthew (MJ); Dahl, Kathy (KA); Dennis Kuehne; Joel Baulch; Chris Day; Holmes, Michael (EH&S)
Subject: RE: Teadit: 2236 Test Data Request
Attachments: API 622 Fugitive Emission Test Report - Teadit Style 2236 - June 2011.pdf

Vanessa,

Please find attached.

Warmest Regards,

Ron Walters
North America Product Manager
Fugitive Emissions Products
Cell: 985-513-0986
www.teadit-na.com

Sealing for a Safer and Greener Tomorrow

From: Smith, Vanessa (A) [VNowak3@dow.com]
Sent: Wednesday, March 20, 2013 3:55 PM
To: Ron Walters
Cc: DeVine, Dan (DJ); Burdick, Matthew (MJ); Dahl, Kathy (KA); Dennis Kuehne; Joel Baulch; Chris Day; Holmes, Michael (EH&S)
Subject: Teadit: 2236 Test Data Request

Ron,

Thank you for all of the information that you have provided thus far. In reviewing our records, I am not able to locate an electronic copy of test data for 2236. Can you please provide this?

Regards,
Vanessa

API Standard 622 Test Report

"Type Testing of Process Valve Packing for Fugitive Emissions"
Second Edition, 2011

Performed for

Teadit North America

www.teadit-na.com

Teadit Style 2236 Graphite Packing

Project Number: 211142
Test Start Date: June 8, 2011

Performed by

YARMOUTH RESEARCH AND TECHNOLOGY, LLC

434 Walnut Hill Road
North Yarmouth, ME 04097 USA
(207) 829-5359
info@yarmouthresearch.com
www.yarmouthresearch.com

Yarmouth Research and Technology, LLC

API 622 PROJECT SUMMARY

Customer: Teadit North America **Start Date:** 8-Jun-11

Project #: 211142

Packing Information

Packing Description: Teadit Style 2236

Rings cut from spool and installed by Yarmouth

Test conducted in test fixture.(1)

Source of Sample: Customer

Packing Cross Section: 1/4 inch nominal

Packing Free Ht: 1.375 inches - measured

Test Conditions

Specification: API 622, 2nd Edition, 2011

Test Media: 99% Methane **Test Pressure:** 600 psig

Recommended Packing Nut Torque: 57 ft-lb

Maximum Allowable Leakage: 100 PPMv

Stem Linear Travel During Cycling: 4.0 inches

Cycling Rate: 45 seconds per cycle

Dimensions (inches)

Stem Diameter:	1.000	**Bore Diameter:**	1.500
Follower Height:	1.015	**Bore Depth:**	1.250
Gland Ht at Start:	0.658	**% Compression:**	35%
Gland Ht at End:	0.658	**% Compression:**	35%
Gland Bolt Diameter:	5/8		

Results

Average Test Pressure:	600	psig
Number of Mechanical Cycles Completed:	1510	
Number of Thermal Cycles Completed:	5	
Number of Packing Adjustments Required:	0	
Cycle Number(s) of Packing Adjustments:	n/a	
Average Leakage Throughout Test:	2	PPMv
Maximum Leakage Throughout Test:	22	PPMv

Witness

Matthew J Wasielewski, PE

President, Yarmouth Research

STATE OF MAINE
MATTHEW J WASIELEWSKI
No. 7437
LICENSED
PROFESSIONAL ENGINEER

Yarmouth Research and Technology, LLC

Customer: Teadit North America **Start Date:** 8-Jun-11

Project #: 211142

Packing Description: Teadit Style 2236

Rings cut from spool and installed by Yarmouth

Cycle Number	Inside Temp (F)	Bonnet Temp - (F)	Pressure (psig)	Stem Seal Leakage (PPMv) Avg.	Stem Seal Leakage (PPMv) Max.	Packing Retorque See Note
0	65	63	606	1	1	
50	66	70	600	0	0	
100	69	77	601	1	1	
150	71	80	606	0	1	
150	491	498	604	3	3	
200	497	496	597	2	3	
250	502	493	601	0	0	
300	503	495	601	0	1	
300	94	80	595	1	1	
350	84	83	598	1	1	
400	82	83	599	1	1	
450	78	80	598	0	0	
450	507	499	602	0	1	
500	502	499	600	1	1	
550	502	503	602	1	1	
600	497	499	598	0	0	
600	86	81	604	1	1	
650	85	84	599	1	1	
700	85	87	600	1	1	
750	85	90	601	1	2	
750	504	500	600	2	2	
800	500	500	604	2	2	
850	502	500	601	1	1	
900	503	499	600	1	1	
900	69	70	596	1	1	
950	73	76	602	2	2	
1000	75	81	597	1	1	
1050	78	85	603	0	1	
1050	509	499	600	2	3	
1100	510	499	599	1	2	
1150	508	500	601	1	1	
1200	505	499	597	1	1	
1200	91	85	603	2	2	
1250	92	92	604	2	2	
1300	90	95	598	7	7	

Yarmouth Research and Technology, LLC

1350	91	94	599	21	22	
1350	502	499	602	4	5	
1400	506	499	598	4	4	
1450	507	499	607	4	4	
1500	508	499	601	8	8	
1500	89	80	599	2	2	
1510	86	81	595	4	4	
		Averages ->	**600**	**2**	**2**	
		Maximums ->	**607**	**21**	**22**	

Packing Retorque Notes:

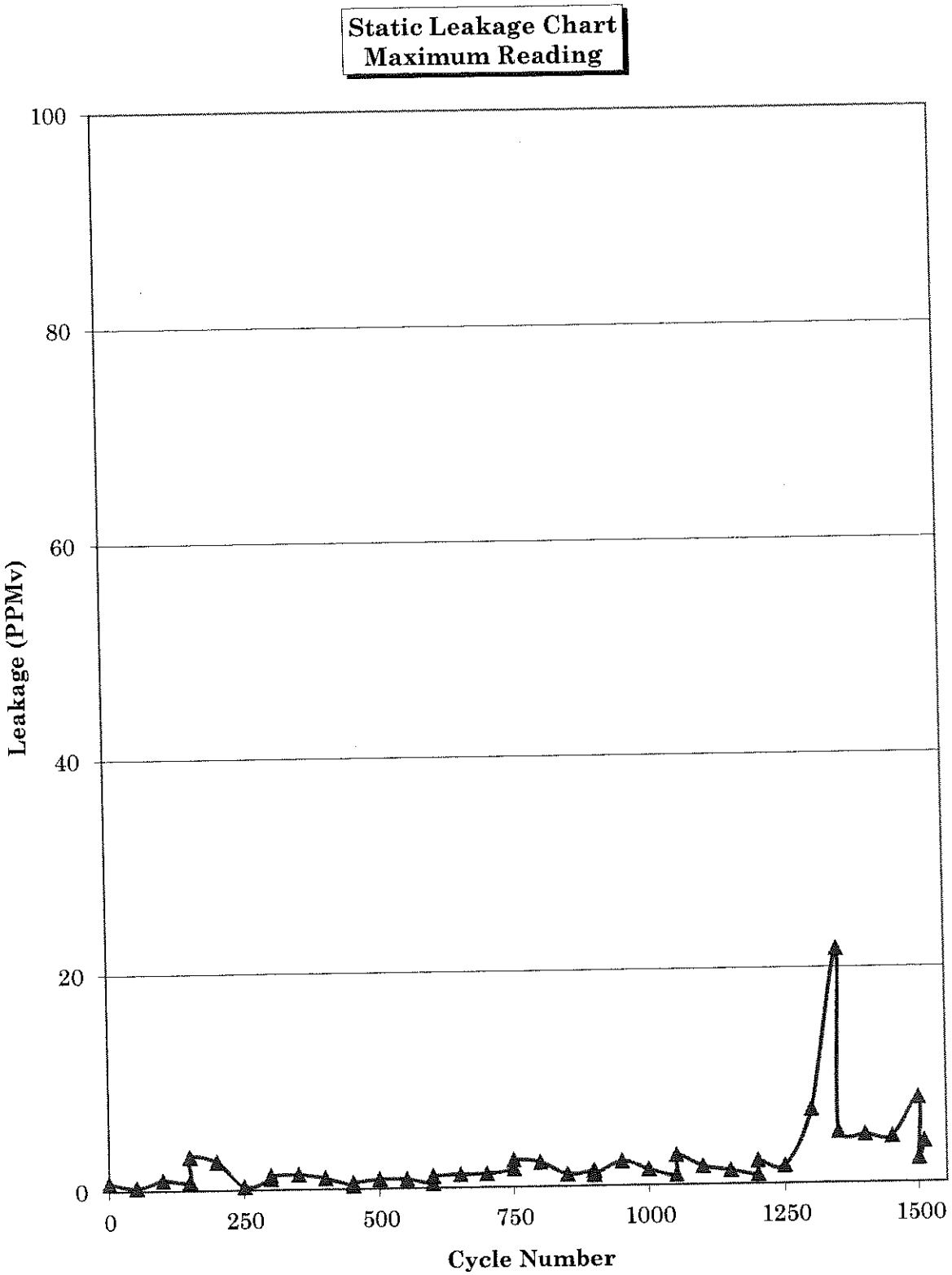
	Before Adjustment		*After Adjustment*			
	Nut Torque		*Nut Torque*		*Number of Flats*	*Gland Height*
	Side 1	*Side 2*	*Side 1*	*Side 2*		
1						
2						

Nut Torque at End of Test: (ft-lb)	35	*<-Side 1*	40	*<-Side 2*

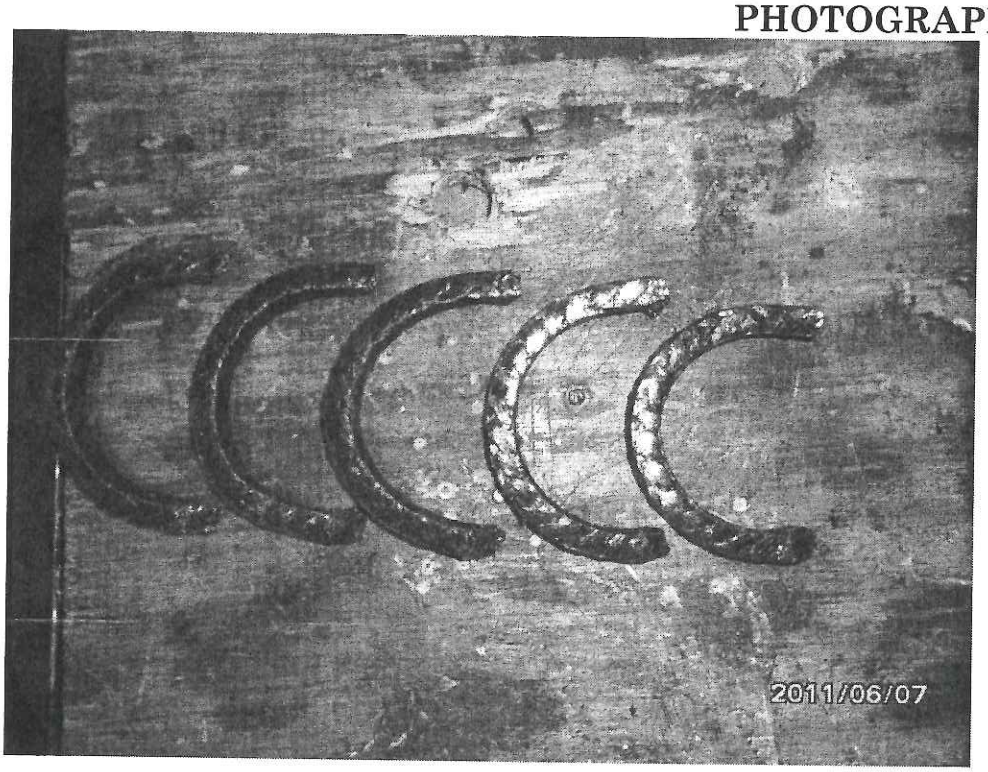
Test Notes:

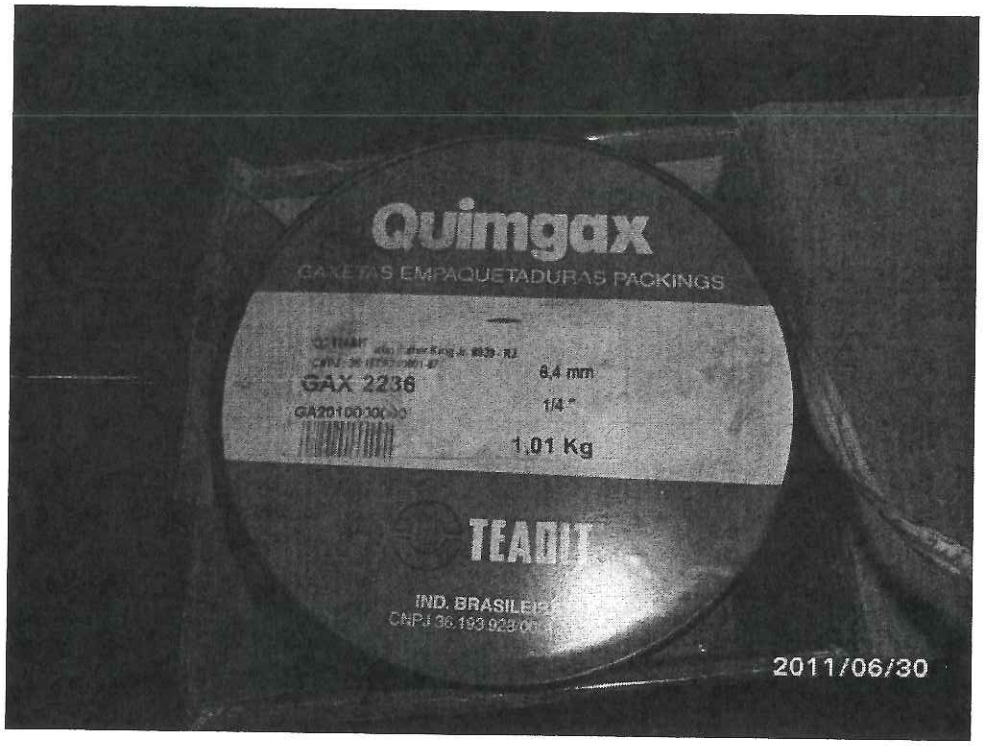
Test Results: The average and maximum leakage results shown below were calculated from 60 readings measured during a minute duration. *See data sheets for more detailed information.*

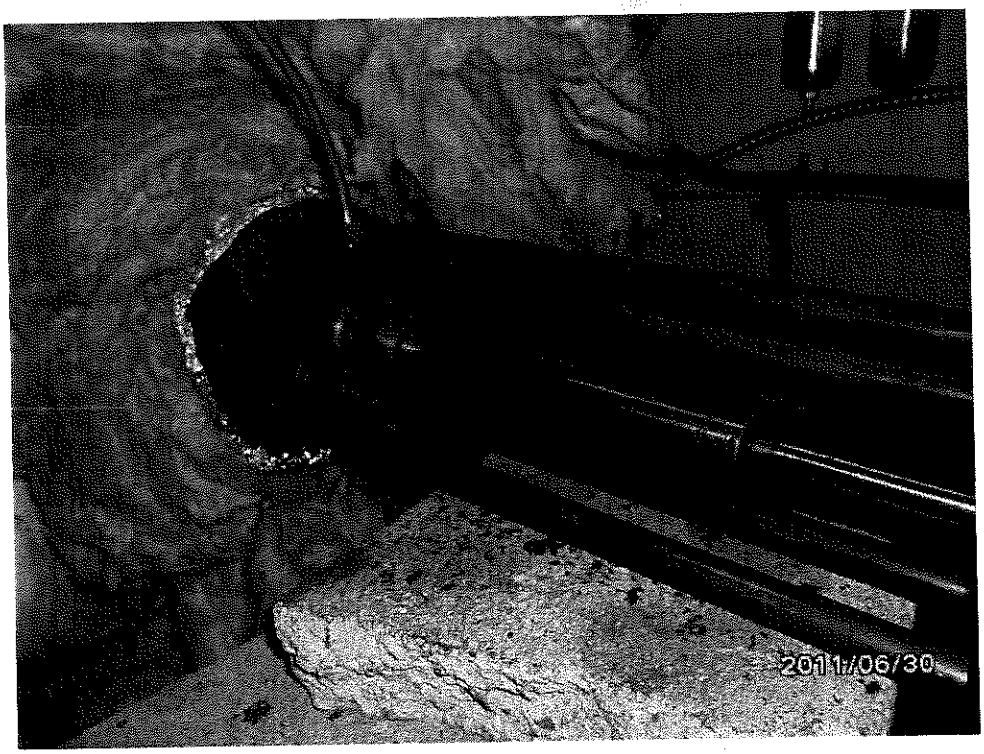
Yarmouth Research and Technology, LLC



PHOTOGRAPHS







Test fixture setup

Packing rings after test

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 0 **Date** 6/8/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
8:22:26 AM	606.2	62.1	66.2	0.6
8:22:27 AM	606.1	63.4	66.4	0.6
8:22:28 AM	606.2	61.8	67.0	0.6
8:22:29 AM	606.0	63.0	65.6	0.7
8:22:30 AM	606.1	62.3	66.3	0.7
8:22:31 AM	606.1	62.7	65.9	0.7
8:22:32 AM	606.1	62.4	65.8	0.7
8:22:33 AM	606.1	62.5	66.1	0.7
8:22:34 AM	606.0	62.7	65.2	0.7
8:22:35 AM	606.2	62.1	64.3	0.7
8:22:36 AM	606.0	62.6	65.2	0.7
8:22:37 AM	605.9	61.8	65.8	0.7
8:22:38 AM	605.9	62.2	65.7	0.7
8:22:39 AM	606.1	63.1	66.3	0.7
8:22:40 AM	606.0	63.4	65.8	0.7
8:22:41 AM	605.9	62.4	64.5	0.7
8:22:42 AM	606.0	63.9	64.7	0.7
8:22:43 AM	605.9	62.5	65.4	0.7
8:22:44 AM	606.0	62.1	65.0	0.7
8:22:45 AM	605.9	62.4	65.9	0.7
8:22:46 AM	605.9	62.8	65.2	0.7
8:22:47 AM	606.0	62.7	65.2	0.7
8:22:48 AM	605.9	62.7	65.7	0.7
8:22:49 AM	606.1	62.5	65.2	0.7
8:22:50 AM	606.0	62.5	65.4	0.7
8:22:51 AM	605.9	63.2	64.8	0.7
8:22:52 AM	606.1	63.0	65.1	0.7
8:22:53 AM	605.9	63.6	64.9	0.7
8:22:54 AM	605.9	61.2	65.1	0.7
8:22:55 AM	605.9	63.6	64.9	0.7
8:22:56 AM	605.9	62.9	64.4	0.7
8:22:57 AM	605.9	62.7	64.5	0.7
8:22:58 AM	605.8	62.3	64.8	0.7
8:22:59 AM	605.9	61.2	65.4	0.7
8:23:00 AM	606.1	62.7	64.5	0.7
8:23:01 AM	605.8	63.0	64.3	0.7
8:23:02 AM	605.9	62.0	63.5	0.7
8:23:03 AM	606.0	63.2	64.5	0.7
8:23:04 AM	605.9	63.2	64.5	0.7
8:23:05 AM	605.8	62.3	63.9	0.7
8:23:06 AM	605.8	62.3	64.5	0.7
8:23:07 AM	605.8	62.1	64.0	0.7
8:23:08 AM	605.7	62.3	63.6	0.7
8:23:09 AM	605.9	62.3	63.9	0.7
8:23:10 AM	605.7	62.2	64.3	0.7
8:23:11 AM	605.7	62.9	65.5	0.7
8:23:12 AM	605.8	61.4	64.5	0.7
8:23:13 AM	605.9	62.3	64.7	0.7
8:23:14 AM	605.9	61.1	64.0	0.7
8:23:15 AM	605.8	62.6	64.5	0.7
8:23:16 AM	605.9	62.2	63.9	0.7
8:23:17 AM	605.7	62.9	65.2	0.7
8:23:18 AM	605.8	62.5	63.9	0.7
8:23:19 AM	605.8	63.4	63.7	0.7
8:23:20 AM	605.7	61.6	64.1	0.7
8:23:21 AM	605.6	63.2	65.1	0.7
8:23:22 AM	605.7	62.7	64.5	0.7
8:23:23 AM	605.8	62.5	63.8	0.7
8:23:24 AM	605.8	62.9	63.9	0.7
8:23:25 AM	605.7	62.3	64.3	0.7
Averages ->	**605.9**	**62.5**	**64.9**	**0.7**
			Maximum ->	**0.7**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 50 **Date** 6/8/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
9:16:13 AM	600.5	70.6	66.0	0.2
9:16:14 AM	600.5	70.0	65.4	0.2
9:16:15 AM	600.6	70.9	65.1	0.2
12:00:00 AM	600.4	70.3	65.9	0.2
9:16:16 AM	600.7	69.9	65.3	0.2
9:16:18 AM	600.4	70.2	66.3	0.2
9:16:19 AM	600.5	70.9	65.9	0.2
9:16:20 AM	600.6	69.9	65.5	0.2
9:16:21 AM	600.4	70.9	65.7	0.2
9:16:22 AM	600.4	71.2	65.6	0.2
9:16:23 AM	600.6	70.1	66.2	0.2
9:16:24 AM	600.4	71.4	66.1	0.2
9:16:25 AM	600.5	71.4	65.9	0.2
9:16:26 AM	600.5	70.3	65.6	0.2
9:16:27 AM	600.5	70.5	65.4	0.2
9:16:28 AM	600.5	70.7	66.0	0.2
9:16:29 AM	600.6	70.0	65.8	0.2
9:16:30 AM	600.5	69.4	66.3	0.2
9:16:31 AM	600.5	71.1	65.4	0.2
9:16:32 AM	600.5	70.8	65.0	0.2
9:16:33 AM	600.5	70.5	66.1	0.1
9:16:34 AM	600.5	70.5	65.8	0.2
9:16:35 AM	600.4	70.7	66.3	0.1
9:16:36 AM	600.6	70.6	65.0	0.1
9:16:37 AM	600.4	69.7	65.6	0.2
9:16:38 AM	600.4	70.1	65.3	0.2
9:16:39 AM	600.4	70.0	65.9	0.2
9:16:40 AM	600.5	71.4	65.9	0.2
9:16:41 AM	600.4	70.8	66.0	0.2
9:16:42 AM	600.5	71.3	66.3	0.2
9:16:43 AM	600.5	69.7	65.6	0.2
9:16:44 AM	600.7	70.6	65.4	0.2
9:16:45 AM	600.5	71.0	65.2	0.2
9:16:46 AM	600.4	70.8	66.1	0.2
9:16:47 AM	600.5	70.1	65.4	0.2
9:16:48 AM	600.4	70.3	66.2	0.2
9:16:49 AM	600.7	71.1	65.1	0.2
9:16:50 AM	600.6	70.1	65.7	0.2
9:16:51 AM	600.4	72.0	65.1	0.2
9:16:52 AM	600.5	70.3	66.6	0.2
9:16:53 AM	600.4	70.6	65.7	0.2
9:16:54 AM	600.5	70.6	66.3	0.2
9:16:55 AM	600.5	71.2	66.4	0.2
9:16:56 AM	600.6	71.4	65.3	0.2
9:16:57 AM	600.3	70.6	65.9	0.2
9:16:58 AM	600.4	69.4	65.6	0.2
9:16:59 AM	600.4	71.0	65.0	0.2
9:17:00 AM	600.3	70.3	65.4	0.3
9:17:01 AM	600.5	70.1	66.2	0.2
9:17:02 AM	600.5	70.7	65.9	0.2
9:17:03 AM	600.4	69.4	65.9	0.2
9:17:04 AM	600.5	69.2	65.8	0.2
9:17:05 AM	600.6	70.7	65.4	0.2
9:17:06 AM	600.5	70.5	65.9	0.2
9:17:07 AM	600.5	69.9	65.9	0.2
9:17:08 AM	600.4	69.8	65.6	0.2
9:17:09 AM	600.4	69.7	66.5	0.2
9:17:10 AM	600.4	70.1	66.1	0.2
9:17:11 AM	600.3	70.2	66.1	0.2
9:17:12 AM	600.3	70.2	65.4	0.2
Averages ->	**600.5**	**70.5**	**65.8**	**0.2**
			Maximum ->	**0.3**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 100 **Date** 6/8/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
9:59:39 AM	601.3	78.6	69.2	0.8
9:59:40 AM	601.3	76.7	69.3	0.8
9:59:41 AM	601.1	77.2	68.5	0.8
9:59:42 AM	601.3	78.4	69.7	0.8
9:59:43 AM	601.2	76.8	69.1	0.8
9:59:44 AM	601.2	76.6	69.4	0.8
9:59:45 AM	601.2	76.5	69.4	0.8
9:59:46 AM	601.1	77.5	68.4	0.8
9:59:47 AM	601.3	76.8	69.1	0.7
9:59:48 AM	601.1	77.9	69.0	0.8
9:59:49 AM	601.2	77.7	70.1	0.8
9:59:50 AM	601.2	77.9	68.6	0.8
9:59:51 AM	601.2	77.2	69.4	0.8
9:59:52 AM	601.2	76.1	68.8	0.7
9:59:53 AM	601.2	77.7	69.2	0.8
9:59:54 AM	601.1	77.2	69.2	0.8
9:59:55 AM	601.1	76.6	69.1	0.8
9:59:56 AM	601.3	76.5	68.5	0.9
9:59:57 AM	601.3	77.2	68.9	0.9
9:59:58 AM	601.1	78.5	70.3	1.0
9:59:59 AM	601.2	77.1	69.0	1.0
10:00:00 AM	601.2	75.7	69.2	0.9
10:00:01 AM	601.2	77.0	69.6	0.9
10:00:02 AM	601.3	77.9	69.2	0.9
10:00:03 AM	601.2	77.5	68.7	0.9
10:00:04 AM	601.1	77.0	69.9	0.8
10:00:05 AM	601.2	77.4	69.4	0.8
10:00:06 AM	601.2	76.4	69.3	0.8
10:00:07 AM	601.3	77.6	69.0	0.8
10:00:08 AM	601.1	77.2	69.1	0.7
10:00:09 AM	601.2	76.3	69.3	0.7
10:00:10 AM	601.3	78.3	69.7	0.7
10:00:11 AM	601.2	77.3	69.2	0.7
10:00:12 AM	601.2	77.9	69.4	0.7
10:00:13 AM	601.4	76.3	69.1	0.7
10:00:14 AM	601.2	77.7	69.1	0.7
10:00:15 AM	601.2	76.7	68.8	0.7
10:00:16 AM	601.2	77.1	69.0	0.7
10:00:17 AM	601.1	76.7	68.3	0.7
10:00:18 AM	601.3	77.4	69.0	0.7
10:00:19 AM	601.2	77.5	69.9	0.7
10:00:20 AM	601.2	77.2	69.1	0.7
10:00:21 AM	601.2	76.3	68.4	0.7
10:00:22 AM	601.1	76.7	68.8	0.7
10:00:23 AM	601.2	77.5	69.7	0.7
10:00:24 AM	601.4	77.7	68.9	0.7
10:00:25 AM	601.2	75.9	69.0	0.7
10:00:26 AM	601.2	76.3	69.0	0.7
10:00:27 AM	601.3	75.9	69.0	0.7
10:00:28 AM	601.2	77.2	68.8	0.7
10:00:29 AM	601.3	76.6	68.8	0.8
10:00:30 AM	601.2	76.9	69.2	0.8
10:00:31 AM	601.2	76.7	69.2	0.8
10:00:32 AM	601.1	77.3	69.6	0.8
10:00:33 AM	601.3	77.0	69.4	0.8
10:00:34 AM	601.1	76.3	68.5	0.8
10:00:35 AM	601.2	76.7	69.1	0.8
10:00:36 AM	601.2	76.6	68.7	0.7
10:00:37 AM	601.2	76.8	69.0	0.8
10:00:38 AM	601.2	77.6	69.7	0.8
Averages ->	**601.2**	**77.1**	**69.1**	**0.8**
			Maximum ->	**1.0**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 150 **Date** 6/8/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
10:42:31 AM	606.0	80.1	70.8	0.5
10:42:32 AM	606.1	80.5	70.9	0.5
10:42:33 AM	606.1	80.2	70.7	0.5
10:42:34 AM	606.0	80.6	70.5	0.5
10:42:35 AM	606.0	79.9	71.3	0.4
10:42:36 AM	606.0	80.8	71.2	0.4
10:42:37 AM	606.0	80.6	70.5	0.4
10:42:38 AM	606.0	80.6	71.9	0.4
10:42:39 AM	606.0	80.4	71.2	0.4
10:42:40 AM	606.0	79.8	70.2	0.4
10:42:41 AM	605.9	80.4	71.2	0.4
10:42:42 AM	606.1	80.6	71.0	0.4
10:42:43 AM	606.0	79.6	71.2	0.4
10:42:44 AM	605.9	79.9	71.3	0.4
10:42:45 AM	606.0	80.8	71.5	0.4
10:42:46 AM	605.9	80.4	70.8	0.5
10:42:47 AM	606.0	79.9	71.4	0.4
10:42:48 AM	605.9	79.7	70.9	0.4
10:42:49 AM	606.2	80.0	71.6	0.4
10:42:50 AM	606.0	80.3	71.5	0.5
10:42:51 AM	605.9	79.8	71.4	0.5
10:42:52 AM	605.9	79.9	70.8	0.5
10:42:53 AM	606.1	80.2	71.2	0.6
10:42:54 AM	606.0	81.2	72.0	0.7
10:42:55 AM	605.9	79.4	70.1	0.7
10:42:56 AM	606.1	80.1	71.7	0.7
10:42:57 AM	605.9	79.7	70.3	0.7
10:42:58 AM	605.9	79.5	70.7	0.7
10:42:59 AM	606.0	79.9	71.0	0.8
10:43:00 AM	606.2	79.4	71.5	0.8
10:43:01 AM	605.9	79.8	71.2	0.8
10:43:02 AM	606.0	80.6	71.2	0.8
10:43:03 AM	606.0	80.0	71.4	0.8
10:43:04 AM	606.0	80.1	71.1	0.7
10:43:05 AM	605.9	80.2	70.9	0.7
10:43:06 AM	606.0	80.5	71.1	0.6
10:43:07 AM	605.9	79.7	70.6	0.6
10:43:08 AM	606.0	79.7	71.3	0.5
10:43:09 AM	605.9	79.7	70.8	0.5
10:43:10 AM	606.0	81.2	72.1	0.4
10:43:11 AM	606.0	80.0	71.1	0.4
10:43:12 AM	606.0	79.7	71.0	0.4
10:43:13 AM	606.1	79.3	71.2	0.4
10:43:14 AM	606.1	79.6	71.0	0.4
10:43:15 AM	605.9	79.5	71.5	0.4
10:43:16 AM	605.9	79.1	70.5	0.4
10:43:17 AM	606.0	79.9	71.0	0.3
10:43:18 AM	606.0	79.5	70.7	0.3
10:43:19 AM	606.1	79.5	72.3	0.4
10:43:20 AM	606.0	79.5	70.9	0.4
10:43:21 AM	606.0	81.3	70.8	0.4
10:43:22 AM	606.0	79.8	71.3	0.4
10:43:23 AM	606.2	79.0	72.1	0.4
10:43:24 AM	606.0	80.5	71.2	0.4
10:43:25 AM	606.0	79.2	70.8	0.4
10:43:26 AM	606.0	79.5	71.4	0.4
10:43:27 AM	606.0	79.5	70.6	0.4
10:43:28 AM	606.0	79.6	70.9	0.4
10:43:29 AM	605.9	79.5	71.2	0.3
10:43:30 AM	606.0	79.7	71.0	0.3
Averages ->	**606.0**	**80.0**	**71.1**	**0.5**
			Maximum ->	**0.8**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 150 **Date** 6/8/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
1:43:55 PM	604.0	497.2	489.6	3.0
1:43:56 PM	603.9	497.4	488.6	3.0
1:43:57 PM	603.9	498.0	489.5	3.0
1:43:58 PM	603.9	497.4	489.6	3.0
1:43:59 PM	603.8	496.3	490.3	3.0
1:44:00 PM	603.8	498.0	491.0	3.0
1:44:01 PM	604.0	497.0	489.8	3.0
1:44:02 PM	603.9	497.0	490.4	3.0
1:44:03 PM	604.0	497.8	489.6	3.0
1:44:04 PM	604.0	497.7	488.9	3.0
1:44:05 PM	604.0	497.6	489.9	3.0
1:44:06 PM	604.0	497.8	489.6	3.0
1:44:07 PM	604.0	497.3	489.4	3.0
1:44:08 PM	604.1	498.0	490.5	3.0
1:44:09 PM	604.1	496.8	489.8	3.0
1:44:10 PM	604.1	498.4	490.4	3.0
1:44:11 PM	604.0	497.6	490.3	3.0
1:44:12 PM	604.1	497.4	489.6	3.0
1:44:13 PM	604.1	498.0	489.8	3.0
1:44:14 PM	604.2	497.5	490.4	3.0
1:44:15 PM	604.3	497.0	489.8	3.0
1:44:16 PM	604.3	497.9	490.4	3.0
1:44:17 PM	604.3	498.6	491.4	3.0
1:44:18 PM	604.2	496.4	489.9	3.0
1:44:19 PM	604.2	498.0	490.4	3.0
1:44:20 PM	604.2	497.9	490.0	3.0
1:44:21 PM	604.3	498.0	490.5	3.0
1:44:22 PM	604.3	498.2	489.6	3.0
1:44:23 PM	604.3	497.9	490.4	3.0
1:44:24 PM	604.3	499.4	491.2	3.0
1:44:25 PM	604.5	499.0	490.9	3.0
1:44:26 PM	604.4	497.6	490.1	3.0
1:44:27 PM	604.4	498.3	491.4	3.0
1:44:28 PM	604.3	498.2	491.0	3.0
1:44:29 PM	604.4	497.4	491.0	3.0
1:44:30 PM	604.4	497.6	490.1	3.0
1:44:31 PM	604.5	498.3	490.7	3.0
1:44:32 PM	604.5	498.2	490.6	3.0
1:44:33 PM	604.7	498.5	491.0	3.0
1:44:34 PM	604.5	498.3	490.2	3.0
1:44:35 PM	604.6	497.4	490.0	3.0
1:44:36 PM	604.8	499.5	490.6	3.0
1:44:37 PM	604.8	498.8	491.4	3.0
1:44:38 PM	604.8	497.5	490.9	3.0
1:44:39 PM	604.8	497.9	492.2	3.0
1:44:40 PM	604.8	499.8	491.5	3.0
1:44:41 PM	604.6	498.8	491.8	3.0
1:44:42 PM	604.9	499.7	490.6	3.0
1:44:43 PM	604.8	498.8	491.0	3.0
1:44:44 PM	604.8	499.0	491.2	3.0
1:44:45 PM	604.8	498.6	492.6	3.0
1:44:46 PM	604.9	498.5	490.7	3.0
1:44:47 PM	605.0	498.8	491.9	3.0
1:44:48 PM	604.9	498.9	491.2	3.0
1:44:49 PM	605.0	497.8	491.2	3.0
1:44:50 PM	604.9	499.6	491.3	3.0
1:44:51 PM	604.9	498.6	491.8	3.1
1:44:52 PM	604.9	499.2	491.4	3.0
1:44:53 PM	605.1	499.8	490.7	3.1
1:44:54 PM	605.0	498.2	490.6	3.1
Averages ->	**604.4**	**498.1**	**490.5**	**3.0**
			Maximum ->	**3.1**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 200 **Date** 6/8/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
2:33:30 PM	596.8	495.3	496.9	2.6
2:33:31 PM	596.8	493.9	497.2	2.6
2:33:32 PM	596.6	495.1	496.2	2.6
2:33:33 PM	596.7	494.1	497.6	2.5
2:33:34 PM	596.7	495.6	495.9	2.5
2:33:35 PM	596.7	495.3	496.9	2.5
2:33:36 PM	596.7	495.3	497.2	2.5
2:33:37 PM	596.8	494.5	496.9	2.5
2:33:38 PM	596.8	494.0	497.4	2.4
2:33:39 PM	597.0	496.2	497.2	2.4
2:33:40 PM	596.8	495.2	496.4	2.4
2:33:41 PM	597.0	495.5	496.2	2.4
2:33:42 PM	596.9	495.1	496.9	2.4
2:33:43 PM	597.0	495.0	496.2	2.4
2:33:44 PM	596.8	495.0	497.4	2.3
2:33:45 PM	596.9	495.4	496.3	2.3
2:33:46 PM	596.9	495.3	497.1	2.3
2:33:47 PM	597.0	496.1	496.6	2.3
2:33:48 PM	597.0	494.2	496.8	2.3
2:33:49 PM	597.0	494.5	496.8	2.3
2:33:50 PM	597.0	494.3	496.4	2.3
2:33:51 PM	597.1	495.5	496.4	2.3
2:33:52 PM	597.1	495.7	496.6	2.3
2:33:53 PM	597.1	494.9	497.1	2.3
2:33:54 PM	597.2	495.8	496.4	2.3
2:33:55 PM	597.1	494.9	497.5	2.3
2:33:56 PM	597.2	496.1	497.8	2.3
2:33:57 PM	597.2	495.7	496.9	2.3
2:33:58 PM	597.1	496.3	496.8	2.3
2:33:59 PM	597.2	496.0	497.0	2.3
2:34:00 PM	597.2	496.0	497.4	2.3
2:34:01 PM	597.4	495.9	496.6	2.3
2:34:02 PM	597.3	494.9	496.6	2.3
2:34:03 PM	597.5	496.0	497.2	2.3
2:34:04 PM	597.3	495.5	496.4	2.3
2:34:05 PM	597.4	496.4	497.2	2.3
2:34:06 PM	597.3	496.1	496.9	2.3
2:34:07 PM	597.5	496.5	497.8	2.2
2:34:08 PM	597.5	495.7	497.5	2.3
2:34:09 PM	597.4	496.8	496.9	2.3
2:34:10 PM	597.5	495.9	497.2	2.3
2:34:11 PM	597.6	496.3	498.0	2.2
2:34:12 PM	597.7	496.9	497.8	2.3
2:34:13 PM	597.8	496.1	496.9	2.3
2:34:14 PM	597.7	496.8	497.1	2.3
2:34:15 PM	597.7	496.2	496.8	2.3
2:34:16 PM	597.7	496.7	497.6	2.3
2:34:17 PM	597.8	497.4	496.8	2.3
2:34:18 PM	597.7	496.7	497.6	2.3
2:34:19 PM	597.9	497.3	497.0	2.3
2:34:20 PM	597.9	497.9	497.4	2.3
2:34:21 PM	597.9	497.3	498.4	2.2
2:34:22 PM	597.9	496.9	497.8	2.2
2:34:23 PM	598.0	497.7	497.9	2.2
2:34:24 PM	598.0	497.5	498.4	2.2
2:34:25 PM	598.0	498.7	497.6	2.2
2:34:26 PM	598.1	497.9	497.2	2.2
2:34:27 PM	598.0	497.9	496.4	2.2
2:34:28 PM	599.0	498.4	497.0	2.2
2:34:29 PM	600.8	498.1	497.2	2.2
Averages ->	**597.4**	**496.0**	**497.1**	**2.3**
			Maximum ->	**2.6**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 250 **Date** 6/8/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
3:25:55 PM	600.4	494.0	500.0	0.3
3:25:56 PM	600.4	493.8	499.7	0.3
3:25:57 PM	600.5	494.0	500.3	0.3
3:25:58 PM	600.6	494.5	500.2	0.3
3:25:59 PM	600.6	493.7	500.0	0.3
3:26:00 PM	600.6	493.6	499.7	0.3
3:26:01 PM	600.7	493.4	500.3	0.3
3:26:02 PM	600.7	494.4	500.3	0.3
3:26:03 PM	600.5	495.0	500.3	0.3
3:26:04 PM	600.6	493.6	500.2	0.3
3:26:05 PM	600.8	493.2	500.6	0.3
3:26:06 PM	600.6	494.0	500.0	0.3
3:26:07 PM	600.9	494.2	500.6	0.3
3:26:08 PM	600.7	494.0	500.6	0.3
3:26:09 PM	600.7	494.1	500.9	0.3
3:26:10 PM	600.9	493.8	501.0	0.3
3:26:11 PM	600.8	494.2	500.3	0.3
3:26:12 PM	600.9	494.6	501.2	0.3
3:26:13 PM	601.0	493.8	500.9	0.3
3:26:14 PM	600.9	494.0	501.5	0.3
3:26:15 PM	600.9	494.4	501.4	0.2
3:26:16 PM	600.9	494.7	502.3	0.2
3:26:17 PM	601.0	494.6	501.6	0.2
3:26:18 PM	601.0	493.6	501.2	0.2
3:26:19 PM	601.1	493.0	500.8	0.2
3:26:20 PM	601.1	493.8	503.0	0.2
3:26:21 PM	601.0	493.8	500.8	0.2
3:26:22 PM	601.2	493.6	500.9	0.2
3:26:23 PM	601.0	494.5	502.0	0.2
3:26:24 PM	601.0	494.1	502.2	0.2
3:26:25 PM	601.2	493.5	501.2	0.2
3:26:26 PM	601.0	494.2	501.6	0.2
3:26:27 PM	601.1	494.6	502.7	0.2
3:26:28 PM	601.3	493.8	502.8	0.3
3:26:29 PM	601.1	492.7	501.8	0.2
3:26:30 PM	601.1	492.7	502.2	0.2
3:26:31 PM	601.2	492.6	502.4	0.2
3:26:32 PM	601.1	493.6	502.2	0.2
3:26:33 PM	601.1	492.4	502.7	0.2
3:26:34 PM	601.1	492.6	502.1	0.2
3:26:35 PM	601.1	492.3	502.2	0.3
3:26:36 PM	601.2	493.4	502.4	0.2
3:26:37 PM	601.1	493.0	502.9	0.2
3:26:38 PM	601.0	493.2	502.4	0.2
3:26:39 PM	601.0	493.5	502.6	0.2
3:26:40 PM	601.2	491.9	502.6	0.2
3:26:41 PM	601.1	492.5	502.5	0.2
3:26:42 PM	601.2	492.3	502.4	0.2
3:26:43 PM	601.0	491.6	502.0	0.2
3:26:44 PM	600.9	493.0	502.4	0.2
3:26:45 PM	601.0	493.0	502.8	0.3
3:26:46 PM	601.0	492.5	503.1	0.2
3:26:47 PM	601.0	492.2	503.0	0.2
3:26:48 PM	600.9	493.6	502.2	0.2
3:26:49 PM	600.9	494.2	503.1	0.2
3:26:50 PM	601.5	491.8	503.6	0.2
3:26:51 PM	601.0	492.8	502.8	0.2
3:26:52 PM	600.9	492.6	503.2	0.2
3:26:53 PM	601.0	493.8	502.6	0.2
3:26:54 PM	601.0	491.7	503.6	0.2
Averages ->	**600.9**	**493.5**	**501.7**	**0.2**
			Maximum ->	**0.3**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 300 **Date** 6/8/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
4:12:10 PM	600.7	496.2	502.0	0.0
4:12:11 PM	600.9	495.6	502.3	0.8
4:12:12 PM	600.9	496.4	502.3	1.0
4:12:13 PM	600.8	496.6	501.7	0.9
4:12:14 PM	600.8	497.0	501.2	0.7
4:12:15 PM	600.7	497.3	503.2	0.6
4:12:16 PM	600.9	495.8	501.2	0.5
4:12:17 PM	600.9	496.9	502.2	0.4
4:12:18 PM	600.9	495.3	502.0	0.4
4:12:19 PM	600.8	496.1	502.6	0.4
4:12:20 PM	600.7	496.6	503.8	0.4
4:12:21 PM	600.8	496.4	503.1	0.4
4:12:22 PM	600.7	496.7	503.0	0.5
4:12:23 PM	600.9	496.1	502.0	0.5
4:12:24 PM	600.9	495.4	502.9	0.5
4:12:25 PM	600.9	496.6	502.2	0.6
4:12:26 PM	600.8	496.0	502.6	0.6
4:12:27 PM	600.7	496.2	503.8	0.6
4:12:28 PM	600.8	496.2	503.0	0.6
4:12:29 PM	600.7	495.4	503.0	0.7
4:12:30 PM	600.8	495.3	503.0	0.7
4:12:31 PM	600.8	495.6	502.6	0.7
4:12:32 PM	600.7	496.4	503.4	0.7
4:12:33 PM	600.7	495.0	503.0	0.7
4:12:34 PM	600.7	494.6	502.6	0.7
4:12:35 PM	600.7	495.4	502.6	0.6
4:12:36 PM	600.7	496.2	503.2	0.5
4:12:37 PM	600.9	494.5	503.1	0.4
4:12:38 PM	600.7	495.0	502.3	0.4
4:12:39 PM	600.8	494.9	503.6	0.4
4:12:40 PM	600.7	495.6	503.2	0.3
4:12:41 PM	600.6	495.4	503.4	0.3
4:12:42 PM	600.6	495.1	502.6	0.3
4:12:43 PM	600.7	495.3	503.0	0.3
4:12:44 PM	600.5	494.9	503.2	0.3
4:12:45 PM	600.6	494.4	503.0	0.2
4:12:46 PM	600.7	495.7	503.6	0.2
4:12:47 PM	600.6	494.7	502.2	0.1
4:12:48 PM	600.5	494.5	503.1	0.0
4:12:49 PM	600.5	495.1	502.8	0.2
4:12:50 PM	600.5	495.6	503.8	0.3
4:12:51 PM	600.5	494.8	502.4	0.3
4:12:52 PM	600.5	494.7	504.0	0.3
4:12:53 PM	600.3	495.6	503.6	0.3
4:12:54 PM	600.5	494.6	502.9	0.3
4:12:55 PM	600.3	494.2	503.0	0.3
4:12:56 PM	600.4	495.3	503.8	0.3
4:12:57 PM	600.4	495.0	502.6	0.3
4:12:58 PM	600.4	495.9	502.7	0.3
4:12:59 PM	600.4	495.0	503.9	0.3
4:13:00 PM	600.3	493.8	504.4	0.3
4:13:01 PM	600.3	495.1	502.7	0.4
4:13:02 PM	600.3	495.3	502.4	0.3
4:13:03 PM	600.3	494.8	501.9	0.4
4:13:04 PM	600.3	494.3	503.1	0.4
4:13:05 PM	600.2	495.8	502.8	0.4
4:13:06 PM	600.2	495.2	502.8	0.4
4:13:07 PM	600.2	494.8	502.4	0.4
4:13:08 PM	600.2	494.2	502.2	0.4
4:13:09 PM	600.1	492.5	503.1	0.4
Averages ->	**600.6**	**495.4**	**502.8**	**0.4**
			Maximum ->	**1.0**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 300 **Date** 6/9/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
8:23:09 AM	599.1	78.6	98.7	1.3
8:23:10 AM	598.7	79.6	99.8	1.3
8:23:11 AM	598.2	78.8	98.3	1.3
8:23:12 AM	597.9	79.8	98.9	1.3
8:23:13 AM	597.9	78.8	97.9	1.3
8:23:14 AM	597.7	80.4	98.5	1.3
8:23:15 AM	597.4	79.1	97.2	1.3
8:23:16 AM	597.1	78.0	97.5	1.3
8:23:17 AM	596.9	79.2	98.8	1.3
8:23:18 AM	596.6	79.0	96.8	1.3
8:23:19 AM	596.5	80.3	97.0	1.3
8:23:20 AM	596.4	79.3	96.7	1.3
8:23:21 AM	596.1	80.4	97.8	1.3
8:23:22 AM	596.1	79.1	97.3	1.3
8:23:23 AM	596.0	79.5	95.3	1.3
8:23:24 AM	595.9	79.7	95.1	1.3
8:23:25 AM	595.7	79.5	95.9	1.3
8:23:26 AM	595.6	80.0	95.5	1.3
8:23:27 AM	595.5	78.8	95.0	1.3
8:23:28 AM	595.4	79.5	94.9	1.3
8:23:29 AM	595.2	78.1	94.7	1.3
8:23:30 AM	595.2	80.1	95.4	1.3
8:23:31 AM	595.1	79.5	94.3	1.3
8:23:32 AM	594.8	80.1	94.1	1.3
8:23:33 AM	594.8	79.0	95.1	1.3
8:23:34 AM	594.8	79.6	94.5	1.3
8:23:35 AM	594.7	80.1	93.6	1.3
8:23:36 AM	594.6	78.8	95.2	1.3
8:23:37 AM	594.7	80.2	93.7	1.3
8:23:38 AM	594.6	81.0	93.6	1.3
8:23:39 AM	594.5	80.3	93.1	1.3
8:23:40 AM	594.5	79.5	93.6	1.3
8:23:41 AM	594.4	79.2	93.1	1.3
8:23:42 AM	594.3	80.4	93.6	1.3
8:23:43 AM	594.2	79.6	91.7	1.3
8:23:44 AM	594.3	78.7	91.8	1.3
8:23:45 AM	594.1	80.6	93.1	1.3
8:23:46 AM	594.2	78.8	92.9	1.3
8:23:47 AM	594.1	79.7	91.9	1.3
8:23:48 AM	594.1	78.8	90.8	1.3
8:23:49 AM	594.0	80.1	91.5	1.3
8:23:50 AM	594.0	79.8	92.6	1.3
8:23:51 AM	593.9	79.5	91.7	1.3
8:23:52 AM	593.8	80.5	91.2	1.3
8:23:53 AM	593.8	80.6	92.1	1.3
8:23:54 AM	593.7	79.7	91.9	1.3
8:23:55 AM	593.7	80.0	90.3	1.3
8:23:56 AM	593.8	80.6	92.2	1.3
8:23:57 AM	593.8	79.0	91.2	1.3
8:23:58 AM	593.7	80.5	90.5	1.3
8:23:59 AM	593.7	80.1	90.0	1.3
8:24:00 AM	593.7	79.5	89.9	1.3
8:24:01 AM	593.7	79.9	91.5	1.3
8:24:02 AM	593.6	79.6	89.7	1.3
8:24:03 AM	593.6	80.8	89.9	1.3
8:24:04 AM	593.6	80.5	89.7	1.3
8:24:05 AM	593.6	79.7	89.7	1.3
8:24:06 AM	593.5	80.2	89.4	1.3
8:24:07 AM	593.6	79.5	89.3	1.3
8:24:08 AM	594.0	79.6	89.7	1.3
Averages ->	**595.1**	**79.6**	**93.8**	**1.3**
			Maximum ->	**1.3**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 350 **Date** 6/9/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
9:08:25 AM	598.2	82.3	84.7	1.4
9:08:26 AM	598.1	83.6	83.7	1.4
9:08:27 AM	598.2	84.3	83.7	1.3
9:08:28 AM	598.3	84.1	83.3	1.3
9:08:29 AM	598.2	82.9	84.2	1.3
9:08:30 AM	598.4	83.2	83.2	1.3
9:08:31 AM	598.2	83.1	83.7	1.3
9:08:32 AM	598.1	84.1	83.2	1.3
9:08:33 AM	598.2	84.1	83.9	1.3
9:08:34 AM	598.2	83.4	83.0	1.2
9:08:35 AM	598.2	83.3	83.2	1.2
9:08:36 AM	598.2	84.3	82.7	1.2
9:08:37 AM	598.3	82.7	83.8	1.2
9:08:38 AM	598.1	83.5	83.2	1.2
9:08:39 AM	598.1	83.2	83.2	1.2
9:08:40 AM	598.2	84.1	84.1	1.2
9:08:41 AM	598.1	82.6	84.0	1.2
9:08:42 AM	598.1	82.8	83.7	1.2
9:08:43 AM	598.1	83.7	83.1	1.2
9:08:44 AM	598.2	83.7	83.3	1.2
9:08:45 AM	598.0	83.0	84.0	1.2
9:08:46 AM	598.2	83.0	83.0	1.2
9:08:47 AM	597.9	83.7	84.5	1.2
9:08:48 AM	598.1	84.0	83.3	1.2
9:08:49 AM	598.0	82.8	83.8	1.1
9:08:50 AM	598.1	83.5	84.0	1.1
9:08:51 AM	598.2	83.3	83.7	1.1
9:08:52 AM	598.1	83.2	82.7	1.1
9:08:53 AM	598.1	83.0	82.7	1.1
9:08:54 AM	598.1	84.0	83.7	1.1
9:08:55 AM	598.1	81.9	83.6	1.1
9:08:56 AM	598.2	84.9	83.9	1.1
9:08:57 AM	598.1	83.7	82.5	1.1
9:08:58 AM	598.1	83.2	84.2	1.1
9:08:59 AM	598.1	83.8	83.5	1.1
9:09:00 AM	598.1	83.9	83.2	1.1
9:09:01 AM	598.1	83.9	83.1	1.1
9:09:02 AM	598.1	83.4	83.5	1.1
9:09:03 AM	598.2	83.5	83.7	1.1
9:09:04 AM	598.1	83.9	83.8	1.1
9:09:05 AM	598.0	83.7	83.8	1.1
9:09:06 AM	598.1	82.9	83.4	1.1
9:09:07 AM	598.1	82.6	84.3	1.1
9:09:08 AM	598.0	84.1	83.8	1.1
9:09:09 AM	598.0	83.2	83.9	1.1
9:09:10 AM	598.2	84.2	84.5	1.1
9:09:11 AM	598.1	83.0	83.5	1.1
9:09:12 AM	597.9	82.8	83.1	1.0
9:09:13 AM	598.1	83.1	82.8	1.0
9:09:14 AM	598.1	84.5	83.8	1.0
9:09:15 AM	598.2	82.3	83.6	1.0
9:09:16 AM	598.1	83.9	82.8	1.0
9:09:17 AM	598.1	83.3	84.3	1.0
9:09:18 AM	598.1	83.7	83.5	1.0
9:09:19 AM	598.1	82.3	83.8	1.0
9:09:20 AM	598.0	83.5	83.7	1.0
9:09:21 AM	598.0	83.9	83.5	1.0
9:09:22 AM	598.2	83.5	83.2	1.0
9:09:23 AM	597.9	84.0	84.5	1.0
9:09:24 AM	598.0	83.0	83.9	1.0
Averages ->	**598.1**	**83.4**	**83.6**	**1.1**
			Maximum ->	**1.4**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 400 **Date** 6/9/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
9:59:12 AM	598.7	83.0	81.5	1.0
9:59:13 AM	598.7	82.9	81.8	1.0
9:59:14 AM	598.7	83.5	82.1	1.0
9:59:15 AM	598.6	83.9	81.9	1.0
9:59:16 AM	598.6	83.5	82.1	1.0
9:59:17 AM	598.6	83.0	82.1	1.0
9:59:18 AM	598.8	82.8	81.1	1.0
9:59:19 AM	598.5	83.4	81.5	1.0
9:59:20 AM	598.6	83.8	82.3	1.0
9:59:21 AM	598.6	83.7	81.5	1.0
9:59:22 AM	598.6	83.2	81.7	1.0
9:59:23 AM	598.6	82.9	82.0	1.0
9:59:24 AM	598.7	83.2	83.0	1.0
9:59:25 AM	598.7	82.8	82.1	1.0
9:59:26 AM	598.8	83.7	82.4	1.0
9:59:27 AM	598.7	83.0	81.7	1.0
9:59:28 AM	598.7	83.6	81.2	1.0
9:59:29 AM	598.8	83.2	80.8	1.0
9:59:30 AM	598.7	83.9	80.8	1.0
9:59:31 AM	598.6	83.9	81.7	1.0
9:59:32 AM	598.7	83.7	81.5	1.0
9:59:33 AM	598.6	83.3	81.2	1.0
9:59:34 AM	598.7	82.8	81.7	1.0
9:59:35 AM	598.6	83.4	81.5	1.0
9:59:36 AM	598.7	83.0	82.3	0.9
9:59:37 AM	598.7	83.1	82.3	1.0
9:59:38 AM	598.7	82.8	81.7	1.0
9:59:39 AM	598.6	83.0	82.1	1.0
9:59:40 AM	598.6	82.3	81.6	1.0
9:59:41 AM	598.7	84.1	80.9	1.0
9:59:42 AM	598.7	84.3	80.7	1.0
9:59:43 AM	598.7	82.4	81.7	1.0
9:59:44 AM	598.7	82.8	81.9	1.0
9:59:45 AM	598.6	83.9	81.5	1.0
9:59:46 AM	598.7	83.7	82.3	1.0
9:59:47 AM	598.6	83.7	81.2	1.0
9:59:48 AM	598.7	82.2	81.9	1.0
9:59:49 AM	598.6	83.4	82.3	1.0
9:59:50 AM	598.6	82.7	81.9	1.0
9:59:51 AM	598.7	82.8	81.5	1.0
9:59:52 AM	598.6	82.8	81.0	1.0
9:59:53 AM	598.6	82.6	82.4	1.0
9:59:54 AM	598.7	83.2	82.2	1.0
9:59:55 AM	598.7	82.3	81.6	1.0
9:59:56 AM	598.7	82.9	82.2	1.0
9:59:57 AM	598.7	82.6	81.5	1.0
9:59:58 AM	598.6	82.4	81.2	1.0
9:59:59 AM	598.6	83.4	81.9	1.0
10:00:00 AM	598.6	84.7	81.5	1.0
10:00:01 AM	598.7	83.1	82.2	1.0
10:00:02 AM	598.7	83.2	82.6	1.0
10:00:03 AM	598.7	83.4	82.0	1.0
10:00:04 AM	598.6	83.4	82.4	1.0
10:00:05 AM	598.6	83.9	81.4	1.0
10:00:06 AM	598.7	83.7	81.4	1.0
10:00:07 AM	598.6	83.5	82.0	1.0
10:00:08 AM	598.6	82.5	81.8	1.0
10:00:09 AM	598.7	83.5	81.9	1.0
10:00:10 AM	598.6	82.9	81.4	1.0
10:00:11 AM	598.7	83.0	82.2	1.0
Averages ->	**598.7**	**83.2**	**81.8**	**1.0**
			Maximum ->	**1.0**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 450 **Date** 6/9/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
11:04:05 AM	598.4	79.9	78.7	0.1
11:04:06 AM	598.3	80.1	78.6	0.1
11:04:07 AM	598.4	79.3	78.6	0.0
11:04:08 AM	598.3	79.0	78.0	0.1
11:04:09 AM	598.3	79.4	78.6	0.2
11:04:10 AM	598.3	79.9	78.4	0.2
11:04:11 AM	598.4	79.9	78.3	0.2
11:04:12 AM	598.4	79.1	78.8	0.2
11:04:13 AM	598.3	78.4	77.2	0.2
11:04:14 AM	598.2	80.0	77.2	0.1
11:04:15 AM	598.4	79.7	77.9	0.1
11:04:16 AM	598.3	79.0	77.1	0.1
11:04:17 AM	598.4	79.1	78.2	0.1
11:04:18 AM	598.4	79.3	78.4	0.1
11:04:19 AM	598.4	80.0	78.5	0.2
11:04:20 AM	598.3	78.5	77.7	0.2
11:04:21 AM	598.3	79.7	78.4	0.2
11:04:22 AM	598.5	81.3	78.2	0.2
11:04:23 AM	598.4	79.4	77.5	0.2
11:04:24 AM	598.4	79.1	77.9	0.2
11:04:25 AM	598.4	79.0	78.3	0.2
11:04:26 AM	598.5	78.8	78.1	0.2
11:04:27 AM	598.4	80.1	77.4	0.2
11:04:28 AM	598.5	80.3	77.0	0.2
11:04:29 AM	598.3	79.5	78.2	0.2
11:04:30 AM	598.5	79.2	77.6	0.1
11:04:31 AM	598.4	80.3	78.4	0.1
11:04:32 AM	598.5	79.9	77.9	0.0
11:04:33 AM	598.4	79.2	78.5	0.1
11:04:34 AM	598.3	79.9	78.3	0.1
11:04:35 AM	598.4	79.1	78.8	0.1
11:04:36 AM	598.3	80.3	78.5	0.1
11:04:37 AM	598.4	79.5	78.3	0.1
11:04:38 AM	598.3	79.5	78.5	0.0
11:04:39 AM	598.3	79.7	78.5	0.1
11:04:40 AM	598.3	79.3	78.1	0.2
11:04:41 AM	598.4	79.6	79.1	0.2
11:04:42 AM	598.3	79.9	78.0	0.2
11:04:43 AM	598.4	78.6	78.3	0.2
11:04:44 AM	598.4	79.3	77.9	0.2
11:04:45 AM	598.3	78.3	78.3	0.2
11:04:46 AM	598.2	80.0	77.9	0.3
11:04:47 AM	598.2	79.6	77.5	0.3
11:04:48 AM	598.5	78.8	78.1	0.3
11:04:49 AM	598.2	80.6	78.1	0.3
11:04:50 AM	598.3	79.9	78.2	0.3
11:04:51 AM	598.4	80.0	78.6	0.3
11:04:52 AM	598.2	80.3	77.5	0.3
11:04:53 AM	598.5	80.6	78.7	0.3
11:04:54 AM	598.4	78.9	77.6	0.3
11:04:55 AM	598.3	79.6	78.3	0.3
11:04:56 AM	598.4	79.7	78.3	0.2
11:04:57 AM	598.3	79.1	79.5	0.2
11:04:58 AM	598.2	80.0	77.5	0.2
11:04:59 AM	598.4	78.8	79.0	0.2
11:05:00 AM	598.3	79.5	78.6	0.1
11:05:01 AM	598.3	79.5	78.0	0.1
11:05:02 AM	598.3	79.5	78.6	0.1
11:05:03 AM	598.3	78.8	78.4	0.1
11:05:04 AM	598.3	79.2	78.8	0.2
Averages ->	**598.3**	**79.5**	**78.2**	**0.2**
			Maximum ->	**0.3**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 450 **Date** 6/9/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
2:48:03 PM	600.7	499.7	504.8	0.6
2:48:04 PM	600.6	498.6	505.8	0.5
2:48:05 PM	600.8	498.2	505.7	0.5
2:48:06 PM	600.8	499.6	504.7	0.5
2:48:07 PM	601.0	498.8	506.0	0.5
2:48:08 PM	601.0	499.1	505.8	0.5
2:48:09 PM	601.0	499.4	506.5	0.5
2:48:10 PM	601.1	499.6	506.4	0.5
2:48:11 PM	601.2	498.7	505.7	0.5
2:48:12 PM	601.2	499.6	505.8	0.5
2:48:13 PM	601.3	498.0	505.6	0.5
2:48:14 PM	601.3	498.0	506.0	0.5
2:48:15 PM	601.3	499.1	506.1	0.5
2:48:16 PM	601.4	499.1	505.9	0.5
2:48:17 PM	601.3	498.8	506.7	0.5
2:48:18 PM	601.4	499.6	506.0	0.5
2:48:19 PM	601.3	499.4	506.3	0.5
2:48:20 PM	601.5	499.8	505.9	0.5
2:48:21 PM	601.6	498.7	506.9	0.5
2:48:22 PM	601.5	498.7	507.2	0.5
2:48:23 PM	601.5	499.3	507.0	0.5
2:48:24 PM	601.6	498.9	506.8	0.5
2:48:25 PM	601.5	498.1	507.3	0.5
2:48:26 PM	601.6	499.4	506.7	0.5
2:48:27 PM	601.6	499.6	507.7	0.5
2:48:28 PM	601.6	498.2	506.9	0.5
2:48:29 PM	601.6	499.1	506.9	0.5
2:48:30 PM	601.6	497.5	507.5	0.5
2:48:31 PM	601.8	498.2	507.3	0.5
2:48:32 PM	601.5	498.0	507.3	0.5
2:48:33 PM	601.6	499.5	507.1	0.5
2:48:34 PM	601.8	498.2	507.9	0.5
2:48:35 PM	601.6	498.2	507.4	0.5
2:48:36 PM	601.8	498.5	507.0	0.5
2:48:37 PM	601.8	499.8	507.1	0.5
2:48:38 PM	601.7	499.0	507.7	0.5
2:48:39 PM	601.8	499.1	507.3	0.5
2:48:40 PM	601.7	498.1	508.5	0.5
2:48:41 PM	601.6	500.4	508.2	0.5
2:48:42 PM	601.8	498.6	508.5	0.5
2:48:43 PM	601.8	498.4	508.5	0.5
2:48:44 PM	601.8	498.6	508.0	0.5
2:48:45 PM	601.8	499.4	509.3	0.5
2:48:46 PM	601.9	498.5	507.7	0.5
2:48:47 PM	601.8	498.2	507.9	0.5
2:48:48 PM	601.7	498.5	508.2	0.5
2:48:49 PM	601.8	498.1	508.5	0.5
2:48:50 PM	601.8	498.9	509.1	0.5
2:48:51 PM	601.7	499.2	508.6	0.5
2:48:52 PM	601.8	499.7	508.8	0.5
2:48:53 PM	601.8	498.4	507.9	0.5
2:48:54 PM	601.7	498.9	509.1	0.5
2:48:55 PM	601.8	498.6	508.0	0.5
2:48:56 PM	601.8	499.0	507.3	0.5
2:48:57 PM	601.8	498.2	508.2	0.5
2:48:58 PM	601.8	500.1	508.5	0.5
2:48:59 PM	601.7	499.2	508.4	0.4
2:49:00 PM	601.8	499.2	507.6	0.4
2:49:01 PM	601.7	500.1	509.3	0.5
2:49:02 PM	601.8	498.9	509.4	0.5
Averages ->	**601.5**	**498.9**	**507.3**	**0.5**
			Maximum ->	**0.6**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 500 **Date** 6/9/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
3:41:37 PM	600.1	499.2	501.1	0.8
3:41:38 PM	600.1	498.9	502.1	0.8
3:41:39 PM	600.2	499.1	501.3	0.8
3:41:40 PM	600.1	498.4	501.6	0.8
3:41:41 PM	600.1	499.4	501.9	0.8
3:41:42 PM	600.1	498.7	502.0	0.9
3:41:43 PM	600.2	499.2	502.6	0.9
3:41:44 PM	600.1	498.8	502.4	0.9
3:41:45 PM	600.2	498.5	501.9	0.9
3:41:46 PM	600.2	498.4	501.2	0.9
3:41:47 PM	600.1	499.8	501.0	0.8
3:41:48 PM	600.1	499.0	501.7	0.9
3:41:49 PM	600.3	498.2	500.6	0.9
3:41:50 PM	600.2	500.0	501.0	0.9
3:41:51 PM	600.1	499.9	502.1	0.8
3:41:52 PM	600.1	499.2	502.4	0.8
3:41:53 PM	600.3	498.6	502.6	0.8
3:41:54 PM	600.1	499.6	501.9	0.8
3:41:55 PM	600.3	500.2	502.2	0.8
3:41:56 PM	600.2	499.2	502.0	0.8
3:41:57 PM	600.2	500.0	501.2	0.8
3:41:58 PM	600.2	499.4	501.5	0.8
3:41:59 PM	600.3	498.8	501.8	0.8
3:42:00 PM	600.2	500.1	502.6	0.8
3:42:01 PM	600.2	499.1	501.9	0.8
3:42:02 PM	600.2	500.0	502.5	0.8
3:42:03 PM	600.1	498.9	501.4	0.8
3:42:04 PM	600.2	499.6	502.0	0.8
3:42:05 PM	600.2	499.2	501.9	0.8
3:42:06 PM	600.3	499.2	501.9	0.8
3:42:07 PM	600.2	498.6	501.7	0.8
3:42:08 PM	600.3	499.2	502.0	0.8
3:42:09 PM	600.3	499.8	501.8	0.8
3:42:10 PM	600.2	498.6	502.6	0.8
3:42:11 PM	600.2	499.9	502.0	0.8
3:42:12 PM	600.2	499.6	502.5	0.8
3:42:13 PM	600.3	499.9	502.4	0.8
3:42:14 PM	600.2	498.2	502.6	0.8
3:42:15 PM	600.3	500.4	502.0	0.8
3:42:16 PM	600.3	499.0	502.2	0.8
3:42:17 PM	600.3	499.6	501.8	0.8
3:42:18 PM	600.3	498.8	502.1	0.8
3:42:19 PM	600.3	499.0	502.3	0.8
3:42:20 PM	600.2	498.8	502.2	0.8
3:42:21 PM	600.2	500.0	501.5	0.8
3:42:22 PM	600.2	499.4	503.4	0.8
3:42:23 PM	600.2	499.2	502.6	0.8
3:42:24 PM	600.1	500.2	503.0	0.8
3:42:25 PM	600.3	498.4	502.0	0.8
3:42:26 PM	600.4	499.4	502.8	0.8
3:42:27 PM	600.3	499.6	502.6	0.8
3:42:28 PM	600.2	499.0	502.3	0.8
3:42:29 PM	600.3	499.3	501.6	0.8
3:42:30 PM	600.3	500.4	502.6	0.8
3:42:31 PM	600.2	499.3	502.5	0.8
3:42:32 PM	600.2	499.4	503.0	0.8
3:42:33 PM	600.1	498.7	502.4	0.8
3:42:34 PM	600.2	500.6	502.0	0.8
3:42:35 PM	600.2	499.5	501.9	0.8
3:42:36 PM	600.2	498.8	502.4	0.8
Averages ->	**600.2**	**499.3**	**502.0**	**0.8**
			Maximum ->	**0.9**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 550 **Date** 6/9/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
4:40:31 PM	602.3	504.4	502.0	0.8
4:40:32 PM	602.4	504.4	502.4	0.8
4:40:33 PM	602.2	503.8	502.2	0.8
4:40:34 PM	602.3	504.3	502.3	0.8
4:40:35 PM	602.3	504.4	502.8	0.8
4:40:36 PM	602.1	504.4	502.4	0.8
4:40:37 PM	602.3	503.8	502.7	0.8
4:40:38 PM	602.1	503.4	503.0	0.8
4:40:39 PM	602.1	503.6	501.6	0.8
4:40:40 PM	602.1	503.2	502.5	0.8
4:40:41 PM	602.1	504.3	501.6	0.8
4:40:42 PM	602.2	504.2	503.0	0.8
4:40:43 PM	602.3	503.9	502.7	0.8
4:40:44 PM	602.2	504.1	502.0	0.8
4:40:45 PM	602.2	503.4	502.6	0.8
4:40:46 PM	602.1	503.8	502.1	0.8
4:40:47 PM	602.3	502.9	502.6	0.8
4:40:48 PM	602.2	503.2	502.2	0.8
4:40:49 PM	602.0	503.5	502.0	0.8
4:40:50 PM	602.1	503.5	501.9	0.7
4:40:51 PM	602.0	503.2	501.6	0.8
4:40:52 PM	602.1	503.6	501.7	0.8
4:40:53 PM	602.1	502.3	501.1	0.8
4:40:54 PM	602.3	503.1	502.4	0.8
4:40:55 PM	602.1	502.7	501.6	0.8
4:40:56 PM	602.0	503.1	503.4	0.8
4:40:57 PM	602.0	503.4	501.7	0.8
4:40:58 PM	602.0	502.9	501.8	0.7
4:40:59 PM	602.0	503.0	502.9	0.7
4:41:00 PM	602.0	504.2	501.5	0.7
4:41:01 PM	601.9	502.5	502.2	0.7
4:41:02 PM	602.0	502.4	501.9	0.8
4:41:03 PM	602.0	503.1	501.9	0.8
4:41:04 PM	601.8	502.5	501.8	0.7
4:41:05 PM	601.8	502.3	502.1	0.8
4:41:06 PM	601.8	502.5	502.5	0.8
4:41:07 PM	601.8	502.6	501.9	0.8
4:41:08 PM	601.8	502.5	502.5	0.8
4:41:09 PM	601.8	502.8	502.5	0.8
4:41:10 PM	601.7	502.4	502.2	0.8
4:41:11 PM	601.7	501.9	502.6	0.8
4:41:12 PM	601.7	501.5	502.2	0.8
4:41:13 PM	601.7	501.6	501.7	0.8
4:41:14 PM	601.7	502.1	501.7	0.8
4:41:15 PM	601.7	502.3	501.2	0.8
4:41:16 PM	601.6	502.1	502.0	0.8
4:41:17 PM	601.7	502.3	501.4	0.8
4:41:18 PM	601.6	502.6	502.1	0.8
4:41:19 PM	601.7	501.5	501.2	0.8
4:41:20 PM	601.5	501.7	501.7	0.8
4:41:21 PM	601.5	502.2	502.3	0.8
4:41:22 PM	601.5	501.7	501.0	0.8
4:41:23 PM	601.4	502.0	501.2	0.8
4:41:24 PM	601.3	502.1	500.9	0.8
4:41:25 PM	601.5	500.5	501.2	0.8
4:41:26 PM	601.3	501.5	500.8	0.8
4:41:27 PM	601.3	501.4	501.7	0.8
4:41:28 PM	601.3	501.5	501.8	0.8
4:41:29 PM	601.3	500.9	501.0	0.8
4:41:30 PM	601.2	500.8	501.4	0.8
Averages ->	**601.9**	**502.8**	**502.0**	**0.8**
			Maximum ->	**0.8**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 600 **Date** 6/9/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
5:37:14 PM	598.7	498.7	498.7	0.3
5:37:15 PM	598.6	499.1	498.1	0.3
5:37:16 PM	598.6	499.0	498.3	0.3
5:37:17 PM	598.6	498.9	498.2	0.3
5:37:18 PM	598.6	498.6	497.9	0.3
5:37:19 PM	598.7	497.4	497.5	0.3
5:37:20 PM	598.5	498.9	497.7	0.3
5:37:21 PM	598.6	498.5	497.5	0.3
5:37:22 PM	598.5	498.0	497.9	0.3
5:37:23 PM	598.5	499.1	497.9	0.3
5:37:24 PM	598.6	498.8	497.3	0.3
5:37:25 PM	598.6	499.8	497.7	0.3
5:37:26 PM	598.3	498.7	497.7	0.3
5:37:27 PM	598.6	498.9	497.7	0.3
5:37:28 PM	598.4	498.4	497.8	0.4
5:37:29 PM	598.5	498.8	496.1	0.3
5:37:30 PM	598.4	497.9	497.0	0.3
5:37:31 PM	598.5	498.3	496.4	0.3
5:37:32 PM	598.4	499.2	497.1	0.3
5:37:33 PM	598.3	496.7	497.7	0.3
5:37:34 PM	598.5	499.4	496.8	0.3
5:37:35 PM	598.4	498.5	497.1	0.3
5:37:36 PM	598.4	498.9	497.3	0.3
5:37:37 PM	598.5	498.8	497.2	0.3
5:37:38 PM	598.5	499.1	496.0	0.3
5:37:39 PM	598.3	497.7	496.7	0.3
5:37:40 PM	598.4	499.0	497.5	0.3
5:37:41 PM	598.4	498.2	496.9	0.3
5:37:42 PM	598.4	499.3	497.2	0.3
5:37:43 PM	598.4	498.9	496.7	0.3
5:37:44 PM	598.4	499.3	495.2	0.3
5:37:45 PM	598.3	498.5	496.9	0.3
5:37:46 PM	598.4	498.3	496.7	0.3
5:37:47 PM	598.4	498.9	496.8	0.3
5:37:48 PM	598.4	497.9	496.7	0.3
5:37:49 PM	598.5	499.3	496.6	0.3
5:37:50 PM	598.3	499.5	496.8	0.3
5:37:51 PM	598.4	497.8	496.3	0.3
5:37:52 PM	598.5	499.3	495.3	0.3
5:37:53 PM	598.5	499.0	496.5	0.3
5:37:54 PM	598.4	498.2	496.7	0.3
5:37:55 PM	598.4	499.5	495.9	0.3
5:37:56 PM	598.5	498.3	496.1	0.4
5:37:57 PM	598.6	499.9	496.3	0.4
5:37:58 PM	598.6	499.9	496.1	0.4
5:37:59 PM	598.4	499.1	496.7	0.4
5:38:00 PM	598.6	498.6	496.7	0.4
5:38:01 PM	598.6	499.0	496.7	0.4
5:38:02 PM	598.4	499.0	496.2	0.4
5:38:03 PM	598.5	499.5	496.0	0.4
5:38:04 PM	598.6	499.9	496.3	0.4
5:38:05 PM	598.5	499.2	496.7	0.4
5:38:06 PM	598.6	499.0	496.6	0.4
5:38:07 PM	598.6	499.3	496.0	0.4
5:38:08 PM	598.6	499.9	495.5	0.3
5:38:09 PM	598.6	498.9	496.7	0.3
5:38:10 PM	598.7	499.9	497.7	0.3
5:38:11 PM	598.6	499.5	496.6	0.4
5:38:12 PM	598.8	499.5	496.1	0.4
5:38:13 PM	598.7	500.9	496.5	0.4
Averages ->	**598.5**	**498.9**	**496.9**	**0.3**
			Maximum ->	**0.4**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 600 **Date** 6/10/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
8:15:18 AM	603.6	82.0	86.6	1.0
8:15:19 AM	603.8	81.5	87.0	1.0
8:15:20 AM	603.7	81.6	85.2	1.0
8:15:21 AM	603.8	81.2	86.0	1.0
8:15:22 AM	603.6	81.7	85.7	1.0
8:15:23 AM	603.6	81.9	85.8	1.0
8:15:24 AM	603.7	81.0	85.5	1.0
8:15:25 AM	603.8	81.0	85.2	1.0
8:15:26 AM	603.7	81.1	86.3	1.0
8:15:27 AM	603.7	81.0	86.0	1.0
8:15:28 AM	603.6	82.3	86.0	1.0
8:15:29 AM	603.7	80.7	86.1	1.0
8:15:30 AM	603.7	81.0	86.6	1.0
8:15:31 AM	603.7	81.8	86.2	1.0
8:15:32 AM	603.7	81.9	86.6	1.0
8:15:33 AM	603.7	81.2	86.3	1.0
8:15:34 AM	603.7	81.9	87.9	1.0
8:15:35 AM	603.5	82.0	86.5	1.0
8:15:36 AM	603.7	81.3	86.3	1.0
8:15:37 AM	603.8	80.7	86.2	1.0
8:15:38 AM	603.6	81.1	86.2	1.0
8:15:39 AM	603.7	81.5	86.2	1.0
8:15:40 AM	603.6	81.4	86.5	1.0
8:15:41 AM	603.6	80.8	86.0	1.0
8:15:42 AM	603.6	81.6	86.3	1.0
8:15:43 AM	603.6	80.8	85.7	1.0
8:15:44 AM	603.6	80.0	84.9	1.0
8:15:45 AM	603.6	81.2	86.4	1.0
8:15:46 AM	603.7	81.7	87.0	1.0
8:15:47 AM	603.5	81.7	85.5	1.0
8:15:48 AM	603.6	80.5	85.5	1.0
8:15:49 AM	603.7	82.7	85.9	1.0
8:15:50 AM	603.6	81.3	85.8	1.0
8:15:51 AM	603.7	81.4	85.4	1.0
8:15:52 AM	603.5	80.8	86.5	1.0
8:15:53 AM	603.6	82.4	85.5	1.0
8:15:54 AM	603.7	80.8	86.9	1.0
8:15:55 AM	603.8	81.4	86.2	1.0
8:15:56 AM	603.8	80.2	86.2	1.0
8:15:57 AM	603.5	81.0	86.8	1.0
8:15:58 AM	603.8	80.8	86.6	1.0
8:15:59 AM	603.6	81.9	87.2	1.0
8:16:00 AM	603.7	82.8	85.5	1.0
8:16:01 AM	603.7	81.5	85.7	1.0
8:16:02 AM	603.6	82.4	85.7	1.1
8:16:03 AM	603.6	81.2	86.6	1.0
8:16:04 AM	603.6	80.6	86.5	1.0
8:16:05 AM	603.7	81.8	86.2	1.1
8:16:06 AM	603.6	81.0	86.8	1.0
8:16:07 AM	603.7	80.8	86.1	1.1
8:16:08 AM	603.8	81.0	85.3	1.0
8:16:09 AM	603.7	80.8	86.1	1.1
8:16:10 AM	603.6	80.8	86.6	1.0
8:16:11 AM	603.7	80.8	86.1	1.1
8:16:12 AM	603.7	81.9	85.9	1.0
8:16:13 AM	603.6	80.8	85.1	1.0
8:16:14 AM	603.5	80.9	85.5	1.0
8:16:15 AM	603.6	81.1	85.8	1.0
8:16:16 AM	603.6	81.9	85.9	1.0
8:16:17 AM	603.5	80.6	86.3	1.0
Averages ->	**603.7**	**81.3**	**86.1**	**1.0**
			Maximum ->	**1.1**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 650 **Date** 6/10/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
9:05:37 AM	598.8	84.3	84.6	1.2
9:05:38 AM	598.9	84.3	84.7	1.2
9:05:39 AM	598.8	83.8	84.1	1.2
9:05:40 AM	598.7	83.8	84.6	1.2
9:05:41 AM	598.7	84.6	85.1	1.2
9:05:42 AM	598.8	83.1	83.7	1.2
9:05:43 AM	598.8	84.2	85.2	1.2
9:05:44 AM	598.7	84.3	84.1	1.2
9:05:45 AM	598.8	85.5	84.5	1.2
9:05:46 AM	598.7	83.3	83.6	1.2
9:05:47 AM	598.8	84.3	84.6	1.2
9:05:48 AM	598.9	83.5	85.6	1.2
9:05:49 AM	598.7	83.7	84.2	1.2
9:05:50 AM	598.8	84.1	85.0	1.2
9:05:51 AM	598.8	84.3	85.4	1.2
9:05:52 AM	598.7	84.2	85.2	1.2
9:05:53 AM	598.7	84.1	84.0	1.2
9:05:54 AM	598.8	83.7	84.1	1.2
9:05:55 AM	598.8	83.5	83.2	1.2
9:05:56 AM	598.7	84.1	84.3	1.2
9:05:57 AM	598.8	83.9	85.2	1.2
9:05:58 AM	598.8	83.2	84.3	1.2
9:05:59 AM	598.9	84.2	85.5	1.2
9:06:00 AM	598.8	83.5	84.1	1.2
9:06:01 AM	598.7	83.7	83.9	1.2
9:06:02 AM	598.8	84.0	84.9	1.2
9:06:03 AM	598.8	83.9	85.0	1.2
9:06:04 AM	598.8	84.6	84.8	1.2
9:06:05 AM	598.8	83.6	84.3	1.1
9:06:06 AM	598.9	84.6	85.2	1.2
9:06:07 AM	598.7	84.4	84.8	1.2
9:06:08 AM	598.8	83.5	85.0	1.2
9:06:09 AM	598.8	84.5	83.3	1.2
9:06:10 AM	598.8	83.5	84.5	1.2
9:06:11 AM	598.7	83.7	84.6	1.2
9:06:12 AM	598.8	84.3	85.5	1.2
9:06:13 AM	598.6	83.8	84.7	1.2
9:06:14 AM	598.8	83.5	84.8	1.2
9:06:15 AM	598.7	84.1	84.1	1.2
9:06:16 AM	598.8	83.9	84.4	1.2
9:06:17 AM	598.9	83.9	84.0	1.2
9:06:18 AM	598.8	82.8	84.6	1.2
9:06:19 AM	598.8	84.4	85.0	1.2
9:06:20 AM	598.7	83.5	85.1	1.2
9:06:21 AM	598.7	83.8	85.0	1.2
9:06:22 AM	598.7	83.7	84.9	1.2
9:06:23 AM	598.8	84.1	84.6	1.2
9:06:24 AM	598.7	84.1	84.6	1.2
9:06:25 AM	598.8	82.5	84.9	1.2
9:06:26 AM	598.8	83.2	84.7	1.2
9:06:27 AM	598.8	83.4	85.3	1.2
9:06:28 AM	598.7	83.8	85.2	1.2
9:06:29 AM	598.7	84.8	83.7	1.2
9:06:30 AM	598.6	83.7	84.5	1.2
9:06:31 AM	598.7	84.3	84.5	1.2
9:06:32 AM	598.8	83.6	85.2	1.2
9:06:33 AM	598.8	84.0	84.2	1.2
9:06:34 AM	598.7	83.7	84.8	1.2
9:06:35 AM	598.8	84.3	85.2	1.2
9:06:36 AM	598.8	84.3	84.2	1.1
Averages ->	**598.8**	**83.9**	**84.6**	**1.2**
			Maximum ->	**1.2**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 700 **Date** 6/10/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
9:47:15 AM	599.8	87.9	84.4	1.3
9:47:16 AM	599.9	86.4	84.3	1.2
9:47:17 AM	599.8	88.2	85.0	1.2
9:47:18 AM	599.8	87.1	84.8	1.2
9:47:19 AM	599.8	87.0	84.0	1.2
9:47:20 AM	599.7	87.4	84.9	1.1
9:47:21 AM	599.8	87.0	85.4	1.1
9:47:22 AM	599.7	86.6	85.7	1.1
9:47:23 AM	599.8	87.2	84.8	1.1
9:47:24 AM	599.8	88.0	85.5	1.1
9:47:25 AM	599.8	86.6	85.1	1.1
9:47:26 AM	599.8	87.2	83.7	1.1
9:47:27 AM	599.7	87.0	84.7	1.1
9:47:28 AM	599.8	86.9	84.8	1.1
9:47:29 AM	599.8	87.5	84.1	1.1
9:47:30 AM	599.8	88.1	84.8	1.1
9:47:31 AM	599.7	87.3	83.9	1.1
9:47:32 AM	599.8	86.3	84.6	1.1
9:47:33 AM	599.8	86.8	85.4	1.1
9:47:34 AM	599.7	86.6	84.8	1.1
9:47:35 AM	599.8	87.8	84.6	1.1
9:47:36 AM	599.7	86.5	83.7	1.1
9:47:37 AM	599.9	86.8	84.6	1.1
9:47:38 AM	599.8	87.2	84.1	1.1
9:47:39 AM	599.8	87.8	83.7	1.1
9:47:40 AM	599.6	86.3	84.7	1.1
9:47:41 AM	599.7	88.1	85.0	1.1
9:47:42 AM	599.8	87.4	84.4	1.1
9:47:43 AM	599.7	86.3	84.6	1.1
9:47:44 AM	599.9	86.4	85.5	1.1
9:47:45 AM	599.7	87.0	85.2	1.1
9:47:46 AM	599.7	88.0	84.1	1.1
9:47:47 AM	599.8	87.2	85.0	1.1
9:47:48 AM	599.8	87.6	84.3	1.1
9:47:49 AM	599.8	86.7	84.8	1.1
9:47:50 AM	599.8	86.4	84.1	1.1
9:47:51 AM	599.8	87.0	84.6	1.1
9:47:52 AM	599.7	86.6	84.6	1.1
9:47:53 AM	599.8	88.2	84.3	1.1
9:47:54 AM	599.8	87.1	84.0	1.1
9:47:55 AM	599.7	87.0	84.9	1.1
9:47:56 AM	599.7	86.4	85.0	1.1
9:47:57 AM	599.7	85.5	84.7	1.1
9:47:58 AM	599.8	86.8	84.9	1.1
9:47:59 AM	599.8	87.5	85.5	1.1
9:48:00 AM	599.8	85.9	85.8	1.1
9:48:01 AM	599.8	87.2	84.9	1.1
9:48:02 AM	599.8	86.6	85.6	1.1
9:48:03 AM	599.7	87.2	84.8	1.1
9:48:04 AM	599.7	87.2	85.2	1.1
9:48:05 AM	599.6	87.0	84.6	1.1
9:48:06 AM	599.8	86.6	84.3	1.0
9:48:07 AM	599.9	86.7	85.5	1.0
9:48:08 AM	599.8	87.0	85.3	1.1
9:48:09 AM	599.8	87.9	84.6	1.1
9:48:10 AM	599.9	86.8	84.5	1.0
9:48:11 AM	599.7	87.1	84.4	1.0
9:48:12 AM	599.7	86.8	85.0	1.0
9:48:13 AM	600.0	87.0	84.6	1.0
9:48:14 AM	601.0	87.1	84.8	1.0
Averages ->	**599.8**	**87.0**	**84.7**	**1.1**
			Maximum ->	**1.3**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 750 **Date** 6/10/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
10:26:39 AM	601.1	90.4	85.5	1.6
10:26:40 AM	601.1	90.1	85.7	1.6
10:26:41 AM	601.2	90.7	85.6	1.6
10:26:42 AM	601.2	89.6	85.1	1.6
10:26:43 AM	601.4	90.0	85.2	1.6
10:26:44 AM	601.1	90.2	85.3	1.6
10:26:45 AM	601.1	90.3	84.6	1.6
10:26:46 AM	601.2	90.8	85.4	1.6
10:26:47 AM	601.2	90.1	85.9	1.6
10:26:48 AM	601.2	89.8	84.8	1.6
10:26:49 AM	601.3	89.2	85.3	1.6
10:26:50 AM	601.2	90.0	85.3	1.6
10:26:51 AM	601.2	89.5	85.0	1.6
10:26:52 AM	601.2	90.2	85.0	1.5
10:26:53 AM	601.2	90.7	84.7	1.5
10:26:54 AM	601.2	89.7	85.2	1.5
10:26:55 AM	601.3	89.9	86.6	1.5
10:26:56 AM	601.2	91.2	84.7	1.5
10:26:57 AM	601.3	90.4	84.6	1.5
10:26:58 AM	601.3	90.0	85.3	1.4
10:26:59 AM	601.2	89.5	85.7	1.4
10:27:00 AM	601.2	91.1	85.4	1.4
10:27:01 AM	601.3	89.3	85.9	1.4
10:27:02 AM	601.2	90.5	85.9	1.3
10:27:03 AM	601.2	90.7	85.7	1.3
10:27:04 AM	601.3	90.1	84.6	1.3
10:27:05 AM	601.2	90.8	85.0	1.3
10:27:06 AM	601.2	89.9	85.5	1.3
10:27:07 AM	601.3	89.9	85.9	1.3
10:27:08 AM	601.2	89.8	84.8	1.3
10:27:09 AM	601.2	90.5	84.3	1.2
10:27:10 AM	601.4	90.4	85.4	1.2
10:27:11 AM	601.3	89.9	85.0	1.2
10:27:12 AM	601.2	90.5	84.1	1.1
10:27:13 AM	601.2	90.2	85.5	1.2
10:27:14 AM	601.2	90.5	85.0	1.2
10:27:15 AM	601.4	90.3	85.5	1.2
10:27:16 AM	601.3	90.5	83.9	1.2
10:27:17 AM	601.3	90.1	84.6	1.2
10:27:18 AM	601.2	90.3	85.5	1.2
10:27:19 AM	601.2	89.4	85.7	1.2
10:27:20 AM	601.2	90.3	84.6	1.3
10:27:21 AM	601.2	89.9	85.2	1.3
10:27:22 AM	601.2	89.9	85.7	1.2
10:27:23 AM	601.2	89.4	85.0	1.2
10:27:24 AM	601.4	90.5	85.8	1.3
10:27:25 AM	601.3	90.0	84.8	1.3
10:27:26 AM	601.2	89.9	84.8	1.3
10:27:27 AM	601.2	90.4	85.5	1.2
10:27:28 AM	601.2	89.9	86.1	1.2
10:27:29 AM	601.2	89.9	85.5	1.2
10:27:30 AM	601.2	90.1	85.1	1.2
10:27:31 AM	601.2	89.4	85.7	1.2
10:27:32 AM	601.4	89.7	85.0	1.2
10:27:33 AM	601.3	90.1	85.5	1.2
10:27:34 AM	601.4	90.3	85.5	1.2
10:27:35 AM	601.4	90.1	84.5	1.2
10:27:36 AM	601.3	90.8	84.6	1.2
10:27:37 AM	601.4	89.6	85.1	1.2
10:27:38 AM	601.3	90.5	85.0	1.2
Averages ->	**601.2**	**90.1**	**85.2**	**1.3**
			Maximum ->	**1.6**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 750 **Date** 6/10/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
12:36:53 PM	599.6	497.8	504.1	1.7
12:36:54 PM	599.6	499.1	504.5	1.7
12:36:55 PM	599.8	499.2	503.9	1.7
12:36:56 PM	599.8	498.2	503.6	1.7
12:36:57 PM	599.8	497.5	504.2	1.7
12:36:58 PM	599.8	498.3	503.4	1.7
12:36:59 PM	599.8	497.9	505.6	1.7
12:37:00 PM	599.8	498.7	504.2	1.7
12:37:01 PM	599.8	499.0	503.1	1.7
12:37:02 PM	599.8	499.7	503.1	1.7
12:37:03 PM	599.8	499.5	504.4	1.7
12:37:04 PM	599.8	499.8	503.9	1.7
12:37:05 PM	599.9	500.1	502.7	1.7
12:37:06 PM	599.6	500.1	505.1	1.7
12:37:07 PM	599.8	498.9	503.3	1.6
12:37:08 PM	599.8	499.5	503.6	1.6
12:37:09 PM	599.8	499.8	502.8	1.6
12:37:10 PM	599.8	499.8	503.5	1.6
12:37:11 PM	599.8	500.1	503.8	1.7
12:37:12 PM	600.0	497.9	504.5	1.7
12:37:13 PM	599.8	499.4	504.1	1.7
12:37:14 PM	599.9	499.5	503.3	1.7
12:37:15 PM	599.9	499.5	504.0	1.7
12:37:16 PM	599.9	499.5	504.9	1.7
12:37:17 PM	599.9	500.2	504.3	1.7
12:37:18 PM	600.0	499.7	503.5	1.8
12:37:19 PM	600.0	500.3	504.4	1.8
12:37:20 PM	600.0	500.3	503.5	1.8
12:37:21 PM	600.0	499.3	504.3	1.9
12:37:22 PM	599.9	500.3	504.5	1.9
12:37:23 PM	600.0	499.7	502.8	1.9
12:37:24 PM	599.9	498.9	504.0	2.0
12:37:25 PM	600.0	501.2	504.0	2.0
12:37:26 PM	599.9	500.6	503.1	2.0
12:37:27 PM	599.9	500.3	503.4	2.0
12:37:28 PM	600.0	499.3	503.7	2.0
12:37:29 PM	600.0	499.6	504.0	2.0
12:37:30 PM	599.8	499.7	503.2	2.0
12:37:31 PM	600.1	500.2	504.3	2.0
12:37:32 PM	600.1	500.2	504.3	2.1
12:37:33 PM	600.0	499.6	503.4	2.1
12:37:34 PM	600.2	500.5	504.3	2.1
12:37:35 PM	600.0	500.4	504.2	2.1
12:37:36 PM	600.1	500.7	504.6	2.2
12:37:37 PM	599.9	499.2	504.1	2.2
12:37:38 PM	599.9	499.9	504.5	2.3
12:37:39 PM	600.1	499.3	504.5	2.3
12:37:40 PM	599.9	500.3	504.2	2.3
12:37:41 PM	600.1	499.9	503.6	2.3
12:37:42 PM	599.9	500.0	503.9	2.3
12:37:43 PM	600.0	500.2	504.5	2.4
12:37:44 PM	600.0	498.9	503.4	2.4
12:37:45 PM	600.0	500.3	504.1	2.4
12:37:46 PM	600.0	499.9	503.8	2.4
12:37:47 PM	600.0	498.7	504.2	2.4
12:37:48 PM	599.8	500.1	504.0	2.4
12:37:49 PM	600.0	499.1	504.6	2.5
12:37:50 PM	600.1	498.6	503.8	2.5
12:37:51 PM	600.0	498.7	504.5	2.5
12:37:52 PM	600.1	499.7	503.6	2.5
Averages ->	**599.9**	**499.5**	**503.9**	**2.0**
			Maximum ->	**2.5**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 800 **Date** 6/10/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
1:27:37 PM	603.7	499.1	501.2	2.3
1:27:38 PM	603.8	498.7	500.6	2.2
1:27:39 PM	603.8	499.5	500.2	2.2
1:27:40 PM	604.0	498.5	500.2	2.2
1:27:41 PM	603.8	499.2	500.1	2.2
1:27:42 PM	603.9	498.5	500.2	2.2
1:27:43 PM	603.9	499.6	500.2	2.2
1:27:44 PM	604.1	498.7	500.5	2.2
1:27:45 PM	603.8	498.7	499.6	2.2
1:27:46 PM	604.0	498.8	499.6	2.2
1:27:47 PM	604.0	499.6	500.0	2.2
1:27:48 PM	604.0	499.3	499.6	2.2
1:27:49 PM	603.9	499.8	499.9	2.1
1:27:50 PM	603.9	499.5	500.1	2.1
1:27:51 PM	603.9	499.1	500.5	2.1
1:27:52 PM	603.9	500.5	500.0	2.1
1:27:53 PM	603.8	499.1	500.2	2.1
1:27:54 PM	603.8	498.9	499.8	2.1
1:27:55 PM	604.0	498.8	499.8	2.1
1:27:56 PM	603.9	499.2	500.2	2.1
1:27:57 PM	604.0	499.2	499.8	2.1
1:27:58 PM	604.0	499.4	499.9	2.1
1:27:59 PM	604.1	499.7	500.9	2.1
1:28:00 PM	604.0	499.3	500.1	2.1
1:28:01 PM	604.0	499.9	500.6	2.1
1:28:02 PM	604.0	499.2	500.0	2.1
1:28:03 PM	604.0	498.9	499.4	2.1
1:28:04 PM	604.0	499.3	500.3	2.1
1:28:05 PM	604.0	499.6	500.3	2.1
1:28:06 PM	604.0	499.5	499.8	2.1
1:28:07 PM	603.9	499.0	500.5	2.1
1:28:08 PM	604.0	499.5	500.0	2.0
1:28:09 PM	604.1	500.4	500.8	2.0
1:28:10 PM	604.3	500.4	500.2	2.0
1:28:11 PM	604.2	499.9	500.3	2.0
1:28:12 PM	604.2	499.7	500.0	2.0
1:28:13 PM	604.2	500.2	500.9	2.0
1:28:14 PM	604.2	499.8	499.8	2.0
1:28:15 PM	604.2	499.7	500.0	2.0
1:28:16 PM	604.1	501.0	500.7	2.0
1:28:17 PM	604.2	499.3	500.2	2.0
1:28:18 PM	604.1	500.7	500.8	1.9
1:28:19 PM	604.2	501.8	501.3	1.9
1:28:20 PM	604.0	500.5	500.8	1.9
1:28:21 PM	604.0	500.5	500.3	1.9
1:28:22 PM	604.2	500.3	500.5	1.9
1:28:23 PM	604.2	500.5	499.8	1.9
1:28:24 PM	604.1	499.8	500.5	2.0
1:28:25 PM	604.2	499.9	500.1	2.0
1:28:26 PM	604.3	501.3	499.4	2.0
1:28:27 PM	604.3	500.1	500.0	2.0
1:28:28 PM	604.1	500.1	500.3	2.0
1:28:29 PM	604.2	500.3	501.3	2.0
1:28:30 PM	604.2	499.9	500.3	2.0
1:28:31 PM	604.1	499.5	500.0	2.0
1:28:32 PM	604.1	500.0	500.5	2.0
1:28:33 PM	604.0	500.3	501.5	2.0
1:28:34 PM	604.2	499.7	500.4	2.0
1:28:35 PM	604.2	499.4	499.8	2.0
1:28:36 PM	604.2	500.8	500.9	2.0
Averages ->	**604.0**	**499.7**	**500.3**	**2.1**
			Maximum ->	**2.3**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 850 **Date** 6/10/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
2:20:14 PM	601.1	500.1	501.0	1.1
2:20:15 PM	601.0	500.0	501.2	1.1
2:20:16 PM	601.0	499.4	502.0	1.1
2:20:17 PM	600.9	500.4	502.5	1.1
2:20:18 PM	601.0	498.9	502.3	1.1
2:20:19 PM	601.0	498.9	502.8	1.1
2:20:20 PM	601.1	499.0	501.8	1.1
2:20:21 PM	601.1	499.9	502.9	1.1
2:20:22 PM	601.2	499.6	502.0	1.1
2:20:23 PM	601.1	499.6	502.0	1.1
2:20:24 PM	601.1	499.0	502.5	1.0
2:20:25 PM	601.2	498.9	502.7	1.0
2:20:26 PM	601.1	499.7	503.3	1.1
2:20:27 PM	601.1	499.8	502.0	1.1
2:20:28 PM	601.1	500.3	503.5	1.1
2:20:29 PM	601.1	499.8	502.3	1.1
2:20:30 PM	601.0	499.5	503.5	1.1
2:20:31 PM	601.0	499.9	502.7	1.1
2:20:32 PM	601.0	499.9	502.9	1.1
2:20:33 PM	601.1	500.3	501.2	1.1
2:20:34 PM	600.9	500.7	503.2	1.1
2:20:35 PM	601.2	498.9	503.1	1.1
2:20:36 PM	601.1	499.9	502.7	1.1
2:20:37 PM	601.0	499.8	503.5	1.1
2:20:38 PM	601.2	499.5	503.1	1.1
2:20:39 PM	601.1	499.6	502.6	1.1
2:20:40 PM	601.1	500.1	502.1	1.1
2:20:41 PM	601.0	499.1	503.0	1.1
2:20:42 PM	601.2	500.0	502.7	1.0
2:20:43 PM	601.2	500.3	502.2	1.0
2:20:44 PM	601.1	499.3	502.5	1.0
2:20:45 PM	601.2	499.3	503.0	1.0
2:20:46 PM	601.3	499.7	501.6	1.0
2:20:47 PM	601.1	499.5	503.7	1.0
2:20:48 PM	601.1	499.7	502.5	1.0
2:20:49 PM	600.9	499.9	502.2	1.0
2:20:50 PM	601.2	498.9	503.0	1.0
2:20:51 PM	601.2	499.9	502.7	1.0
2:20:52 PM	601.1	499.0	502.4	1.0
2:20:53 PM	601.2	499.9	501.6	1.0
2:20:54 PM	601.1	499.7	502.2	1.0
2:20:55 PM	601.3	499.9	502.5	1.0
2:20:56 PM	601.3	498.9	502.9	1.0
2:20:57 PM	601.2	499.7	503.3	1.0
2:20:58 PM	601.1	499.7	501.9	1.0
2:20:59 PM	601.2	498.5	502.5	1.0
2:21:00 PM	601.3	499.6	501.6	1.0
2:21:01 PM	601.0	499.9	502.3	1.0
2:21:02 PM	601.2	500.1	502.9	1.0
2:21:03 PM	601.2	499.9	501.7	1.0
2:21:04 PM	601.3	499.8	502.5	1.0
2:21:05 PM	601.2	500.5	502.0	1.0
2:21:06 PM	601.3	499.6	503.2	1.0
2:21:07 PM	601.4	500.1	502.0	1.0
2:21:08 PM	601.2	498.9	503.5	1.0
2:21:09 PM	601.4	498.4	502.1	1.0
2:21:10 PM	601.1	500.3	503.3	1.0
2:21:11 PM	601.3	499.3	501.5	1.0
2:21:12 PM	601.3	499.3	502.7	1.0
2:21:13 PM	601.1	499.4	502.2	1.0
Averages ->	**601.1**	**499.6**	**502.5**	**1.0**
			Maximum ->	**1.1**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 900 **Date** 6/10/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
3:41:50 PM	600.0	499.2	502.3	1.4
3:41:51 PM	600.1	499.5	502.1	1.4
3:41:52 PM	600.1	500.3	503.1	1.4
3:41:53 PM	600.0	499.5	501.8	1.4
3:41:54 PM	600.1	498.9	502.6	1.4
3:41:55 PM	600.1	499.9	502.7	1.4
3:41:56 PM	600.1	500.5	502.0	1.4
3:41:57 PM	600.2	500.2	501.3	1.4
3:41:58 PM	600.0	500.1	502.4	1.4
3:41:59 PM	600.0	498.6	502.9	1.4
3:42:00 PM	600.1	500.4	502.3	1.4
3:42:01 PM	600.1	499.3	502.4	1.4
3:42:02 PM	600.0	498.9	501.5	1.3
3:42:03 PM	600.3	499.8	503.2	1.3
3:42:04 PM	600.0	500.0	502.6	1.3
3:42:05 PM	600.3	499.3	502.9	1.3
3:42:06 PM	600.0	498.9	502.5	1.4
3:42:07 PM	600.1	500.5	502.5	1.4
3:42:08 PM	600.0	500.0	502.0	1.4
3:42:09 PM	600.0	500.5	502.5	1.4
3:42:10 PM	600.0	499.0	502.0	1.4
3:42:11 PM	600.3	500.8	501.8	1.3
3:42:12 PM	600.3	499.0	502.6	1.3
3:42:13 PM	600.1	498.9	502.7	1.3
3:42:14 PM	600.1	499.0	502.7	1.3
3:42:15 PM	600.2	499.9	503.7	1.3
3:42:16 PM	600.1	500.3	503.3	1.3
3:42:17 PM	600.1	499.5	502.9	1.3
3:42:18 PM	600.1	498.8	501.5	1.3
3:42:19 PM	600.2	499.6	502.4	1.3
3:42:20 PM	600.1	500.2	503.0	1.3
3:42:21 PM	600.2	500.5	502.9	1.3
3:42:22 PM	600.0	500.7	502.7	1.3
3:42:23 PM	600.1	498.9	501.8	1.3
3:42:24 PM	600.0	498.5	502.8	1.3
3:42:25 PM	600.2	499.7	502.7	1.3
3:42:26 PM	600.1	499.5	502.7	1.3
3:42:27 PM	600.2	500.1	503.0	1.3
3:42:28 PM	600.1	499.7	502.2	1.3
3:42:29 PM	600.1	498.7	502.3	1.3
3:42:30 PM	600.2	499.5	502.3	1.3
3:42:31 PM	600.0	498.7	501.1	1.3
3:42:32 PM	600.1	499.2	503.3	1.3
3:42:33 PM	598.9	499.2	503.4	1.3
3:42:34 PM	600.1	499.0	503.3	1.3
3:42:35 PM	600.0	499.6	502.4	1.3
3:42:36 PM	600.1	498.8	502.7	1.3
3:42:37 PM	600.1	499.9	502.3	1.3
3:42:38 PM	599.9	499.3	502.5	1.3
3:42:39 PM	600.0	499.5	503.6	1.3
3:42:40 PM	600.0	498.3	503.1	1.3
3:42:41 PM	600.0	499.7	503.9	1.3
3:42:42 PM	600.1	498.4	502.6	1.3
3:42:43 PM	600.0	499.2	502.6	1.3
3:42:44 PM	600.0	498.3	502.2	1.3
3:42:45 PM	600.0	499.2	502.9	1.3
3:42:46 PM	600.1	499.0	502.2	1.3
3:42:47 PM	600.1	500.1	502.2	1.3
3:42:48 PM	600.0	499.4	502.5	1.3
3:42:49 PM	600.0	499.5	502.6	1.3
Averages ->	**600.1**	**499.5**	**502.6**	**1.3**
			Maximum ->	**1.4**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 900 **Date** 6/13/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
8:29:35 AM	596.1	69.2	68.7	1.0
8:29:36 AM	596.2	70.9	69.9	1.0
8:29:37 AM	595.8	70.3	69.8	0.9
8:29:38 AM	596.1	70.0	69.4	1.0
8:29:39 AM	596.1	70.1	69.6	0.9
8:29:40 AM	596.1	69.9	70.5	0.9
8:29:41 AM	596.1	69.6	69.3	0.9
8:29:42 AM	596.2	70.3	68.2	0.8
8:29:43 AM	596.2	69.8	70.0	0.8
8:29:44 AM	596.3	70.3	70.5	0.7
8:29:45 AM	596.1	70.8	69.2	0.7
8:29:46 AM	596.2	69.7	68.5	0.8
8:29:47 AM	596.0	69.7	69.1	0.7
8:29:48 AM	596.2	68.9	69.0	0.7
8:29:49 AM	596.2	68.9	68.5	0.8
8:29:50 AM	596.3	69.5	68.8	0.7
8:29:51 AM	596.3	69.5	69.0	0.7
8:29:52 AM	596.2	69.6	69.4	0.7
8:29:53 AM	596.2	70.3	69.2	0.7
8:29:54 AM	596.2	69.6	68.8	0.6
8:29:55 AM	596.2	70.1	69.3	0.6
8:29:56 AM	596.2	69.4	68.1	0.7
8:29:57 AM	596.1	70.0	69.4	0.6
8:29:58 AM	596.2	69.4	69.9	0.5
8:29:59 AM	596.1	69.4	69.6	0.6
8:30:00 AM	596.1	70.8	70.1	0.6
8:30:01 AM	596.2	68.7	69.7	0.6
8:30:02 AM	596.1	70.0	70.4	0.5
8:30:03 AM	596.2	70.3	70.8	0.5
8:30:04 AM	596.1	69.6	69.4	0.6
8:30:05 AM	596.2	70.0	68.9	0.6
8:30:06 AM	596.1	69.6	69.2	0.5
8:30:07 AM	596.0	69.5	68.7	0.5
8:30:08 AM	596.1	70.1	69.6	0.5
8:30:09 AM	596.3	70.1	70.3	0.6
8:30:10 AM	596.1	70.0	69.1	0.5
8:30:11 AM	596.1	70.3	70.4	0.4
8:30:12 AM	596.2	70.7	70.2	0.4
8:30:13 AM	596.2	69.9	69.1	0.4
8:30:14 AM	596.3	69.8	69.2	0.4
8:30:15 AM	596.2	69.8	69.1	0.4
8:30:16 AM	596.2	70.5	69.3	0.3
8:30:17 AM	596.0	70.3	69.8	0.3
8:30:18 AM	596.1	70.0	69.3	0.2
8:30:19 AM	596.1	69.5	69.8	0.2
8:30:20 AM	596.3	69.4	68.7	0.2
8:30:21 AM	596.2	70.2	68.2	0.2
8:30:22 AM	596.2	69.5	68.8	0.2
8:30:23 AM	596.2	69.6	69.3	0.3
8:30:24 AM	596.1	70.6	69.2	0.2
8:30:25 AM	596.1	70.1	69.8	0.2
8:30:26 AM	596.1	69.4	68.7	0.2
8:30:27 AM	596.2	69.3	69.0	0.2
8:30:28 AM	596.2	70.0	70.4	0.1
8:30:29 AM	596.1	70.1	69.6	0.1
8:30:30 AM	596.2	69.1	68.4	0.1
8:30:31 AM	596.2	69.7	69.9	0.1
8:30:32 AM	596.2	70.3	69.7	0.1
8:30:33 AM	596.2	69.9	69.2	0.1
8:30:34 AM	596.1	69.9	70.0	0.1
Averages ->	**596.2**	**69.9**	**69.4**	**0.5**
			Maximum ->	**1.0**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 950 **Date** 6/13/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
9:13:43 AM	602.5	75.9	74.1	2.3
9:13:44 AM	602.4	76.3	72.7	2.3
9:13:45 AM	602.4	76.8	72.4	2.2
9:13:46 AM	602.5	75.7	73.7	2.2
9:13:47 AM	602.4	77.4	72.4	2.2
9:13:48 AM	602.3	76.5	72.2	2.2
9:13:49 AM	602.3	76.3	72.5	2.2
9:13:50 AM	602.4	75.8	72.3	2.2
9:13:51 AM	602.4	77.2	73.1	2.2
9:13:52 AM	602.4	76.7	72.7	2.2
9:13:53 AM	602.4	76.8	71.8	2.2
9:13:54 AM	602.2	75.4	73.3	2.2
9:13:55 AM	602.4	75.7	73.7	2.2
9:13:56 AM	602.5	76.4	71.6	2.2
9:13:57 AM	602.4	76.1	72.7	2.2
9:13:58 AM	602.3	75.5	72.0	2.2
9:13:59 AM	602.3	76.6	72.1	2.2
9:14:00 AM	602.3	77.4	73.3	2.2
9:14:01 AM	602.3	75.0	73.1	2.2
9:14:02 AM	602.4	76.6	73.0	2.2
9:14:03 AM	602.3	76.3	73.3	2.2
9:14:04 AM	602.4	76.6	73.2	2.2
9:14:05 AM	602.5	77.0	73.4	2.2
9:14:06 AM	602.3	76.0	73.6	2.2
9:14:07 AM	602.3	76.1	72.2	2.2
9:14:08 AM	602.3	76.8	72.6	2.2
9:14:09 AM	602.6	76.6	73.3	2.2
9:14:10 AM	602.4	76.6	72.0	2.2
9:14:11 AM	602.3	75.8	73.4	2.2
9:14:12 AM	602.2	77.4	72.5	2.2
9:14:13 AM	602.3	77.0	72.2	2.2
9:14:14 AM	602.3	76.2	72.6	2.2
9:14:15 AM	602.3	76.6	73.2	2.2
9:14:16 AM	602.3	75.9	71.8	2.2
9:14:17 AM	602.3	77.0	73.6	2.1
9:14:18 AM	602.3	76.9	71.6	2.1
9:14:19 AM	602.3	75.6	72.9	2.1
9:14:20 AM	602.4	75.9	72.7	2.1
9:14:21 AM	602.3	77.0	71.8	2.1
9:14:22 AM	602.3	76.1	72.7	2.1
9:14:23 AM	602.3	76.4	72.4	2.1
9:14:24 AM	602.3	75.2	72.9	2.1
9:14:25 AM	602.3	74.6	74.0	2.1
9:14:26 AM	602.3	76.8	72.0	2.1
9:14:27 AM	602.4	76.3	72.4	2.1
9:14:28 AM	602.3	76.3	73.6	2.1
9:14:29 AM	602.3	75.4	73.3	2.0
9:14:30 AM	602.4	76.6	73.0	2.1
9:14:31 AM	602.3	76.4	73.2	2.0
9:14:32 AM	602.4	75.9	73.4	2.0
9:14:33 AM	602.3	76.9	71.8	2.0
9:14:34 AM	602.3	76.8	73.2	2.0
9:14:35 AM	602.3	76.1	74.4	2.0
9:14:36 AM	602.4	76.6	72.4	1.9
9:14:37 AM	602.4	75.0	73.6	1.9
9:14:38 AM	602.3	76.6	73.4	2.0
9:14:39 AM	602.3	76.7	73.1	1.9
9:14:40 AM	602.3	75.3	73.6	1.9
9:14:41 AM	602.3	77.4	72.7	1.9
9:14:42 AM	602.4	76.8	72.4	1.9
Averages ->	**602.4**	**76.3**	**72.8**	**2.1**
			Maximum ->	**2.3**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 1000 **Date** 6/13/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
10:06:21 AM	597.4	80.6	74.7	1.5
10:06:22 AM	597.2	81.8	75.2	1.5
10:06:23 AM	597.4	81.3	76.3	1.4
10:06:24 AM	597.5	81.6	74.7	1.4
10:06:25 AM	597.3	81.1	75.2	1.4
10:06:26 AM	597.2	81.1	75.1	1.4
10:06:27 AM	597.4	81.1	75.1	1.4
10:06:28 AM	597.3	80.4	75.3	1.4
10:06:29 AM	597.4	80.3	76.2	1.3
10:06:30 AM	597.4	80.6	75.8	1.3
10:06:31 AM	597.4	80.7	73.5	1.3
10:06:32 AM	597.2	81.8	75.1	1.3
10:06:33 AM	597.3	80.5	74.6	1.3
10:06:34 AM	597.4	80.7	75.3	1.3
10:06:35 AM	597.5	81.8	75.1	1.2
10:06:36 AM	597.4	81.4	75.2	1.2
10:06:37 AM	597.3	81.9	75.6	1.2
10:06:38 AM	597.2	79.7	74.8	1.2
10:06:39 AM	597.4	80.1	75.3	1.2
10:06:40 AM	597.3	82.5	74.3	1.2
10:06:41 AM	597.4	82.2	74.7	1.1
10:06:42 AM	597.3	80.8	75.6	1.1
10:06:43 AM	597.2	80.5	74.7	1.1
10:06:44 AM	597.3	80.9	74.9	1.1
10:06:45 AM	597.3	81.4	75.2	1.1
10:06:46 AM	597.3	81.6	73.3	1.0
10:06:47 AM	597.4	81.1	74.4	1.0
10:06:48 AM	597.3	81.7	74.0	1.0
10:06:49 AM	597.3	81.5	75.0	1.0
10:06:50 AM	597.2	82.1	74.9	1.0
10:06:51 AM	597.3	81.4	74.5	1.0
10:06:52 AM	597.3	81.1	74.9	1.0
10:06:53 AM	597.3	80.2	75.0	1.0
10:06:54 AM	597.3	81.5	75.1	1.0
10:06:55 AM	597.2	80.9	74.0	1.0
10:06:56 AM	597.3	81.2	75.3	1.0
10:06:57 AM	597.5	80.2	74.8	1.0
10:06:58 AM	597.3	80.6	75.3	1.0
10:06:59 AM	597.3	80.3	75.2	0.9
10:07:00 AM	597.3	80.7	74.9	1.0
10:07:01 AM	597.3	81.6	74.4	1.0
10:07:02 AM	597.4	81.1	74.3	0.9
10:07:03 AM	597.3	80.9	74.7	0.9
10:07:04 AM	597.3	81.1	75.1	0.9
10:07:05 AM	597.4	82.4	76.0	0.9
10:07:06 AM	597.4	81.3	75.0	0.9
10:07:07 AM	597.2	80.2	75.6	0.9
10:07:08 AM	597.3	80.9	74.4	0.9
10:07:09 AM	597.5	81.2	75.8	0.9
10:07:10 AM	597.4	81.0	74.8	0.8
10:07:11 AM	597.2	81.6	75.3	0.8
10:07:12 AM	597.3	81.0	75.1	0.8
10:07:13 AM	597.2	80.9	75.3	0.8
10:07:14 AM	597.3	81.3	74.2	0.8
10:07:15 AM	597.4	80.6	74.4	0.8
10:07:16 AM	597.3	81.3	74.4	0.8
10:07:17 AM	597.4	79.8	75.8	0.8
10:07:18 AM	597.3	82.8	76.2	0.8
10:07:19 AM	597.2	81.3	75.3	0.8
10:07:20 AM	597.2	80.7	74.8	0.8
Averages ->	**597.3**	**81.1**	**75.0**	**1.1**
			Maximum ->	**1.5**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236
Cycle Number: 1050 **Date** 6/13/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
10:58:07 AM	603.3	86.3	78.0	0.6
10:58:08 AM	603.3	85.3	78.4	0.6
10:58:09 AM	603.3	85.3	77.7	0.6
10:58:10 AM	603.2	84.5	77.7	0.6
10:58:11 AM	603.4	85.5	78.3	0.5
10:58:12 AM	603.3	85.6	78.1	0.5
10:58:13 AM	603.2	85.4	78.3	0.5
10:58:14 AM	603.3	84.2	77.1	0.5
10:58:15 AM	603.3	84.8	77.5	0.5
10:58:16 AM	603.4	84.8	77.2	0.4
10:58:17 AM	603.5	85.6	78.2	0.4
10:58:18 AM	603.3	85.8	77.9	0.4
10:58:19 AM	603.3	85.8	78.7	0.4
10:58:20 AM	603.3	84.7	77.0	0.4
10:58:21 AM	603.2	84.8	78.4	0.3
10:58:22 AM	603.4	85.6	78.1	0.1
10:58:23 AM	603.3	84.7	78.8	0.1
10:58:24 AM	603.3	85.6	77.9	0.2
10:58:25 AM	603.3	84.9	78.1	0.2
10:58:26 AM	603.3	84.6	77.0	0.2
10:58:27 AM	603.3	85.1	79.2	0.2
10:58:28 AM	603.4	84.7	79.0	0.1
10:58:29 AM	603.2	85.8	78.3	0.1
10:58:30 AM	603.2	85.9	77.2	0.0
10:58:31 AM	603.3	85.7	78.3	0.1
10:58:32 AM	603.3	84.3	77.1	0.1
10:58:33 AM	603.4	86.3	77.9	0.1
10:58:34 AM	603.3	85.8	78.0	0.1
10:58:35 AM	603.3	85.6	78.5	0.1
10:58:36 AM	603.3	84.8	78.3	0.0
10:58:37 AM	603.3	85.6	77.7	0.1
10:58:38 AM	603.3	84.9	78.7	0.1
10:58:39 AM	603.2	85.5	77.7	0.1
10:58:40 AM	603.3	85.0	77.2	0.0
10:58:41 AM	603.3	86.1	77.5	0.1
10:58:42 AM	603.4	85.2	78.5	0.0
10:58:43 AM	603.4	86.1	78.7	0.0
10:58:44 AM	603.4	84.4	77.2	0.1
10:58:45 AM	603.3	86.0	77.8	0.2
10:58:46 AM	603.2	85.4	78.0	0.1
10:58:47 AM	603.2	85.4	77.9	0.2
10:58:48 AM	603.3	86.3	77.9	0.2
10:58:49 AM	603.3	85.2	78.6	0.3
10:58:50 AM	603.2	85.0	78.1	0.3
10:58:51 AM	603.3	84.4	77.4	0.3
10:58:52 AM	603.3	85.3	77.0	0.4
10:58:53 AM	603.5	83.2	77.6	0.4
10:58:54 AM	603.3	83.3	77.3	0.5
10:58:55 AM	603.4	85.0	77.0	0.5
10:58:56 AM	603.2	86.4	78.3	0.5
10:58:57 AM	603.4	84.4	78.0	0.6
10:58:58 AM	603.3	85.6	78.9	0.6
10:58:59 AM	603.3	85.1	77.9	0.7
10:59:00 AM	603.2	84.7	77.5	0.7
10:59:01 AM	603.2	84.9	78.0	0.8
10:59:02 AM	603.2	84.6	78.5	0.8
10:59:03 AM	603.3	85.3	78.1	0.8
10:59:04 AM	603.2	85.1	78.5	0.8
10:59:05 AM	603.3	85.4	77.7	0.9
10:59:06 AM	603.2	84.8	78.1	0.9
Averages ->	**603.3**	**85.2**	**78.0**	**0.4**
			Maximum ->	**0.9**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 1050 **Date** 6/13/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
1:28:29 PM	599.7	500.4	508.8	2.2
1:28:30 PM	599.3	499.0	508.1	2.1
1:28:31 PM	599.4	498.8	507.6	2.1
1:28:32 PM	599.5	499.6	508.3	2.0
1:28:33 PM	599.4	499.4	508.4	2.0
1:28:34 PM	599.6	499.0	508.5	1.9
1:28:35 PM	599.6	499.5	507.6	2.0
1:28:36 PM	599.7	500.2	508.6	1.9
1:28:37 PM	599.6	499.2	508.2	1.9
1:28:38 PM	599.5	499.2	508.7	2.4
1:28:39 PM	599.7	499.3	508.0	2.7
1:28:40 PM	599.6	500.6	508.4	2.8
1:28:41 PM	599.5	499.1	509.1	2.6
1:28:42 PM	599.6	499.4	509.2	2.4
1:28:43 PM	599.3	498.7	509.0	2.3
1:28:44 PM	599.6	499.5	508.4	2.3
1:28:45 PM	599.6	498.9	508.3	2.2
1:28:46 PM	599.7	499.1	508.2	2.1
1:28:47 PM	599.7	499.0	508.5	2.1
1:28:48 PM	599.8	499.3	509.8	2.2
1:28:49 PM	599.9	499.7	508.0	2.2
1:28:50 PM	599.9	499.2	507.7	2.2
1:28:51 PM	599.9	498.8	507.9	2.3
1:28:52 PM	600.0	499.6	507.8	2.3
1:28:53 PM	599.6	499.7	506.5	2.3
1:28:54 PM	599.9	499.1	509.6	2.3
1:28:55 PM	599.9	498.9	510.0	2.3
1:28:56 PM	600.0	500.2	508.0	2.3
1:28:57 PM	600.0	499.0	510.1	2.2
1:28:58 PM	600.1	499.0	508.4	2.3
1:28:59 PM	599.9	498.8	508.0	2.3
1:29:00 PM	600.0	499.6	508.8	2.3
1:29:01 PM	599.9	499.0	508.9	2.3
1:29:02 PM	600.0	499.3	509.2	2.2
1:29:03 PM	599.8	498.9	508.0	2.2
1:29:04 PM	600.0	499.6	508.4	2.2
1:29:05 PM	599.8	499.2	508.3	2.1
1:29:06 PM	599.8	498.3	508.4	2.2
1:29:07 PM	599.9	498.4	508.5	2.2
1:29:08 PM	599.9	497.7	508.7	2.3
1:29:09 PM	599.9	498.7	508.6	2.3
1:29:10 PM	599.9	498.3	508.8	2.3
1:29:11 PM	600.1	499.2	508.0	2.3
1:29:12 PM	600.0	499.9	509.8	2.4
1:29:13 PM	599.8	499.1	508.8	2.3
1:29:14 PM	600.0	499.6	508.6	2.3
1:29:15 PM	600.0	499.1	509.1	2.3
1:29:16 PM	600.0	499.7	509.2	2.2
1:29:17 PM	599.9	498.7	509.4	2.2
1:29:18 PM	600.0	499.4	508.4	2.2
1:29:19 PM	600.0	498.8	509.0	2.3
1:29:20 PM	599.9	498.5	508.4	2.3
1:29:21 PM	600.1	500.0	508.8	2.3
1:29:22 PM	600.1	499.5	507.6	2.3
1:29:23 PM	600.0	499.6	508.4	2.3
1:29:24 PM	600.1	499.6	508.5	2.3
1:29:25 PM	600.2	499.8	509.0	2.3
1:29:26 PM	600.1	499.2	508.2	2.2
1:29:27 PM	600.1	499.5	507.6	2.2
1:29:28 PM	600.2	500.5	509.5	2.1
Averages ->	**599.8**	**499.3**	**508.6**	**2.2**
			Maximum ->	**2.8**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 1100 **Date** 6/13/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
3:34:02 PM	599.1	499.8	509.5	1.5
3:34:03 PM	599.1	499.1	509.6	1.4
3:34:04 PM	599.0	499.3	509.8	1.4
3:34:05 PM	599.0	500.0	510.0	1.4
3:34:06 PM	598.9	498.9	509.1	1.3
3:34:07 PM	599.1	499.3	510.4	1.3
3:34:08 PM	598.9	499.5	509.1	1.3
3:34:09 PM	599.0	499.1	509.0	1.3
3:34:10 PM	598.9	499.5	510.1	1.2
3:34:11 PM	599.0	499.0	510.2	1.2
3:34:12 PM	599.0	499.2	509.2	1.3
3:34:13 PM	599.0	499.2	509.6	1.3
3:34:14 PM	599.1	499.1	509.3	1.3
3:34:15 PM	599.1	498.8	509.6	1.4
3:34:16 PM	599.0	498.5	510.3	1.4
3:34:17 PM	599.0	499.6	509.2	1.5
3:34:18 PM	599.0	498.7	509.5	1.5
3:34:19 PM	598.9	499.7	509.4	1.6
3:34:20 PM	598.9	498.6	509.5	1.6
3:34:21 PM	598.9	498.7	509.8	1.6
3:34:22 PM	599.0	499.3	509.5	1.7
3:34:23 PM	599.1	499.0	509.1	1.7
3:34:24 PM	599.1	500.0	509.7	1.7
3:34:25 PM	598.9	499.5	509.7	1.7
3:34:26 PM	598.9	499.4	509.6	1.6
3:34:27 PM	599.1	499.3	509.6	1.6
3:34:28 PM	598.9	499.5	508.4	1.5
3:34:29 PM	599.1	499.5	509.6	1.5
3:34:30 PM	599.0	498.8	510.2	1.5
3:34:31 PM	598.9	499.8	509.4	1.5
3:34:32 PM	599.0	498.8	509.2	1.4
3:34:33 PM	598.9	499.2	509.2	1.4
3:34:34 PM	598.9	499.4	509.4	1.4
3:34:35 PM	598.9	499.8	509.5	1.3
3:34:36 PM	599.1	499.6	510.4	1.3
3:34:37 PM	598.9	500.0	509.7	1.3
3:34:38 PM	598.9	499.8	510.2	1.3
3:34:39 PM	599.1	499.4	509.0	1.3
3:34:40 PM	599.0	499.3	509.8	1.3
3:34:41 PM	599.0	499.3	509.2	1.3
3:34:42 PM	599.0	499.5	509.6	1.3
3:34:43 PM	599.2	499.3	509.9	1.3
3:34:44 PM	598.9	499.1	509.3	1.3
3:34:45 PM	599.1	499.1	509.4	1.3
3:34:46 PM	599.1	499.6	510.2	1.3
3:34:47 PM	599.1	498.9	509.1	1.3
3:34:48 PM	599.1	499.8	509.6	1.4
3:34:49 PM	599.1	500.2	509.8	1.4
3:34:50 PM	599.1	499.8	509.0	1.4
3:34:51 PM	599.0	500.2	510.2	1.5
3:34:52 PM	599.2	499.4	510.0	1.5
3:34:53 PM	599.2	500.3	509.8	1.5
3:34:54 PM	599.1	499.0	509.0	1.5
3:34:55 PM	599.1	500.3	509.5	1.5
3:34:56 PM	599.2	500.2	509.9	1.6
3:34:57 PM	599.1	499.1	510.2	1.5
3:34:58 PM	599.1	500.0	509.6	1.5
3:34:59 PM	599.0	500.4	509.6	1.5
3:35:00 PM	599.1	500.0	509.8	1.5
3:35:01 PM	599.0	499.3	509.7	1.5
Averages ->	**599.0**	**499.4**	**509.6**	**1.4**
			Maximum ->	**1.7**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 1150 **Date** 6/13/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
4:26:41 PM	601.0	499.2	507.2	1.3
4:26:42 PM	600.9	499.4	508.5	1.3
4:26:43 PM	601.1	499.1	507.8	1.2
4:26:44 PM	600.9	499.4	507.5	1.2
4:26:45 PM	600.9	499.5	507.4	1.3
4:26:46 PM	600.9	499.6	507.6	1.2
4:26:47 PM	601.1	499.4	507.6	1.2
4:26:48 PM	600.9	499.4	507.8	1.2
4:26:49 PM	601.1	500.5	508.4	1.2
4:26:50 PM	601.1	499.6	508.7	1.2
4:26:51 PM	601.0	499.2	508.0	1.2
4:26:52 PM	601.0	498.9	506.7	1.2
4:26:53 PM	601.0	499.2	506.8	1.2
4:26:54 PM	601.1	499.4	506.8	1.2
4:26:55 PM	600.9	500.1	507.6	1.1
4:26:56 PM	601.0	499.0	507.7	1.1
4:26:57 PM	601.0	499.3	507.8	1.1
4:26:58 PM	601.1	499.2	507.4	1.1
4:26:59 PM	601.1	500.6	507.6	1.1
4:27:00 PM	601.0	500.2	507.8	1.1
4:27:01 PM	601.1	500.3	507.9	1.1
4:27:02 PM	601.0	499.4	507.1	1.1
4:27:03 PM	601.0	499.2	507.3	1.1
4:27:04 PM	601.0	499.7	507.5	1.1
4:27:05 PM	600.9	499.5	506.9	1.1
4:27:06 PM	600.9	499.1	507.2	1.0
4:27:07 PM	601.1	499.7	507.4	1.0
4:27:08 PM	601.0	499.5	507.7	1.1
4:27:09 PM	601.0	500.5	507.2	1.0
4:27:10 PM	600.9	499.1	507.7	1.1
4:27:11 PM	601.1	499.6	507.6	1.1
4:27:12 PM	600.9	499.8	506.8	1.1
4:27:13 PM	601.1	498.6	506.6	1.1
4:27:14 PM	601.0	499.6	508.0	1.1
4:27:15 PM	601.1	501.1	508.2	1.1
4:27:16 PM	601.0	499.6	506.9	1.2
4:27:17 PM	601.1	498.8	507.2	1.2
4:27:18 PM	601.1	500.4	507.9	1.2
4:27:19 PM	601.0	499.4	507.2	1.2
4:27:20 PM	601.1	500.2	508.3	1.2
4:27:21 PM	601.1	500.0	507.4	1.2
4:27:22 PM	601.0	499.9	507.4	1.2
4:27:23 PM	601.1	499.6	506.9	1.2
4:27:24 PM	601.1	499.2	508.4	1.2
4:27:25 PM	601.2	500.6	508.3	1.2
4:27:26 PM	601.0	500.0	507.8	1.2
4:27:27 PM	601.1	498.6	507.7	1.2
4:27:28 PM	601.0	498.6	506.9	1.2
4:27:29 PM	601.1	500.6	507.5	1.1
4:27:30 PM	601.1	499.7	508.8	1.2
4:27:31 PM	601.1	498.8	507.1	1.1
4:27:32 PM	601.0	499.4	507.5	1.1
4:27:33 PM	601.2	500.0	508.0	1.2
4:27:34 PM	601.2	499.6	508.3	1.2
4:27:35 PM	601.0	498.9	507.0	1.2
4:27:36 PM	601.1	499.2	508.1	1.2
4:27:37 PM	601.1	499.5	507.8	1.2
4:27:38 PM	601.1	500.4	508.2	1.2
4:27:39 PM	601.2	499.3	507.2	1.2
4:27:40 PM	601.1	499.5	508.6	1.2
Averages ->	**601.0**	**499.6**	**507.6**	**1.2**
			Maximum ->	**1.3**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 1200 **Date** 6/13/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
5:18:18 PM	597.1	499.7	504.8	0.8
5:18:19 PM	597.0	499.6	505.2	0.8
5:18:20 PM	597.2	499.4	504.8	0.8
5:18:21 PM	597.2	499.8	504.0	0.8
5:18:22 PM	597.2	499.9	504.4	0.8
5:18:23 PM	597.2	499.4	504.0	0.7
5:18:24 PM	597.3	500.2	505.1	0.7
5:18:25 PM	597.1	499.9	504.4	0.8
5:18:26 PM	597.2	499.7	505.0	0.8
5:18:27 PM	597.1	500.0	504.6	0.8
5:18:28 PM	597.2	500.0	503.9	0.8
5:18:29 PM	597.1	499.8	505.3	0.8
5:18:30 PM	597.2	499.3	504.0	0.8
5:18:31 PM	597.2	498.3	504.8	0.8
5:18:32 PM	597.2	499.4	504.6	0.8
5:18:33 PM	597.2	500.2	505.2	0.7
5:18:34 PM	597.2	499.6	504.8	0.8
5:18:35 PM	597.1	498.4	504.9	0.7
5:18:36 PM	597.0	499.6	504.0	0.7
5:18:37 PM	597.1	498.4	504.9	0.7
5:18:38 PM	597.3	499.4	505.0	0.7
5:18:39 PM	597.2	498.9	505.7	0.7
5:18:40 PM	597.2	499.8	504.2	0.8
5:18:41 PM	597.1	499.6	505.2	0.8
5:18:42 PM	597.2	499.0	504.6	0.8
5:18:43 PM	597.1	499.8	504.0	0.8
5:18:44 PM	597.1	500.3	504.2	0.8
5:18:45 PM	597.2	500.1	504.8	0.8
5:18:46 PM	597.1	499.2	504.6	0.8
5:18:47 PM	597.1	498.8	504.9	0.7
5:18:48 PM	597.1	499.1	504.6	0.7
5:18:49 PM	597.1	499.5	505.2	0.7
5:18:50 PM	597.0	499.8	505.4	0.7
5:18:51 PM	597.2	499.2	504.9	0.7
5:18:52 PM	597.1	499.3	504.6	0.7
5:18:53 PM	597.1	498.7	504.4	0.7
5:18:54 PM	597.1	499.2	505.0	0.7
5:18:55 PM	597.0	499.2	504.6	0.7
5:18:56 PM	597.1	499.5	504.5	0.7
5:18:57 PM	597.1	499.8	504.8	0.7
5:18:58 PM	597.2	498.7	503.9	0.7
5:18:59 PM	597.2	499.8	505.5	0.7
5:19:00 PM	597.2	499.2	505.6	0.7
5:19:01 PM	597.2	500.5	505.7	0.7
5:19:02 PM	597.1	499.3	505.4	0.7
5:19:03 PM	597.2	499.4	505.3	0.7
5:19:04 PM	597.1	499.7	504.4	0.7
5:19:05 PM	597.0	499.5	505.2	0.7
5:19:06 PM	597.2	499.1	504.9	0.7
5:19:07 PM	597.1	500.0	505.9	0.7
5:19:08 PM	597.2	500.0	504.4	0.8
5:19:09 PM	597.2	499.1	505.4	0.8
5:19:10 PM	597.1	499.7	504.7	0.8
5:19:11 PM	597.1	499.4	505.2	0.8
5:19:12 PM	597.1	499.2	505.8	0.8
5:19:13 PM	597.1	499.4	506.4	0.8
5:19:14 PM	597.2	499.2	505.3	0.8
5:19:15 PM	597.3	499.8	505.2	0.9
5:19:16 PM	597.3	498.8	505.5	0.9
5:19:17 PM	597.2	498.8	504.4	0.9
Averages ->	**597.1**	**499.5**	**504.9**	**0.8**
			Maximum ->	**0.9**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 1200 **Date** 6/14/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
8:23:53 AM	603.2	85.0	91.1	1.8
8:23:54 AM	603.1	85.6	91.1	1.9
8:23:55 AM	603.1	84.8	89.0	1.9
8:23:56 AM	603.1	83.9	90.4	2.0
8:23:57 AM	603.1	84.7	91.2	2.0
8:23:58 AM	603.3	85.2	91.1	2.1
8:23:59 AM	603.1	84.9	90.8	2.1
8:24:00 AM	603.0	84.2	90.5	2.1
8:24:01 AM	603.0	84.8	90.9	2.1
8:24:02 AM	603.2	84.6	90.7	2.1
8:24:03 AM	603.0	84.1	91.3	2.1
8:24:04 AM	603.3	84.2	90.8	2.1
8:24:05 AM	603.2	84.6	90.4	2.1
8:24:06 AM	603.2	84.6	90.1	2.1
8:24:07 AM	603.0	85.0	91.2	2.1
8:24:08 AM	603.1	85.4	90.0	2.1
8:24:09 AM	603.1	84.4	91.0	2.1
8:24:10 AM	603.0	84.4	90.8	2.1
8:24:11 AM	603.1	85.5	91.1	2.1
8:24:12 AM	603.2	84.8	90.5	2.0
8:24:13 AM	603.0	84.8	90.8	2.0
8:24:14 AM	603.0	84.3	90.3	2.1
8:24:15 AM	603.0	85.2	91.5	2.0
8:24:16 AM	603.0	83.9	90.8	2.0
8:24:17 AM	603.2	85.4	90.5	2.0
8:24:18 AM	603.1	85.0	89.9	2.0
8:24:19 AM	603.2	85.4	91.3	2.1
8:24:20 AM	603.2	84.6	91.5	2.1
8:24:21 AM	603.2	84.6	90.2	2.0
8:24:22 AM	603.1	84.2	91.0	2.0
8:24:23 AM	603.1	84.1	90.8	2.0
8:24:24 AM	603.3	84.8	90.8	2.1
8:24:25 AM	603.0	85.2	90.9	2.1
8:24:26 AM	603.2	84.8	90.7	2.0
8:24:27 AM	603.1	84.6	90.2	2.0
8:24:28 AM	602.9	84.6	89.9	2.1
8:24:29 AM	603.1	84.4	90.6	2.0
8:24:30 AM	603.2	84.5	90.1	2.0
8:24:31 AM	603.2	85.0	91.4	2.0
8:24:32 AM	603.1	83.9	90.4	2.0
8:24:33 AM	603.1	84.8	89.3	2.0
8:24:34 AM	603.1	83.7	90.5	2.0
8:24:35 AM	603.2	84.7	89.9	2.0
8:24:36 AM	603.1	84.2	91.4	2.0
8:24:37 AM	603.3	84.8	91.1	2.0
8:24:38 AM	603.0	84.6	91.2	2.0
8:24:39 AM	603.1	84.2	89.2	2.0
8:24:40 AM	603.1	84.7	91.4	2.0
8:24:41 AM	603.1	84.5	91.0	2.0
8:24:42 AM	603.0	84.2	90.8	2.0
8:24:43 AM	603.0	84.7	90.2	2.0
8:24:44 AM	603.2	84.9	91.8	2.0
8:24:45 AM	603.1	84.5	89.6	1.9
8:24:46 AM	603.2	85.0	90.8	2.0
8:24:47 AM	603.0	84.4	91.1	1.9
8:24:48 AM	603.1	85.3	91.0	1.9
8:24:49 AM	603.1	85.0	89.9	1.9
8:24:50 AM	603.2	85.2	91.0	2.0
8:24:51 AM	603.1	84.7	90.7	1.9
8:24:52 AM	602.9	85.5	90.5	2.0
Averages ->	**603.1**	**84.7**	**90.7**	**2.0**
			Maximum ->	**2.1**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 1250 **Date** 6/14/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
9:23:33 AM	604.4	92.3	92.1	1.6
9:23:34 AM	604.4	91.4	91.9	1.6
9:23:35 AM	604.4	92.1	91.6	1.6
9:23:36 AM	604.4	92.5	92.0	1.6
9:23:37 AM	604.3	93.3	91.5	1.6
9:23:38 AM	604.4	92.8	91.7	1.6
9:23:39 AM	604.4	92.3	91.0	1.6
9:23:40 AM	604.3	91.7	91.6	1.6
9:23:41 AM	604.4	92.3	92.5	1.6
9:23:42 AM	604.4	92.1	91.4	1.6
9:23:43 AM	604.4	93.4	91.7	1.6
9:23:44 AM	604.5	92.1	91.9	1.6
9:23:45 AM	604.5	91.9	91.9	1.6
9:23:46 AM	604.4	92.7	92.5	1.6
9:23:47 AM	604.3	92.1	90.6	1.6
9:23:48 AM	604.4	92.1	91.7	1.6
9:23:49 AM	604.4	92.1	93.0	1.6
9:23:50 AM	604.5	91.9	91.6	1.6
9:23:51 AM	604.4	91.9	92.2	1.6
9:23:52 AM	604.3	93.3	91.4	1.6
9:23:53 AM	604.3	91.4	90.7	1.6
9:23:54 AM	604.4	92.3	90.8	1.6
9:23:55 AM	604.2	92.3	92.4	1.6
9:23:56 AM	604.4	92.3	92.0	1.6
9:23:57 AM	604.5	91.9	91.5	1.6
9:23:58 AM	604.4	93.0	91.8	1.6
9:23:59 AM	604.5	92.3	91.6	1.6
9:24:00 AM	604.4	91.9	92.8	1.6
9:24:01 AM	604.4	92.2	90.8	1.6
9:24:02 AM	604.4	91.2	91.8	1.6
9:24:03 AM	604.3	92.6	91.5	1.6
9:24:04 AM	604.3	92.4	91.7	1.6
9:24:05 AM	604.4	91.9	91.7	1.6
9:24:06 AM	604.3	92.8	91.2	1.6
9:24:07 AM	604.4	91.9	92.1	1.6
9:24:08 AM	604.4	92.2	92.6	1.6
9:24:09 AM	604.3	91.7	91.8	1.6
9:24:10 AM	604.2	93.2	91.6	1.6
9:24:11 AM	604.5	91.0	92.6	1.6
9:24:12 AM	604.3	91.6	90.8	1.6
9:24:13 AM	604.4	92.9	91.9	1.6
9:24:14 AM	604.4	92.1	92.2	1.6
9:24:15 AM	604.3	92.4	92.3	1.6
9:24:16 AM	604.4	92.5	91.9	1.6
9:24:17 AM	604.4	91.7	91.2	1.6
9:24:18 AM	604.3	91.1	91.0	1.6
9:24:19 AM	604.4	92.5	91.9	1.6
9:24:20 AM	604.4	91.7	92.1	1.6
9:24:21 AM	604.3	92.1	91.5	1.6
9:24:22 AM	604.4	92.1	91.2	1.6
9:24:23 AM	604.4	91.7	91.1	1.6
9:24:24 AM	604.4	92.3	91.5	1.6
9:24:25 AM	604.4	92.0	93.0	1.6
9:24:26 AM	604.5	92.3	91.8	1.6
9:24:27 AM	604.4	91.9	92.1	1.6
9:24:28 AM	604.3	91.9	92.0	1.6
9:24:29 AM	604.3	91.1	91.0	1.6
9:24:30 AM	604.2	91.6	91.9	1.6
9:24:31 AM	604.4	91.6	91.1	1.6
9:24:32 AM	604.4	92.1	91.6	1.6
Averages ->	**604.4**	**92.1**	**91.7**	**1.6**
			Maximum ->	**1.6**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 1300 **Date** 6/14/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
10:16:26 AM	597.8	94.9	90.3	6.8
10:16:27 AM	597.9	95.5	90.6	6.7
10:16:28 AM	597.7	95.4	90.2	6.7
10:16:29 AM	597.7	95.5	90.1	6.7
10:16:30 AM	597.8	94.7	90.1	6.7
10:16:31 AM	597.9	94.0	89.9	6.7
10:16:32 AM	597.8	94.7	90.2	6.7
10:16:33 AM	597.7	94.4	90.0	6.7
10:16:34 AM	597.8	94.4	90.1	6.6
10:16:35 AM	597.9	94.2	90.2	6.7
10:16:36 AM	597.8	95.0	89.7	6.7
10:16:37 AM	597.9	94.5	91.0	6.7
10:16:38 AM	597.9	95.1	90.4	6.7
10:16:39 AM	597.9	94.3	90.8	6.8
10:16:40 AM	597.9	94.0	91.2	6.7
10:16:41 AM	597.7	94.9	91.4	6.8
10:16:42 AM	597.9	94.7	89.4	6.7
10:16:43 AM	597.9	96.3	89.8	6.6
10:16:44 AM	597.9	94.8	89.7	6.7
10:16:45 AM	598.0	95.1	90.7	6.7
10:16:46 AM	597.8	94.5	90.3	6.8
10:16:47 AM	597.8	94.6	90.4	6.7
10:16:48 AM	597.7	94.8	90.8	6.7
10:16:49 AM	597.9	95.2	91.4	6.7
10:16:50 AM	597.9	94.3	90.4	6.7
10:16:51 AM	597.8	95.2	89.7	6.8
10:16:52 AM	597.8	94.4	89.9	6.8
10:16:53 AM	597.9	93.4	91.2	6.8
10:16:54 AM	597.8	93.8	90.8	6.8
10:16:55 AM	597.7	94.0	90.3	6.8
10:16:56 AM	597.9	94.4	90.3	6.8
10:16:57 AM	597.7	94.7	90.4	6.8
10:16:58 AM	597.8	94.8	90.5	6.7
10:16:59 AM	597.7	95.6	89.2	6.8
10:17:00 AM	597.8	95.1	90.5	6.8
10:17:01 AM	597.7	93.7	91.0	6.8
10:17:02 AM	597.9	94.9	90.9	6.7
10:17:03 AM	598.0	95.0	90.3	6.7
10:17:04 AM	597.9	95.2	89.7	6.7
10:17:05 AM	597.9	93.7	89.4	6.8
10:17:06 AM	597.7	94.0	90.1	6.8
10:17:07 AM	597.7	94.4	89.4	6.7
10:17:08 AM	597.8	94.6	89.8	6.7
10:17:09 AM	597.7	94.2	89.8	6.8
10:17:10 AM	597.8	94.4	89.4	6.7
10:17:11 AM	597.8	94.6	90.2	6.7
10:17:12 AM	597.8	93.8	89.9	6.7
10:17:13 AM	597.5	94.7	89.9	6.8
10:17:14 AM	597.8	94.8	90.1	6.8
10:17:15 AM	597.7	94.5	91.3	6.8
10:17:16 AM	597.9	93.6	90.8	6.8
10:17:17 AM	597.8	93.8	90.5	6.7
10:17:18 AM	597.8	94.3	89.9	6.8
10:17:19 AM	596.9	95.1	89.7	6.8
10:17:20 AM	597.8	95.2	90.7	6.8
10:17:21 AM	597.8	94.0	90.4	6.8
10:17:22 AM	597.8	93.6	90.2	6.7
10:17:23 AM	597.9	94.3	89.4	6.7
10:17:24 AM	597.8	94.2	91.3	6.7
10:17:25 AM	597.6	95.1	90.4	6.7
Averages ->	**597.8**	**94.6**	**90.3**	**6.7**
			Maximum ->	**6.8**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 1350 **Date** 6/14/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
11:14:31 AM	599.2	94.0	92.9	20.8
11:14:32 AM	599.1	94.4	93.4	20.8
11:14:33 AM	599.2	93.9	91.4	20.8
11:14:34 AM	599.2	94.4	91.3	20.8
11:14:35 AM	599.0	94.9	91.1	20.8
11:14:36 AM	599.0	94.4	91.3	20.8
11:14:37 AM	598.9	94.2	91.0	21.0
11:14:38 AM	599.1	94.3	91.6	21.2
11:14:39 AM	599.1	94.1	92.2	21.2
11:14:40 AM	599.1	94.7	91.8	21.0
11:14:41 AM	599.1	94.5	91.9	21.0
11:14:42 AM	599.1	94.3	92.5	21.1
11:14:43 AM	599.1	93.6	92.1	21.1
11:14:44 AM	599.1	94.7	91.4	21.1
11:14:45 AM	599.0	94.3	91.6	21.1
11:14:46 AM	599.0	94.9	91.7	21.1
11:14:47 AM	599.1	94.0	90.8	21.1
11:14:48 AM	599.1	92.9	91.7	21.2
11:14:49 AM	598.8	94.7	90.4	21.2
11:14:50 AM	599.1	93.6	90.8	21.2
11:14:51 AM	599.0	94.2	91.9	21.2
11:14:52 AM	599.1	93.8	90.8	21.2
11:14:53 AM	598.9	94.5	91.9	21.2
11:14:54 AM	598.8	93.5	91.2	21.2
11:14:55 AM	598.8	93.6	92.2	21.2
11:14:56 AM	598.9	94.0	91.1	21.2
11:14:57 AM	599.0	94.8	90.2	21.3
11:14:58 AM	598.8	93.3	92.5	21.3
11:14:59 AM	598.9	94.4	90.7	21.3
11:15:00 AM	598.9	93.3	91.6	21.3
11:15:01 AM	599.0	94.7	90.8	21.4
11:15:02 AM	598.9	93.3	91.3	21.4
11:15:03 AM	598.9	94.4	92.0	21.3
11:15:04 AM	598.9	94.0	90.8	21.3
11:15:05 AM	598.9	94.3	91.4	21.3
11:15:06 AM	599.0	93.8	90.8	21.4
11:15:07 AM	599.1	93.9	90.6	21.6
11:15:08 AM	598.9	93.5	90.9	21.4
11:15:09 AM	598.9	93.6	91.6	21.3
11:15:10 AM	598.9	94.2	91.0	21.4
11:15:11 AM	598.9	93.7	91.9	21.4
11:15:12 AM	598.9	94.1	91.0	21.5
11:15:13 AM	598.9	94.2	91.7	21.4
11:15:14 AM	598.7	93.9	91.2	21.5
11:15:15 AM	598.9	94.3	90.3	21.5
11:15:16 AM	599.0	94.0	91.3	21.5
11:15:17 AM	598.7	93.6	90.4	21.6
11:15:18 AM	598.9	94.4	90.5	21.5
11:15:19 AM	598.8	94.0	91.5	21.5
11:15:20 AM	598.9	93.8	91.0	21.5
11:15:21 AM	598.8	93.6	91.3	21.6
11:15:22 AM	599.0	93.5	90.9	21.7
11:15:23 AM	598.7	93.7	90.6	21.5
11:15:24 AM	598.8	94.4	90.3	21.5
11:15:25 AM	598.8	94.0	90.8	21.6
11:15:26 AM	598.8	94.1	90.8	21.6
11:15:27 AM	598.9	94.0	91.7	21.6
11:15:28 AM	598.9	94.4	91.2	21.7
11:15:29 AM	598.8	92.9	90.8	21.7
11:15:30 AM	598.7	95.1	89.4	21.7
Averages ->	**598.9**	**94.1**	**91.3**	**21.3**
			Maximum ->	**21.7**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 1350 **Date** 6/14/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
1:35:56 PM	601.8	499.5	500.8	4.8
1:35:57 PM	601.9	498.5	501.6	4.8
1:35:58 PM	601.9	499.1	500.9	4.7
1:35:59 PM	601.8	499.4	501.8	4.7
1:36:00 PM	602.0	498.4	501.4	4.7
1:36:01 PM	601.8	498.5	502.0	4.7
1:36:02 PM	601.8	499.7	500.8	4.7
1:36:03 PM	601.9	498.7	501.6	4.6
1:36:04 PM	601.9	499.3	501.3	4.6
1:36:05 PM	601.9	499.5	500.8	4.6
1:36:06 PM	601.9	499.1	501.1	4.6
1:36:07 PM	602.0	499.4	501.4	4.6
1:36:08 PM	602.0	499.1	502.1	4.6
1:36:09 PM	601.8	498.8	501.8	4.6
1:36:10 PM	601.9	498.8	501.2	4.5
1:36:11 PM	601.9	499.5	501.6	4.5
1:36:12 PM	601.9	498.4	500.9	4.5
1:36:13 PM	601.9	499.3	501.5	4.5
1:36:14 PM	601.8	499.4	501.5	4.5
1:36:15 PM	602.0	498.7	502.8	4.5
1:36:16 PM	602.0	499.3	501.0	4.5
1:36:17 PM	601.9	498.7	501.7	4.5
1:36:18 PM	601.9	498.9	502.1	4.5
1:36:19 PM	601.9	499.1	501.4	4.5
1:36:20 PM	601.8	499.5	501.6	4.4
1:36:21 PM	602.0	499.5	500.6	4.4
1:36:22 PM	601.9	499.6	501.2	4.4
1:36:23 PM	601.9	499.4	501.4	4.4
1:36:24 PM	602.0	498.3	502.4	4.4
1:36:25 PM	602.1	499.6	500.8	4.4
1:36:26 PM	602.0	499.7	501.6	4.4
1:36:27 PM	602.0	498.9	501.9	4.3
1:36:28 PM	602.1	500.1	501.1	4.3
1:36:29 PM	602.0	499.1	500.9	4.3
1:36:30 PM	601.6	500.1	501.6	4.3
1:36:31 PM	601.9	499.1	503.2	4.3
1:36:32 PM	602.1	499.3	501.8	4.3
1:36:33 PM	602.1	499.4	502.2	4.3
1:36:34 PM	602.2	499.3	501.7	4.3
1:36:35 PM	602.0	499.7	501.6	4.3
1:36:36 PM	602.2	499.5	500.6	4.3
1:36:37 PM	602.2	499.7	502.1	4.3
1:36:38 PM	602.1	499.2	501.5	4.3
1:36:39 PM	602.0	498.9	502.0	4.3
1:36:40 PM	602.1	499.1	502.6	4.3
1:36:41 PM	602.1	499.4	501.2	4.2
1:36:42 PM	602.2	498.7	501.3	4.2
1:36:43 PM	602.1	499.1	501.0	4.2
1:36:44 PM	602.1	499.7	502.4	4.3
1:36:45 PM	602.3	499.9	501.8	4.3
1:36:46 PM	602.3	499.3	502.4	4.3
1:36:47 PM	602.2	499.4	501.3	4.2
1:36:48 PM	602.2	499.3	502.4	4.2
1:36:49 PM	602.3	498.8	502.3	4.2
1:36:50 PM	602.4	498.8	502.4	4.2
1:36:51 PM	602.4	499.2	501.6	4.2
1:36:52 PM	602.3	498.5	501.7	4.2
1:36:53 PM	602.4	498.7	503.0	4.2
1:36:54 PM	602.3	500.0	500.9	4.2
1:36:55 PM	602.3	499.6	502.6	4.2
Averages ->	**602.0**	**499.2**	**501.6**	**4.4**
			Maximum ->	**4.8**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 1400 **Date** 6/14/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
2:28:24 PM	597.7	498.0	505.2	4.3
2:28:25 PM	597.6	497.7	506.1	4.3
2:28:26 PM	597.6	498.9	505.8	4.2
2:28:27 PM	597.8	499.5	506.3	4.2
2:28:28 PM	597.8	499.2	505.8	4.2
2:28:29 PM	597.6	499.5	506.4	4.3
2:28:30 PM	597.7	498.3	505.6	4.3
2:28:31 PM	597.6	500.0	505.4	4.3
2:28:32 PM	597.6	498.7	505.0	4.3
2:28:33 PM	597.8	499.1	505.5	4.3
2:28:34 PM	597.7	498.8	505.6	4.3
2:28:35 PM	597.8	499.5	506.3	4.3
2:28:36 PM	597.7	499.6	506.1	4.3
2:28:37 PM	597.9	499.1	505.2	4.3
2:28:38 PM	597.9	499.9	506.3	4.3
2:28:39 PM	597.8	499.6	505.4	4.3
2:28:40 PM	597.8	498.7	504.8	4.3
2:28:41 PM	597.8	498.9	505.8	4.3
2:28:42 PM	597.9	498.8	505.3	4.3
2:28:43 PM	597.7	498.3	506.1	4.3
2:28:44 PM	597.9	499.5	506.2	4.3
2:28:45 PM	598.0	499.5	506.3	4.3
2:28:46 PM	598.0	499.4	506.7	4.3
2:28:47 PM	597.9	499.2	505.4	4.3
2:28:48 PM	597.9	500.2	505.3	4.3
2:28:49 PM	597.9	498.9	506.0	4.3
2:28:50 PM	597.8	499.6	506.7	4.3
2:28:51 PM	597.9	499.3	506.3	4.3
2:28:52 PM	597.9	499.6	505.8	4.3
2:28:53 PM	589.2	499.0	506.7	4.4
2:28:54 PM	597.9	499.3	506.6	4.4
2:28:55 PM	598.0	500.3	507.0	4.4
2:28:56 PM	597.9	499.9	506.5	4.4
2:28:57 PM	597.9	500.1	505.6	4.4
2:28:58 PM	598.0	499.2	506.4	4.4
2:28:59 PM	598.0	499.8	506.2	4.4
2:29:00 PM	597.9	499.5	506.3	4.4
2:29:01 PM	598.0	499.8	506.1	4.4
2:29:02 PM	598.0	499.3	506.4	4.4
2:29:03 PM	597.9	500.4	505.1	4.4
2:29:04 PM	598.1	499.1	505.9	4.4
2:29:05 PM	598.1	499.9	506.4	4.4
2:29:06 PM	598.0	499.2	506.2	4.4
2:29:07 PM	597.9	499.7	505.0	4.4
2:29:08 PM	598.1	499.1	506.2	4.4
2:29:09 PM	598.1	499.1	506.1	4.4
2:29:10 PM	598.1	498.9	505.7	4.4
2:29:11 PM	598.1	500.3	506.6	4.4
2:29:12 PM	598.0	499.3	507.0	4.4
2:29:13 PM	598.1	499.7	506.4	4.4
2:29:14 PM	598.0	499.9	506.3	4.4
2:29:15 PM	598.1	499.1	505.7	4.4
2:29:16 PM	598.0	500.0	506.7	4.4
2:29:17 PM	598.1	498.2	506.5	4.4
2:29:18 PM	598.1	499.1	506.7	4.4
2:29:19 PM	597.9	498.7	505.5	4.4
2:29:20 PM	598.0	498.9	506.4	4.4
2:29:21 PM	598.1	499.1	506.0	4.4
2:29:22 PM	598.0	498.5	505.7	4.5
2:29:23 PM	598.0	500.0	506.5	4.5
Averages ->	**597.8**	**499.3**	**506.0**	**4.4**
			Maximum ->	**4.5**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 1450 **Date** 6/14/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
3:25:17 PM	606.4	499.7	506.3	3.8
3:25:18 PM	606.5	500.3	507.2	3.8
3:25:19 PM	606.4	500.1	507.1	3.8
3:25:20 PM	606.4	499.5	506.9	3.8
3:25:21 PM	606.2	499.9	506.6	3.8
3:25:22 PM	606.4	499.6	506.9	3.9
3:25:23 PM	606.4	499.9	506.5	3.9
3:25:24 PM	606.4	499.3	506.0	3.9
3:25:25 PM	606.5	499.5	506.1	3.9
3:25:26 PM	606.4	500.0	506.3	3.8
3:25:27 PM	606.5	500.3	507.4	3.9
3:25:28 PM	606.5	499.3	506.9	3.9
3:25:29 PM	606.6	499.5	507.5	3.9
3:25:30 PM	606.5	499.7	506.5	3.9
3:25:31 PM	606.5	499.1	506.2	3.9
3:25:32 PM	606.5	499.8	507.1	3.9
3:25:33 PM	606.6	499.3	506.2	3.9
3:25:34 PM	606.5	499.4	506.6	3.9
3:25:35 PM	606.6	499.9	507.5	3.9
3:25:36 PM	606.6	499.3	506.5	3.9
3:25:37 PM	606.7	500.1	506.7	3.9
3:25:38 PM	606.7	499.4	507.7	4.0
3:25:39 PM	606.5	500.5	506.7	4.0
3:25:40 PM	606.6	499.6	506.5	4.0
3:25:41 PM	606.5	498.6	506.1	4.0
3:25:42 PM	606.7	499.1	507.2	4.0
3:25:43 PM	606.6	499.4	506.9	4.0
3:25:44 PM	606.5	499.1	507.6	4.1
3:25:45 PM	606.8	499.8	507.1	4.1
3:25:46 PM	606.8	499.8	507.8	4.1
3:25:47 PM	606.7	499.3	506.6	4.1
3:25:48 PM	606.8	499.2	506.9	4.1
3:25:49 PM	606.7	499.9	506.5	4.1
3:25:50 PM	606.6	499.1	507.7	4.1
3:25:51 PM	606.5	499.3	507.6	4.1
3:25:52 PM	606.7	499.7	508.2	4.1
3:25:53 PM	606.6	499.3	507.0	4.1
3:25:54 PM	606.6	498.7	506.9	4.1
3:25:55 PM	606.5	500.2	507.3	4.1
3:25:56 PM	606.7	498.5	507.1	4.1
3:25:57 PM	606.7	499.9	507.7	4.1
3:25:58 PM	606.7	498.0	507.4	4.2
3:25:59 PM	606.7	499.3	506.9	4.2
3:26:00 PM	606.7	499.2	507.5	4.2
3:26:01 PM	606.7	499.2	507.3	4.2
3:26:02 PM	606.6	499.7	507.1	4.2
3:26:03 PM	606.7	499.5	507.3	4.2
3:26:04 PM	606.6	499.1	507.0	4.2
3:26:05 PM	606.8	498.3	508.5	4.2
3:26:06 PM	606.6	498.9	506.7	4.2
3:26:07 PM	606.7	498.7	507.0	4.2
3:26:08 PM	606.7	499.1	506.9	4.2
3:26:09 PM	606.7	498.9	506.7	4.2
3:26:10 PM	606.8	498.5	506.8	4.2
3:26:11 PM	606.5	499.5	508.6	4.2
3:26:12 PM	606.7	498.6	506.7	4.2
3:26:13 PM	606.6	498.4	506.4	4.2
3:26:14 PM	606.6	499.2	507.0	4.2
3:26:15 PM	606.6	499.3	507.5	4.3
3:26:16 PM	606.7	499.5	507.9	4.3
Averages ->	**606.6**	**499.4**	**507.0**	**4.0**
			Maximum ->	**4.3**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 1500 **Date** 6/14/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
4:27:03 PM	601.1	499.1	507.9	7.6
4:27:04 PM	601.0	499.5	507.7	7.6
4:27:05 PM	601.0	498.3	507.0	7.6
4:27:06 PM	600.9	498.9	506.9	7.6
4:27:07 PM	601.0	498.9	508.1	7.6
4:27:08 PM	600.9	499.0	508.5	7.6
4:27:09 PM	601.0	498.7	507.1	7.6
4:27:10 PM	601.0	499.3	507.7	7.6
4:27:11 PM	601.0	498.9	507.2	7.6
4:27:12 PM	601.0	498.7	507.5	7.6
4:27:13 PM	601.0	498.5	507.5	7.6
4:27:14 PM	601.0	499.9	507.7	7.7
4:27:15 PM	600.8	499.6	508.0	7.7
4:27:16 PM	601.1	498.8	506.5	7.7
4:27:17 PM	601.3	499.5	507.9	7.7
4:27:18 PM	601.1	498.9	507.3	7.6
4:27:19 PM	601.2	498.9	507.3	7.6
4:27:20 PM	601.1	499.0	507.9	7.7
4:27:21 PM	601.0	498.8	507.1	7.7
4:27:22 PM	601.2	498.9	507.6	7.7
4:27:23 PM	600.9	499.5	507.7	7.7
4:27:24 PM	601.2	499.7	507.9	7.7
4:27:25 PM	601.2	500.4	508.6	7.7
4:27:26 PM	601.2	499.3	508.0	7.7
4:27:27 PM	601.1	499.0	507.5	7.7
4:27:28 PM	601.1	500.1	508.2	7.7
4:27:29 PM	601.3	499.1	507.9	7.7
4:27:30 PM	601.2	499.3	507.5	7.7
4:27:31 PM	601.3	498.9	508.7	7.7
4:27:32 PM	601.0	499.7	508.1	7.7
4:27:33 PM	601.4	498.9	507.8	7.6
4:27:34 PM	601.2	501.0	507.7	7.6
4:27:35 PM	601.3	500.4	507.8	7.6
4:27:36 PM	601.4	498.9	507.3	7.6
4:27:37 PM	601.3	499.0	506.5	7.7
4:27:38 PM	601.3	499.9	508.4	7.7
4:27:39 PM	601.4	499.7	507.7	7.7
4:27:40 PM	601.2	500.1	508.6	7.7
4:27:41 PM	601.4	499.7	508.5	7.7
4:27:42 PM	601.4	499.0	507.9	7.7
4:27:43 PM	601.5	498.4	506.9	7.7
4:27:44 PM	601.6	499.3	508.5	7.7
4:27:45 PM	601.3	498.9	508.3	7.7
4:27:46 PM	601.4	498.6	507.7	7.7
4:27:47 PM	601.5	499.2	508.0	7.7
4:27:48 PM	601.5	500.4	508.6	7.8
4:27:49 PM	601.5	498.5	507.9	7.7
4:27:50 PM	601.3	500.1	508.3	7.7
4:27:51 PM	601.5	499.2	507.9	7.8
4:27:52 PM	601.5	500.4	509.1	7.8
4:27:53 PM	601.3	499.6	508.5	7.8
4:27:54 PM	601.6	499.3	507.7	7.8
4:27:55 PM	601.5	499.9	507.3	7.8
4:27:56 PM	601.4	499.9	509.1	7.8
4:27:57 PM	601.5	499.3	508.3	7.8
4:27:58 PM	601.6	499.3	508.3	7.8
4:27:59 PM	601.5	499.6	508.6	7.8
4:28:00 PM	601.5	498.5	508.8	7.8
4:28:01 PM	601.4	500.0	508.3	7.8
4:28:02 PM	601.5	499.2	508.9	7.8
Averages ->	**601.2**	**499.3**	**507.9**	**7.7**
			Maximum ->	**7.8**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 1500 **Date** 6/15/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
7:47:38 AM	598.9	80.2	88.5	2.2
7:47:39 AM	599.0	79.3	89.1	2.1
7:47:40 AM	599.0	79.3	88.7	1.9
7:47:41 AM	599.0	79.3	90.0	1.8
7:47:42 AM	599.0	80.2	89.6	2.0
7:47:43 AM	599.0	80.6	88.9	1.9
7:47:44 AM	598.9	79.4	88.9	2.0
7:47:45 AM	598.9	80.0	89.6	2.0
7:47:46 AM	598.9	79.7	90.0	2.2
7:47:47 AM	598.9	79.0	89.4	2.1
7:47:48 AM	599.0	80.6	88.7	2.0
7:47:49 AM	599.0	79.7	89.5	2.1
7:47:50 AM	598.9	79.9	88.7	2.2
7:47:51 AM	598.9	79.3	88.6	2.2
7:47:52 AM	598.8	80.2	89.7	2.0
7:47:53 AM	599.0	80.2	88.1	2.0
7:47:54 AM	599.0	79.7	88.7	2.0
7:47:55 AM	599.0	79.3	89.1	2.3
7:47:56 AM	599.0	80.0	89.5	2.1
7:47:57 AM	598.8	80.1	88.4	2.0
7:47:58 AM	599.0	79.8	89.4	1.9
7:47:59 AM	599.0	80.5	88.7	1.9
7:48:00 AM	599.1	79.7	88.4	2.0
7:48:01 AM	598.9	79.9	88.7	2.1
7:48:02 AM	599.0	79.3	89.0	2.0
7:48:03 AM	598.8	79.4	89.3	1.9
7:48:04 AM	598.9	80.7	89.1	1.9
7:48:05 AM	598.9	80.4	89.1	1.9
7:48:06 AM	599.0	80.0	88.9	2.1
7:48:07 AM	599.1	80.5	88.5	2.2
7:48:08 AM	599.0	79.7	89.2	2.2
7:48:09 AM	599.0	79.2	88.9	2.0
7:48:10 AM	598.9	80.4	90.4	2.0
7:48:11 AM	598.9	80.1	88.4	1.8
7:48:12 AM	598.9	80.3	90.0	1.9
7:48:13 AM	599.0	79.3	89.1	2.1
7:48:14 AM	599.0	80.2	90.0	1.9
7:48:15 AM	598.9	80.3	89.7	2.0
7:48:16 AM	598.8	80.5	89.5	2.1
7:48:17 AM	599.0	81.0	90.0	2.2
7:48:18 AM	599.0	80.0	90.0	1.9
7:48:19 AM	599.0	80.1	89.3	2.0
7:48:20 AM	599.0	79.7	88.9	2.1
7:48:21 AM	599.0	79.8	89.9	2.1
7:48:22 AM	598.9	80.0	89.1	2.2
7:48:23 AM	599.0	80.5	89.3	2.2
7:48:24 AM	599.0	80.1	88.1	2.2
7:48:25 AM	599.0	80.5	89.3	2.0
7:48:26 AM	598.9	80.7	89.2	2.0
7:48:27 AM	598.8	80.9	89.4	2.2
7:48:28 AM	598.9	80.5	90.0	2.1
7:48:29 AM	598.8	80.1	88.5	2.2
7:48:30 AM	598.9	80.2	89.1	2.1
7:48:31 AM	599.0	80.0	89.0	2.2
7:48:32 AM	599.0	79.7	89.3	2.1
7:48:33 AM	599.0	79.8	89.0	2.0
7:48:34 AM	599.0	79.0	88.9	2.1
7:48:35 AM	598.9	79.3	88.9	2.2
7:48:36 AM	598.9	80.0	88.9	2.1
7:48:37 AM	598.8	80.2	89.1	2.0
Averages ->	**598.9**	**80.0**	**89.2**	**2.1**
			Maximum ->	**2.3**

Yarmouth Research and Technology, LLC

Valve Description: Teadit Style 2236

Cycle Number: 1510 **Date** 6/15/2011

Time	Pressure (psig)	Packing Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
7:55:01 AM	595.8	80.2	87.6	3.5
7:55:02 AM	595.7	80.4	89.0	3.5
7:55:03 AM	595.7	79.7	88.8	3.5
7:55:04 AM	595.4	80.6	87.4	3.5
7:55:05 AM	595.6	80.6	87.8	3.5
7:55:06 AM	595.7	81.3	89.0	3.5
7:55:07 AM	595.6	80.6	87.6	3.5
7:55:08 AM	595.8	79.9	88.1	3.6
7:55:09 AM	595.5	80.5	88.4	3.6
7:55:10 AM	595.7	81.0	87.2	3.6
7:55:11 AM	595.5	81.0	87.9	3.5
7:55:12 AM	595.4	81.3	86.7	3.6
7:55:13 AM	595.4	80.7	88.3	3.6
7:55:14 AM	595.4	80.3	86.2	3.6
7:55:15 AM	595.6	80.0	88.5	3.6
7:55:16 AM	595.4	81.0	85.8	3.6
7:55:17 AM	595.5	80.0	87.6	3.6
7:55:18 AM	595.4	80.1	86.1	3.6
7:55:19 AM	595.3	79.8	87.8	3.7
7:55:20 AM	595.4	80.1	86.1	3.6
7:55:21 AM	595.7	80.6	86.6	3.6
7:55:22 AM	595.4	79.9	87.7	3.6
7:55:23 AM	595.4	79.8	86.8	3.6
7:55:24 AM	595.5	81.0	85.7	3.6
7:55:25 AM	595.3	79.6	88.0	3.6
7:55:26 AM	595.4	81.0	86.0	3.6
7:55:27 AM	595.6	80.4	86.4	3.6
7:55:28 AM	595.4	80.3	86.1	3.7
7:55:29 AM	595.4	80.3	86.4	3.7
7:55:30 AM	595.4	81.2	85.0	3.6
7:55:31 AM	595.4	80.7	86.8	3.6
7:55:32 AM	595.4	81.2	86.3	3.6
7:55:33 AM	595.4	81.5	85.7	3.7
7:55:34 AM	595.3	79.8	86.9	3.6
7:55:35 AM	595.4	79.4	85.4	3.7
7:55:36 AM	595.4	80.4	85.2	3.7
7:55:37 AM	595.3	80.6	87.2	3.7
7:55:38 AM	595.5	81.3	86.5	3.7
7:55:39 AM	595.3	81.8	86.6	3.7
7:55:40 AM	595.3	80.1	86.9	3.7
7:55:41 AM	595.4	80.8	85.0	3.7
7:55:42 AM	595.3	80.3	85.0	3.7
7:55:43 AM	595.3	80.7	87.6	3.7
7:55:44 AM	595.4	79.9	85.3	3.7
7:55:45 AM	595.3	81.2	85.0	3.7
7:55:46 AM	595.3	80.2	85.7	3.7
7:55:47 AM	595.2	79.8	86.0	3.7
7:55:48 AM	595.3	81.2	84.6	3.7
7:55:49 AM	595.3	80.4	85.6	3.7
7:55:50 AM	595.2	80.8	85.6	3.7
7:55:51 AM	595.2	81.0	83.9	3.7
7:55:52 AM	595.3	80.1	85.2	3.7
7:55:53 AM	595.3	79.6	85.4	3.7
7:55:54 AM	595.4	80.8	84.8	3.8
7:55:55 AM	595.2	80.6	83.9	3.8
7:55:56 AM	595.3	80.8	84.8	3.8
7:55:57 AM	595.4	80.1	85.8	3.8
7:55:58 AM	595.2	82.2	85.0	3.8
7:55:59 AM	595.2	81.6	86.3	3.8
7:56:00 AM	595.2	80.5	85.0	3.8
Averages ->	**595.4**	**80.5**	**86.4**	**3.7**
			Maximum ->	**3.8**

2014 ELP Compliance Status Report
Consent Decree No. 1:11-cv-13330-TLL-CEB

See Corresponding Tab in the Confidential Binder for Relevant Documentation

Tyco/KTM Response

Smith, Vanessa (A)

From: Smith, Vanessa (A)
Sent: Thursday, February 07, 2013 12:12 PM
To: 'tthurn@tycovalves.com'
Cc: rchristian@columbiapipe.com; DeVine, Dan (DJ); Burdick, Matthew (MJ); Dahl, Kathy (KA)
Subject: Tyco KTM: 2013 Low E Technology
Attachments: FW: LDAR Low Fugitive Emission Questionnaire-follow up; FW: LDAR Low Fugitive Emission Questionnaire CRM:0268355; Fw: LDAR Low Fugitive Emission Questionnaire

Good Afternoon,

As you may recall, in late 2011 Dow Chemical Michigan Operations entered a Consent Decree requiring Low Emission valves and/or packing to be installed in the Covered Process Units. In early 2012, a questionnaire was sent to you to determine if your products met the specifications of the Consent Decree. Attached are the completed questionnaires and any supporting data that you provided.

Per the Consent Decree, each year we must revalidate the Low Emission valves and/or packing determinations. Please review the attached information that you provided in 2012 upon which we based our original determination. Once reviewed, please reply to the questions below:

1. **Are the valves or packing that met the Low-E definition per the Dow Chemical Consent Decree in 2012 last year still Low-E? See definition below.**

2. **Do you have any valves or packing that qualify as Low-E per the definitions below since the last time the questionnaire was answered? If yes, please include the testing data.**

"Low-Emissions Valve" or "Low-E Valve" shall mean either (i) or (ii) as follows:

(i) A valve (including its specific packing assembly) for which the manufacturer has issued a written warranty that it will not emit fugitives at greater than 100 ppm, and that, if it does so emit at any time in the first five years, the manufacturer will replace the valve; provided however, that no valve shall qualify as "Low-E" by reason of written warranty unless the valve (including its specific packing assembly) either:

(a) first was tested by the manufacturer or a qualified testing firm pursuant to generally-accepted good engineering practices for testing fugitive emissions and the results of the testing reasonably support the warranty; or

(b) is as an Extension of another valve that qualified as "Low-E" per the definition of "Extension" listed below.

Or

(ii) A valve (including its specific packing assembly) that:

(a) Has been tested by the manufacturer or a qualified testing firm pursuant to generally-accepted good engineering practices for testing fugitive emissions and that, during the test, at no time leaked at greater than 500 ppm, and on average, leaked at less than 100 ppm; or

(b) Is an Extension of another valve that qualified as "Low-E" per the definition of "Extension" listed below.

NOTE: "Extension" shall mean that: (i) the tested and untested valves were produced by the same manufacturer to the same or essentially equivalent quality requirements; (ii) the characteristics of the valve that affect sealing performance (e.g., type of valve, stem motion, tolerances, surface finishes, loading arrangement, and stem and body seal material, design, and construction) are the same or essentially equivalent as between the tested valve and the untested valve; and (iii) the temperature and pressure ratings of the tested valve are at least as high as the temperature and pressure ratings of the untested valve.

Thank you for your time and assistance with this matter. **All responses must be received by February 28th** in order for us to review and make our 2013 determinations.
Sincerely,

Vanessa Smith
Environmental Delivery Specialist
Dow Automotive/Dow Pharma
Office: (989) 638-7774
Cell: (989) 213-7258

Velan Response

Smith, Vanessa (A)

From: Smith, Vanessa (A)
Sent: Thursday, February 07, 2013 12:38 PM
To: 'mirek.hubacek@velan.com'
Cc: 'Russ Christian'; DeVine, Dan (DJ); Burdick, Matthew (MJ); Dahl, Kathy (KA)
Subject: Velan: 2013 Low E Technology
Attachments: Low-E Valve Questionnaire.pdf; PV Latty CET 0044865a_ang_v1.zip; Velan Emissions Certificate for API 600-602-607, dated January 2010.zip; FE testing PP 2006.pdf

Good Afternoon Mirek,
(The attached messages were too large to send in one email. I will be sending another to incorporate the rest of the previous communications)

As you may recall, in late 2011 Dow Chemical Michigan Operations entered a Consent Decree requiring Low Emission valves and/or packing to be installed in the Covered Process Units. In early 2012, a questionnaire was sent to you to determine if your products met the specifications of the Consent Decree. Attached are the completed questionnaires and any supporting data that you provided.

Per the Consent Decree, each year we must revalidate the Low Emission valves and/or packing determinations. Please review the attached information that you provided in 2012 upon which we based our original determination. Once reviewed, please reply to the questions below:

1. **Are the valves or packing that met the Low-E definition per the Dow Chemical Consent Decree in 2012 last year still Low-E? See definition below.**

2. **Do you have any valves or packing that qualify as Low-E per the definitions below since the last time the questionnaire was answered? If yes, please include the testing data.**

"Low-Emissions Valve" or "Low-E Valve" shall mean either (i) or (ii) as follows:

(i) A valve (including its specific packing assembly) for which the manufacturer has issued a written warranty that it will not emit fugitives at greater than 100 ppm, and that, if it does so emit at any time in the first five years, the manufacturer will replace the valve; provided however, that no valve shall qualify as "Low-E" by reason of written warranty unless the valve (including its specific packing assembly) either:

(a) first was tested by the manufacturer or a qualified testing firm pursuant to generally-accepted good engineering practices for testing fugitive emissions and the results of the testing reasonably support the warranty; or

(b) is as an Extension of another valve that qualified as "Low-E" per the definition of "Extension" listed below.

Or

(ii) A valve (including its specific packing assembly) that:

(a) Has been tested by the manufacturer or a qualified testing firm pursuant to generally-accepted good engineering practices for testing fugitive emissions and that, during the test, at no time leaked at greater than 500 ppm, and on average, leaked at less than 100 ppm; or

(b) Is an Extension of another valve that qualified as "Low-E" per the definition of "Extension" listed below.

NOTE: "Extension" shall mean that: (i) the tested and untested valves were produced by the same manufacturer to the same or essentially equivalent quality requirements; (ii) the characteristics of the valve that affect sealing performance (e.g., type of valve, stem motion, tolerances, surface finishes, loading arrangement, and stem and body seal material, design, and construction) are the same or essentially equivalent as between the tested valve and the untested valve; and (iii) the temperature and pressure ratings of the tested valve are at least as high as the temperature and pressure ratings of the untested valve.

Thank you for your time and assistance with this matter. **All responses must be received by February 28th** in order for us to review and make our 2013 determinations.
Sincerely,

Vanessa Smith
Environmental Delivery Specialist
Dow Automotive/Dow Pharma
Office: (989) 638-7774
Cell: (989) 213-7258

Smith, Vanessa (A)

From: Smith, Vanessa (A)
Sent: Thursday, February 07, 2013 12:42 PM
To: Smith, Vanessa (A); 'mirek.hubacek@velan.com'
Cc: 'Russ Christian'; DeVine, Dan (DJ); Burdick, Matthew (MJ); Dahl, Kathy (KA)
Subject: RE: Velan: 2013 Low E Technology
Attachments: API 622 Test - Velan 3 in Cl300 SB FP Ball Valve - May 2010.pdf; TA-LUFT 6 inch 150 Class.pdf; 6902-05053-RE_ISO15848_1_SSBV_Class300_1303 Dry _Amb_ _2_.pdf; API 622 Test - Velan 2 in Cl600 Top Entry Ball Valve - May 2010.pdf

Mirek,

I have attached the final set of documents from your 2012 submission. The document that I have not resent is the VDI 2440 Nov. 2000 as this is readily available.

Thank you,
Vanessa Smith

From: Smith, Vanessa (A)
Sent: Thursday, February 07, 2013 12:38 PM
To: 'mirek.hubacek@velan.com'
Cc: 'Russ Christian'; DeVine, Dan (DJ); Burdick, Matthew (MJ); Dahl, Kathy (KA)
Subject: Velan: 2013 Low E Technology

Good Afternoon Mirek,
(The attached messages were too large to send in one email. I will be sending another to incorporate the rest of the previous communications)

As you may recall, in late 2011 Dow Chemical Michigan Operations entered a Consent Decree requiring Low Emission valves and/or packing to be installed in the Covered Process Units. In early 2012, a questionnaire was sent to you to determine if your products met the specifications of the Consent Decree. Attached are the completed questionnaires and any supporting data that you provided.

Per the Consent Decree, each year we must revalidate the Low Emission valves and/or packing determinations. Please review the attached information that you provided in 2012 upon which we based our original determination. Once reviewed, please reply to the questions below:

1. **Are the valves or packing that met the Low-E definition per the Dow Chemical Consent Decree in 2012 last year still Low-E? See definition below.**

2. **Do you have any valves or packing that qualify as Low-E per the definitions below since the last time the questionnaire was answered? If yes, please include the testing data.**

"Low-Emissions Valve" or "Low-E Valve" shall mean either (i) or (ii) as follows:

(i) A valve (including its specific packing assembly) for which the manufacturer has issued a written warranty that it will not emit fugitives at greater than 100 ppm, and that, if it does so emit at any time in the first five years, the manufacturer will replace the valve; provided however, that no valve shall qualify as "Low-E" by reason of written warranty unless the valve (including its specific packing assembly) either:

(a) first was tested by the manufacturer or a qualified testing firm pursuant to generally-accepted good engineering practices for testing fugitive emissions and the results of the testing reasonably support the warranty; or

(b) is as an Extension of another valve that qualified as "Low-E" per the definition of "Extension" listed below.

Or

(ii) A valve (including its specific packing assembly) that:

(a) Has been tested by the manufacturer or a qualified testing firm pursuant to generally-accepted good engineering practices for testing fugitive emissions and that, during the test, at no time leaked at greater than 500 ppm, and on average, leaked at less than 100 ppm; or

(b) Is an Extension of another valve that qualified as "Low-E" per the definition of "Extension" listed below.

NOTE: "Extension" shall mean that: (i) the tested and untested valves were produced by the same manufacturer to the same or essentially equivalent quality requirements; (ii) the characteristics of the valve that affect sealing performance (e.g., type of valve, stem motion, tolerances, surface finishes, loading arrangement, and stem and body seal material, design, and construction) are the same or essentially equivalent as between the tested valve and the untested valve; and (iii) the temperature and pressure ratings of the tested valve are at least as high as the temperature and pressure ratings of the untested valve.

Thank you for your time and assistance with this matter. **All responses must be received by February 28th** in orde. for us to review and make our 2013 determinations.
Sincerely,

Vanessa Smith
Environmental Delivery Specialist
Dow Automotive/Dow Pharma
Office: (989) 638-7774
Cell: (989) 213-7258

Smith, Vanessa (A)

om: Tony Boland [tony.boland@velan.com]
nt: Friday, February 15, 2013 2:50 PM
o: Smith, Vanessa (A)
Cc: Mirek Hubacek
Subject: FW: Velan: 2013 Low E Technology
Attachments: Low-E Valve Questionnaire.pdf; PV Latty CET 0044865a_ang_v1.zip; Velan Emissions Certificate for API 600-602-607, dated January 2010.zip; FE testing PP 2006.pdf

Vanessa,
There has been no change to the data Velan submitted per the Dow Chemical Consent Decree in 2012. If you have any further questions, please contact myself or Mirek Hubacek. Thank you.

Tony Boland
Regional Sales Manager-Mideast

Velan
Tel: (937) 848-2011
Fax:

From: Mirek Hubacek
Sent: Thursday, February 07, 2013 1:33 PM
To: Tony Boland
Subject: FW: Velan: 2013 Low E Technology

irek Hubacek
ector Of Design, Quarter-Turn, DPCV

Velan
Tel: (802) 864–3350,
Fax: (802) 865–3030

From: Smith, Vanessa (A) [mailto:VNowak3@dow.com]
Sent: February-07-13 12:38 PM
To: Mirek Hubacek
Cc: Russ Christian; DeVine, Dan (DJ); Burdick, Matthew (MJ); Dahl, Kathy (KA)
Subject: Velan: 2013 Low E Technology

Good Afternoon Mirek,
(The attached messages were too large to send in one email. I will be sending another to incorporate the rest of the previous communications)

As you may recall, in late 2011 Dow Chemical Michigan Operations entered a Consent Decree requiring Low Emission valves and/or packing to be installed in the Covered Process Units. In early 2012, a questionnaire was sent to you to determine if your products met the specifications of the Consent Decree. Attached are the completed questionnaires and any supporting data that you provided.

Per the Consent Decree, each year we must revalidate the Low Emission valves and/or packing determinations. Please review the attached information that you provided in 2012 upon which we based our original determination. Once reviewed, please reply to the questions below:

1. **Are the valves or packing that met the Low-E definition per the Dow Chemical Consent Decree in 2012 last year still Low-E? See definition below.**

2. **Do you have any valves or packing that qualify as Low-E per the definitions below since the last time the questionnaire was answered? If yes, please include the testing data.**

"Low-Emissions Valve" or "Low-E Valve" shall mean either (i) or (ii) as follows:

(i) A valve (including its specific packing assembly) for which the manufacturer has issued a written warranty that it will not emit fugitives at greater than 100 ppm, and that, if it does so emit at any time in the first five years, the manufacturer will replace the valve; provided however, that no valve shall qualify as "Low-E" by reason of written warranty unless the valve (including its specific packing assembly) either:

(a) first was tested by the manufacturer or a qualified testing firm pursuant to generally-accepted good engineering practices for testing fugitive emissions and the results of the testing reasonably support the warranty; or

(b) is as an Extension of another valve that qualified as "Low-E" per the definition of "Extension" listed below.

Or

(ii) A valve (including its specific packing assembly) that:

(a) Has been tested by the manufacturer or a qualified testing firm pursuant to generally-accepted good engineering practices for testing fugitive emissions and that, during the test, at no time leaked at greater than 500 ppm, and on average, leaked at less than 100 ppm; or

(b) Is an Extension of another valve that qualified as "Low-E" per the definition of "Extension" listed below

NOTE: "Extension" shall mean that: (i) the tested and untested valves were produced by the same manufacturer to the same or essentially equivalent quality requirements; (ii) the characteristics of the valve that affect sealing performance (e.g., type of valve, stem motion, tolerances, surface finishes, loading arrangement, and stem and body seal material, design, and construction) are the same or essentially equivalent as between the tested valve and the untested valve; and (iii) the temperature and pressure ratings of the tested valve are at least as high as the temperature and pressure ratings of the untested valve.

Thank you for your time and assistance with this matter. **All responses must be received by February 28th** in order for us to review and make our 2013 determinations.
Sincerely,

Vanessa Smith
Environmental Delivery Specialist
Dow Automotive/Dow Pharma
Office: (989) 638-7774
Cell: (989) 213-7258

VELAN

Research and Development

VELAN Inc.
550 McArthur
Montreal, QC
H4T 1X8
CANADA

Phone (514) 748 7743
Fax (514) 342 2311
www.velanvalve.com

Research & Development

Fugitive Emissions
ISO 15848-1 Qualification
Report 690205-053-RE

2 braided from John Crane (G 58-IV) &
2 ribbon from John Crane (273 W)

SOFT SEATED SPLIT BODY BALL VALVE
FP - 150# and #300 from 3/4" to 6"
RP - 150# and #300 from 3" to 8"

METAL SEATED SPLIT BODY BALL VALVE
150# and #300 from 2" to 4"

Test Performed by: Bernard Gelineau
Design Technician

Report Written By: Luc Vernhes
Group Leader Product Development

VELAN Research and Development

VELAN Inc.
550 McArthur
Montreal, QC
H4T 1X8
CANADA

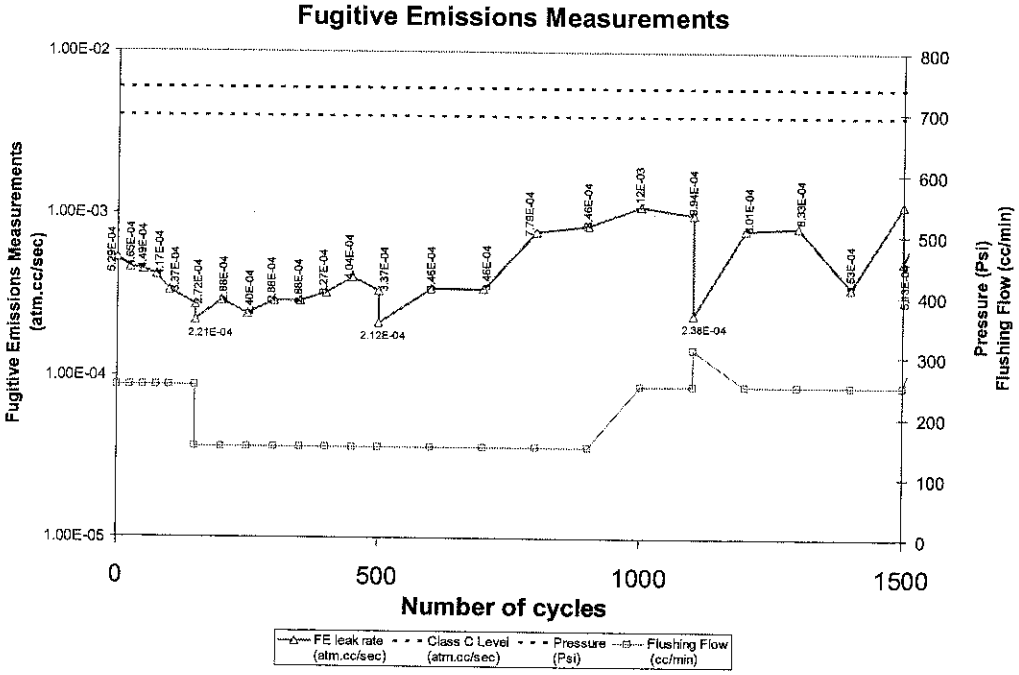
Phone (514) 748 7743
Fax (514) 342 2311
www.velanvalve.com

Executive Summary

There is strong environmental pressure to reduce stem seal leakage in industrial valves. Consequently, users have applied pressure on suppliers to demonstrate that new products meet target emission levels. Until 2005, there was no international FE standard. Since the introduction of ISO 15848, an international specification exists. This report describes the qualification of Velan standard split body ball valve graphite packing arrangement, with the fugitive emissions following the requirements of ISO 15848-1.

Test Results

A regular Velan standard split body ball valve, 3"300#, has been tested according to the ISO15848-1 specification. The packing arrangement used for this design is qualified according to ISO15848-1. Qualification covers Velan split body soft seated ball valve from 3/4" to 6" 150# FP and 2" to 6" FP and Velan split body metal seated ball 2" to 4" 150# and 300#



Packing arrangement Tightness class :

- ✓ Tightness Class: The maximum leakage has been maintained under 10^{-2} mg.s^{-1}.m^{-1} during test: **The tightness class is C.**
- ✓ Number of retightening: 0
- ✓ Tolerance Class: 1,500 mechanical cycles. The tolerance class is CO2
- ✓ Temperature Class: The applied temperature is ambient: The class temperature is T_{amb}
- ✓ Performance Class: ISO FE CH-C02-SSA0- T_{amb} –CL150-ISO 15848/1

To use the ISO stamp, a minimum of one valve form each production lot must be FE controlled (per valve type, pressure class, and size, NDT 835)

DESIGN TESTED

Figure #	Design	Packing Type	Packing stress (Psi)	Ø Stem(")	Ø Body (")	Stroke (")
F10-11402-SSGZ	G10-0063	JC G 58-IV JC 273 W	4000	0,875	1.375	90Deg

VELAN Inc.
550 McArthur
Montreal, QC
H4T 1X8
CANADA

Phone (514) 748 7743
Fax (514) 342 2311
www.velanvalve.com

DETAILED TEST PROCEDURE

1. DATE AND PLACE OF TEST

The tests were conducted in the month of December 2007 at the Velan R&D Laboratory, at Montréal, Canada.

2. TEST OBJECTIVE

The qualification of Velan standard API600 graphite packing arrangement, with the fugitive emissions following the requirements of ISO 15848-1.

3. TEST ELEMENTS

A set of graphite packing rings composed of John Crane G 58-IV & John Crane 273 W rings.

4. TEST BENCH

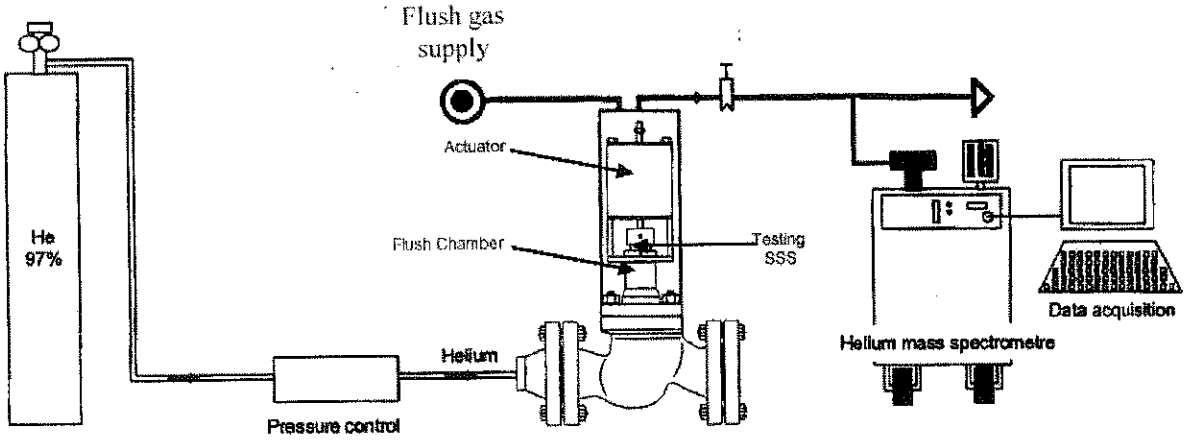
- **Tested Valve**

The test was conducted on a regular 3" valve CL 300 WCB SM3 made by Velan.

Figure #	Design	Packing Type	Packing stress (Psi)	Ø Stem(")	Ø Body (")	Stroke (")
F10-11402-SSGZ	G10-0063	JC G 58-IV JC 273 W	4000	0,875	1.375	90Deg

- **Description of Set Up**

Fugitive Emissions was measured by the flushing method. A flush chamber encloses the packing. A flush gas (N_2) passes through this chamber, where it mixes with the leakage stream of the test gas (He). Then it passes down an exhaust line from which it vents into the atmosphere. The concentration of the resulting mixture in the exhaust line depends only on the leak rate and the flush gas flow rate. Flush gas flow rate is set to an appropriate value, concentration is measured and leakage is calculated.



Schematic Picture of Test Installation

- **Gas Supplying System**

Helium (He):

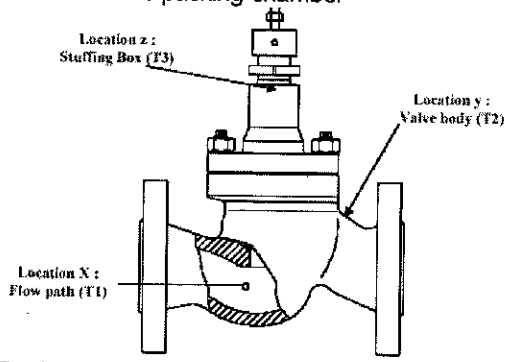
VELAN Inc.
550 McArthur
Montreal, QC
H4T 1X8
CANADA
Phone (514) 748 7743
Fax (514) 342 2311
www.velanvalve.com

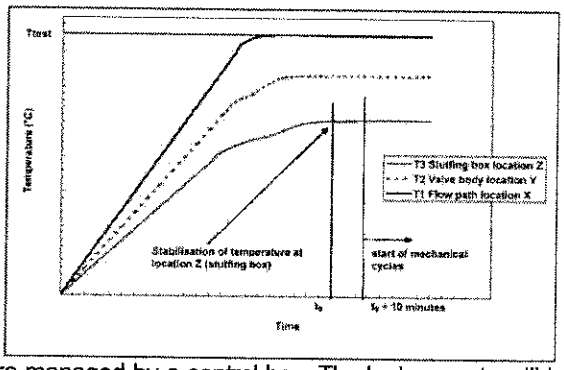
The supply system is comprised of 97% pure helium.
Nitrogen (N2):
The supply flushing system is comprised of 97% pure Nitrogen.

- **Temperature Regulation**

The heating of the valve was conducted through the use of six heating cartridges of 150W.
The temperature gauges struck the indicated norm points and were measured by type K thermocouples.

The temperature measurement points are situated at the level (see schematic);
-of the fluid hose
-of the body of the valve
-of the packing-chamber





The heating phases, to control and cool-down are managed by a control box. The leakage rate will be measured when the temperature of the packing-chamber has stabilized (See Schematic).

- **Packing Displacement**

The electrical actuator comes from AUMA, type SA07.5F10. The mechanical cycles are performed by an automated box. The cycle counter acts as a way to predetermine and program the timing sequence for opening and closing.

- **Measuring tightness with the Flushing Method**

The leakage rate is calculated with the following equation:
Ql = C x Qf
where :
-Ql is the leak rate of test gas from stem seal (atm.cm^3/s) ;
-C is the volumetric concentration of test gas in flush gas stream (C= ppm x 10-6) ;
-Qf is the flow rate of flush gas into the flush chamber (atm.cm^3/s) ;

C was measured with a mass helium spectrometer (Type: Varian 979), calibrated with cylinder calibration gas mixture (50 ppm He)

- **Acquisition of Data**

The acquisition of data is performed by a PC and a Data Acquisition System 5000 from Vishay.

VELAN Inc.
550 McArthur
Montreal, QC
H4T 1X8
CANADA
Phone (514) 748 7743
Fax (514) 342 2311
www.velanvalve.com

5. TEST PROCEDURE

• Number of Retightening Times for SET (SSA):

A maximum number or tightening of SET is authorized by the platform of qualification. The retightening is in effect until the leakage is interfered by a threshold indicated by the norm. (the tightening should remain inferior to the maximum tightening).

• Mechanical Cycles

The mechanical cycles are defined by:

Time to Open / Close: 30 seconds
Temporization: 30 seconds
Stem movement amplitude: 3 in
Transfer Rate: 0,1 in.s-1

• Thermal Cycles

Test Temperature: 23°C
Laboratory Temperature: 23°C

• Pressure Cycles

Laboratory Temperature pressure: 280 psi
Test Temperature Pressure: 280 psi

• Tightness Criteria

The following table provides the admissible leakage values for the class C prescribed by the norm in the different units utilized.

	Class A $mg.s^{-1}.m^{-1}$	Class B $mg.s^{-1}.m^{-1}$	Class C $mg.s^{-1}.m^{-1}$
	10^{-6}	10^{-4}	10^{-2}
ϕ stem mm	Class A $atm.cm^3.s^{-1}$	Class B $atm.cm^3.s^{-1}$	Class C $atm.cm^3.s^{-1}$
10	$1,76 \times 10^{-7}$	$1,76 \times 10^{-5}$	$1,76 \times 10^{-3}$
15	$2,64 \times 10^{-7}$	$2,64 \times 10^{-5}$	$2,64 \times 10^{-3}$
20	$3,52 \times 10^{-7}$	$3,52 \times 10^{-5}$	$3,52 \times 10^{-3}$
25	$4,40 \times 10^{-7}$	$4,40 \times 10^{-5}$	$4,40 \times 10^{-3}$
30	$5,28 \times 10^{-7}$	$5,28 \times 10^{-5}$	$5,28 \times 10^{-3}$
35	$6,16 \times 10^{-7}$	$6,16 \times 10^{-5}$	$6,16 \times 10^{-3}$
40	$7,04 \times 10^{-7}$	$7,04 \times 10^{-5}$	$7,04 \times 10^{-3}$
45	$7,92 \times 10^{-7}$	$7,92 \times 10^{-5}$	$7,92 \times 10^{-3}$
50	$8,80 \times 10^{-7}$	$8,80 \times 10^{-5}$	$8,80 \times 10^{-3}$
55	$9,68 \times 10^{-7}$	$9,68 \times 10^{-5}$	$9,68 \times 10^{-3}$
60	$1,06 \times 10^{-6}$	$1,06 \times 10^{-4}$	$1,06 \times 10^{-2}$
65	$1,14 \times 10^{-6}$	$1,14 \times 10^{-4}$	$1,14 \times 10^{-2}$
70	$1,23 \times 10^{-6}$	$1,23 \times 10^{-4}$	$1,23 \times 10^{-2}$
75	$1,32 \times 10^{-6}$	$1,32 \times 10^{-4}$	$1,32 \times 10^{-2}$
80	$1,41 \times 10^{-6}$	$1,41 \times 10^{-4}$	$1,41 \times 10^{-2}$
NOTE Helium (20°C).			

• Packing Installation

The applied force on the packing is 4,000 psi, which represents a gland nut torque of 14 ft.lbs.

VELAN Inc.
550 McArthur
Montreal, QC
H4T 1X8
CANADA
Phone (514) 748 7743
Fax (514) 342 2311
www.velanvalve.com

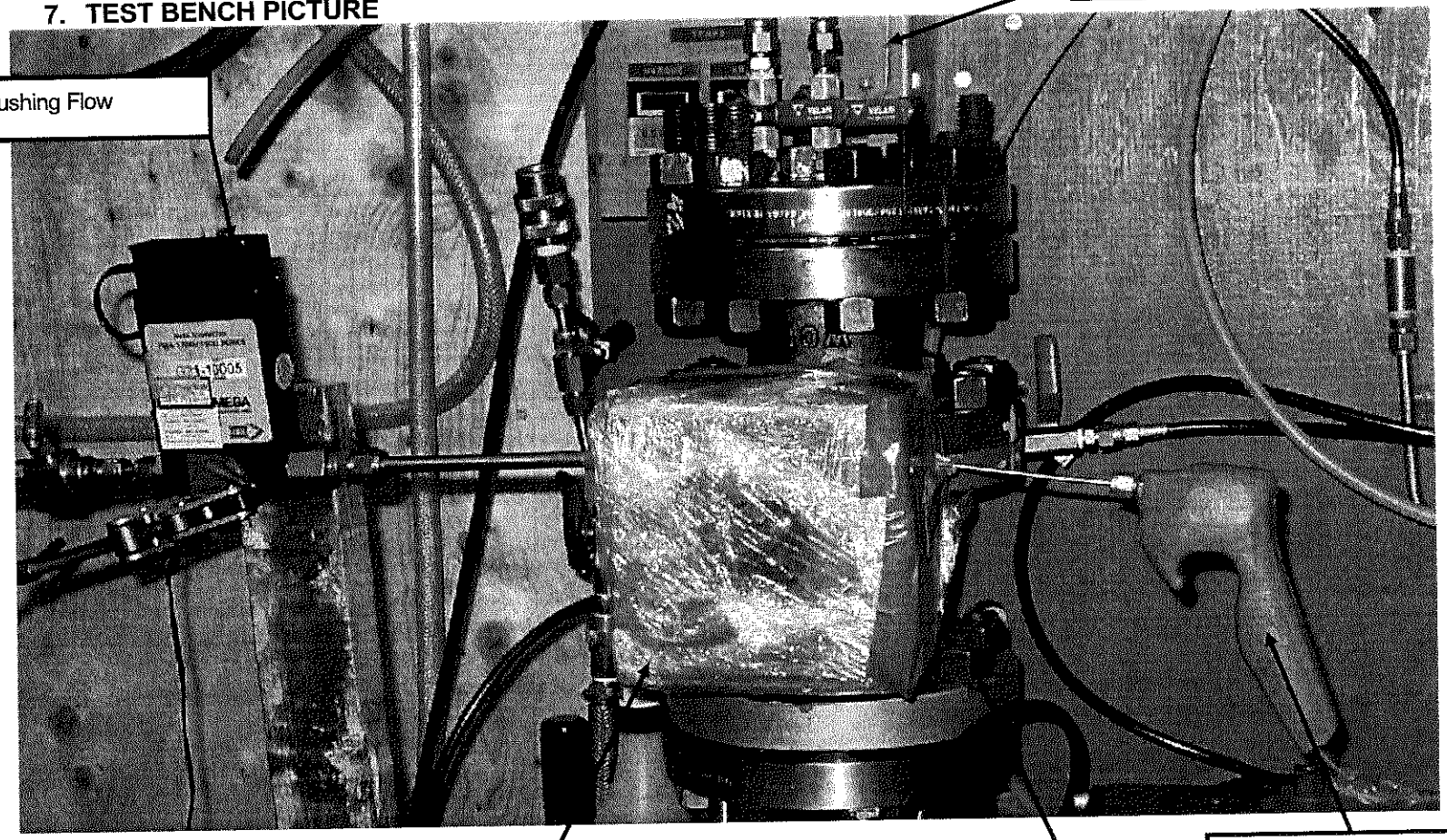
6. Results

Date	Total Number of Cycles	Pressure (Psi)	Temp Body (Deg C)	Torque on packing (inch-lb)	FE leak rate (atm.cc/sec)
05/21/08	0	740	20	144	5.29E-04
	25	740	20	144	4.65E-04
	50	740	20	144	4.49E-04
	75	740	20	144	4.17E-04
	100	740	20	144	3.37E-04
	150	740	20	144	2.72E-04
	150	740	20	144	2.21E-04
	200	740	20	144	2.88E-04
	250	740	20	144	2.40E-04
	300	740	20	144	2.88E-04
	350	740	20	144	2.88E-04
	400	740	20	144	3.27E-04
	450	740	20	144	4.04E-04
	500	740	20	144	3.37E-04
05/22/08	500	740	20	144	2.12E-04
	600	740	20	144	3.46E-04
	700	740	20	144	3.46E-04
	800	740	20	144	7.79E-04
	900	740	20	144	8.46E-04
	1000	740	20	144	1.12E-03
	1100	740	20	144	9.94E-04
05/23/08	1100	740	20	144	2.38E-04
	1200	740	20	144	8.01E-04
	1300	740	20	144	8.33E-04
	1400	740	20	144	3.53E-04
	1500	740	20	144	1.15E-03
	1500	740	20	144	5.13E-04

Measurement of Leak Rate by the Flushing Method

VELAN Inc.
550 McArthur
Montreal, QC
H4T 1X8
CANA
Phone (514) 748 7743
Fax (514) 342 2311
www.velanvalve.com

7. TEST BENCH PICTURE



VELAN Research and Development

VELAN Inc.
550 McArthur
Montreal, QC
H4T 1X8
CANADA

Phone (514) 748 7743
Fax (514) 342 2311
www.velanvalve.com

8. Original Spread Sheet

VELAN FUGITIVE EMISSIONS

Test Data & Test Target

Test Set-up	Ball 3" 300 #
Top & Bottom Ref	2 braided from John Crane model: G 58-IV
Middle Ref	2 ribbon from John Crane model:
Number of ring	4
Packing torque at beginning	12 ft-lb
Pressure class	300
Tightness Level	ISO Class C

In this test i didn't put any metal packing washer

Test

Pressurize valve with He up to 100 psi during 15 min minimum. Increase the pressure at 740 psi if the leakage is acceptable
Pressure is to be maintened throughout the testing
if leakage exceeds the limit (0.00040 atm.cc/sec), one packing retorque to ftlbs is allowable
if leakage exceeds the limit again, test is stopped

Test Preparation

Clean Packing chamber, stem and gland-bushing with acetone.	OK
Control packing chamber and Stem surface finish (Scratch...)	OK
Lubricate packing flange studs, nuts with antiseize (Threads and bottom of nuts)	OK
Assemble test set-up without the bell and torque packing nut to 80%	N/A
Perform 5 cycles and readjust packing nut to 80%	N/A
Perform 5 cycles and readjust packing nut to 100%	OK
Time of cycle: 40 second or 90 cycles/hour	OK
Limit	4.00E-03

* When I wait a minimum of 30 min between to take the leakage, the leakage down.

Test Data					Temp (Deg C)		Flushing				
Date - Hour	Total Number of Cycles	Pressure (Psi)	max leakage Dynamic	time waiting min	Body	torque on packing (inch-lb)	Flushing Flow (cc/min)	Machine Leak Rate (atm.cc/sec) Static	He Concentration (PPM)	FE leak rate (atm.cc/sec)	Class C Level (atm.cc/sec)
05/21/08	0	740		60	20	144	250	3.30E-06	126.92	5.29E-04	4.00E-03
	25	740		*	20	144	250	2.90E-06	111.54	4.65E-04	4.00E-03
	50	740		*	20	144	250	2.80E-06	107.69	4.49E-04	4.00E-03
	75	740		*	20	144	250	2.60E-06	100.00	4.17E-04	4.00E-03
	100	740		*	20	144	250	2.10E-06	80.77	3.37E-04	4.00E-03
	150	740		*	20	144	250	1.70E-06	65.38	2.72E-04	4.00E-03
	150	740		over night	20	144	150	2.30E-06	88.46	2.21E-04	4.00E-03
	200	740		*	20	144	150	3.00E-06	115.38	2.88E-04	4.00E-03
	250	740		*	20	144	150	2.50E-06	96.15	2.40E-04	4.00E-03
	300	740		*	20	144	150	3.00E-06	115.38	2.88E-04	4.00E-03
	350	740		*	20	144	150	3.00E-06	115.38	2.88E-04	4.00E-03
	400	740		*	20	144	150	3.40E-06	130.77	3.27E-04	4.00E-03
	450	740		*	20	144	150	4.20E-06	161.54	4.04E-04	4.00E-03
	500	740		*	20	144	150	3.50E-06	134.62	3.37E-04	4.00E-03
05/22/08	500	740		over night	20	144	150	2.20E-06	84.62	2.12E-04	4.00E-03
	600	740		*	20	144	150	3.60E-06	138.46	3.46E-04	4.00E-03
	700	740		*	20	144	150	3.60E-06	138.46	3.46E-04	4.00E-03
	800	740		*	20	144	150	8.10E-06	311.54	7.79E-04	4.00E-03
	900	740		*	20	144	150	8.80E-06	338.46	8.46E-04	4.00E-03
	1000	740		*	20	144	250	7.00E-06	269.23	1.12E-03	4.00E-03
	1100	740		*	20	144	250	6.20E-06	238.46	9.94E-04	4.00E-03
05/23/08	1100	740		over weekend	20	144	310	1.20E-06	46.15	2.38E-04	4.00E-03
	1200	740		*	20	144	250	5.00E-06	192.31	8.01E-04	4.00E-03
	1300	740		*	20	144	250	5.20E-06	200.00	8.33E-04	4.00E-03
	1400	740		lunch time	20	144	250	2.20E-06	84.62	3.53E-04	4.00E-03
	1500	740		*	20	144	250	7.20E-06	276.92	1.15E-03	4.00E-03
	1500	740		day	20	144	250	3.20E-06	123.08	5.13E-04	4.00E-03

VELAN Research and Development

VELAN Inc.
550 McArthur
Montreal, QC
H4T 1X8
CANADA

Phone (514) 748 7743
Fax (514) 342 2311
www.velanvalve.com

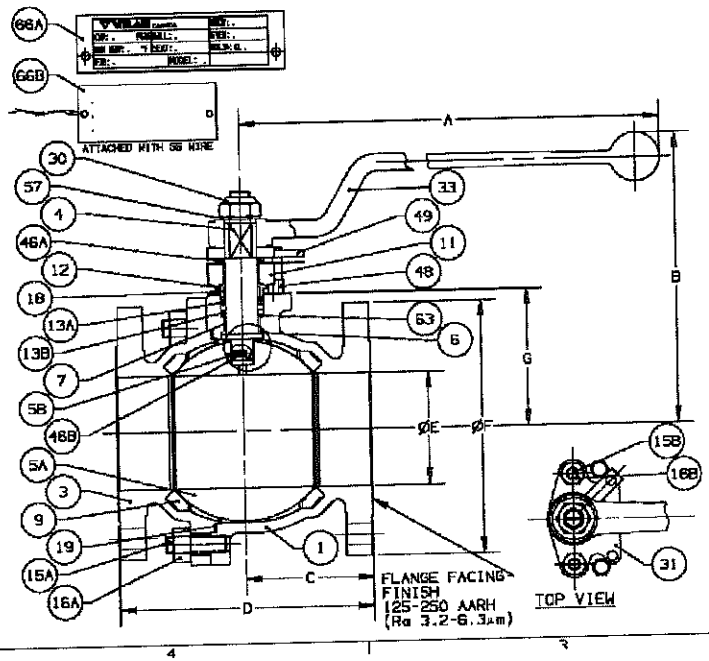
CLASS 300 / PN 50

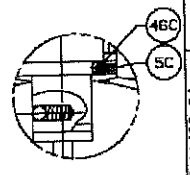
NPS	A	B	C B16.34	C BS 5351	D	ØE	ØF	G	Cv	WT LB
2	10.38	5.44	3.83	3.94	8.50	2.00	6.50	2.88	430	32
2.5	11.91	6.97	4.00	-	9.50	2.50	7.50	3.55	720	56
3	11.91	7.38	5.30	5.31	11.12	3.00	8.25	4.00	1020	76
4	19.88	10.33	5.99	5.63	12.00	4.00	10.00	4.88	2000	124
6	25.88	12.56	6.65	7.94	15.88	6.00	12.50	6.69	5500	254
DN									Kv	Kg
50	263.7	138.2	97.3	100.1	215.9	50.8	165.1	73.2	381	15
65	302.5	177.0	101.6	-	241.3	63.5	190.5	91.2	638	26
80	302.5	187.5	134.8	134.9	282.4	78.2	209.8	101.8	903	35
100	355.0	202.4	152.1	143.0	304.8	101.6	254.0	124.0	1770	56
150	457.4	319.0	168.9	201.7	403.4	152.4	317.5	169.9	4870	116

MATERIAL LIST (02-SS*Z)

PART	DESCRIPTION	QTY	MATERIAL	MATL SPEC	REMARKS
1	BODY	1	WCB	ASTM A216	
3	BODY END	1	WCB	ASTM A216	
4	STEM	1	316 COND. A	ASTM A276	
5A	BALL	1	CF8M	ASTM A351	ALT. 316 COND. A ASTM A276
5B	GROUNDING BALL	1	316	ASTM A276	
5C	GROUNDING BALL	1	316	ASTM A276	NOTE 5
6	THRUST WASHER	1	RPTFE	COMMERCIAL	
7	STEM BUSHING	1	RPTFE	COMMERCIAL	NPS 2(DN 50)NONE
9C	SEAT *(C)	2	C-RPTFE	COMMERCIAL	
9E	SEAT *(E)	2	NPTFE	COMMERCIAL	MATERIAL AS PER ORDER
9G	SEAT *(G)	2	RPTFE	COMMERCIAL	
9T	SEAT *(T)	2	PTFE	COMMERCIAL	
11	PACKING FLANGE	1	WCB	ASTM A216	ALT. CS ASTM A105
12	GLAND BUSHING	1	304	ASTM A276	ALT. CF8 ASTM A351
13A	PACKING RING	1	BRAIDED GRAPHITE		
13B	PACKING RING	2	DIE-FORMED FLEXIBLE GRAPHITE		NPS 4 (DN 100) QTY 3
15A	STUD	-	GR B7 or B7M	ASTM A193	MFG. OPTION
15B	STUD	2	GR B7 or B7M	ASTM A193	MFG. OPTION
16A	NUT	-	GR 2H or 2HM	ASTM A194	MFG. OPTION
16B	NUT	2	GR 2H or 2HM	ASTM A194	MFG. OPTION
18	GLAND BSHG SLV	1	RPTFE	COMMERCIAL	
19	BODY SEAL	1	316L or 347/GRAPHITE	SPIRAL WOUND	
30	HANDLE NUT	1	CS	PLATED	SELF LOCKING
31	LOCK PLATE	1	304	ASTM A240	
33	HANDLE	1	MALL. IRON	ASTM A47	
46A	SPRING	1	302	ASTM A313	
46B	SPRING	1	302	ASTM A313	
46C	SPRING	1	302	ASTM A313	NOTE 5
48	STOP PIN	2	304	ASTM A276	
49	STOP PLATE	1	CF8M	ASTM A351	ALT. CA-15,A217
57	WASHER	1	CS (PLATED)	COMMERCIAL	
63	PACKING WASHER	2	316	ASTM A240	NPS 2(DN 50)QTY:1
66A	NAME PLATE	1	302-304	ASTM A240	ALT. SPOTWELDED
66B	TAG PLATE	1	302-304	ASTM A240	OPTIONAL
66D	CE NAME PLATE	1	302-304	ASTM A240	
67	RIVET	2	302-304	ASTM A493	

NOTES:
1) VALVES DESIGN IN ACCORDANCE WITH ASME B16.34
2) VALVES DESIGN IN ACCORDANCE WITH BS 5351 (ON REQUEST ONLY) (EXCEPT FOR ACTUATOR ATTACHMENT FLANGES)
3) THE "CE" MARK SHALL BE AFFIXED TO THE VALVE FOR THE COUNTRY WHERE APPLICABLE
4) VALVES ARE FIRE SAFE PER API-607, 4th EDITION
5) ADDITIONAL PARTS FOR BS 5351 ARRANGEMENT OPTION





BS 5351 ARRANGEMENT OPTION

REV	DESCRIPTION	DATE	DWN	APVD	CHK

VELAN ORDER NO:
CUSTOMER:
PROJECT:
ORDER NO:
JOB NO:

VELAN

NPS 2-6 / DN 50-150
CAST STEEL BALL VALVES
SPLIT BODY - FULL PORT
FLANGED ENDS

CLASS 300 / PN 50

DRAWN : C.A. 97-08-21
APVD : J.R. 07-11-12
IND REV CERTIFIED : J.R. 07-11-12
DWG NO : 6F-11402-SS*Z-02
SHEET 1 OF 1
REV.N DATE:07-11-12

REF NO	MASTER DWG 6F-11402-SS*Z-02
6F-11400-104	9606-004
6F-11400-106	9697-396
9694-733	9694-542

Fugitive Emission Test Report

API Standard 622, First Edition

Performed for

Velan Inc.

7007 Cote de Liesse
Montreal, QC, Canada H4T 1G2
www.velan.com

3 inch Class 300 Split-Body Full-Port
Ball Valve
Product Code: F10-21402-PRCZ

Project Number: 210037
April 2010

Performed by

YARMOUTH RESEARCH AND TECHNOLOGY, LLC

434 Walnut Hill Road
North Yarmouth, ME 04097 USA
(207) 829-5359
info@yarmouthresearch.com
www.yarmouthresearch.com

Yarmouth Research and Technology, LLC

API 622 PROJECT SUMMARY

Customer: Velan Inc. **Start Date:** 12-Apr-10

Project #: 210037

Valve Information

Valve Manufacturer: Velan Inc.

Description: 3 inch Class 300 Split Body Full Port Ball Valve

Valve Product Code: F10-11413-SSGZ

Packing Description: OEM

Test Information

Cycling Rate:	30	seconds per cycle
Test Pressure:	600	psig
Test Media:	99% Methane	
High Temperature:	200	C

Results

Average Test Pressure:	601	psig
Number of Mechanical Cycles Completed:	1500	
Number of Thermal Cycles Completed:	3	
Number of Packing Adjustments Required:	0	
Cycle Number(s) of Packing Adjustments:	none	
Average Leakage Throughout Test:	1	PPMv
Maximum Leakage Throughout Test:	3	PPMv

Witness

Matthew J Wasielewski, PE

President, Yarmouth Research

STATE OF MAINE
MATTHEW J WASIELEWSKI
No. 7437
LICENSED
PROFESSIONAL ENGINEER

Yarmouth Research and Technology, LLC

Customer: Velan Inc. **Start Date:** 12-Apr-10

Project #: 210037

Valve Description: 3 inch Class 300 Split Body Full Port Ball Valve

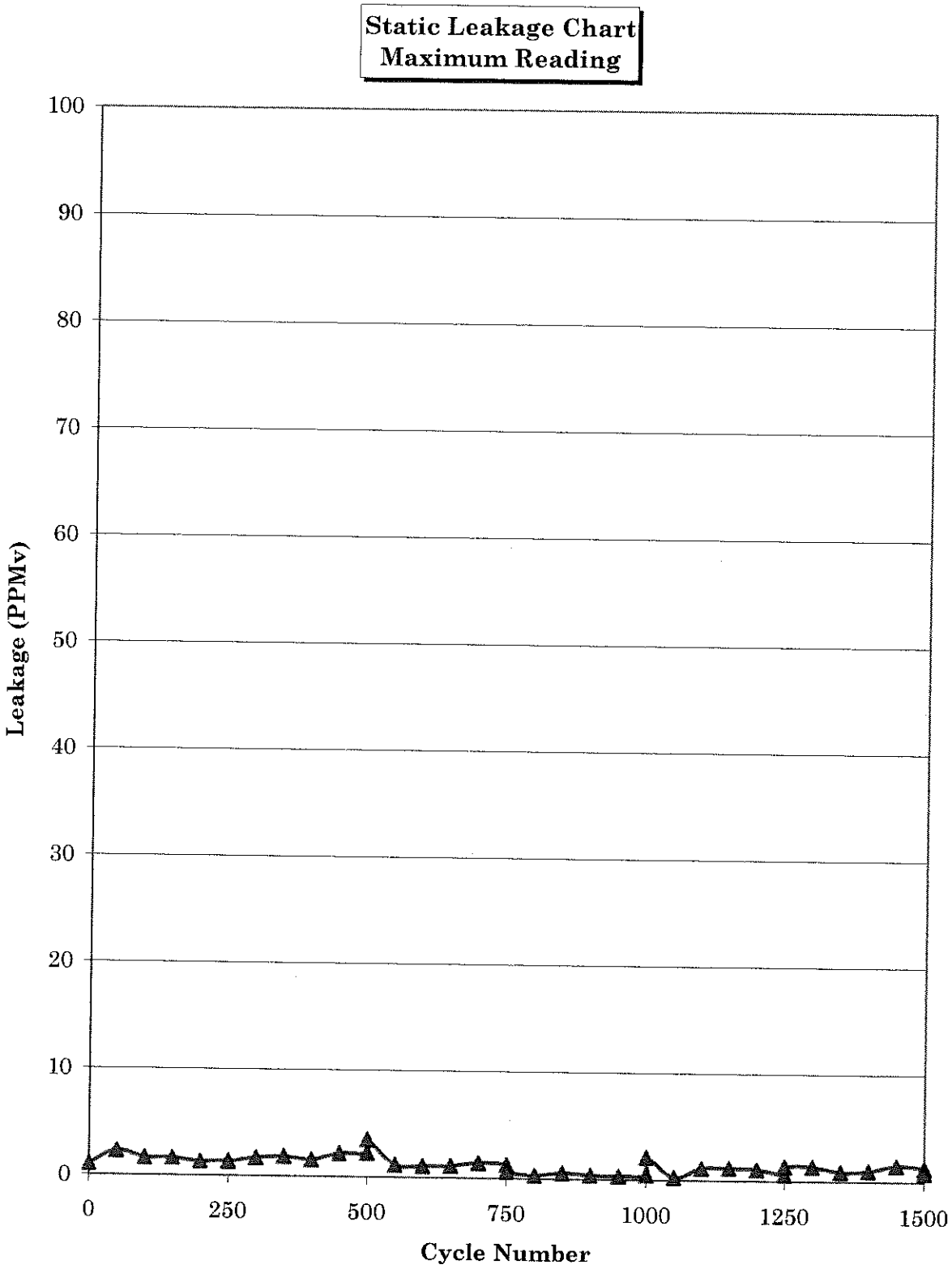
F10-11413-SSGZ

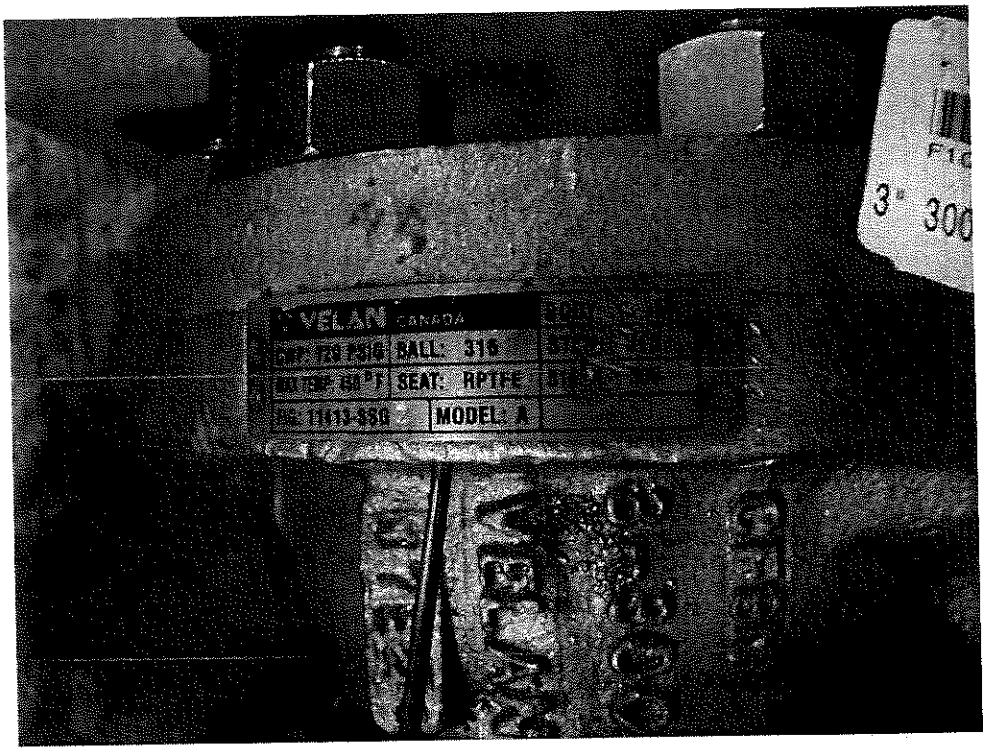
Cycle Number	*Inside Temp (F)*	*Bonnet Temp - (F)*	*Pressure (psig)*	*Stem Seal Leakage (PPMv)*		*Packing Retorque See Note*
				Avg.	*Max.*	
0	72	72	595	1	1	
50	74	74	595	2	2	
100	74	74	599	2	2	
150	74	74	601	2	2	
200	74	74	600	1	1	
250	74	74	600	1	1	
250	393	379	604	1	1	
300	391	397	602	2	2	
350	394	365	603	2	2	
400	395	353	603	1	2	
450	395	361	601	2	2	
500	391	391	601	2	2	
500	83	83	599	3	3	
550	83	82	599	1	1	
600	81	80	602	1	1	
650	81	80	602	1	1	
700	81	80	603	1	1	
750	79	79	603	1	1	
750	391	387	605	0	1	
800	392	386	600	0	0	
850	393	387	601	0	1	
900	393	386	601	0	0	
950	392	384	599	0	0	
1000	393	388	600	0	0	
1000	81	79	604	2	2	
1050	79	77	602	0	0	
1100	79	77	600	1	1	
1150	79	77	600	1	1	
1200	79	78	601	1	1	
1250	80	78	600	1	1	
1250	393	389	603	1	1	
1300	392	388	599	1	1	
1350	393	387	600	1	1	
1400	393	385	602	1	1	
1450	393	384	603	1	1	
1500	393	384	598	1	1	
1500	71	71	600	1	1	
		Averages ->	**601**	**1**	**1**	
		Maximums ->	**605**	**3**	**3**	

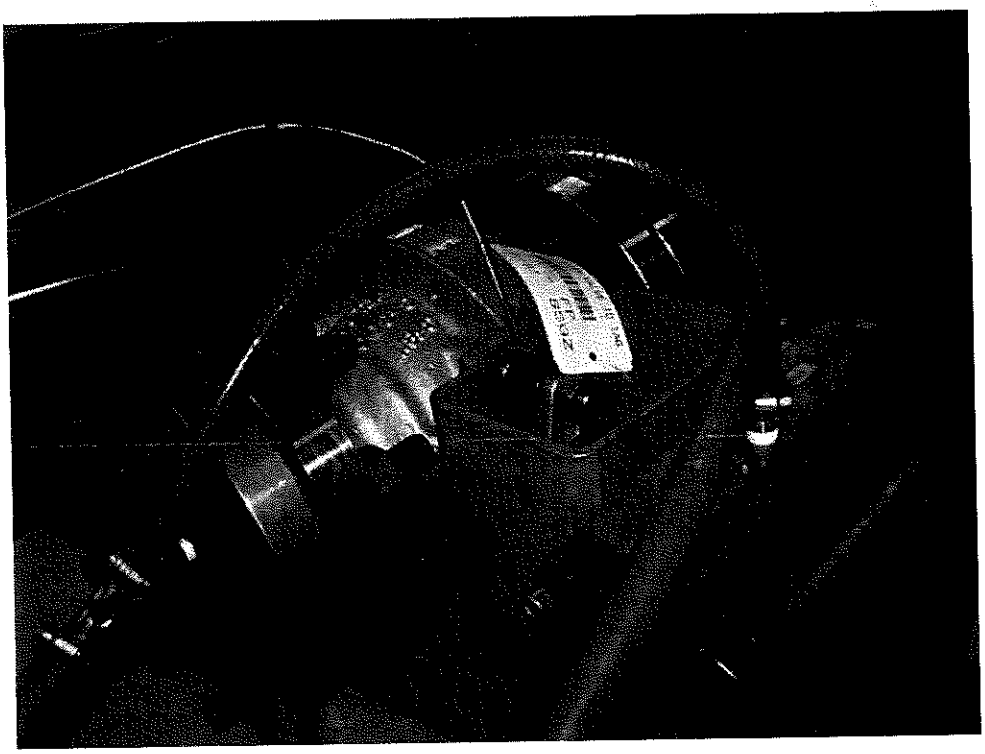
Test Results: The average and maximum leakage results shown below were calculated from 60 readings measured during a minute duration.

See data sheets for more detailed information.

Yarmouth Research and Technology, LLC







Test Valve

CLASS 300 / PN 50

NPS	C B16.34	C BS 5351	D	ØE	ØF	G	J	M	N	Cv	WT LB
2	3.83	3.94	8.50	2.00	6.50	2.88	5.50	0.81	1/2-13 UNC	430	32
2.5	4.00	-	9.50	2.50	7.50	3.59	6.80	1.00	5/8-11 UNC	720	56
3	5.30	5.31	11.12	3.00	8.25	4.00	7.21	1.00	5/8-11 UNC	1020	76
4	5.99	5.63	12.00	4.00	10.00	4.88	8.51	1.12	3/4-10 UNC	2000	124
6	6.65	7.94	15.88	6.00	12.50	6.69	11.06	1.25	1 -8 UNC	5500	254
DN										Kv	Kg
50	97.3	100.1	215.9	50.8	165.1	73.2	139.7	20.6	1/2-13 UNC	381	15
65	101.6	-	241.3	63.5	190.5	91.2	172.7	25.4	5/8-11 UNC	638	26
80	134.6	134.9	282.4	76.2	209.6	101.6	183.1	25.4	5/8-11 UNC	903	35
100	152.1	143.0	304.8	101.6	254.0	124.0	216.2	28.4	3/4-10 UNC	1770	56
150	168.9	201.7	403.4	152.4	317.5	169.9	280.9	31.8	1 -8 UNC	4870	116

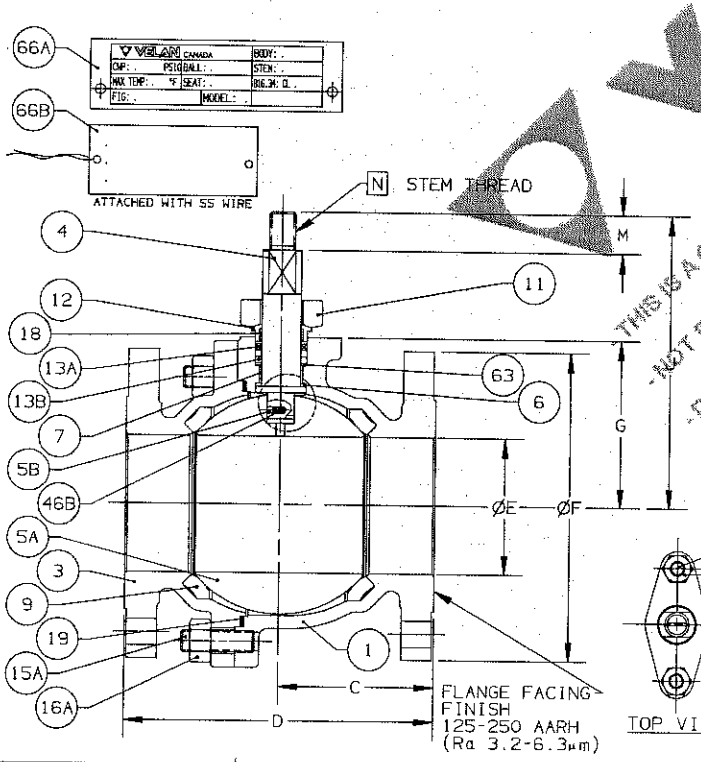
MATERIAL LIST (13-SS*Z-J)

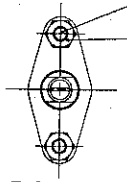
PART	DESCRIPTION	QTY	MATERIAL	MATL SPEC	REMARKS
1	BODY	1	CF8M	ASTM A351	
3	BODY END	1	CF8M	ASTM A351	
4	STEM	1	316 COND. A	ASTM A276	
5A	BALL	1	CF8M	ASTM A351	ALT. 316 COND. A ASTM A276
5B	GROUNDING BALL	1	316	ASTM A276	
5C	GROUNDING BALL	1	316	ASTM A276	NOTE 5
6	THRUST WASHER	1	RPTFE	COMMERCIAL	
7	STEM BUSHING	1	RPTFE	COMMERCIAL	NPS 2(DN 50)NONE
9C	SEAT *(C)	2	C-RPTFE	COMMERCIAL	
9E	SEAT *(E)	2	MPTFE	COMMERCIAL	MATERIAL AS PER ORDER
9G	SEAT *(G)	2	RPTFE	COMMERCIAL	
9T	SEAT *(T)	2	PTFE	COMMERCIAL	
11	PACKING FLANGE	1	CF8M	ASTM A351	ALT. F316 ASTM A182
12	GLAND BUSHING	1	304	ASTM A276	ALT. CF8 ASTM A351
13A	PACKING RING	1	BRAIDED GRAPHITE		NO TEFLON
13B	PACKING RING	2	DIE-FORMED FLEXIBLE GRAPHITE		NPS 4 (DN 100) QTY 3
15A	STUD	-	GR B8M CL.2	ASTM A193	
15B	STUD	2	GR B8M CL.2	ASTM A193	
16A	NUT	-	GR 8M	ASTM A194	
16B	NUT	2	GR 8M	ASTM A194	
18	GLAND BSHG SLV	1	RPTFE	COMMERCIAL	
19	BODY SEAL	1	316L or 347/GRAPHITE	SPIRAL WOUND	
46B	SPRING	1	302	ASTM A313	
46C	SPRING	1	302	ASTM A313	NOTE 5
63	PACKING WASHER	2	316	ASTM A240	NPS 2(DN 50)QTY:1
66A	NAME PLATE	1	302-304	ASTM A240	ALT. SPOTWELDED
66B	TAG PLATE	1	302-304	ASTM A240	OPTIONAL
66D	CE NAME PLATE	1	302-304	ASTM A240	
67	RIVET	2	302-304	ASTM A493	

NOTES:

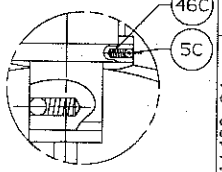
1) VALVES DESIGN IN ACCORDANCE WITH ASME B16.34
2) VALVES DESIGN IN ACCORDANCE WITH BS 5351 (ON REQUEST ONLY) (EXCEPT FOR ACTUATOR ATTACHMENT FLANGES)
3) THE "CE" MARK SHALL BE AFFIXED TO THE VALVE FOR THE COUNTRY WHERE APPLICABLE
4) VALVES ARE FIRE SAFE PER API-607, 4th EDITION
5) ADDITIONAL PARTS FOR BS 5351 ARRANGEMENT OPTION
6) VELAN WILL NOT ACCEPT ANY LIABILITY OR ENTERTAIN ANY CONSEQUENTIAL OR WARRANTY CONSIDERATION, UNLESS THE SELECTION OF THE ACTUATING DEVICE AND AUTOMATION IS CARRIED OUT AT VELAN FACTORY

VELAN
THIS IS A GENERIC DRAWING / REFERENCE ONLY
- NOT FOR MANUFACTURING / SIZING
- DUE TO THE POSSIBILITY OF DESIGN MODIFICATIONS THIS DRAWING IS TO BE USED AS A GUIDELINE ONLY
- VELAN WILL NOT ACCEPT ANY LIABILITY FOR MISMATCH BETWEEN THIS DRAWING AND THE PRODUCT SUPPLIED
- CONSULT ENGINEERING DEPARTMENT FOR APPLICATIONS





TOP VIEW



BS 5351 ARRANGEMENT OPTION

REV	DESCRIPTION	DATE	DWN	APVD	IR CERT

VELAN ORDER NO: .
CUSTOMER: ORDER NO:
PROJECT: JOB NO:

VELAN

NPS 2-6 / DN 50-150
CAST STEEL BALL VALVES
SPLIT BODY - FULL PORT
FLANGED ENDS - BARE STEM
CLASS 300 / PN 50

DRAWN : C.A. 06-08-25
APVD : J.R 08-01-03
IND REV CERTIFIED : J.B. 08-01-03
DWG NO : 6F-11413-SS*Z-18
SHEET 1 OF 1
REV.B DATE:08-01-03

REF NO	MASTER DWG 6F-11413-SS*Z-18
6F-11400-04	9606-004
9996-406	9997-396
9994-733	9994-942

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 0 **Date** 4/12/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
8:48:17 AM	595.5	72.4	72.5	1.0
8:48:18 AM	595.5	72.3	72.4	1.0
8:48:19 AM	595.5	72.4	72.3	1.0
8:48:20 AM	595.5	72.4	72.6	0.9
8:48:21 AM	595.5	72.4	72.7	1.0
8:48:22 AM	595.4	72.2	72.5	1.0
8:48:23 AM	595.4	72.6	72.4	1.0
8:48:24 AM	595.4	72.5	72.4	0.9
8:48:25 AM	596.0	72.3	72.4	0.9
8:48:26 AM	595.9	72.2	72.1	0.8
8:48:27 AM	595.8	72.3	72.4	0.9
8:48:28 AM	595.8	72.2	72.1	0.9
8:48:29 AM	595.7	72.6	72.6	0.8
8:48:30 AM	595.6	72.6	72.1	0.9
8:48:31 AM	595.6	72.4	72.3	1.0
8:48:32 AM	595.5	72.1	72.1	0.8
8:48:33 AM	595.6	72.2	72.6	0.9
8:48:34 AM	595.5	72.2	72.3	1.0
8:48:35 AM	595.4	72.3	72.6	0.8
8:48:36 AM	595.3	72.7	72.3	0.8
8:48:37 AM	595.4	72.5	72.5	0.9
8:48:38 AM	595.3	72.3	72.3	0.9
8:48:39 AM	595.4	72.6	72.5	0.8
8:48:40 AM	595.3	72.5	72.7	1.0
8:48:41 AM	595.2	72.5	72.5	0.8
8:48:42 AM	595.0	72.5	72.5	0.7
8:48:43 AM	595.0	72.7	72.9	0.9
8:48:44 AM	594.9	72.4	72.6	0.9
8:48:45 AM	594.8	72.5	73.0	0.8
8:48:46 AM	594.7	72.5	72.6	0.8
8:48:47 AM	594.7	72.4	72.8	0.9
8:48:48 AM	594.6	72.6	72.7	0.7
8:48:49 AM	594.5	72.5	72.6	0.8
8:48:50 AM	594.4	72.3	72.2	0.9
8:48:51 AM	594.4	72.5	72.1	0.8
8:48:52 AM	594.3	72.6	72.8	0.8
8:48:53 AM	594.2	72.3	72.3	0.9
8:48:54 AM	594.2	72.3	73.0	0.8
8:48:55 AM	594.1	72.6	72.3	0.7
8:48:56 AM	594.1	72.5	72.6	0.8
8:48:57 AM	594.1	72.4	71.9	0.8
8:48:58 AM	594.0	72.4	72.5	0.7
8:48:59 AM	594.0	72.5	72.5	0.7
8:49:00 AM	594.0	72.4	72.5	0.8
8:49:01 AM	594.0	72.6	72.2	0.7
8:49:02 AM	593.9	72.7	72.0	0.5
8:49:03 AM	593.9	72.4	72.6	0.6
8:49:04 AM	593.8	72.3	72.5	0.6
8:49:05 AM	593.7	72.3	72.3	0.5
8:49:06 AM	593.7	72.4	72.5	0.5
8:49:07 AM	593.7	72.4	72.4	0.6
8:49:08 AM	593.7	72.3	72.3	0.7
8:49:09 AM	593.6	72.3	71.7	0.6
8:49:10 AM	593.6	72.3	72.3	0.5
8:49:11 AM	593.6	72.3	71.9	0.6
8:49:12 AM	593.6	72.4	72.5	0.7
8:49:13 AM	593.5	72.2	72.3	0.6
8:49:14 AM	593.5	72.3	72.5	0.4
8:49:15 AM	593.5	72.4	72.4	0.5
8:49:16 AM	593.4	72.3	72.2	0.6
Averages ->	**594.7**	**72.4**	**72.4**	**0.8**
			Maximum ->	**1.0**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 50 **Date** 4/12/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
9:17:04 AM	594.8	74.3	73.8	1.3
9:17:05 AM	594.8	74.3	73.8	0.9
9:17:06 AM	594.6	74.5	73.5	1.2
12:00:00 AM	594.6	74.2	73.6	1.8
9:17:07 AM	594.6	74.5	73.8	1.5
9:17:09 AM	594.7	74.4	74.0	1.6
9:17:10 AM	594.8	74.5	73.5	1.6
9:17:11 AM	594.8	74.5	74.3	1.9
9:17:12 AM	594.7	74.3	73.6	1.8
9:17:13 AM	594.8	74.6	73.7	1.7
9:17:14 AM	594.7	74.4	73.7	1.7
9:17:15 AM	594.8	74.2	73.6	1.1
9:17:16 AM	594.8	74.3	74.3	1.1
9:17:17 AM	594.8	74.6	73.8	1.7
9:17:18 AM	594.8	74.5	74.1	1.5
9:17:19 AM	594.9	74.3	73.6	0.9
9:17:20 AM	594.9	74.3	73.6	1.3
9:17:21 AM	595.0	74.4	74.0	1.2
9:17:22 AM	595.1	74.3	73.4	1.7
9:17:23 AM	595.1	74.3	74.1	1.8
9:17:24 AM	594.9	74.6	73.3	1.5
9:17:25 AM	594.9	74.6	74.3	2.1
9:17:26 AM	594.9	74.5	73.6	2.0
9:17:27 AM	594.8	74.2	73.5	2.2
9:17:28 AM	594.7	74.3	73.5	1.9
9:17:29 AM	594.7	74.6	74.1	2.0
9:17:30 AM	594.6	74.4	74.1	1.6
9:17:31 AM	594.6	74.3	73.8	1.6
9:17:32 AM	594.4	74.4	73.7	1.6
9:17:33 AM	594.3	74.4	73.5	1.4
9:17:34 AM	594.4	74.5	73.5	2.3
9:17:35 AM	594.4	74.2	73.5	1.9
9:17:36 AM	594.5	74.3	73.2	1.8
9:17:37 AM	594.4	74.6	73.8	1.4
9:17:38 AM	594.4	74.6	73.5	1.4
9:17:39 AM	594.4	74.6	73.9	1.3
9:17:40 AM	594.4	74.5	73.7	1.4
9:17:41 AM	594.4	74.6	73.8	1.4
9:17:42 AM	594.4	74.4	73.7	1.3
9:17:43 AM	594.5	74.4	74.1	1.9
9:17:44 AM	594.4	74.7	73.6	1.2
9:17:45 AM	594.4	74.6	73.7	1.4
9:17:46 AM	594.4	74.3	73.0	1.8
9:17:47 AM	594.4	74.1	73.7	1.9
9:17:48 AM	594.4	74.4	74.0	1.5
9:17:49 AM	594.4	74.3	73.3	1.9
9:17:50 AM	594.4	74.4	73.7	1.8
9:17:51 AM	594.4	74.6	74.3	1.3
9:17:52 AM	594.4	74.5	74.2	2.0
9:17:53 AM	594.4	74.6	73.9	1.5
9:17:54 AM	594.4	74.4	73.9	1.9
9:17:55 AM	594.4	74.6	73.7	1.8
9:17:56 AM	594.4	74.3	73.7	1.7
9:17:57 AM	594.4	74.6	73.8	1.7
9:17:58 AM	594.4	74.3	73.5	1.8
9:17:59 AM	594.4	74.6	73.9	1.7
9:18:00 AM	594.4	74.6	73.7	1.4
9:18:01 AM	594.4	74.3	73.8	1.5
9:18:02 AM	594.4	74.4	73.5	1.2
9:18:03 AM	594.4	74.5	73.5	1.9
Averages ->	**594.6**	**74.4**	**73.7**	**1.6**
			Maximum ->	**2.3**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 1000 **Date** 4/12/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
9:30:31 AM	599.4	73.8	74.4	1.7
9:30:32 AM	599.4	74.0	74.2	1.6
9:30:33 AM	599.3	73.9	73.9	1.5
9:30:34 AM	599.3	73.9	74.2	1.5
9:30:35 AM	599.4	73.9	74.2	1.5
9:30:36 AM	599.4	73.9	74.5	1.5
9:30:37 AM	599.4	73.9	74.0	1.5
9:30:38 AM	599.4	73.8	74.1	1.7
9:30:39 AM	599.4	73.8	73.7	1.6
9:30:40 AM	599.4	73.7	74.3	1.6
9:30:41 AM	599.4	73.7	74.3	1.5
9:30:42 AM	599.3	73.9	73.9	1.5
9:30:43 AM	599.3	73.8	73.5	1.5
9:30:44 AM	599.4	73.9	73.9	1.5
9:30:45 AM	599.4	73.7	74.4	1.6
9:30:46 AM	599.4	73.7	74.0	1.6
9:30:47 AM	599.4	73.6	74.3	1.6
9:30:48 AM	599.4	73.9	73.8	1.6
9:30:49 AM	599.4	73.9	74.2	1.6
9:30:50 AM	599.4	73.8	74.2	1.6
9:30:51 AM	599.4	73.9	73.7	1.6
9:30:52 AM	599.4	74.0	74.1	1.6
9:30:53 AM	599.4	73.7	73.6	1.6
9:30:54 AM	599.4	73.9	74.5	1.6
9:30:55 AM	599.3	73.7	74.1	1.6
9:30:56 AM	599.4	73.5	74.3	1.6
9:30:57 AM	599.4	73.9	73.8	1.6
9:30:58 AM	599.5	73.9	74.4	1.6
9:30:59 AM	599.4	73.9	73.7	1.6
9:31:00 AM	599.5	73.9	74.0	1.6
9:31:01 AM	599.5	73.9	74.1	1.6
9:31:02 AM	599.5	73.9	74.1	1.6
9:31:03 AM	599.5	73.8	74.3	1.6
9:31:04 AM	599.5	73.9	74.0	1.5
9:31:05 AM	599.6	73.8	74.5	1.5
9:31:06 AM	599.6	73.7	73.9	1.5
9:31:07 AM	599.5	74.0	74.2	1.6
9:31:08 AM	599.6	73.8	74.3	1.5
9:31:09 AM	599.7	73.9	73.8	1.5
9:31:10 AM	599.7	73.9	74.3	1.6
9:31:11 AM	599.7	74.1	74.3	1.5
9:31:12 AM	599.7	74.0	74.2	1.5
9:31:13 AM	599.6	73.6	74.0	1.6
9:31:14 AM	599.5	73.9	73.9	1.7
9:31:15 AM	599.5	73.7	74.4	1.6
9:31:16 AM	599.4	73.9	74.3	1.6
9:31:17 AM	599.4	73.9	74.2	1.6
9:31:18 AM	599.4	73.7	74.0	1.6
9:31:19 AM	599.4	74.2	74.1	1.6
9:31:20 AM	599.4	73.8	73.9	1.6
9:31:21 AM	599.3	73.8	74.1	1.6
9:31:22 AM	599.3	73.8	74.0	1.5
9:31:23 AM	599.3	73.8	74.2	1.5
9:31:24 AM	599.3	73.7	74.1	1.5
9:31:25 AM	599.3	73.9	74.8	1.5
9:31:26 AM	599.4	74.1	74.0	1.5
9:31:27 AM	599.4	73.7	73.9	1.5
9:31:28 AM	599.4	73.8	73.9	1.6
9:31:29 AM	599.4	73.8	73.9	1.6
9:31:30 AM	599.5	73.8	74.1	1.6
Averages ->	**599.4**	**73.8**	**74.1**	**1.6**
			Maximum ->	**1.7**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 150 **Date** 4/12/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
10:09:35 AM	601.4	73.9	74.3	1.4
10:09:36 AM	601.4	73.9	74.4	1.4
10:09:37 AM	601.5	74.0	74.0	1.5
10:09:38 AM	601.4	73.7	74.6	1.5
10:09:39 AM	601.4	73.9	74.6	1.5
10:09:40 AM	601.4	74.0	74.7	1.5
10:09:41 AM	601.4	73.9	74.6	1.5
10:09:42 AM	601.4	73.9	73.9	1.5
10:09:43 AM	601.4	73.9	74.1	1.4
10:09:44 AM	601.4	73.8	74.1	1.5
10:09:45 AM	601.4	73.8	74.1	1.5
10:09:46 AM	601.5	73.8	74.3	1.4
10:09:47 AM	601.4	74.1	74.7	1.5
10:09:48 AM	601.4	73.9	73.9	1.4
10:09:49 AM	601.4	74.0	74.0	1.5
10:09:50 AM	601.4	73.9	73.7	1.4
10:09:51 AM	601.4	73.7	73.9	1.4
10:09:52 AM	601.4	74.0	74.2	1.4
10:09:53 AM	601.4	74.0	74.1	1.5
10:09:54 AM	601.4	73.9	74.8	1.5
10:09:55 AM	601.3	74.1	73.8	1.5
10:09:56 AM	601.4	74.1	75.0	1.6
10:09:57 AM	601.4	74.1	74.1	1.5
10:09:58 AM	601.4	73.9	74.3	1.5
10:09:59 AM	601.4	73.9	74.5	1.5
10:10:00 AM	601.4	74.3	74.0	1.6
10:10:01 AM	601.3	73.7	74.1	1.5
10:10:02 AM	601.4	74.1	74.3	1.5
10:10:03 AM	601.4	73.9	74.3	1.6
10:10:04 AM	601.4	74.0	74.1	1.5
10:10:05 AM	601.4	74.1	73.8	1.5
10:10:06 AM	601.4	73.8	74.0	1.5
10:10:07 AM	601.4	74.1	74.6	1.4
10:10:08 AM	601.4	73.8	74.2	1.5
10:10:09 AM	601.4	74.0	74.4	1.5
10:10:10 AM	601.4	73.9	74.4	1.5
10:10:11 AM	601.4	74.2	74.5	1.4
10:10:12 AM	601.3	73.7	74.3	1.5
10:10:13 AM	601.4	74.0	74.3	1.5
10:10:14 AM	601.4	74.1	74.4	1.4
10:10:15 AM	601.4	73.9	74.1	1.4
10:10:16 AM	601.4	74.2	74.4	1.5
10:10:17 AM	601.4	73.9	74.1	1.5
10:10:18 AM	601.4	73.9	74.3	1.6
10:10:19 AM	601.3	73.8	74.0	1.6
10:10:20 AM	601.4	73.7	74.1	1.6
10:10:21 AM	601.4	74.2	74.7	1.5
10:10:22 AM	601.3	74.1	74.5	1.6
10:10:23 AM	601.3	74.1	74.6	1.6
10:10:24 AM	601.4	74.1	74.6	1.6
10:10:25 AM	601.4	74.1	73.9	1.5
10:10:26 AM	601.4	74.1	74.3	1.6
10:10:27 AM	601.3	74.1	74.3	1.5
10:10:28 AM	601.3	74.0	74.5	1.5
10:10:29 AM	601.3	74.3	74.1	1.6
10:10:30 AM	601.3	73.9	74.7	1.6
10:10:31 AM	601.3	74.0	73.8	1.5
10:10:32 AM	601.3	74.3	74.3	1.5
10:10:33 AM	601.3	74.0	74.2	1.5
10:10:34 AM	601.3	74.1	74.0	1.6
Averages ->	**601.4**	**74.0**	**74.3**	**1.5**
			Maximum ->	**1.6**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 200 **Date** 4/12/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
10:41:45 AM	600.5	74.1	74.6	1.3
10:41:46 AM	600.5	74.0	73.9	1.3
10:41:47 AM	600.5	74.0	74.2	1.3
10:41:48 AM	600.5	74.0	74.1	1.3
10:41:49 AM	600.6	74.1	74.3	1.3
10:41:50 AM	600.6	74.1	74.4	1.3
10:41:51 AM	600.6	73.8	74.5	1.2
10:41:52 AM	600.6	73.9	73.9	1.2
10:41:53 AM	600.6	74.1	74.3	1.2
10:41:54 AM	600.6	73.9	74.4	1.2
10:41:55 AM	600.6	73.8	74.2	1.3
10:41:56 AM	600.6	73.9	73.9	1.2
10:41:57 AM	600.7	74.1	74.6	1.3
10:41:58 AM	600.6	73.8	74.1	1.2
10:41:59 AM	600.5	74.0	74.5	1.2
10:42:00 AM	600.5	73.9	74.3	1.1
10:42:01 AM	600.5	74.0	74.5	1.2
10:42:02 AM	600.5	73.9	74.3	1.2
10:42:03 AM	600.4	74.0	74.2	1.3
10:42:04 AM	600.3	74.0	74.0	1.3
10:42:05 AM	600.4	74.1	74.3	1.3
10:42:06 AM	600.3	74.0	74.3	1.3
10:42:07 AM	600.3	73.9	74.6	1.2
10:42:08 AM	600.3	74.2	74.2	1.2
10:42:09 AM	600.3	73.9	74.5	1.2
10:42:10 AM	600.3	74.2	73.7	1.2
10:42:11 AM	600.3	73.7	74.1	1.2
10:42:12 AM	600.3	73.9	74.0	1.2
10:42:13 AM	600.3	73.9	74.1	1.2
10:42:14 AM	600.3	73.9	74.8	1.2
10:42:15 AM	600.3	73.9	74.1	1.2
10:42:16 AM	600.3	74.1	73.8	1.2
10:42:17 AM	600.3	74.0	74.1	1.3
10:42:18 AM	600.3	73.9	73.7	1.2
10:42:19 AM	600.3	73.9	74.1	1.2
10:42:20 AM	600.3	74.0	74.1	1.2
10:42:21 AM	600.3	73.9	73.9	1.2
10:42:22 AM	600.3	73.9	74.0	1.2
10:42:23 AM	600.3	74.3	74.1	1.1
10:42:24 AM	600.3	73.6	74.6	1.2
10:42:25 AM	600.3	73.9	74.3	1.2
10:42:26 AM	600.3	73.7	73.9	1.2
10:42:27 AM	600.3	74.1	74.3	1.2
10:42:28 AM	600.2	73.8	73.5	1.2
10:42:29 AM	600.3	74.0	74.1	1.2
10:42:30 AM	600.3	74.0	73.9	1.2
10:42:31 AM	600.3	74.1	74.1	1.1
10:42:32 AM	600.3	73.7	74.5	1.1
10:42:33 AM	600.3	74.1	73.9	1.2
10:42:34 AM	600.3	73.6	74.6	1.1
10:42:35 AM	600.3	73.8	74.2	1.1
10:42:36 AM	600.3	74.0	74.4	1.1
10:42:37 AM	600.3	74.2	74.2	1.2
10:42:38 AM	600.3	73.8	74.2	1.1
10:42:39 AM	600.3	74.1	74.3	1.1
10:42:40 AM	600.3	73.9	74.6	1.2
10:42:41 AM	600.3	74.1	73.9	1.1
10:42:42 AM	600.3	73.9	74.2	1.1
10:42:43 AM	600.3	73.9	74.1	1.1
10:42:44 AM	600.2	74.0	74.3	1.1
Averages ->	**600.4**	**74.0**	**74.2**	**1.2**
			Maximum ->	**1.3**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 250 **Date** 4/12/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
11:40:25 AM	600.5	73.7	74.2	1.2
11:40:26 AM	600.6	73.9	74.1	1.2
11:40:27 AM	600.6	73.8	74.5	1.3
11:40:28 AM	600.6	73.7	73.9	1.3
11:40:29 AM	600.5	73.7	74.0	1.3
11:40:30 AM	600.6	73.9	74.3	1.2
11:40:31 AM	600.5	73.8	74.1	1.2
11:40:32 AM	600.5	74.0	74.6	1.2
11:40:33 AM	600.5	73.9	74.1	1.2
11:40:34 AM	600.6	73.8	74.0	1.2
11:40:35 AM	600.5	74.1	74.0	1.2
11:40:36 AM	600.5	73.9	74.1	1.3
11:40:37 AM	600.5	74.0	74.2	1.3
11:40:38 AM	600.5	73.7	74.1	1.2
11:40:39 AM	600.5	74.0	74.1	1.4
11:40:40 AM	600.5	74.0	74.0	1.3
11:40:41 AM	600.5	74.1	74.4	1.3
11:40:42 AM	600.5	74.1	74.5	1.2
11:40:43 AM	600.5	73.8	74.1	1.2
11:40:44 AM	600.4	73.9	74.5	1.2
11:40:45 AM	600.5	73.7	74.2	1.2
11:40:46 AM	600.5	73.9	74.6	1.2
11:40:47 AM	600.5	73.9	74.3	1.3
11:40:48 AM	600.4	74.0	73.9	1.3
11:40:49 AM	600.4	74.0	73.7	1.4
11:40:50 AM	600.4	74.0	74.4	1.3
11:40:51 AM	600.4	73.8	74.2	1.3
11:40:52 AM	600.4	73.8	74.2	1.4
11:40:53 AM	600.4	73.9	73.9	1.4
11:40:54 AM	600.4	73.8	74.8	1.4
11:40:55 AM	600.4	73.8	74.2	1.3
11:40:56 AM	600.3	73.9	74.2	1.3
11:40:57 AM	600.3	73.7	74.8	1.3
11:40:58 AM	600.3	73.8	74.8	1.2
11:40:59 AM	600.3	73.8	74.3	1.3
11:41:00 AM	600.3	73.7	74.3	1.2
11:41:01 AM	600.3	73.9	73.9	1.2
11:41:02 AM	600.3	73.9	74.3	1.2
11:41:03 AM	600.3	73.5	74.2	1.3
11:41:04 AM	600.2	73.5	74.4	1.3
11:41:05 AM	600.2	73.9	73.9	1.2
11:41:06 AM	600.2	73.8	74.3	1.1
11:41:07 AM	600.2	73.7	73.9	1.2
11:41:08 AM	600.2	73.9	74.4	1.2
11:41:09 AM	600.2	73.9	74.1	1.1
11:41:10 AM	600.2	73.9	74.3	1.2
11:41:11 AM	600.2	74.0	73.8	1.1
11:41:12 AM	600.3	73.8	74.6	1.2
11:41:13 AM	600.3	73.8	74.3	1.2
11:41:14 AM	600.3	73.8	74.3	1.1
11:41:15 AM	600.3	73.8	74.1	1.2
11:41:16 AM	600.3	73.8	74.0	1.3
11:41:17 AM	600.3	73.7	74.6	1.2
11:41:18 AM	600.2	73.8	74.0	1.2
11:41:19 AM	600.2	73.8	74.1	1.2
11:41:20 AM	600.3	73.8	74.1	1.2
11:41:21 AM	600.3	73.8	74.5	1.2
11:41:22 AM	600.3	73.9	74.5	1.2
11:41:23 AM	600.2	73.7	73.8	1.2
11:41:24 AM	600.3	74.0	74.0	1.2
Averages ->	**600.4**	**73.8**	**74.2**	**1.2**
			Maximum ->	**1.4**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 250 **Date** 5/12/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
12:32:44 PM	603.6	391.0	393.6	1.2
12:32:45 PM	603.6	391.0	393.6	1.2
12:32:46 PM	603.7	390.9	393.4	1.1
12:32:47 PM	603.7	391.0	393.8	1.2
12:32:48 PM	603.7	391.0	393.4	1.2
12:32:49 PM	603.7	391.0	393.5	1.2
12:32:50 PM	603.7	390.9	393.6	1.3
12:32:51 PM	603.7	390.7	393.4	1.2
12:32:52 PM	603.8	391.0	394.0	1.2
12:32:53 PM	603.8	390.6	394.0	1.1
12:32:54 PM	603.7	390.4	394.0	1.2
12:32:55 PM	603.8	390.2	393.7	1.1
12:32:56 PM	603.8	390.0	393.8	1.2
12:32:57 PM	603.8	390.0	393.9	1.1
12:32:58 PM	603.8	389.5	393.7	1.1
12:32:59 PM	603.8	389.2	394.0	1.2
12:33:00 PM	603.9	388.8	394.1	1.2
12:33:01 PM	603.9	388.4	394.0	1.3
12:33:02 PM	603.9	387.9	393.9	1.2
12:33:03 PM	603.9	387.4	394.3	1.2
12:33:04 PM	603.9	386.8	394.0	1.3
12:33:05 PM	603.9	386.4	393.9	1.3
12:33:06 PM	603.9	385.8	393.9	1.2
12:33:07 PM	604.0	385.1	394.2	1.2
12:33:08 PM	604.0	384.3	394.1	1.2
12:33:09 PM	604.0	383.8	394.0	1.3
12:33:10 PM	604.0	383.2	394.1	1.2
12:33:11 PM	604.0	382.4	394.1	1.1
12:33:12 PM	604.1	381.8	394.2	1.2
12:33:13 PM	604.0	381.0	394.0	1.1
12:33:14 PM	604.0	380.2	394.0	1.1
12:33:15 PM	604.0	379.7	394.2	1.1
12:33:16 PM	604.0	378.7	394.1	1.2
12:33:17 PM	604.0	378.1	394.1	1.2
12:33:18 PM	604.0	377.3	393.8	1.2
12:33:19 PM	604.1	376.7	394.0	1.3
12:33:20 PM	604.2	375.9	394.0	1.2
12:33:21 PM	604.2	375.4	393.7	1.2
12:33:22 PM	604.2	374.4	393.7	1.1
12:33:23 PM	604.2	373.9	393.7	1.1
12:33:24 PM	604.2	373.2	393.3	1.2
12:33:25 PM	604.2	372.4	393.6	1.2
12:33:26 PM	604.2	371.7	393.7	1.2
12:33:27 PM	604.2	370.9	393.6	1.1
12:33:28 PM	604.1	370.3	393.2	1.1
12:33:29 PM	604.2	369.5	393.2	1.1
12:33:30 PM	604.2	369.0	393.0	1.1
12:33:31 PM	604.2	368.3	393.0	1.1
12:33:32 PM	604.3	367.9	393.2	1.0
12:33:33 PM	604.2	367.3	393.0	1.1
12:33:34 PM	604.2	366.7	392.4	1.1
12:33:35 PM	604.2	366.3	392.6	1.0
12:33:36 PM	604.3	365.8	392.7	1.1
12:33:37 PM	604.3	365.3	392.5	1.1
12:33:38 PM	604.3	365.1	392.4	1.1
12:33:39 PM	604.3	364.7	392.1	1.0
12:33:40 PM	604.3	364.6	391.8	1.0
12:33:41 PM	604.3	364.6	391.9	1.3
12:33:42 PM	604.3	364.6	391.8	1.0
12:33:43 PM	604.3	364.4	391.6	1.0
Averages ->	**604.0**	**379.4**	**393.5**	**1.2**
			Maximum ->	**1.3**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 300 **Date** 5/12/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
1:28:19 PM	602.2	389.2	389.8	1.4
1:28:20 PM	602.2	389.4	389.8	1.6
1:28:21 PM	602.2	389.8	389.8	1.5
1:28:22 PM	602.3	390.2	389.4	1.5
1:28:23 PM	602.3	390.5	389.8	1.5
1:28:24 PM	602.2	390.8	389.5	1.5
1:28:25 PM	602.3	391.2	389.8	1.6
1:28:26 PM	602.3	391.4	389.6	1.5
1:28:27 PM	602.3	391.5	389.9	1.5
1:28:28 PM	602.3	392.1	390.0	1.6
1:28:29 PM	602.3	392.2	390.0	1.5
1:28:30 PM	602.3	392.8	390.0	1.5
1:28:31 PM	602.3	393.0	390.1	1.6
1:28:32 PM	602.3	393.3	389.9	1.5
1:28:33 PM	602.4	393.6	389.6	1.4
1:28:34 PM	602.3	393.9	390.1	1.5
1:28:35 PM	602.3	394.2	390.3	1.5
1:28:36 PM	602.4	394.4	390.5	1.4
1:28:37 PM	602.4	394.8	390.2	1.4
1:28:38 PM	602.4	395.1	390.2	1.4
1:28:39 PM	602.4	395.3	390.3	1.4
1:28:40 PM	602.4	395.7	390.0	1.5
1:28:41 PM	602.4	395.8	390.3	1.4
1:28:42 PM	602.4	396.2	390.2	1.5
1:28:43 PM	602.4	396.5	390.2	1.4
1:28:44 PM	602.4	396.8	390.3	1.5
1:28:45 PM	602.5	397.0	390.3	1.5
1:28:46 PM	602.5	397.3	390.4	1.6
1:28:47 PM	602.5	397.5	390.6	1.6
1:28:48 PM	602.4	398.0	390.4	1.7
1:28:49 PM	602.5	397.8	390.4	1.6
1:28:50 PM	602.4	398.3	390.4	1.5
1:28:51 PM	602.5	398.6	390.8	1.5
1:28:52 PM	602.5	398.6	390.8	1.5
1:28:53 PM	602.4	399.2	390.6	1.6
1:28:54 PM	602.4	399.2	391.0	1.4
1:28:55 PM	602.5	399.6	390.8	1.5
1:28:56 PM	602.4	399.8	390.9	1.6
1:28:57 PM	602.5	400.0	391.4	1.5
1:28:58 PM	602.5	400.4	391.0	1.5
1:28:59 PM	602.5	400.6	391.2	1.6
1:29:00 PM	602.5	400.8	391.3	1.5
1:29:01 PM	602.5	401.0	391.2	1.5
1:29:02 PM	602.6	401.2	391.4	1.5
1:29:03 PM	602.5	401.2	391.4	1.5
1:29:04 PM	602.6	401.4	391.6	1.5
1:29:05 PM	602.6	401.8	391.7	1.5
1:29:06 PM	602.6	402.0	391.6	1.5
1:29:07 PM	602.7	402.2	391.7	1.5
1:29:08 PM	602.6	402.3	391.6	1.5
1:29:09 PM	602.6	402.4	391.6	1.7
1:29:10 PM	602.6	402.6	391.6	1.7
1:29:11 PM	602.7	403.0	391.9	1.7
1:29:12 PM	602.7	402.9	392.2	1.6
1:29:13 PM	602.7	403.3	392.4	1.5
1:29:14 PM	602.7	403.5	392.0	1.6
1:29:15 PM	602.7	404.0	391.8	1.5
1:29:16 PM	602.7	404.0	392.0	1.5
1:29:17 PM	602.8	404.0	392.4	1.5
1:29:18 PM	602.7	404.3	392.3	1.5
Averages ->	**602.5**	**397.5**	**390.8**	**1.5**
			Maximum ->	**1.7**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 350 **Date** 5/12/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
2:34:26 PM	602.0	378.4	394.1	1.8
2:34:27 PM	602.1	378.4	394.3	1.8
2:34:28 PM	602.1	378.2	394.3	1.7
2:34:29 PM	602.2	377.8	394.4	1.8
2:34:30 PM	602.2	377.4	394.6	1.8
2:34:31 PM	602.3	377.3	394.4	1.7
2:34:32 PM	602.2	376.8	394.1	1.8
2:34:33 PM	602.3	376.4	394.6	1.8
2:34:34 PM	602.3	376.2	394.7	1.7
2:34:35 PM	602.3	375.4	394.6	1.8
2:34:36 PM	602.3	375.2	394.6	1.8
2:34:37 PM	602.4	374.7	394.6	1.8
2:34:38 PM	602.4	374.5	394.4	1.7
2:34:39 PM	602.4	373.7	394.7	1.7
2:34:40 PM	602.4	373.1	395.0	1.8
2:34:41 PM	602.4	372.6	394.8	1.7
2:34:42 PM	602.4	372.0	395.1	1.7
2:34:43 PM	602.4	371.6	394.8	1.8
2:34:44 PM	602.5	371.2	394.9	1.7
2:34:45 PM	602.5	370.3	394.8	1.7
2:34:46 PM	602.5	369.8	394.6	1.7
2:34:47 PM	602.5	369.1	394.9	1.7
2:34:48 PM	602.5	368.9	395.0	1.7
2:34:49 PM	602.5	368.5	394.8	1.8
2:34:50 PM	602.6	367.7	394.6	1.7
2:34:51 PM	602.6	367.2	394.9	1.7
2:34:52 PM	602.6	366.3	395.1	1.7
2:34:53 PM	602.6	365.9	394.9	1.8
2:34:54 PM	602.7	365.3	394.8	1.5
2:34:55 PM	602.6	364.7	394.9	1.6
2:34:56 PM	602.7	364.3	394.6	1.7
2:34:57 PM	602.7	363.9	394.7	1.7
2:34:58 PM	602.7	363.1	394.7	1.6
2:34:59 PM	602.7	362.8	394.4	1.7
2:35:00 PM	602.7	362.1	394.6	1.7
2:35:01 PM	602.7	361.5	394.4	1.6
2:35:02 PM	602.7	361.1	394.2	1.7
2:35:03 PM	602.7	360.7	394.2	1.8
2:35:04 PM	602.8	360.1	394.2	1.6
2:35:05 PM	602.8	359.7	394.2	1.7
2:35:06 PM	602.8	359.0	394.3	1.6
2:35:07 PM	602.7	358.9	393.7	1.6
2:35:08 PM	602.8	358.4	394.0	1.7
2:35:09 PM	602.8	357.5	393.6	1.8
2:35:10 PM	602.8	357.2	393.6	1.7
2:35:11 PM	602.8	356.9	393.3	1.6
2:35:12 PM	602.8	356.5	393.4	1.8
2:35:13 PM	602.8	355.6	393.5	1.7
2:35:14 PM	602.8	355.5	393.0	1.7
2:35:15 PM	602.8	354.8	393.6	1.7
2:35:16 PM	602.8	354.5	393.2	1.8
2:35:17 PM	602.8	354.0	393.0	1.6
2:35:18 PM	602.9	353.8	393.0	1.6
2:35:19 PM	602.8	353.0	392.8	1.7
2:35:20 PM	602.9	353.3	392.7	1.7
2:35:21 PM	602.9	352.7	392.7	1.6
2:35:22 PM	602.9	352.4	392.8	1.7
2:35:23 PM	602.9	352.4	392.6	1.7
2:35:24 PM	602.9	352.3	392.3	1.6
2:35:25 PM	602.9	352.2	392.3	1.7
Averages ->	**602.6**	**364.9**	**394.1**	**1.7**
			Maximum ->	**1.8**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 400 **Date** 5/12/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
3:21:11 PM	603.2	364.8	396.0	1.4
3:21:12 PM	603.2	364.3	395.8	1.5
3:21:13 PM	603.2	363.8	396.2	1.5
3:21:14 PM	603.1	363.5	396.1	1.4
3:21:15 PM	603.2	362.9	396.4	1.5
3:21:16 PM	603.2	363.0	396.2	1.5
3:21:17 PM	603.2	362.2	396.1	1.3
3:21:18 PM	603.2	361.9	396.1	1.4
3:21:19 PM	603.2	361.3	396.0	1.4
3:21:20 PM	603.1	360.9	396.2	1.5
3:21:21 PM	603.1	360.6	396.0	1.5
3:21:22 PM	603.2	360.2	396.0	1.4
3:21:23 PM	603.2	359.7	395.8	1.5
3:21:24 PM	603.2	359.1	396.2	1.5
3:21:25 PM	603.2	358.8	395.9	1.3
3:21:26 PM	603.2	358.4	395.6	1.4
3:21:27 PM	603.2	357.9	395.8	1.5
3:21:28 PM	603.2	357.4	396.0	1.5
3:21:29 PM	603.3	357.3	395.8	1.5
3:21:30 PM	603.2	356.7	395.8	1.4
3:21:31 PM	603.2	356.0	395.8	1.4
3:21:32 PM	603.3	355.6	395.4	1.5
3:21:33 PM	603.2	355.5	395.4	1.5
3:21:34 PM	603.3	355.0	395.4	1.4
3:21:35 PM	603.3	354.6	395.4	1.4
3:21:36 PM	603.3	354.1	395.3	1.4
3:21:37 PM	603.3	353.9	395.2	1.5
3:21:38 PM	603.3	353.0	395.0	1.4
3:21:39 PM	603.3	352.8	394.8	1.3
3:21:40 PM	603.3	352.5	395.0	1.5
3:21:41 PM	603.3	352.4	394.8	1.5
3:21:42 PM	603.3	351.9	395.0	1.3
3:21:43 PM	603.3	351.4	394.3	1.4
3:21:44 PM	603.3	351.2	394.6	1.5
3:21:45 PM	603.4	350.6	394.5	1.4
3:21:46 PM	603.3	350.2	394.3	1.5
3:21:47 PM	603.4	350.2	394.3	1.4
3:21:48 PM	603.4	349.6	394.2	1.4
3:21:49 PM	603.4	349.2	394.2	1.5
3:21:50 PM	603.4	348.9	394.0	1.5
3:21:51 PM	603.4	348.6	394.1	1.5
3:21:52 PM	603.4	348.2	393.6	1.3
3:21:53 PM	603.4	347.7	393.6	1.4
3:21:54 PM	603.4	347.6	393.6	1.5
3:21:55 PM	603.4	347.0	393.6	1.5
3:21:56 PM	603.4	346.8	393.4	1.4
3:21:57 PM	603.4	346.4	393.3	1.5
3:21:58 PM	603.4	345.9	393.3	1.4
3:21:59 PM	603.4	345.7	392.9	1.4
3:22:00 PM	603.4	345.7	393.0	1.6
3:22:01 PM	603.4	345.1	392.8	1.5
3:22:02 PM	603.4	344.9	392.9	1.5
3:22:03 PM	603.4	344.7	392.8	1.5
3:22:04 PM	603.4	344.5	392.5	1.4
3:22:05 PM	603.4	344.3	392.4	1.4
3:22:06 PM	603.4	344.3	392.3	1.5
3:22:07 PM	603.4	344.4	392.3	1.4
3:22:08 PM	603.4	344.5	392.5	1.4
3:22:09 PM	603.4	344.6	392.1	1.5
3:22:10 PM	603.4	344.9	391.8	1.4
Averages ->	**603.3**	**353.0**	**394.6**	**1.4**
			Maximum ->	**1.6**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 450 **Date** 5/12/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
4:09:44 PM	600.6	368.1	394.2	1.4
4:09:45 PM	600.6	368.7	394.6	1.3
4:09:46 PM	600.6	368.7	394.8	1.3
4:09:47 PM	600.6	369.3	394.8	1.4
4:09:48 PM	600.6	369.2	395.1	1.4
4:09:49 PM	600.6	369.1	394.7	1.3
4:09:50 PM	600.7	369.0	395.3	1.4
4:09:51 PM	600.7	368.9	395.2	1.3
4:09:52 PM	600.7	369.3	395.1	1.4
4:09:53 PM	600.6	368.8	395.5	1.4
4:09:54 PM	600.7	368.6	395.4	1.3
4:09:55 PM	600.7	368.7	395.3	1.4
4:09:56 PM	600.7	368.2	395.4	1.4
4:09:57 PM	600.7	368.1	395.5	1.3
4:09:58 PM	600.7	367.8	395.8	1.3
4:09:59 PM	600.7	367.9	395.5	1.4
4:10:00 PM	600.7	367.2	395.7	1.4
4:10:01 PM	600.7	366.9	396.0	1.4
4:10:02 PM	600.7	366.1	395.9	1.4
4:10:03 PM	600.8	366.1	395.9	1.3
4:10:04 PM	600.7	365.9	395.9	1.4
4:10:05 PM	600.7	365.3	395.9	1.4
4:10:06 PM	600.7	365.0	396.2	1.5
4:10:07 PM	600.7	364.6	395.8	1.4
4:10:08 PM	600.8	363.9	395.8	1.6
4:10:09 PM	600.7	363.6	396.2	1.5
4:10:10 PM	600.8	363.3	395.7	1.6
4:10:11 PM	600.8	362.9	395.8	1.7
4:10:12 PM	600.8	362.3	395.8	1.7
4:10:13 PM	600.7	361.7	396.1	1.8
4:10:14 PM	600.8	361.6	396.0	1.8
4:10:15 PM	600.8	361.1	395.8	1.8
4:10:16 PM	600.7	360.6	396.0	1.9
4:10:17 PM	600.7	360.2	396.0	2.0
4:10:18 PM	600.7	359.5	395.7	2.0
4:10:19 PM	600.8	359.2	395.7	1.9
4:10:20 PM	600.8	358.7	395.8	2.0
4:10:21 PM	600.7	358.4	395.5	1.9
4:10:22 PM	600.7	358.0	395.8	1.9
4:10:23 PM	600.7	357.7	395.5	1.9
4:10:24 PM	600.8	357.2	395.5	2.1
4:10:25 PM	600.9	356.8	395.6	2.1
4:10:26 PM	600.8	356.2	395.6	2.0
4:10:27 PM	600.8	355.9	395.7	2.1
4:10:28 PM	600.9	355.4	395.7	2.0
4:10:29 PM	600.9	355.1	395.5	2.0
4:10:30 PM	600.9	354.7	395.3	2.0
4:10:31 PM	600.9	354.4	395.4	1.9
4:10:32 PM	600.9	353.9	395.4	2.0
4:10:33 PM	600.9	353.4	395.3	2.0
4:10:34 PM	600.9	353.4	395.1	2.0
4:10:35 PM	600.9	352.8	395.1	2.1
4:10:36 PM	600.9	352.4	395.3	2.1
4:10:37 PM	600.9	352.0	394.8	2.2
4:10:38 PM	600.9	351.6	394.9	2.1
4:10:39 PM	600.9	351.4	394.8	2.1
4:10:40 PM	600.9	351.0	395.1	2.2
4:10:41 PM	600.9	350.6	394.4	2.2
4:10:42 PM	600.9	350.2	394.5	2.1
4:10:43 PM	600.9	349.7	394.6	2.2
Averages ->	**600.8**	**361.1**	**395.4**	**1.7**
			Maximum ->	**2.2**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 500 **Date** 5/12/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
4:51:57 PM	601.2	379.8	389.8	2.1
4:51:58 PM	601.2	379.9	389.6	2.1
4:51:59 PM	601.3	380.2	390.0	2.2
4:52:00 PM	601.3	380.4	389.7	2.1
4:52:01 PM	601.2	380.9	389.9	2.1
4:52:02 PM	601.2	381.0	390.0	2.1
4:52:03 PM	601.3	381.3	389.8	2.1
4:52:04 PM	601.3	381.7	389.8	2.1
4:52:05 PM	601.2	382.2	389.7	2.0
4:52:06 PM	601.2	382.5	389.9	2.0
4:52:07 PM	601.2	383.0	389.7	2.0
4:52:08 PM	601.3	383.3	390.1	2.0
4:52:09 PM	601.2	383.7	390.0	2.0
4:52:10 PM	601.2	384.0	390.3	2.1
4:52:11 PM	601.4	384.3	390.2	2.0
4:52:12 PM	601.4	384.9	389.8	2.1
4:52:13 PM	601.3	385.3	390.0	2.0
4:52:14 PM	601.3	385.9	389.9	2.1
4:52:15 PM	601.4	386.1	390.0	2.0
4:52:16 PM	601.4	386.5	390.2	2.1
4:52:17 PM	601.3	387.0	390.0	2.0
4:52:18 PM	601.3	387.5	389.8	2.1
4:52:19 PM	601.3	387.9	390.0	2.0
4:52:20 PM	601.3	388.3	390.1	2.0
4:52:21 PM	601.3	388.5	390.6	2.1
4:52:22 PM	601.3	389.1	390.4	2.0
4:52:23 PM	601.4	389.5	390.4	2.1
4:52:24 PM	601.4	389.8	390.7	2.0
4:52:25 PM	601.4	390.1	390.4	2.1
4:52:26 PM	601.4	390.6	390.5	2.1
4:52:27 PM	601.4	390.9	390.7	2.1
4:52:28 PM	601.4	391.5	390.7	2.1
4:52:29 PM	601.4	391.9	390.7	2.0
4:52:30 PM	601.4	392.1	390.7	2.1
4:52:31 PM	601.5	392.7	390.8	2.1
4:52:32 PM	601.5	393.0	391.0	2.1
4:52:33 PM	601.4	393.2	391.3	2.1
4:52:34 PM	601.5	393.7	391.1	2.0
4:52:35 PM	601.4	394.1	391.2	2.0
4:52:36 PM	601.4	394.5	391.5	2.0
4:52:37 PM	601.4	394.8	391.5	2.0
4:52:38 PM	601.4	395.1	391.5	2.1
4:52:39 PM	601.5	395.5	391.3	2.0
4:52:40 PM	601.5	395.7	391.5	2.1
4:52:41 PM	601.5	396.1	391.8	2.1
4:52:42 PM	601.5	396.7	391.3	2.0
4:52:43 PM	601.4	397.1	391.7	2.1
4:52:44 PM	601.5	397.3	391.7	2.0
4:52:45 PM	601.4	397.6	391.9	2.0
4:52:46 PM	601.5	398.0	391.9	2.0
4:52:47 PM	601.5	398.1	392.3	2.1
4:52:48 PM	601.5	398.5	392.4	2.0
4:52:49 PM	601.5	398.8	392.0	2.1
4:52:50 PM	601.5	399.1	392.1	2.1
4:52:51 PM	601.5	399.4	392.5	2.1
4:52:52 PM	601.5	399.7	392.7	2.2
4:52:53 PM	601.5	399.9	392.7	2.1
4:52:54 PM	601.6	400.3	392.7	2.2
4:52:55 PM	601.5	400.6	393.1	2.2
4:52:56 PM	601.5	401.1	392.9	2.1
Averages ->	**601.4**	**390.5**	**390.9**	**2.1**
			Maximum ->	**2.2**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 500 **Date** 5/13/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
7:26:46 AM	599.2	82.6	83.5	3.5
7:26:47 AM	599.2	82.5	83.1	3.4
7:26:48 AM	599.2	82.6	83.0	3.4
7:26:49 AM	599.1	82.6	83.8	3.5
7:26:50 AM	599.1	82.3	83.3	3.5
7:26:51 AM	599.1	82.6	83.4	3.4
7:26:52 AM	599.1	82.6	83.3	3.4
7:26:53 AM	599.1	82.2	83.7	3.4
7:26:54 AM	599.1	82.6	83.0	3.4
7:26:55 AM	599.1	82.6	83.4	3.4
7:26:56 AM	599.1	82.4	83.3	3.4
7:26:57 AM	599.1	82.5	83.5	3.3
7:26:58 AM	599.1	82.4	83.2	3.2
7:26:59 AM	599.2	82.6	83.2	3.2
7:27:00 AM	599.2	82.5	83.3	3.2
7:27:01 AM	599.1	82.4	83.4	3.1
7:27:02 AM	599.2	82.5	83.4	3.3
7:27:03 AM	599.1	82.5	83.5	3.3
7:27:04 AM	599.1	82.4	83.3	3.2
7:27:05 AM	599.1	82.4	83.2	3.2
7:27:06 AM	599.1	82.6	83.2	3.1
7:27:07 AM	599.1	82.6	83.0	3.2
7:27:08 AM	599.2	82.6	83.7	3.2
7:27:09 AM	599.2	82.3	83.7	3.3
7:27:10 AM	599.2	82.7	83.2	3.1
7:27:11 AM	599.2	82.6	83.2	3.2
7:27:12 AM	599.2	82.6	83.4	3.3
7:27:13 AM	599.2	82.4	83.2	3.1
7:27:14 AM	599.2	82.5	83.2	3.1
7:27:15 AM	599.2	82.6	83.1	3.1
7:27:16 AM	599.2	82.3	83.7	3.1
7:27:17 AM	599.2	82.5	83.5	3.1
7:27:18 AM	599.2	82.6	83.5	3.0
7:27:19 AM	599.1	82.5	83.2	3.0
7:27:20 AM	599.1	82.7	83.5	3.0
7:27:21 AM	599.1	82.6	83.4	3.0
7:27:22 AM	599.1	82.6	83.5	3.0
7:27:23 AM	599.1	82.6	83.1	3.0
7:27:24 AM	599.1	82.6	83.3	2.9
7:27:25 AM	599.1	82.6	83.6	3.0
7:27:26 AM	599.2	82.3	83.4	3.0
7:27:27 AM	599.1	82.1	83.5	2.9
7:27:28 AM	599.2	82.6	83.1	2.9
7:27:29 AM	599.2	82.8	83.5	3.0
7:27:30 AM	599.2	82.4	83.4	3.0
7:27:31 AM	599.1	82.6	83.7	3.1
7:27:32 AM	599.1	83.0	83.2	3.0
7:27:33 AM	599.1	82.5	83.6	2.9
7:27:34 AM	599.1	82.6	83.7	3.1
7:27:35 AM	599.2	82.4	83.5	3.1
7:27:36 AM	599.2	82.4	83.5	3.2
7:27:37 AM	599.1	82.6	83.5	3.0
7:27:38 AM	599.1	82.7	83.2	3.0
7:27:39 AM	599.1	82.6	83.6	3.1
7:27:40 AM	599.1	82.4	83.4	3.1
7:27:41 AM	599.2	82.6	83.6	3.0
7:27:42 AM	599.1	82.5	83.2	3.1
7:27:43 AM	599.1	82.6	83.4	2.9
7:27:44 AM	599.1	82.6	83.5	3.0
7:27:45 AM	599.1	82.6	83.6	3.0
Averages ->	**599.1**	**82.5**	**83.4**	**3.1**
			Maximum ->	**3.5**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 550 **Date** 5/13/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
8:03:46 AM	599.5	81.9	82.8	1.1
8:03:47 AM	599.4	82.1	82.6	1.1
8:03:48 AM	599.3	81.9	82.6	1.0
8:03:49 AM	599.3	82.0	82.6	1.1
8:03:50 AM	599.3	82.0	82.4	1.1
8:03:51 AM	599.3	82.0	82.8	1.1
8:03:52 AM	599.2	81.9	83.0	1.1
8:03:53 AM	599.1	81.9	82.6	1.1
8:03:54 AM	599.1	82.1	82.8	1.1
8:03:55 AM	599.0	81.9	82.6	1.1
8:03:56 AM	599.1	82.0	82.7	1.1
8:03:57 AM	599.1	82.0	82.8	1.1
8:03:58 AM	599.1	82.1	82.6	1.1
8:03:59 AM	599.1	82.1	82.6	1.1
8:04:00 AM	599.1	82.0	82.7	1.1
8:04:01 AM	599.1	82.0	82.6	1.1
8:04:02 AM	599.1	82.0	82.6	1.1
8:04:03 AM	599.0	82.0	82.5	1.1
8:04:04 AM	599.0	82.1	82.4	1.1
8:04:05 AM	599.0	82.1	83.2	1.1
8:04:06 AM	599.0	82.0	82.5	1.1
8:04:07 AM	599.0	82.0	83.0	1.1
8:04:08 AM	599.1	82.1	82.6	1.1
8:04:09 AM	599.2	81.9	82.6	1.1
8:04:10 AM	599.2	81.7	82.6	1.2
8:04:11 AM	599.1	82.1	82.3	1.1
8:04:12 AM	599.1	82.3	82.6	1.1
8:04:13 AM	599.2	82.3	82.7	1.1
8:04:14 AM	599.2	82.1	82.6	1.1
8:04:15 AM	599.1	82.1	82.8	1.1
8:04:16 AM	599.1	82.1	82.6	1.0
8:04:17 AM	599.2	82.1	82.5	1.0
8:04:18 AM	599.1	81.9	82.7	1.0
8:04:19 AM	599.2	81.9	82.8	1.0
8:04:20 AM	599.2	81.9	82.7	1.0
8:04:21 AM	599.2	82.1	82.6	1.0
8:04:22 AM	599.1	82.1	82.6	1.0
8:04:23 AM	599.1	82.0	82.6	1.0
8:04:24 AM	599.1	81.9	82.6	1.0
8:04:25 AM	599.1	82.1	83.0	0.9
8:04:26 AM	599.1	82.3	82.6	0.9
8:04:27 AM	599.1	82.1	82.6	0.9
8:04:28 AM	599.1	82.2	82.6	0.9
8:04:29 AM	599.1	82.2	82.3	0.9
8:04:30 AM	599.1	81.9	82.9	0.9
8:04:31 AM	599.2	82.0	82.6	0.8
8:04:32 AM	599.1	82.1	82.7	0.9
8:04:33 AM	599.1	82.1	82.6	0.9
8:04:34 AM	599.1	82.1	82.4	0.9
8:04:35 AM	599.2	82.1	82.4	0.9
8:04:36 AM	599.1	82.1	82.6	0.9
8:04:37 AM	599.2	82.1	82.6	0.8
8:04:38 AM	599.2	82.1	82.6	0.9
8:04:39 AM	599.2	81.7	82.6	0.9
8:04:40 AM	599.2	81.9	82.5	0.8
8:04:41 AM	599.2	82.1	82.7	0.8
8:04:42 AM	599.3	81.9	82.7	0.8
8:04:43 AM	599.3	82.1	82.8	0.9
8:04:44 AM	599.3	82.1	82.6	0.9
8:04:45 AM	599.3	81.8	82.7	0.9
Averages ->	**599.2**	**82.0**	**82.6**	**1.0**
			Maximum ->	**1.2**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 600 **Date** 5/13/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
8:35:57 AM	602.1	79.9	80.7	0.9
8:35:58 AM	602.1	80.1	80.8	1.0
8:35:59 AM	602.1	80.1	80.6	1.0
8:36:00 AM	602.2	79.9	80.7	1.0
8:36:01 AM	602.2	80.1	80.8	1.0
8:36:02 AM	602.2	80.0	80.7	1.0
8:36:03 AM	602.2	80.1	80.6	1.0
8:36:04 AM	602.2	80.1	80.6	1.0
8:36:05 AM	602.3	80.1	80.6	1.0
8:36:06 AM	602.3	80.1	80.8	1.0
8:36:07 AM	602.3	80.1	80.9	1.0
8:36:08 AM	602.4	79.9	80.6	1.0
8:36:09 AM	602.4	80.1	80.7	1.0
8:36:10 AM	602.4	80.0	81.1	1.0
8:36:11 AM	602.6	79.9	80.6	1.0
8:36:12 AM	602.6	80.1	80.6	1.0
8:36:13 AM	602.6	80.1	80.8	1.0
8:36:14 AM	602.8	80.0	80.7	1.1
8:36:15 AM	602.9	80.1	80.8	1.1
8:36:16 AM	603.0	80.1	80.6	1.1
8:36:17 AM	603.2	80.3	80.4	1.1
8:36:18 AM	603.4	80.0	80.8	1.0
8:36:19 AM	603.6	80.1	80.8	1.0
8:36:20 AM	603.6	80.1	80.8	1.0
8:36:21 AM	602.9	80.1	80.6	1.0
8:36:22 AM	602.8	80.1	80.7	1.0
8:36:23 AM	602.7	79.9	80.6	1.0
8:36:24 AM	602.6	80.0	80.8	1.0
8:36:25 AM	602.5	79.9	80.6	1.0
8:36:26 AM	602.3	80.1	80.7	1.0
8:36:27 AM	602.3	80.1	80.8	1.0
8:36:28 AM	602.3	80.0	80.7	1.0
8:36:29 AM	602.2	80.1	80.7	1.0
8:36:30 AM	602.1	80.0	80.4	1.0
8:36:31 AM	602.0	80.0	80.6	1.0
8:36:32 AM	602.0	80.1	80.8	1.0
8:36:33 AM	602.0	80.0	80.7	1.0
8:36:34 AM	602.0	80.1	80.7	1.0
8:36:35 AM	602.0	80.4	80.9	1.0
8:36:36 AM	601.9	80.1	80.8	1.0
8:36:37 AM	602.0	79.9	80.5	1.0
8:36:38 AM	602.0	80.1	80.8	0.9
8:36:39 AM	602.0	80.3	80.1	0.9
8:36:40 AM	601.9	80.0	80.5	0.9
8:36:41 AM	602.0	80.1	80.8	0.9
8:36:42 AM	601.9	80.2	80.9	0.9
8:36:43 AM	601.9	80.0	80.8	0.8
8:36:44 AM	601.9	80.1	80.7	0.8
8:36:45 AM	602.0	80.1	80.8	0.8
8:36:46 AM	602.0	80.1	80.8	0.9
8:36:47 AM	602.0	79.9	80.4	0.9
8:36:48 AM	602.0	80.3	80.8	0.9
8:36:49 AM	602.0	79.8	81.0	0.9
8:36:50 AM	601.9	80.1	80.6	0.9
8:36:51 AM	602.0	80.0	80.3	0.9
8:36:52 AM	602.0	79.9	80.7	0.9
8:36:53 AM	601.9	80.1	80.8	0.9
8:36:54 AM	602.0	80.1	80.7	0.9
8:36:55 AM	601.9	80.2	80.8	0.9
8:36:56 AM	602.0	80.3	80.3	0.9
Averages ->	**602.3**	**80.1**	**80.7**	**1.0**
			Maximum ->	**1.1**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 650 **Date** 5/13/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
9:11:14 AM	601.2	80.1	80.8	1.1
9:11:15 AM	601.2	79.7	80.5	1.1
9:11:16 AM	601.2	80.0	80.6	1.1
9:11:17 AM	601.2	80.0	80.8	1.1
9:11:18 AM	601.2	80.1	80.5	1.1
9:11:19 AM	601.2	80.1	80.6	1.1
9:11:20 AM	601.3	80.1	80.1	1.1
9:11:21 AM	601.2	80.1	81.0	1.1
9:11:22 AM	601.2	80.1	80.6	1.1
9:11:23 AM	601.3	80.0	80.6	1.1
9:11:24 AM	601.4	80.2	80.8	1.1
9:11:25 AM	601.4	80.0	80.9	1.1
9:11:26 AM	601.5	80.1	80.6	1.1
9:11:27 AM	601.6	80.0	80.8	1.1
9:11:28 AM	601.6	80.0	80.7	1.1
9:11:29 AM	601.7	80.2	80.6	1.1
9:11:30 AM	601.7	80.1	80.9	1.1
9:11:31 AM	601.9	80.0	80.6	1.1
9:11:32 AM	602.5	80.1	80.4	1.1
9:11:33 AM	602.4	79.9	80.5	1.0
9:11:34 AM	602.5	80.1	80.6	1.0
9:11:35 AM	602.5	79.9	80.8	1.0
9:11:36 AM	602.5	80.0	80.8	1.0
9:11:37 AM	602.5	80.0	80.8	1.0
9:11:38 AM	602.5	79.9	81.1	1.0
9:11:39 AM	602.5	80.2	80.9	1.0
9:11:40 AM	602.6	80.1	80.6	1.0
9:11:41 AM	602.5	80.1	80.7	1.0
9:11:42 AM	602.4	80.0	81.0	1.0
9:11:43 AM	602.4	80.1	80.5	1.0
9:11:44 AM	602.3	80.1	80.6	1.0
9:11:45 AM	602.2	80.1	80.8	1.0
9:11:46 AM	602.3	80.3	80.7	1.0
9:11:47 AM	602.2	80.0	80.6	1.0
9:11:48 AM	602.2	80.0	80.7	1.0
9:11:49 AM	602.1	80.1	80.8	1.0
9:11:50 AM	602.1	79.9	80.7	1.0
9:11:51 AM	602.0	79.5	80.9	1.0
9:11:52 AM	602.0	80.0	80.8	1.0
9:11:53 AM	602.0	80.2	80.6	1.0
9:11:54 AM	602.1	79.9	80.8	1.0
9:11:55 AM	602.1	79.7	80.6	1.0
9:11:56 AM	602.1	80.0	80.5	1.0
9:11:57 AM	602.2	79.9	80.7	1.0
9:11:58 AM	602.2	79.9	80.8	1.0
9:11:59 AM	602.3	80.0	80.8	1.0
9:12:00 AM	602.4	80.1	80.7	1.0
9:12:01 AM	602.4	80.2	80.3	1.0
9:12:02 AM	602.4	80.1	80.4	1.0
9:12:03 AM	602.0	80.0	80.7	1.0
9:12:04 AM	601.8	80.3	80.6	1.0
9:12:05 AM	601.7	79.9	80.8	1.0
9:12:06 AM	601.7	80.1	80.8	1.0
9:12:07 AM	601.6	80.2	80.6	1.0
9:12:08 AM	601.5	80.0	80.4	1.0
9:12:09 AM	601.4	80.1	80.6	1.0
9:12:10 AM	601.3	80.1	81.0	1.0
9:12:11 AM	601.1	80.1	81.0	1.1
9:12:12 AM	601.1	80.3	80.6	1.1
9:12:13 AM	601.0	80.1	80.7	1.1
Averages ->	**601.9**	**80.0**	**80.7**	**1.0**
			Maximum ->	**1.1**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball-Valve

Cycle Number: 700 **Date** 5/13/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
9:43:09 AM	603.0	80.1	80.5	1.3
9:43:10 AM	603.0	80.2	80.7	1.3
9:43:11 AM	602.9	80.1	80.8	1.3
9:43:12 AM	602.9	80.2	80.6	1.3
9:43:13 AM	602.9	79.9	80.7	1.3
9:43:14 AM	602.9	80.0	80.6	1.3
9:43:15 AM	602.9	80.3	80.8	1.4
9:43:16 AM	603.0	80.3	80.6	1.4
9:43:17 AM	603.0	80.2	80.5	1.4
9:43:18 AM	603.0	80.1	80.8	1.4
9:43:19 AM	603.0	79.9	80.9	1.4
9:43:20 AM	602.9	80.1	80.8	1.4
9:43:21 AM	602.9	80.0	80.8	1.4
9:43:22 AM	602.9	80.1	80.7	1.4
9:43:23 AM	602.9	80.1	80.6	1.4
9:43:24 AM	603.0	80.1	80.6	1.4
9:43:25 AM	602.9	80.0	80.8	1.4
9:43:26 AM	603.0	79.9	80.6	1.4
9:43:27 AM	603.0	79.9	80.3	1.4
9:43:28 AM	602.9	79.9	80.6	1.4
9:43:29 AM	602.9	80.1	80.7	1.4
9:43:30 AM	602.9	80.1	80.6	1.4
9:43:31 AM	603.0	80.1	80.6	1.3
9:43:32 AM	603.0	80.1	80.8	1.3
9:43:33 AM	603.0	80.1	80.8	1.3
9:43:34 AM	602.9	79.9	80.8	1.3
9:43:35 AM	602.9	80.1	80.5	1.3
9:43:36 AM	602.9	80.0	80.5	1.3
9:43:37 AM	602.9	80.1	80.9	1.3
9:43:38 AM	602.9	80.1	80.7	1.3
9:43:39 AM	603.0	80.1	80.7	1.3
9:43:40 AM	603.0	80.0	80.6	1.3
9:43:41 AM	603.0	80.3	80.7	1.3
9:43:42 AM	603.0	80.1	80.4	1.3
9:43:43 AM	603.0	80.0	80.6	1.3
9:43:44 AM	603.0	80.0	80.3	1.3
9:43:45 AM	603.1	80.0	80.6	1.3
9:43:46 AM	603.1	79.9	81.0	1.3
9:43:47 AM	603.1	79.8	81.0	1.3
9:43:48 AM	603.2	80.0	80.6	1.3
9:43:49 AM	603.1	79.9	80.3	1.3
9:43:50 AM	603.2	80.0	81.0	1.3
9:43:51 AM	603.3	79.9	80.8	1.2
9:43:52 AM	603.3	79.7	80.8	1.3
9:43:53 AM	603.4	79.9	80.6	1.2
9:43:54 AM	603.5	80.3	80.4	1.2
9:43:55 AM	603.6	80.1	80.8	1.3
9:43:56 AM	603.7	80.1	80.8	1.3
9:43:57 AM	603.8	80.1	80.8	1.3
9:43:58 AM	603.9	80.1	80.3	1.3
9:43:59 AM	604.1	80.0	80.3	1.2
9:44:00 AM	604.2	80.4	80.8	1.2
9:44:01 AM	604.4	80.3	80.7	1.2
9:44:02 AM	604.1	80.2	80.6	1.2
9:44:03 AM	603.6	80.1	80.7	1.3
9:44:04 AM	603.6	80.1	80.4	1.3
9:44:05 AM	603.5	80.0	80.6	1.3
9:44:06 AM	603.4	80.1	80.8	1.3
9:44:07 AM	603.3	80.0	80.3	1.3
9:44:08 AM	603.2	80.0	80.3	1.3
Averages ->	**603.2**	**80.1**	**80.6**	**1.3**
			Maximum ->	**1.4**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 750 **Date** 5/13/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
10:20:41 AM	603.1	79.0	79.5	1.2
10:20:42 AM	603.0	78.9	79.6	1.2
10:20:43 AM	603.0	78.7	79.3	1.2
10:20:44 AM	603.0	78.8	79.7	1.2
10:20:45 AM	603.0	78.8	79.6	1.2
10:20:46 AM	603.1	78.8	79.6	1.2
10:20:47 AM	603.1	79.0	79.1	1.2
10:20:48 AM	603.0	78.8	79.6	1.2
10:20:49 AM	603.1	78.8	79.3	1.2
10:20:50 AM	603.1	78.9	79.6	1.2
10:20:51 AM	603.0	78.7	79.7	1.2
10:20:52 AM	603.0	78.9	79.6	1.2
10:20:53 AM	603.0	78.8	79.5	1.2
10:20:54 AM	603.0	79.1	79.5	1.2
10:20:55 AM	603.0	78.7	79.7	1.2
10:20:56 AM	603.0	78.9	79.4	1.2
10:20:57 AM	603.0	78.8	79.1	1.2
10:20:58 AM	603.0	78.9	79.3	1.2
10:20:59 AM	603.0	78.8	79.3	1.2
10:21:00 AM	603.0	78.9	79.4	1.2
10:21:01 AM	603.0	78.7	79.5	1.1
10:21:02 AM	603.0	79.1	79.3	1.2
10:21:03 AM	603.0	78.9	79.6	1.2
10:21:04 AM	602.9	79.0	79.6	1.2
10:21:05 AM	602.9	78.9	79.5	1.2
10:21:06 AM	602.9	78.9	79.2	1.2
10:21:07 AM	602.9	78.8	79.6	1.2
10:21:08 AM	602.9	78.9	79.6	1.1
10:21:09 AM	603.0	78.7	79.3	1.1
10:21:10 AM	602.9	78.8	79.6	1.1
10:21:11 AM	602.9	78.8	79.3	1.1
10:21:12 AM	602.9	78.8	79.5	1.1
10:21:13 AM	602.9	78.9	79.4	1.1
10:21:14 AM	603.0	78.9	79.3	1.1
10:21:15 AM	603.0	78.6	79.3	1.1
10:21:16 AM	603.1	78.8	79.4	1.1
10:21:17 AM	603.0	78.7	79.6	1.1
10:21:18 AM	603.1	78.7	79.3	1.2
10:21:19 AM	603.0	78.6	79.3	1.2
10:21:20 AM	603.0	78.8	79.3	1.2
10:21:21 AM	603.1	78.9	79.3	1.2
10:21:22 AM	603.0	78.7	79.1	1.2
10:21:23 AM	603.0	78.6	79.6	1.2
10:21:24 AM	603.1	78.7	79.5	1.2
10:21:25 AM	603.1	78.6	79.4	1.2
10:21:26 AM	603.3	79.0	79.6	1.2
10:21:27 AM	603.0	78.9	79.3	1.2
10:21:28 AM	603.0	78.7	79.4	1.3
10:21:29 AM	603.0	78.9	79.5	1.3
10:21:30 AM	603.1	78.9	79.4	1.3
10:21:31 AM	603.1	78.8	79.1	1.3
10:21:32 AM	603.1	78.7	79.4	1.3
10:21:33 AM	603.0	79.2	80.0	1.2
10:21:34 AM	603.0	79.4	79.3	1.2
10:21:35 AM	603.0	79.4	79.5	1.2
10:21:36 AM	603.0	79.8	79.5	1.2
10:21:37 AM	603.0	80.0	79.3	1.2
10:21:38 AM	603.0	80.5	79.6	1.2
10:21:39 AM	603.0	81.1	79.6	1.2
10:21:40 AM	603.0	81.4	79.2	1.2
Averages ->	**603.0**	**79.0**	**79.4**	**1.2**
			Maximum ->	**1.3**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 750 **Date** 5/13/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
1:56:15 PM	604.4	384.7	388.7	0.6
1:56:16 PM	604.3	384.7	388.8	0.6
1:56:17 PM	604.4	384.9	388.8	0.6
1:56:18 PM	604.4	384.7	388.9	0.6
1:56:19 PM	604.4	384.9	389.1	0.6
1:56:20 PM	604.4	385.0	389.4	0.6
1:56:21 PM	604.4	385.3	389.1	0.6
1:56:22 PM	604.4	385.3	388.9	0.6
1:56:23 PM	604.5	385.3	389.2	0.6
1:56:24 PM	604.4	385.7	389.0	0.6
1:56:25 PM	604.5	385.7	389.4	0.6
1:56:26 PM	604.4	385.5	389.2	0.5
1:56:27 PM	604.4	385.7	389.5	0.5
1:56:28 PM	604.4	385.5	389.6	0.5
1:56:29 PM	604.4	385.8	389.7	0.5
1:56:30 PM	604.5	386.0	389.8	0.5
1:56:31 PM	604.4	385.9	389.9	0.5
1:56:32 PM	604.4	386.1	390.0	0.5
1:56:33 PM	604.5	386.3	390.0	0.5
1:56:34 PM	604.5	386.3	389.9	0.5
1:56:35 PM	604.5	386.3	390.1	0.5
1:56:36 PM	604.5	386.5	390.1	0.5
1:56:37 PM	604.5	386.4	390.1	0.5
1:56:38 PM	604.5	386.3	390.5	0.5
1:56:39 PM	604.5	386.5	390.5	0.5
1:56:40 PM	604.5	386.5	390.0	0.5
1:56:41 PM	604.5	386.7	390.5	0.5
1:56:42 PM	604.5	386.7	390.5	0.5
1:56:43 PM	604.5	386.9	390.9	0.5
1:56:44 PM	604.5	386.8	390.6	0.5
1:56:45 PM	604.6	387.0	390.7	0.5
1:56:46 PM	604.6	387.1	390.7	0.5
1:56:47 PM	604.6	387.1	390.8	0.4
1:56:48 PM	604.5	387.4	391.0	0.4
1:56:49 PM	604.5	387.3	391.0	0.4
1:56:50 PM	604.5	387.2	391.1	0.4
1:56:51 PM	604.5	387.3	391.1	0.4
1:56:52 PM	604.6	387.5	391.0	0.4
1:56:53 PM	604.6	387.7	391.3	0.4
1:56:54 PM	604.6	387.7	391.4	0.4
1:56:55 PM	604.6	387.7	391.5	0.4
1:56:56 PM	604.6	388.1	391.4	0.4
1:56:57 PM	604.6	388.0	391.7	0.4
1:56:58 PM	604.6	388.1	391.4	0.4
1:56:59 PM	604.6	388.2	391.6	0.4
1:57:00 PM	604.6	388.1	391.8	0.4
1:57:01 PM	604.7	388.4	391.8	0.4
1:57:02 PM	604.7	388.4	391.7	0.4
1:57:03 PM	604.7	388.3	391.9	0.4
1:57:04 PM	604.7	388.5	392.3	0.4
1:57:05 PM	604.7	388.4	392.0	0.3
1:57:06 PM	604.6	388.6	391.9	0.4
1:57:07 PM	604.6	388.5	392.1	0.3
1:57:08 PM	604.6	388.7	392.2	0.3
1:57:09 PM	604.7	388.5	392.5	0.4
1:57:10 PM	604.7	388.9	392.1	0.4
1:57:11 PM	604.7	388.9	392.2	0.4
1:57:12 PM	604.7	388.8	392.6	0.4
1:57:13 PM	604.7	389.1	392.5	0.4
1:57:14 PM	604.7	388.7	392.8	0.4
Averages ->	**604.5**	**387.0**	**390.7**	**0.5**
			Maximum ->	**0.6**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 800 **Date** 5/13/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
2:30:17 PM	600.0	387.1	392.5	0.3
2:30:18 PM	600.1	387.1	392.3	0.3
2:30:19 PM	600.0	386.9	391.8	0.3
2:30:20 PM	600.0	386.9	391.9	0.3
2:30:21 PM	600.0	386.8	391.8	0.3
2:30:22 PM	600.1	386.1	391.4	0.3
2:30:23 PM	600.1	386.2	391.5	0.3
2:30:24 PM	600.0	386.1	391.2	0.3
2:30:25 PM	600.1	385.9	391.1	0.2
2:30:26 PM	600.0	385.8	391.3	0.2
2:30:27 PM	600.0	385.5	391.4	0.2
2:30:28 PM	600.1	385.7	391.4	0.2
2:30:29 PM	600.1	385.5	390.8	0.2
2:30:30 PM	600.1	385.2	391.0	0.2
2:30:31 PM	600.0	385.0	391.2	0.2
2:30:32 PM	600.1	385.3	391.0	0.2
2:30:33 PM	600.1	383.9	391.2	0.2
2:30:34 PM	600.1	385.2	391.1	0.2
2:30:35 PM	600.1	384.7	391.0	0.2
2:30:36 PM	600.1	385.1	391.3	0.2
2:30:37 PM	600.0	385.1	391.2	0.2
2:30:38 PM	600.2	385.1	391.4	0.2
2:30:39 PM	600.2	385.2	391.0	0.2
2:30:40 PM	600.2	385.1	391.2	0.2
2:30:41 PM	600.1	385.1	391.1	0.1
2:30:42 PM	600.2	385.1	391.3	0.2
2:30:43 PM	600.2	385.1	391.6	0.2
2:30:44 PM	600.2	385.2	391.5	0.2
2:30:45 PM	600.2	385.1	391.3	0.2
2:30:46 PM	600.2	385.2	391.4	0.2
2:30:47 PM	600.2	385.3	391.4	0.2
2:30:48 PM	600.2	385.5	391.5	0.2
2:30:49 PM	600.2	385.2	392.1	0.2
2:30:50 PM	600.2	385.7	391.9	0.2
2:30:51 PM	600.2	385.9	391.9	0.2
2:30:52 PM	600.2	385.5	391.9	0.2
2:30:53 PM	600.2	385.6	392.1	0.2
2:30:54 PM	600.2	385.7	392.2	0.2
2:30:55 PM	600.2	386.0	392.0	0.2
2:30:56 PM	600.2	386.0	392.0	0.2
2:30:57 PM	600.2	386.1	392.1	0.2
2:30:58 PM	600.2	385.9	392.3	0.2
2:30:59 PM	600.2	386.3	392.0	0.2
2:31:00 PM	600.2	386.3	392.0	0.2
2:31:01 PM	600.3	386.4	392.7	0.2
2:31:02 PM	600.2	386.3	392.3	0.2
2:31:03 PM	600.3	386.4	392.3	0.1
2:31:04 PM	600.2	386.5	392.8	0.1
2:31:05 PM	600.2	386.5	392.7	0.1
2:31:06 PM	600.2	386.9	392.7	0.1
2:31:07 PM	600.2	386.7	392.5	0.1
2:31:08 PM	600.2	386.9	392.7	0.2
2:31:09 PM	600.3	387.2	393.2	0.1
2:31:10 PM	600.3	387.1	393.0	0.1
2:31:11 PM	600.3	386.9	393.2	0.1
2:31:12 PM	600.3	387.1	393.3	0.1
2:31:13 PM	600.3	387.2	393.1	0.1
2:31:14 PM	600.3	387.1	393.3	0.1
2:31:15 PM	600.3	387.3	393.3	0.1
2:31:16 PM	600.2	387.5	393.6	0.2
Averages ->	**600.2**	**386.0**	**391.9**	**0.2**
			Maximum ->	**0.3**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 850 **Date** 5/13/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
3:02:48 PM	600.5	385.8	391.7	0.4
3:02:49 PM	600.5	385.7	391.9	0.4
3:02:50 PM	600.5	385.5	391.9	0.4
3:02:51 PM	600.5	385.7	391.9	0.4
3:02:52 PM	600.5	386.1	392.3	0.4
3:02:53 PM	600.5	385.7	392.3	0.4
3:02:54 PM	600.5	385.7	391.9	0.4
3:02:55 PM	600.5	386.0	392.4	0.5
3:02:56 PM	600.5	386.0	392.5	0.4
3:02:57 PM	600.5	386.1	392.1	0.4
3:02:58 PM	600.5	386.1	392.3	0.4
3:02:59 PM	600.6	386.1	392.4	0.4
3:03:00 PM	600.5	386.3	392.7	0.4
3:03:01 PM	600.5	386.4	392.5	0.4
3:03:02 PM	600.5	386.3	392.5	0.4
3:03:03 PM	600.6	386.3	392.6	0.4
3:03:04 PM	600.5	386.7	392.7	0.4
3:03:05 PM	600.5	386.4	392.9	0.4
3:03:06 PM	600.6	386.7	393.1	0.4
3:03:07 PM	600.6	386.7	392.9	0.4
3:03:08 PM	600.6	386.8	393.1	0.4
3:03:09 PM	600.6	387.1	393.2	0.4
3:03:10 PM	600.6	386.9	393.2	0.4
3:03:11 PM	600.5	387.1	393.0	0.4
3:03:12 PM	600.6	387.1	393.4	0.5
3:03:13 PM	600.6	386.9	393.3	0.4
3:03:14 PM	600.6	387.1	393.3	0.4
3:03:15 PM	600.6	387.4	393.7	0.5
3:03:16 PM	600.6	387.2	393.6	0.5
3:03:17 PM	600.6	387.7	393.8	0.6
3:03:18 PM	600.6	387.3	393.7	0.6
3:03:19 PM	600.6	387.5	393.7	0.6
3:03:20 PM	600.6	387.5	394.0	0.6
3:03:21 PM	600.7	387.7	393.9	0.6
3:03:22 PM	600.6	387.9	393.9	0.5
3:03:23 PM	600.6	387.7	393.9	0.5
3:03:24 PM	600.6	387.9	393.6	0.5
3:03:25 PM	600.6	387.9	393.7	0.5
3:03:26 PM	600.6	387.8	393.5	0.5
3:03:27 PM	600.6	387.5	393.4	0.5
3:03:28 PM	600.7	387.8	393.3	0.5
3:03:29 PM	600.7	387.5	393.3	0.5
3:03:30 PM	600.7	387.5	393.1	0.5
3:03:31 PM	600.7	387.4	392.7	0.5
3:03:32 PM	600.6	387.1	392.5	0.5
3:03:33 PM	600.7	387.0	392.5	0.5
3:03:34 PM	600.7	386.7	391.9	0.5
3:03:35 PM	600.7	386.6	391.9	0.5
3:03:36 PM	600.7	386.4	391.7	0.5
3:03:37 PM	600.7	386.1	391.7	0.5
3:03:38 PM	600.7	385.9	391.7	0.5
3:03:39 PM	600.7	385.7	391.7	0.5
3:03:40 PM	600.7	385.6	391.6	0.5
3:03:41 PM	600.7	385.8	391.3	0.5
3:03:42 PM	600.8	385.3	391.5	0.5
3:03:43 PM	600.7	385.4	391.1	0.5
3:03:44 PM	600.7	385.4	391.7	0.5
3:03:45 PM	600.7	385.1	391.2	0.5
3:03:46 PM	600.7	385.1	391.3	0.5
3:03:47 PM	600.7	385.0	391.0	0.5
Averages ->	**600.6**	**386.6**	**392.6**	**0.5**
			Maximum ->	**0.6**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 900 **Date** 5/13/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
3:44:17 PM	601.2	385.7	392.4	0.3
3:44:18 PM	601.2	385.7	392.2	0.3
3:44:19 PM	601.2	385.9	392.2	0.3
3:44:20 PM	601.2	385.7	392.5	0.3
3:44:21 PM	601.1	385.8	392.6	0.3
3:44:22 PM	601.2	385.9	392.1	0.3
3:44:23 PM	601.1	386.1	392.5	0.3
3:44:24 PM	601.2	386.1	392.4	0.3
3:44:25 PM	601.2	386.1	392.5	0.3
3:44:26 PM	601.2	385.9	392.9	0.3
3:44:27 PM	601.2	386.3	392.6	0.3
3:44:28 PM	601.2	386.4	392.8	0.3
3:44:29 PM	601.3	386.1	392.9	0.3
3:44:30 PM	601.2	386.5	392.7	0.3
3:44:31 PM	601.2	386.5	393.2	0.3
3:44:32 PM	601.2	386.7	393.0	0.3
3:44:33 PM	601.2	387.1	393.2	0.4
3:44:34 PM	601.3	387.1	393.2	0.3
3:44:35 PM	601.3	386.9	393.3	0.3
3:44:36 PM	601.3	386.9	393.6	0.3
3:44:37 PM	601.2	387.1	393.5	0.3
3:44:38 PM	601.2	387.2	393.5	0.3
3:44:39 PM	601.3	387.0	393.7	0.3
3:44:40 PM	601.3	387.3	393.8	0.3
3:44:41 PM	601.3	387.4	393.5	0.3
3:44:42 PM	601.3	387.4	393.6	0.3
3:44:43 PM	601.3	387.3	393.9	0.3
3:44:44 PM	601.3	387.5	393.8	0.3
3:44:45 PM	601.3	387.3	393.9	0.3
3:44:46 PM	601.3	387.5	393.7	0.3
3:44:47 PM	601.3	387.7	393.7	0.3
3:44:48 PM	601.4	387.5	393.4	0.3
3:44:49 PM	601.3	387.3	393.4	0.3
3:44:50 PM	601.3	387.3	392.9	0.3
3:44:51 PM	601.4	387.4	392.7	0.3
3:44:52 PM	601.3	387.1	392.9	0.3
3:44:53 PM	601.3	387.1	392.5	0.3
3:44:54 PM	601.4	387.1	392.4	0.3
3:44:55 PM	601.4	386.9	392.3	0.3
3:44:56 PM	601.4	386.5	392.0	0.3
3:44:57 PM	601.3	386.3	392.0	0.3
3:44:58 PM	601.3	386.3	391.8	0.3
3:44:59 PM	601.4	386.1	391.9	0.3
3:45:00 PM	601.4	385.8	391.9	0.3
3:45:01 PM	601.4	385.9	391.8	0.3
3:45:02 PM	601.4	385.7	391.7	0.3
3:45:03 PM	601.4	385.7	391.7	0.3
3:45:04 PM	601.4	385.5	391.9	0.3
3:45:05 PM	601.4	385.4	391.7	0.4
3:45:06 PM	601.4	385.5	391.7	0.3
3:45:07 PM	601.4	385.4	391.9	0.3
3:45:08 PM	601.4	384.9	391.6	0.4
3:45:09 PM	601.4	385.1	391.6	0.3
3:45:10 PM	601.4	385.3	391.7	0.3
3:45:11 PM	601.5	385.1	391.6	0.3
3:45:12 PM	601.4	385.3	391.9	0.3
3:45:13 PM	601.4	385.3	391.9	0.3
3:45:14 PM	601.4	385.4	391.8	0.3
3:45:15 PM	601.4	385.6	392.0	0.3
3:45:16 PM	601.4	385.4	392.1	0.4
Averages ->	**601.3**	**386.4**	**392.6**	**0.3**
			Maximum ->	**0.4**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 950 **Date** 5/13/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
4:23:07 PM	598.8	385.9	393.8	0.3
4:23:08 PM	598.7	385.6	394.1	0.3
4:23:09 PM	598.7	385.5	393.7	0.3
4:23:10 PM	598.8	385.2	394.0	0.3
4:23:11 PM	598.8	385.3	393.7	0.3
4:23:12 PM	598.7	385.3	393.4	0.3
4:23:13 PM	598.7	385.2	393.3	0.3
4:23:14 PM	598.7	385.1	393.0	0.3
4:23:15 PM	598.7	385.1	393.0	0.2
4:23:16 PM	598.8	385.0	392.5	0.2
4:23:17 PM	598.8	384.7	392.4	0.2
4:23:18 PM	598.8	384.4	392.3	0.2
4:23:19 PM	598.8	384.5	392.0	0.2
4:23:20 PM	598.8	384.1	392.1	0.2
4:23:21 PM	598.8	384.1	392.0	0.2
4:23:22 PM	598.8	383.9	391.5	0.2
4:23:23 PM	598.8	383.7	391.6	0.2
4:23:24 PM	598.8	383.5	391.5	0.2
4:23:25 PM	598.8	383.3	391.7	0.2
4:23:26 PM	598.8	383.5	391.6	0.2
4:23:27 PM	598.8	383.1	391.3	0.2
4:23:28 PM	598.8	382.9	391.4	0.2
4:23:29 PM	598.8	383.2	391.4	0.2
4:23:30 PM	598.8	383.0	391.6	0.2
4:23:31 PM	598.8	382.7	391.4	0.3
4:23:32 PM	598.8	382.8	391.5	0.3
4:23:33 PM	598.8	382.8	391.4	0.3
4:23:34 PM	598.8	382.6	391.2	0.3
4:23:35 PM	598.8	382.7	391.6	0.2
4:23:36 PM	598.8	382.8	391.6	0.3
4:23:37 PM	598.8	382.7	391.6	0.3
4:23:38 PM	598.8	382.7	392.0	0.2
4:23:39 PM	598.8	382.8	391.5	0.2
4:23:40 PM	598.8	382.7	391.8	0.3
4:23:41 PM	598.8	382.7	391.9	0.3
4:23:42 PM	598.8	383.1	391.9	0.3
4:23:43 PM	598.9	382.9	392.2	0.2
4:23:44 PM	598.9	383.1	391.8	0.2
4:23:45 PM	598.9	383.3	392.1	0.3
4:23:46 PM	598.9	383.3	392.4	0.3
4:23:47 PM	598.9	383.1	392.2	0.2
4:23:48 PM	598.8	383.3	392.6	0.3
4:23:49 PM	598.9	383.3	392.7	0.3
4:23:50 PM	599.0	383.7	392.1	0.3
4:23:51 PM	598.9	383.5	392.6	0.3
4:23:52 PM	598.9	383.7	392.9	0.3
4:23:53 PM	598.9	383.7	392.9	0.3
4:23:54 PM	598.9	383.7	393.0	0.2
4:23:55 PM	598.9	383.8	393.0	0.2
4:23:56 PM	598.9	383.7	392.8	0.2
4:23:57 PM	599.0	383.7	393.2	0.2
4:23:58 PM	598.9	384.3	393.1	0.2
4:23:59 PM	598.9	383.9	393.4	0.2
4:24:00 PM	598.9	383.9	393.1	0.2
4:24:01 PM	598.9	384.5	393.3	0.2
4:24:02 PM	598.9	384.3	393.6	0.2
4:24:03 PM	598.9	384.8	393.6	0.2
4:24:04 PM	598.9	384.8	393.6	0.2
4:24:05 PM	599.0	384.9	393.9	0.2
4:24:06 PM	598.9	384.9	394.0	0.2
Averages ->	**598.8**	**383.8**	**392.5**	**0.3**
			Maximum ->	**0.3**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 1000 **Date** 5/13/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
4:57:47 PM	600.2	386.4	391.4	0.5
4:57:48 PM	600.2	386.7	391.7	0.4
4:57:49 PM	600.2	386.7	392.0	0.4
4:57:50 PM	600.2	386.8	391.8	0.5
4:57:51 PM	600.1	387.1	391.7	0.5
4:57:52 PM	600.1	386.8	392.0	0.4
4:57:53 PM	600.2	387.1	392.2	0.5
4:57:54 PM	600.2	387.2	391.8	0.5
4:57:55 PM	600.2	387.3	392.0	0.5
4:57:56 PM	600.2	387.1	392.2	0.4
4:57:57 PM	600.2	387.5	392.4	0.5
4:57:58 PM	600.2	387.5	392.3	0.5
4:57:59 PM	600.2	387.7	392.1	0.5
4:58:00 PM	600.2	387.7	392.2	0.4
4:58:01 PM	600.2	387.9	392.5	0.4
4:58:02 PM	600.2	387.9	392.6	0.5
4:58:03 PM	600.2	388.1	392.5	0.4
4:58:04 PM	600.2	387.9	392.8	0.4
4:58:05 PM	600.2	388.2	393.0	0.4
4:58:06 PM	600.3	388.2	392.8	0.4
4:58:07 PM	600.3	388.1	393.4	0.5
4:58:08 PM	600.3	388.7	393.4	0.4
4:58:09 PM	600.3	388.5	393.1	0.5
4:58:10 PM	600.2	388.7	393.4	0.5
4:58:11 PM	600.3	388.7	393.2	0.5
4:58:12 PM	600.3	388.7	393.3	0.4
4:58:13 PM	600.3	388.9	393.5	0.4
4:58:14 PM	600.3	389.1	393.5	0.4
4:58:15 PM	600.2	388.7	393.5	0.5
4:58:16 PM	600.3	389.2	393.7	0.4
4:58:17 PM	600.3	388.9	393.9	0.4
4:58:18 PM	600.3	389.4	393.9	0.4
4:58:19 PM	600.2	389.3	393.7	0.5
4:58:20 PM	600.2	389.5	393.9	0.4
4:58:21 PM	600.3	389.6	394.2	0.4
4:58:22 PM	600.3	389.9	394.1	0.4
4:58:23 PM	600.2	389.8	393.9	0.4
4:58:24 PM	600.3	390.0	393.9	0.4
4:58:25 PM	600.4	389.8	393.5	0.4
4:58:26 PM	600.4	389.7	393.9	0.4
4:58:27 PM	600.3	389.7	393.6	0.4
4:58:28 PM	600.4	389.7	393.5	0.3
4:58:29 PM	600.3	389.4	393.3	0.3
4:58:30 PM	600.3	389.6	393.1	0.3
4:58:31 PM	600.3	389.1	392.9	0.3
4:58:32 PM	600.4	389.1	392.7	0.4
4:58:33 PM	600.4	388.9	392.7	0.4
4:58:34 PM	600.4	388.8	392.0	0.4
4:58:35 PM	600.4	388.7	392.1	0.4
4:58:36 PM	600.4	388.3	392.1	0.4
4:58:37 PM	600.4	388.1	391.8	0.4
4:58:38 PM	600.3	388.1	391.4	0.4
4:58:39 PM	600.4	387.9	391.3	0.4
4:58:40 PM	600.4	387.4	391.7	0.5
4:58:41 PM	600.4	387.3	391.6	0.5
4:58:42 PM	600.4	387.2	391.5	0.4
4:58:43 PM	600.4	387.3	391.1	0.4
4:58:44 PM	600.4	387.1	391.2	0.5
4:58:45 PM	600.4	386.9	391.1	0.4
4:58:46 PM	600.5	386.9	391.2	0.4
Averages ->	**600.3**	**388.3**	**392.7**	**0.4**
			Maximum ->	**0.5**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 1000 **Date** 5/14/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
7:44:42 AM	603.9	79.4	81.0	2.0
7:44:43 AM	604.0	79.3	80.7	2.1
7:44:44 AM	604.0	79.0	81.4	2.0
7:44:45 AM	604.0	79.5	81.0	2.0
7:44:46 AM	604.0	79.3	80.7	1.9
7:44:47 AM	603.9	79.5	81.1	2.0
7:44:48 AM	603.9	79.5	80.8	1.8
7:44:49 AM	603.9	79.4	80.9	1.8
7:44:50 AM	604.0	79.2	80.8	1.9
7:44:51 AM	604.0	79.5	81.0	1.8
7:44:52 AM	603.9	79.6	80.8	1.8
7:44:53 AM	604.0	79.4	81.0	1.9
7:44:54 AM	603.9	79.6	81.1	1.8
7:44:55 AM	603.9	79.5	80.8	2.0
7:44:56 AM	603.9	79.6	80.7	1.8
7:44:57 AM	603.9	79.2	80.8	1.8
7:44:58 AM	604.0	79.4	81.2	1.8
7:44:59 AM	603.9	79.7	80.9	1.8
7:45:00 AM	603.9	79.2	80.9	1.7
7:45:01 AM	603.9	79.4	80.8	1.8
7:45:02 AM	603.9	79.4	81.2	1.8
7:45:03 AM	603.9	79.3	81.0	1.7
7:45:04 AM	603.9	79.6	81.3	1.8
7:45:05 AM	603.9	79.4	80.9	1.9
7:45:06 AM	603.9	79.4	81.0	1.8
7:45:07 AM	603.9	79.3	81.0	1.9
7:45:08 AM	603.9	79.5	81.0	1.8
7:45:09 AM	603.9	79.4	80.9	1.9
7:45:10 AM	603.9	79.4	80.9	1.8
7:45:11 AM	603.9	79.5	81.1	1.7
7:45:12 AM	603.9	79.3	80.8	1.9
7:45:13 AM	603.9	79.4	81.0	1.9
7:45:14 AM	603.9	79.3	80.7	1.9
7:45:15 AM	603.9	79.4	81.2	1.9
7:45:16 AM	603.9	79.4	80.8	2.0
7:45:17 AM	603.9	79.2	81.0	1.9
7:45:18 AM	603.9	79.3	81.1	2.0
7:45:19 AM	603.9	79.4	80.8	1.9
7:45:20 AM	603.9	79.4	81.1	1.9
7:45:21 AM	603.9	79.5	80.9	2.0
7:45:22 AM	603.9	79.4	81.0	2.0
7:45:23 AM	603.9	79.4	81.0	2.0
7:45:24 AM	603.9	79.4	81.1	1.9
7:45:25 AM	603.9	79.3	80.5	1.9
7:45:26 AM	603.9	79.4	81.0	1.9
7:45:27 AM	603.9	79.2	81.0	1.8
7:45:28 AM	603.9	79.6	80.7	1.8
7:45:29 AM	603.9	79.4	81.0	1.9
7:45:30 AM	603.9	79.2	80.7	1.8
7:45:31 AM	603.9	79.3	80.8	1.7
7:45:32 AM	603.9	79.4	81.0	1.8
7:45:33 AM	603.8	79.2	81.1	1.6
7:45:34 AM	603.9	79.4	81.2	1.8
7:45:35 AM	603.9	79.3	81.2	1.6
7:45:36 AM	603.9	79.2	80.7	1.7
7:45:37 AM	603.9	79.2	80.9	1.7
7:45:38 AM	603.9	79.3	81.0	1.6
7:45:39 AM	603.9	79.4	81.0	1.7
7:45:40 AM	603.9	79.4	80.7	1.6
7:45:41 AM	603.9	79.5	80.8	1.7
Averages ->	**603.9**	**79.4**	**80.9**	**1.8**
			Maximum ->	**2.1**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 1050 **Date** 5/14/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
8:20:12 AM	601.4	77.2	78.6	0.2
8:20:13 AM	601.0	77.2	78.6	0.2
8:20:14 AM	601.5	77.4	78.5	0.2
8:20:15 AM	601.8	77.2	78.6	0.3
8:20:16 AM	601.8	77.3	78.9	0.2
8:20:17 AM	601.8	77.2	78.5	0.2
8:20:18 AM	601.7	77.2	78.5	0.2
8:20:19 AM	601.7	77.4	78.6	0.2
8:20:20 AM	601.7	77.3	78.5	0.2
8:20:21 AM	601.7	77.5	78.7	0.2
8:20:22 AM	601.7	77.4	78.5	0.2
8:20:23 AM	601.8	77.3	78.5	0.2
8:20:24 AM	601.6	77.2	78.8	0.1
8:20:25 AM	601.6	77.4	78.3	0.1
8:20:26 AM	601.7	77.5	78.9	0.1
8:20:27 AM	601.8	77.3	78.3	0.1
8:20:28 AM	602.1	77.0	79.0	0.1
8:20:29 AM	602.0	77.4	78.2	0.1
8:20:30 AM	601.7	77.2	78.4	0.1
8:20:31 AM	601.6	77.4	78.6	0.0
8:20:32 AM	601.5	77.0	78.4	0.0
8:20:33 AM	601.4	77.3	78.3	0.1
8:20:34 AM	600.9	77.2	78.5	0.1
8:20:35 AM	598.1	77.2	78.2	0.1
8:20:36 AM	601.5	77.0	78.7	0.1
8:20:37 AM	603.2	77.3	78.3	0.1
8:20:38 AM	602.8	77.2	78.5	0.0
8:20:39 AM	602.6	77.2	78.7	0.0
8:20:40 AM	602.3	77.4	78.6	0.0
8:20:41 AM	602.0	77.0	78.8	0.0
8:20:42 AM	601.9	77.2	78.4	0.1
8:20:43 AM	602.0	77.2	78.6	0.1
8:20:44 AM	601.9	77.0	78.4	0.1
8:20:45 AM	601.8	77.1	78.8	0.1
8:20:46 AM	601.6	77.3	78.6	0.1
8:20:47 AM	601.7	77.3	78.9	0.1
8:20:48 AM	601.9	77.1	78.5	0.1
8:20:49 AM	601.9	77.1	78.5	0.1
8:20:50 AM	601.9	77.1	78.5	0.1
8:20:51 AM	601.8	77.1	78.8	0.1
8:20:52 AM	601.9	77.2	78.3	0.1
8:20:53 AM	601.5	77.2	78.7	0.1
8:20:54 AM	601.5	77.4	78.8	0.1
8:20:55 AM	601.6	77.2	78.8	0.0
8:20:56 AM	601.5	77.2	79.0	0.1
8:20:57 AM	602.0	77.2	78.5	0.1
8:20:58 AM	602.1	77.3	78.5	0.1
8:20:59 AM	602.1	77.2	78.5	0.1
8:21:00 AM	602.1	77.1	79.0	0.1
8:21:01 AM	601.9	77.1	78.6	0.1
8:21:02 AM	601.8	77.4	78.5	0.1
8:21:03 AM	601.8	77.2	78.7	0.1
8:21:04 AM	601.8	77.2	78.8	0.1
8:21:05 AM	601.9	77.2	78.5	0.1
8:21:06 AM	601.8	77.2	78.8	0.1
8:21:07 AM	601.8	77.2	78.5	0.1
8:21:08 AM	601.7	77.4	78.4	0.1
8:21:09 AM	601.7	77.0	78.5	0.1
8:21:10 AM	601.6	77.2	78.8	0.1
8:21:11 AM	601.7	77.2	78.7	0.1
Averages ->	**601.7**	**77.2**	**78.6**	**0.1**
			Maximum ->	**0.3**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 1100 **Date** 5/14/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
8:51:40 AM	599.8	77.1	78.8	1.1
8:51:41 AM	599.8	77.2	78.9	1.1
8:51:42 AM	599.8	77.0	78.5	1.1
8:51:43 AM	599.7	77.2	78.8	1.0
8:51:44 AM	599.7	77.5	78.3	1.1
8:51:45 AM	599.5	77.2	78.7	1.1
8:51:46 AM	599.5	77.2	78.5	1.1
8:51:47 AM	599.5	76.8	78.7	1.1
8:51:48 AM	599.6	77.0	78.4	1.1
8:51:49 AM	599.8	76.7	78.9	1.1
8:51:50 AM	599.8	77.4	78.3	1.1
8:51:51 AM	599.9	77.2	78.9	1.1
8:51:52 AM	599.8	77.2	78.7	1.1
8:51:53 AM	599.8	77.2	78.7	1.1
8:51:54 AM	599.8	77.1	78.7	1.1
8:51:55 AM	599.9	77.3	78.6	1.1
8:51:56 AM	599.9	77.2	78.5	1.1
8:51:57 AM	599.9	77.3	78.5	1.1
8:51:58 AM	599.8	77.2	78.7	1.1
8:51:59 AM	599.8	77.2	78.8	1.1
8:52:00 AM	599.6	77.4	78.8	1.1
8:52:01 AM	600.3	77.1	78.5	1.1
8:52:02 AM	600.3	77.4	78.3	1.1
8:52:03 AM	600.1	77.2	78.7	1.1
8:52:04 AM	600.2	77.2	78.7	1.0
8:52:05 AM	600.0	77.3	78.9	0.9
8:52:06 AM	599.9	76.9	78.7	1.0
8:52:07 AM	599.8	77.2	78.8	1.1
8:52:08 AM	599.8	77.3	78.4	1.1
8:52:09 AM	599.8	77.4	78.5	1.1
8:52:10 AM	599.7	77.4	78.4	1.0
8:52:11 AM	599.7	77.2	78.5	1.1
8:52:12 AM	599.6	77.2	78.7	1.1
8:52:13 AM	599.6	77.3	78.8	1.0
8:52:14 AM	599.6	77.1	78.7	1.1
8:52:15 AM	599.5	77.1	78.5	1.1
8:52:16 AM	599.4	77.2	78.5	1.1
8:52:17 AM	599.5	77.0	78.5	1.1
8:52:18 AM	599.6	77.2	78.5	1.0
8:52:19 AM	600.2	77.1	78.7	1.0
8:52:20 AM	599.9	77.2	78.4	1.0
8:52:21 AM	599.6	77.2	78.5	1.1
8:52:22 AM	599.5	77.2	78.4	1.1
8:52:23 AM	599.4	77.2	78.4	1.0
8:52:24 AM	599.4	77.3	78.5	1.0
8:52:25 AM	598.6	77.2	78.9	1.0
8:52:26 AM	596.1	77.2	78.5	1.1
8:52:27 AM	596.9	77.1	78.4	1.1
8:52:28 AM	601.1	77.2	78.3	1.1
8:52:29 AM	601.1	77.0	78.2	1.0
8:52:30 AM	600.7	76.8	78.6	1.1
8:52:31 AM	600.5	77.0	78.8	1.1
8:52:32 AM	600.4	77.2	78.7	1.1
8:52:33 AM	600.2	77.1	78.5	1.0
8:52:34 AM	600.3	77.1	78.5	1.0
8:52:35 AM	600.1	77.0	78.5	1.1
8:52:36 AM	599.9	77.0	78.3	1.1
8:52:37 AM	599.9	77.0	78.3	1.0
8:52:38 AM	599.8	77.0	78.5	1.0
8:52:39 AM	599.8	77.1	78.6	1.0
Averages ->	**599.7**	**77.2**	**78.6**	**1.1**
			Maximum ->	**1.1**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 1150 **Date** 5/14/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
9:25:05 AM	599.8	77.2	78.8	1.1
9:25:06 AM	599.8	77.0	78.5	1.1
9:25:07 AM	599.8	77.0	78.5	1.1
9:25:08 AM	599.7	77.0	78.5	1.1
9:25:09 AM	599.8	77.2	78.4	1.1
9:25:10 AM	599.9	77.2	78.6	1.1
9:25:11 AM	599.8	77.2	78.8	1.0
9:25:12 AM	599.8	76.9	78.8	1.1
9:25:13 AM	599.9	77.1	78.5	1.1
9:25:14 AM	599.9	76.9	78.8	1.1
9:25:15 AM	599.8	77.1	78.6	1.1
9:25:16 AM	599.9	77.0	78.5	1.1
9:25:17 AM	599.8	76.8	78.3	1.1
9:25:18 AM	599.9	77.2	78.6	1.1
9:25:19 AM	599.9	77.2	78.7	1.1
9:25:20 AM	599.9	77.1	78.6	1.1
9:25:21 AM	600.0	77.2	78.3	1.1
9:25:22 AM	599.7	77.1	78.5	1.2
9:25:23 AM	599.6	77.2	78.5	1.2
9:25:24 AM	599.5	77.0	78.8	1.1
9:25:25 AM	599.4	77.1	78.8	1.1
9:25:26 AM	599.8	76.8	78.5	1.1
9:25:27 AM	600.1	77.2	78.5	1.1
9:25:28 AM	600.1	77.0	78.9	1.1
9:25:29 AM	600.1	77.2	78.5	1.1
9:25:30 AM	599.9	77.0	78.8	1.1
9:25:31 AM	599.8	77.0	78.2	1.1
9:25:32 AM	599.9	77.1	78.5	1.2
9:25:33 AM	599.9	77.2	78.5	1.1
9:25:34 AM	599.9	77.2	78.3	1.2
9:25:35 AM	599.9	76.9	78.5	1.1
9:25:36 AM	600.0	77.1	78.6	1.1
9:25:37 AM	599.8	77.2	78.4	1.1
9:25:38 AM	599.9	77.0	78.5	1.1
9:25:39 AM	599.8	77.0	78.5	1.2
9:25:40 AM	599.8	77.0	78.5	1.2
9:25:41 AM	599.9	76.9	78.5	1.2
9:25:42 AM	599.7	77.1	78.4	1.1
9:25:43 AM	599.7	77.0	78.5	1.1
9:25:44 AM	599.7	77.2	78.5	1.1
9:25:45 AM	599.6	77.2	78.3	1.1
9:25:46 AM	599.6	77.2	79.0	1.1
9:25:47 AM	599.7	77.1	78.8	1.1
9:25:48 AM	599.7	77.0	78.8	1.1
9:25:49 AM	599.8	77.2	78.4	1.0
9:25:50 AM	599.7	77.0	78.3	1.1
9:25:51 AM	599.6	76.9	78.5	1.1
9:25:52 AM	599.7	77.1	78.4	1.0
9:25:53 AM	599.7	77.0	78.3	1.1
9:25:54 AM	599.6	77.0	78.3	1.1
9:25:55 AM	599.3	77.0	78.5	1.1
9:25:56 AM	599.4	77.2	78.5	1.1
9:25:57 AM	599.5	77.4	78.5	1.2
9:25:58 AM	599.9	77.0	78.5	1.2
9:25:59 AM	599.9	77.2	78.2	1.2
9:26:00 AM	599.7	77.2	78.1	1.2
9:26:01 AM	599.6	77.0	78.5	1.2
9:26:02 AM	599.4	77.3	78.3	1.2
9:26:03 AM	599.4	77.0	78.4	1.2
9:26:04 AM	599.1	77.1	78.5	1.2
Averages ->	**599.7**	**77.1**	**78.5**	**1.1**
			Maximum ->	**1.2**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 1200 **Date** 5/14/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
9:56:33 AM	600.6	77.7	79.4	1.1
9:56:34 AM	600.6	78.3	79.5	1.0
9:56:35 AM	600.7	78.3	79.3	1.0
9:56:36 AM	600.4	78.0	79.7	1.0
9:56:37 AM	600.4	78.2	79.6	0.9
9:56:38 AM	600.4	78.2	79.8	1.0
9:56:39 AM	600.6	77.8	79.7	1.0
9:56:40 AM	600.3	78.3	79.3	1.1
9:56:41 AM	601.1	78.1	79.7	1.0
9:56:42 AM	601.1	78.0	79.5	1.0
9:56:43 AM	600.8	78.2	79.5	1.0
9:56:44 AM	600.7	78.1	79.5	1.0
9:56:45 AM	600.6	77.8	79.3	1.0
9:56:46 AM	600.4	78.2	79.7	1.0
9:56:47 AM	600.4	78.2	79.4	1.0
9:56:48 AM	600.3	78.2	79.6	1.0
9:56:49 AM	600.3	78.0	79.5	1.0
9:56:50 AM	599.5	78.1	79.8	1.0
9:56:51 AM	597.1	78.0	79.3	1.0
9:56:52 AM	596.3	77.9	79.5	1.0
9:56:53 AM	599.1	77.9	79.6	1.0
9:56:54 AM	602.1	78.2	79.6	1.0
9:56:55 AM	601.9	78.0	79.5	1.0
9:56:56 AM	601.9	78.0	79.6	1.0
9:56:57 AM	601.6	78.2	79.4	1.0
9:56:58 AM	601.6	77.8	79.4	1.0
9:56:59 AM	601.5	78.2	79.3	1.0
9:57:00 AM	601.3	77.8	79.4	1.0
9:57:01 AM	601.3	77.9	79.5	1.1
9:57:02 AM	601.1	78.1	79.3	1.1
9:57:03 AM	601.1	77.8	79.2	1.0
9:57:04 AM	600.9	77.9	79.3	1.0
9:57:05 AM	600.9	77.8	79.5	0.9
9:57:06 AM	600.8	78.2	79.0	0.9
9:57:07 AM	600.8	78.0	79.6	0.9
9:57:08 AM	600.7	77.6	79.3	0.9
9:57:09 AM	600.7	78.0	79.3	0.9
9:57:10 AM	600.6	78.1	79.6	0.9
9:57:11 AM	600.6	77.9	79.5	1.0
9:57:12 AM	600.4	78.0	79.5	0.9
9:57:13 AM	600.4	77.8	79.4	1.0
9:57:14 AM	600.5	78.0	79.5	0.9
9:57:15 AM	600.6	78.0	79.8	0.9
9:57:16 AM	600.6	78.1	79.3	0.9
9:57:17 AM	600.6	78.0	79.1	0.9
9:57:18 AM	600.6	78.0	79.7	1.0
9:57:19 AM	600.8	77.9	79.4	1.0
9:57:20 AM	600.8	78.2	79.6	1.0
9:57:21 AM	600.9	78.0	79.2	1.0
9:57:22 AM	601.0	78.2	79.5	0.9
9:57:23 AM	600.9	78.0	79.5	1.0
9:57:24 AM	600.9	77.8	79.3	1.0
9:57:25 AM	601.0	78.0	79.5	1.0
9:57:26 AM	601.0	78.1	79.4	1.0
9:57:27 AM	601.4	78.2	79.3	1.0
9:57:28 AM	601.1	78.0	79.7	1.0
9:57:29 AM	601.0	78.0	79.4	1.0
9:57:30 AM	600.8	78.0	79.5	1.0
9:57:31 AM	600.8	77.9	79.8	1.0
9:57:32 AM	600.7	78.1	79.5	1.0
Averages ->	**600.7**	**78.0**	**79.5**	**1.0**
			Maximum ->	**1.1**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 1250 **Date** 5/14/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
10:28:52 AM	600.9	77.8	79.6	0.5
10:28:53 AM	600.8	78.0	79.5	0.5
10:28:54 AM	601.0	78.1	79.4	0.5
10:28:55 AM	601.2	78.0	79.5	0.6
10:28:56 AM	601.1	78.0	79.5	0.6
10:28:57 AM	600.9	78.1	79.6	0.6
10:28:58 AM	600.8	78.1	79.1	0.6
10:28:59 AM	600.7	77.9	79.4	0.5
10:29:00 AM	600.6	78.0	79.5	0.6
10:29:01 AM	600.5	77.9	79.3	0.6
10:29:02 AM	600.5	78.0	79.5	0.5
10:29:03 AM	600.5	77.9	79.5	0.5
10:29:04 AM	600.6	78.0	79.1	0.6
10:29:05 AM	600.6	78.1	79.4	0.6
10:29:06 AM	600.5	78.0	79.3	0.5
10:29:07 AM	600.3	78.1	79.5	0.5
10:29:08 AM	600.3	78.0	79.5	0.5
10:29:09 AM	600.4	77.9	79.5	0.5
10:29:10 AM	600.4	78.0	79.3	0.5
10:29:11 AM	601.2	78.2	79.6	0.5
10:29:12 AM	600.7	78.0	79.3	0.5
10:29:13 AM	600.8	77.8	79.5	0.6
10:29:14 AM	600.7	78.1	79.5	0.6
10:29:15 AM	600.5	77.8	79.6	0.6
10:29:16 AM	600.5	78.0	79.6	0.6
10:29:17 AM	600.4	78.0	79.3	0.6
10:29:18 AM	600.4	78.0	79.5	0.6
10:29:19 AM	600.3	77.8	79.7	0.6
10:29:20 AM	600.3	78.0	79.4	0.6
10:29:21 AM	599.8	78.1	79.5	0.6
10:29:22 AM	598.1	78.1	79.7	0.6
10:29:23 AM	597.1	77.8	79.5	0.5
10:29:24 AM	596.4	77.8	79.4	0.6
10:29:25 AM	596.7	78.0	79.3	0.6
10:29:26 AM	598.0	78.0	79.1	0.6
10:29:27 AM	600.0	77.8	79.5	0.6
10:29:28 AM	601.6	78.1	79.5	0.6
10:29:29 AM	601.9	78.0	79.2	0.5
10:29:30 AM	602.0	78.0	79.5	0.5
10:29:31 AM	601.9	78.1	79.3	0.6
10:29:32 AM	602.0	78.0	79.4	0.5
10:29:33 AM	602.1	77.9	79.4	0.5
10:29:34 AM	602.1	78.2	79.8	0.5
10:29:35 AM	602.0	78.0	80.0	0.5
10:29:36 AM	602.2	78.3	79.5	0.5
10:29:37 AM	602.0	78.2	79.8	0.5
10:29:38 AM	602.1	78.0	80.2	0.5
10:29:39 AM	601.4	78.2	79.8	0.5
10:29:40 AM	597.6	78.1	80.2	0.5
10:29:41 AM	596.7	78.3	80.4	0.5
10:29:42 AM	596.5	78.4	80.5	0.5
10:29:43 AM	596.9	78.3	80.4	0.5
10:29:44 AM	598.6	78.6	81.1	0.5
10:29:45 AM	600.1	78.7	80.9	0.5
10:29:46 AM	600.2	79.1	81.3	0.5
10:29:47 AM	600.2	79.4	82.0	0.5
10:29:48 AM	600.2	79.3	82.0	0.5
10:29:49 AM	600.3	79.5	82.3	0.6
10:29:50 AM	600.3	79.9	82.6	0.6
10:29:51 AM	600.4	80.2	82.8	0.5
Averages ->	**600.3**	**78.2**	**79.9**	**0.5**
			Maximum ->	**0.6**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 1250 **Date** 5/14/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
3:43:04 PM	603.0	388.8	392.5	1.4
3:43:05 PM	603.0	388.4	392.9	1.4
3:43:06 PM	603.0	388.6	392.9	1.4
3:43:07 PM	603.0	388.7	392.9	1.4
3:43:08 PM	603.0	388.8	393.0	1.4
3:43:09 PM	603.0	388.8	392.9	1.4
3:43:10 PM	603.0	388.8	393.0	1.3
3:43:11 PM	603.0	388.8	393.2	1.3
3:43:12 PM	603.0	388.9	393.1	1.3
3:43:13 PM	603.0	388.9	393.0	1.3
3:43:14 PM	603.0	389.0	393.0	1.3
3:43:15 PM	603.0	389.0	393.5	1.3
3:43:16 PM	603.0	389.1	393.3	1.3
3:43:17 PM	603.1	389.1	393.3	1.3
3:43:18 PM	603.1	389.1	393.3	1.4
3:43:19 PM	603.1	389.3	393.5	1.4
3:43:20 PM	603.1	389.0	393.3	1.4
3:43:21 PM	603.0	389.2	393.4	1.4
3:43:22 PM	603.1	389.5	393.3	1.3
3:43:23 PM	603.1	389.2	393.6	1.4
3:43:24 PM	603.1	389.6	393.4	1.4
3:43:25 PM	603.1	389.4	393.5	1.4
3:43:26 PM	603.0	389.6	393.4	1.4
3:43:27 PM	603.1	389.5	393.6	1.4
3:43:28 PM	603.1	389.7	393.7	1.4
3:43:29 PM	603.1	389.8	393.6	1.4
3:43:30 PM	603.1	389.8	393.7	1.3
3:43:31 PM	603.1	389.7	393.9	1.3
3:43:32 PM	603.1	389.3	393.6	1.3
3:43:33 PM	603.0	389.8	393.5	1.4
3:43:34 PM	603.0	389.6	393.6	1.3
3:43:35 PM	603.1	389.6	393.3	1.3
3:43:36 PM	603.1	389.5	393.5	1.4
3:43:37 PM	603.1	389.2	393.3	1.4
3:43:38 PM	603.1	389.2	393.4	1.4
3:43:39 PM	603.1	389.3	392.8	1.4
3:43:40 PM	603.2	389.2	392.8	1.3
3:43:41 PM	603.1	388.6	392.8	1.3
3:43:42 PM	603.2	388.8	392.1	1.3
3:43:43 PM	603.1	388.6	392.2	1.3
3:43:44 PM	603.1	388.8	392.0	1.3
3:43:45 PM	603.1	388.4	391.7	1.4
3:43:46 PM	603.2	388.0	391.7	1.4
3:43:47 PM	603.2	388.0	391.6	1.4
3:43:48 PM	603.1	387.8	391.3	1.3
3:43:49 PM	603.1	387.2	391.5	1.3
3:43:50 PM	603.1	387.4	391.3	1.3
3:43:51 PM	603.1	387.3	391.1	1.3
3:43:52 PM	603.1	387.0	391.3	1.3
3:43:53 PM	603.2	386.9	391.1	1.3
3:43:54 PM	603.2	387.0	390.9	1.3
3:43:55 PM	603.1	387.0	391.3	1.3
3:43:56 PM	603.1	386.7	391.2	1.3
3:43:57 PM	603.1	386.6	391.2	1.3
3:43:58 PM	603.1	386.8	391.1	1.3
3:43:59 PM	603.2	386.8	391.1	1.3
3:44:00 PM	603.1	386.8	391.4	1.3
3:44:01 PM	603.2	386.6	391.2	1.3
3:44:02 PM	603.2	386.6	391.1	1.4
3:44:03 PM	603.2	386.6	391.3	1.4
Averages ->	**603.1**	**388.5**	**392.6**	**1.3**
			Maximum ->	**1.4**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 1300 **Date** 5/14/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
4:14:37 PM	599.1	388.0	392.9	1.3
4:14:38 PM	599.2	388.2	392.4	1.2
4:14:39 PM	599.2	388.4	392.5	1.2
4:14:40 PM	599.2	388.1	393.0	1.2
4:14:41 PM	599.2	388.4	392.8	1.3
4:14:42 PM	599.2	388.4	393.3	1.3
4:14:43 PM	599.2	388.2	393.3	1.2
4:14:44 PM	599.3	388.4	393.1	1.2
4:14:45 PM	599.2	388.2	393.3	1.2
4:14:46 PM	599.3	388.8	393.1	1.3
4:14:47 PM	599.3	388.9	393.2	1.3
4:14:48 PM	599.3	388.6	393.0	1.3
4:14:49 PM	599.3	388.7	393.4	1.3
4:14:50 PM	599.3	389.0	393.5	1.3
4:14:51 PM	599.3	388.8	393.8	1.3
4:14:52 PM	599.4	389.0	393.6	1.3
4:14:53 PM	599.5	388.6	393.9	1.3
4:14:54 PM	599.5	389.4	393.3	1.3
4:14:55 PM	599.4	389.2	393.6	1.2
4:14:56 PM	599.5	389.2	393.5	1.2
4:14:57 PM	599.6	389.2	394.1	1.2
4:14:58 PM	599.5	389.2	393.5	1.2
4:14:59 PM	599.5	389.1	393.7	1.3
4:15:00 PM	599.6	389.0	393.7	1.3
4:15:01 PM	599.6	389.0	393.3	1.3
4:15:02 PM	599.6	389.2	393.1	1.3
4:15:03 PM	599.4	389.0	392.8	1.3
4:15:04 PM	599.5	388.9	392.7	1.3
4:15:05 PM	599.5	388.7	392.5	1.3
4:15:06 PM	599.4	388.6	392.5	1.3
4:15:07 PM	599.5	388.4	392.1	1.3
4:15:08 PM	599.5	388.2	392.3	1.3
4:15:09 PM	599.5	388.1	391.9	1.3
4:15:10 PM	599.5	388.1	391.7	1.3
4:15:11 PM	599.5	387.6	391.7	1.3
4:15:12 PM	599.5	387.4	391.5	1.3
4:15:13 PM	599.4	387.4	391.4	1.3
4:15:14 PM	599.5	387.4	391.2	1.3
4:15:15 PM	599.4	387.0	391.5	1.4
4:15:16 PM	599.4	386.8	391.7	1.4
4:15:17 PM	599.4	386.8	391.4	1.3
4:15:18 PM	599.4	386.8	391.5	1.3
4:15:19 PM	599.4	386.5	391.6	1.3
4:15:20 PM	599.4	386.8	391.5	1.3
4:15:21 PM	599.4	386.5	391.3	1.2
4:15:22 PM	599.4	386.3	391.4	1.2
4:15:23 PM	599.4	386.4	391.3	1.2
4:15:24 PM	599.4	386.4	391.7	1.2
4:15:25 PM	599.3	386.3	391.3	1.2
4:15:26 PM	599.3	386.4	391.1	1.3
4:15:27 PM	599.4	386.5	391.4	1.3
4:15:28 PM	599.4	386.4	391.3	1.3
4:15:29 PM	599.4	386.5	391.5	1.3
4:15:30 PM	599.4	386.8	391.7	1.3
4:15:31 PM	599.4	386.6	391.7	1.3
4:15:32 PM	599.4	386.6	391.5	1.3
4:15:33 PM	599.4	386.5	391.9	1.3
4:15:34 PM	599.4	386.5	391.9	1.2
4:15:35 PM	599.4	386.4	391.5	1.2
4:15:36 PM	599.3	386.3	391.7	1.3
Averages ->	**599.4**	**387.8**	**392.4**	**1.3**
			Maximum ->	**1.4**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 1350 **Date** 5/14/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
4:46:39 PM	599.6	388.4	393.3	0.8
4:46:40 PM	599.6	388.1	393.4	0.8
4:46:41 PM	599.6	388.4	393.0	0.8
4:46:42 PM	599.6	388.4	393.6	0.8
4:46:43 PM	599.8	388.3	393.3	0.8
4:46:44 PM	599.8	388.4	393.7	0.9
4:46:45 PM	599.7	388.3	393.3	0.8
4:46:46 PM	599.7	388.3	393.7	0.9
4:46:47 PM	599.8	388.2	393.5	0.9
4:46:48 PM	599.7	388.7	393.9	0.9
4:46:49 PM	599.6	388.5	393.7	0.9
4:46:50 PM	599.6	388.6	393.6	0.9
4:46:51 PM	599.6	388.6	393.4	0.9
4:46:52 PM	599.6	388.4	393.5	0.9
4:46:53 PM	599.5	388.2	393.6	0.9
4:46:54 PM	599.5	388.4	393.4	0.8
4:46:55 PM	599.5	388.4	393.1	0.8
4:46:56 PM	599.5	388.3	393.1	0.8
4:46:57 PM	599.6	388.2	393.1	0.8
4:46:58 PM	599.5	387.9	392.7	0.8
4:46:59 PM	599.5	388.2	392.3	0.8
4:47:00 PM	599.6	387.8	392.7	0.8
4:47:01 PM	599.6	387.4	392.3	0.7
4:47:02 PM	599.6	387.2	392.1	0.7
4:47:03 PM	599.6	387.2	392.1	0.8
4:47:04 PM	599.6	387.2	391.9	0.8
4:47:05 PM	599.7	387.1	392.0	0.7
4:47:06 PM	599.6	386.7	391.7	0.8
4:47:07 PM	599.6	386.8	391.6	0.8
4:47:08 PM	599.6	386.6	391.7	0.8
4:47:09 PM	599.6	386.4	391.9	0.8
4:47:10 PM	599.6	386.6	391.7	0.8
4:47:11 PM	599.7	386.4	391.5	0.8
4:47:12 PM	599.7	386.4	391.7	0.8
4:47:13 PM	599.7	386.4	391.9	0.8
4:47:14 PM	599.7	386.4	391.4	0.8
4:47:15 PM	599.6	386.2	391.5	0.8
4:47:16 PM	599.6	386.2	391.5	0.7
4:47:17 PM	599.7	386.4	391.8	0.8
4:47:18 PM	599.6	386.4	391.7	0.8
4:47:19 PM	599.7	386.2	391.9	0.8
4:47:20 PM	599.7	386.0	391.9	0.7
4:47:21 PM	599.7	386.2	392.0	0.8
4:47:22 PM	599.7	386.4	391.9	0.8
4:47:23 PM	599.6	386.2	392.0	0.8
4:47:24 PM	599.6	386.4	392.3	0.8
4:47:25 PM	599.7	386.5	392.1	0.7
4:47:26 PM	599.7	386.2	392.5	0.7
4:47:27 PM	599.7	386.2	392.2	0.7
4:47:28 PM	599.7	386.6	392.1	0.8
4:47:29 PM	599.7	386.8	392.1	0.8
4:47:30 PM	599.7	386.7	392.4	0.8
4:47:31 PM	599.6	386.8	392.3	0.8
4:47:32 PM	599.6	386.8	392.6	0.8
4:47:33 PM	599.6	386.6	392.7	0.8
4:47:34 PM	599.7	386.8	392.6	0.8
4:47:35 PM	599.7	387.0	392.5	0.7
4:47:36 PM	599.7	387.0	392.9	0.7
4:47:37 PM	599.7	386.9	392.7	0.7
4:47:38 PM	599.7	387.0	392.8	0.7
Averages ->	**599.6**	**387.2**	**392.5**	**0.8**
			Maximum ->	**0.9**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 1400 **Date** 5/14/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
5:20:18 PM	601.8	385.4	392.9	0.8
5:20:19 PM	601.9	385.2	393.3	0.8
5:20:20 PM	601.8	385.4	392.9	0.8
5:20:21 PM	601.8	385.2	393.4	0.8
5:20:22 PM	601.8	385.0	393.3	0.8
5:20:23 PM	601.8	385.0	393.3	0.9
5:20:24 PM	601.8	385.0	393.2	0.9
5:20:25 PM	601.8	385.4	393.3	0.9
5:20:26 PM	601.8	385.2	393.4	0.9
5:20:27 PM	601.8	385.2	393.7	0.9
5:20:28 PM	601.8	385.6	393.2	0.9
5:20:29 PM	601.7	385.4	393.5	0.9
5:20:30 PM	601.8	385.2	393.5	0.9
5:20:31 PM	601.8	385.1	393.6	0.9
5:20:32 PM	601.7	385.6	393.6	0.9
5:20:33 PM	601.8	385.4	393.7	0.9
5:20:34 PM	601.8	385.4	393.6	0.9
5:20:35 PM	601.8	385.4	393.5	0.9
5:20:36 PM	601.9	385.4	393.5	0.9
5:20:37 PM	601.8	385.7	393.9	0.9
5:20:38 PM	601.8	385.7	393.3	1.0
5:20:39 PM	601.8	385.5	393.6	1.0
5:20:40 PM	601.8	385.6	393.7	1.0
5:20:41 PM	601.8	385.7	393.6	1.0
5:20:42 PM	601.8	385.5	393.4	1.0
5:20:43 PM	601.8	385.4	393.3	0.9
5:20:44 PM	601.8	385.4	393.3	0.9
5:20:45 PM	601.8	385.4	393.0	1.0
5:20:46 PM	601.8	385.2	392.6	1.0
5:20:47 PM	601.8	385.2	392.6	0.9
5:20:48 PM	601.8	385.1	392.6	0.9
5:20:49 PM	601.8	385.0	392.6	0.9
5:20:50 PM	601.8	384.6	392.4	0.9
5:20:51 PM	601.8	384.7	392.2	0.9
5:20:52 PM	601.7	384.4	392.3	0.9
5:20:53 PM	601.7	384.6	392.0	0.9
5:20:54 PM	601.7	384.3	392.1	0.9
5:20:55 PM	601.6	384.1	392.1	0.9
5:20:56 PM	601.7	384.2	392.2	0.9
5:20:57 PM	601.8	384.2	392.2	1.0
5:20:58 PM	601.8	384.0	392.0	1.0
5:20:59 PM	602.0	384.2	392.0	1.0
5:21:00 PM	602.0	383.8	392.3	1.0
5:21:01 PM	602.0	384.0	392.0	1.0
5:21:02 PM	601.9	384.0	392.2	1.0
5:21:03 PM	601.9	383.8	392.4	1.0
5:21:04 PM	601.9	384.0	392.2	1.0
5:21:05 PM	601.8	384.0	392.1	1.0
5:21:06 PM	601.8	384.1	392.4	1.0
5:21:07 PM	601.8	384.1	392.2	1.0
5:21:08 PM	601.8	384.2	392.7	1.0
5:21:09 PM	601.8	384.3	392.4	1.0
5:21:10 PM	601.8	384.1	392.7	0.9
5:21:11 PM	601.8	384.2	392.7	0.9
5:21:12 PM	601.8	384.4	392.9	0.9
5:21:13 PM	601.8	384.4	392.9	0.9
5:21:14 PM	601.8	384.4	393.0	0.9
5:21:15 PM	601.9	384.3	393.3	0.9
5:21:16 PM	601.8	384.6	393.1	0.9
5:21:17 PM	601.9	384.6	393.2	0.9
Averages ->	**601.8**	**384.8**	**392.9**	**0.9**
			Maximum ->	**1.0**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 1450 **Date** 5/14/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
5:48:47 PM	603.0	383.8	392.0	1.5
5:48:48 PM	603.0	383.6	392.0	1.4
5:48:49 PM	603.0	383.6	392.1	1.5
5:48:50 PM	602.9	383.4	391.7	1.4
5:48:51 PM	603.0	383.6	391.7	1.4
5:48:52 PM	602.9	383.7	391.6	1.4
5:48:53 PM	602.9	383.5	391.8	1.4
5:48:54 PM	602.9	383.5	391.8	1.4
5:48:55 PM	602.9	383.5	391.8	1.4
5:48:56 PM	602.9	383.5	392.0	1.4
5:48:57 PM	602.9	383.4	391.9	1.4
5:48:58 PM	602.9	383.3	392.2	1.4
5:48:59 PM	602.9	383.4	392.3	1.4
5:49:00 PM	602.9	383.4	392.2	1.4
5:49:01 PM	602.9	383.6	392.2	1.5
5:49:02 PM	602.9	383.8	392.2	1.5
5:49:03 PM	602.9	383.8	392.3	1.5
5:49:04 PM	602.9	383.7	392.2	1.5
5:49:05 PM	602.9	383.6	392.6	1.5
5:49:06 PM	602.9	383.7	392.4	1.5
5:49:07 PM	602.9	383.8	392.4	1.5
5:49:08 PM	602.9	384.1	392.9	1.5
5:49:09 PM	602.9	383.9	392.7	1.5
5:49:10 PM	602.9	384.4	392.8	1.5
5:49:11 PM	602.8	384.1	392.7	1.5
5:49:12 PM	602.9	384.4	392.7	1.5
5:49:13 PM	602.9	384.5	392.9	1.5
5:49:14 PM	602.9	384.4	392.7	1.4
5:49:15 PM	602.9	384.6	393.0	1.4
5:49:16 PM	602.9	384.5	393.3	1.3
5:49:17 PM	603.1	384.6	393.2	1.1
5:49:18 PM	603.1	384.8	393.3	1.0
5:49:19 PM	603.1	384.8	393.5	1.0
5:49:20 PM	603.0	384.9	393.1	1.0
5:49:21 PM	603.0	384.6	393.5	1.0
5:49:22 PM	602.9	385.1	393.8	1.0
5:49:23 PM	602.9	385.0	393.9	1.1
5:49:24 PM	602.9	385.3	393.7	1.1
5:49:25 PM	602.9	385.3	393.9	1.1
5:49:26 PM	602.9	385.5	394.0	1.1
5:49:27 PM	602.9	385.6	393.8	1.1
5:49:28 PM	602.9	385.4	393.8	1.1
5:49:29 PM	602.9	385.5	393.9	1.1
5:49:30 PM	602.9	385.6	393.9	1.1
5:49:31 PM	602.9	385.8	393.8	1.1
5:49:32 PM	603.0	385.6	393.8	1.1
5:49:33 PM	603.1	385.4	393.4	1.1
5:49:34 PM	602.9	385.6	392.8	1.1
5:49:35 PM	603.0	385.4	393.3	1.1
5:49:36 PM	602.9	385.2	392.9	1.1
5:49:37 PM	602.9	385.1	392.7	1.1
5:49:38 PM	603.0	385.0	392.5	1.1
5:49:39 PM	602.9	385.0	392.5	1.1
5:49:40 PM	603.0	384.5	392.2	1.1
5:49:41 PM	602.9	384.2	392.1	1.2
5:49:42 PM	603.0	384.1	391.7	1.1
5:49:43 PM	603.0	384.1	391.8	1.2
5:49:44 PM	602.9	384.2	391.6	1.2
5:49:45 PM	602.9	383.6	391.8	1.2
5:49:46 PM	602.9	383.6	391.7	1.2
Averages ->	**602.9**	**384.4**	**392.7**	**1.3**
			Maximum ->	**1.5**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 1500 **Date** 5/14/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
6:24:10 PM	598.0	384.2	393.1	1.2
6:24:11 PM	598.0	384.3	393.3	1.2
6:24:12 PM	598.0	384.6	393.3	1.2
6:24:13 PM	598.0	384.8	393.5	1.2
6:24:14 PM	598.1	384.6	393.4	1.2
6:24:15 PM	598.1	385.0	393.2	1.2
6:24:16 PM	598.1	385.0	393.5	1.2
6:24:17 PM	598.1	385.2	393.5	1.2
6:24:18 PM	598.1	385.3	393.3	1.2
6:24:19 PM	598.1	385.1	393.8	1.2
6:24:20 PM	598.0	385.1	394.1	1.2
6:24:21 PM	598.0	385.3	393.9	1.2
6:24:22 PM	598.0	385.6	394.1	1.2
6:24:23 PM	598.0	385.7	393.9	1.2
6:24:24 PM	598.0	385.7	393.9	1.2
6:24:25 PM	598.1	385.6	393.9	1.2
6:24:26 PM	598.0	385.8	393.9	1.3
6:24:27 PM	598.1	385.8	393.9	1.2
6:24:28 PM	598.0	385.4	393.9	1.2
6:24:29 PM	598.0	385.7	393.9	1.3
6:24:30 PM	598.0	385.5	393.8	1.2
6:24:31 PM	598.0	385.4	393.3	1.3
6:24:32 PM	598.0	385.6	393.2	1.3
6:24:33 PM	598.0	385.2	392.9	1.3
6:24:34 PM	598.1	385.3	393.1	1.2
6:24:35 PM	598.0	385.0	392.6	1.2
6:24:36 PM	597.9	385.0	392.6	1.2
6:24:37 PM	597.9	384.6	392.3	1.2
6:24:38 PM	598.0	384.5	392.1	1.2
6:24:39 PM	597.9	384.1	392.0	1.2
6:24:40 PM	597.9	384.2	391.9	1.2
6:24:41 PM	597.9	383.9	392.0	1.2
6:24:42 PM	597.9	383.8	391.7	1.2
6:24:43 PM	597.9	383.4	391.6	1.2
6:24:44 PM	597.9	383.4	391.4	1.2
6:24:45 PM	598.0	383.3	391.3	1.2
6:24:46 PM	597.9	383.0	391.2	1.2
6:24:47 PM	598.0	383.2	391.2	1.2
6:24:48 PM	598.0	383.0	391.6	1.2
6:24:49 PM	597.9	383.1	391.4	1.2
6:24:50 PM	597.9	383.0	391.4	1.2
6:24:51 PM	597.9	382.9	391.5	1.2
6:24:52 PM	597.9	382.8	391.4	1.2
6:24:53 PM	598.0	382.8	391.7	1.1
6:24:54 PM	597.9	382.6	391.5	1.1
6:24:55 PM	598.0	382.7	391.5	1.2
6:24:56 PM	598.0	383.0	391.7	1.2
6:24:57 PM	597.9	382.8	391.8	1.2
6:24:58 PM	597.9	382.9	391.6	1.2
6:24:59 PM	598.0	382.8	391.6	1.2
6:25:00 PM	598.0	382.9	392.0	1.2
6:25:01 PM	597.9	383.0	392.0	1.2
6:25:02 PM	597.9	383.2	392.2	1.3
6:25:03 PM	597.9	383.2	391.8	1.3
6:25:04 PM	598.0	383.0	392.0	1.3
6:25:05 PM	598.0	383.2	392.0	1.2
6:25:06 PM	598.0	383.2	392.2	1.2
6:25:07 PM	598.0	383.2	392.4	1.2
6:25:08 PM	598.0	383.5	392.2	1.2
6:25:09 PM	598.0	383.6	392.4	1.2
Averages ->	**598.0**	**384.1**	**392.5**	**1.2**
			Maximum ->	**1.3**

Yarmouth Research and Technology, LLC

Valve Description: 3 inch Class 300 Velan Split Body Ball Valve

Cycle Number: 1500 **Date** 5/17/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
9:32:00 AM	600.1	70.6	71.0	0.8
9:32:01 AM	600.1	70.7	71.1	0.8
9:32:02 AM	600.1	70.6	71.1	0.8
9:32:03 AM	600.1	70.7	71.0	0.8
9:32:04 AM	600.1	70.6	71.0	0.8
9:32:05 AM	600.1	70.5	71.2	0.8
9:32:06 AM	600.1	70.6	71.1	0.8
9:32:07 AM	600.1	70.6	71.2	0.8
9:32:08 AM	600.1	70.3	71.1	0.8
9:32:09 AM	600.1	70.6	71.3	0.8
9:32:10 AM	600.1	70.9	71.0	0.8
9:32:11 AM	600.1	70.7	71.0	0.8
9:32:12 AM	600.1	70.6	71.0	0.8
9:32:13 AM	600.1	70.6	71.0	0.8
9:32:14 AM	600.1	70.7	71.0	0.8
9:32:15 AM	600.1	70.8	71.0	0.8
9:32:16 AM	600.1	70.6	70.9	0.8
9:32:17 AM	600.1	70.5	71.1	0.8
9:32:18 AM	600.1	70.7	70.9	0.8
9:32:19 AM	600.1	70.6	70.8	0.8
9:32:20 AM	600.1	70.6	70.8	0.8
9:32:21 AM	600.1	70.7	71.1	0.8
9:32:22 AM	600.1	70.6	71.0	0.8
9:32:23 AM	600.1	70.6	70.9	0.8
9:32:24 AM	600.1	70.3	71.2	0.8
9:32:25 AM	600.1	70.6	71.2	0.8
9:32:26 AM	600.1	70.7	71.2	0.8
9:32:27 AM	600.1	70.6	71.0	0.8
9:32:28 AM	600.1	70.3	71.1	0.8
9:32:29 AM	600.1	70.8	70.8	0.8
9:32:30 AM	600.1	70.6	71.1	0.8
9:32:31 AM	600.1	70.6	71.3	0.8
9:32:32 AM	600.1	70.7	71.0	0.8
9:32:33 AM	600.1	70.6	70.8	0.8
9:32:34 AM	600.1	70.8	71.1	0.8
9:32:35 AM	600.1	70.5	71.2	0.8
9:32:36 AM	600.1	70.9	71.0	0.8
9:32:37 AM	600.1	70.3	71.1	0.8
9:32:38 AM	600.1	70.6	70.9	0.8
9:32:39 AM	600.1	70.6	71.1	0.8
9:32:40 AM	600.1	70.6	71.0	0.8
9:32:41 AM	600.1	71.0	70.9	0.8
9:32:42 AM	600.1	70.6	71.1	0.8
9:32:43 AM	600.1	70.6	71.0	0.8
9:32:44 AM	600.1	70.7	70.9	0.8
9:32:45 AM	600.1	70.8	71.2	0.8
9:32:46 AM	600.1	70.5	71.3	0.8
9:32:47 AM	600.0	70.5	70.8	0.8
9:32:48 AM	600.1	70.6	71.3	0.8
9:32:49 AM	600.1	70.7	71.2	0.8
9:32:50 AM	600.1	70.5	70.9	0.8
9:32:51 AM	600.1	70.8	71.2	0.8
9:32:52 AM	600.1	70.6	70.6	0.8
9:32:53 AM	600.1	70.9	71.1	0.8
9:32:54 AM	600.1	70.6	71.2	0.8
9:32:55 AM	600.1	70.4	71.0	0.8
9:32:56 AM	600.1	70.4	71.2	0.8
9:32:57 AM	600.1	70.4	71.2	0.8
9:32:58 AM	600.1	70.6	71.0	0.8
9:32:59 AM	600.1	70.6	71.2	0.8
Averages ->	**600.1**	**70.6**	**71.1**	**0.8**
			Maximum ->	**0.8**

Fugitive Emission Test Report

API Standard 622, First Edition

Performed for

Velan Inc.
7007 Cote de Liesse
Montreal, QC, Canada H4T 1G2
www.velan.com

2 inch Class 600 Top-Entry
Ball Valve
Product Code: S08-G0613-SSEZ

Project Number: 210037
May 2010

Performed by

YARMOUTH RESEARCH AND TECHNOLOGY, LLC

434 Walnut Hill Road
North Yarmouth, ME 04097 USA
(207) 829-5359
info@yarmouthresearch.com
www.yarmouthresearch.com

Yarmouth Research and Technology, LLC

API 622 PROJECT SUMMARY

Customer: Velan Inc. **Start Date:** 19-May-10

Project #: 210037

Valve Information

Valve Manufacturer:	Velan Inc.
Description:	2 inch Class 600 Top Entry Ball Valve
Valve Product Code:	S08-G0613-SSEZ
Packing Description:	OEM

Test Information

Cycling Rate:	30	seconds per cycle
Test Pressure:	600	psig
Test Media:	99% Methane	
High Temperature:	200	C

Results

Average Test Pressure:	600	psig
Number of Mechanical Cycles Completed:	1500	
Number of Thermal Cycles Completed:	3	
Number of Packing Adjustments Required:	1	
Cycle Number(s) of Packing Adjustments:	1000	
Average Leakage Throughout Test:	58	PPMv
Maximum Leakage Throughout Test:	710	PPMv

Witness

Matthew J Wasielewski, PE

President, Yarmouth Research

STATE OF MAINE
MATTHEW
J
WASIELEWSKI
No. 7437
LICENSED
PROFESSIONAL ENGINEER

Yarmouth Research and Technology, LLC

Customer: Velan Inc. **Start Date:** 19-May-10

Project #: 210037

Valve Description: 2 inch Class 600 Top Entry Ball Valve

S08-G0613-SSEZ

Cycle Number	*Inside Temp (F)*	*Bonnet Temp - (F)*	*Pressure (psig)*	*Stem Seal Leakage (PPMv)*		*Packing Retorque See Note*
				Avg.	*Max.*	
0	62	62	599	0	1	
50	66	66	600	1	2	
100	66	66	600	1	1	
150	67	67	602	1	1	
200	68	68	602	1	1	
250	67	68	601	1	1	
250	388	394	595	3	3	
300	391	401	599	2	2	
350	391	400	599	1	1	
400	392	402	603	1	2	
450	391	401	602	1	1	
500	391	400	600	1	1	
500	70	70	597	250	314	
550	71	72	597	300	331	
600	71	72	601	235	257	
650	72	73	598	241	307	
700	72	72	608	151	170	
750	72	72	598	217	236	
750	375	386	600	9	10	
800	391	403	600	5	5	
850	392	403	603	7	7	
900	391	401	600	5	6	
950	391	401	599	6	7	
1000	392	403	602	6	7	
1000	72	72	597	688	710	1
1000	71	71	604	9	14	
1050	72	73	599	5	7	
1100	74	74	596	5	8	
1150	75	75	602	17	20	
1200	74	74	593	4	5	
1250	74	74	592	2	3	
1250	391	395	602	1	1	
1300	389	395	597	3	3	
1350	390	396	599	2	2	
1400	391	396	600	2	2	
1450	391	396	600	1	2	
1500	391	396	602	1	1	
1500	71	71	599	27	29	
		Averages ->	**600**	**58**	**65**	
		Maximums ->	**608**	**688**	**710**	

Yarmouth Research and Technology, LLC

Test Results: The average and maximum leakage results shown below were calculated from 60 readings measured during a minute duration.
See data sheets for more detailed information.

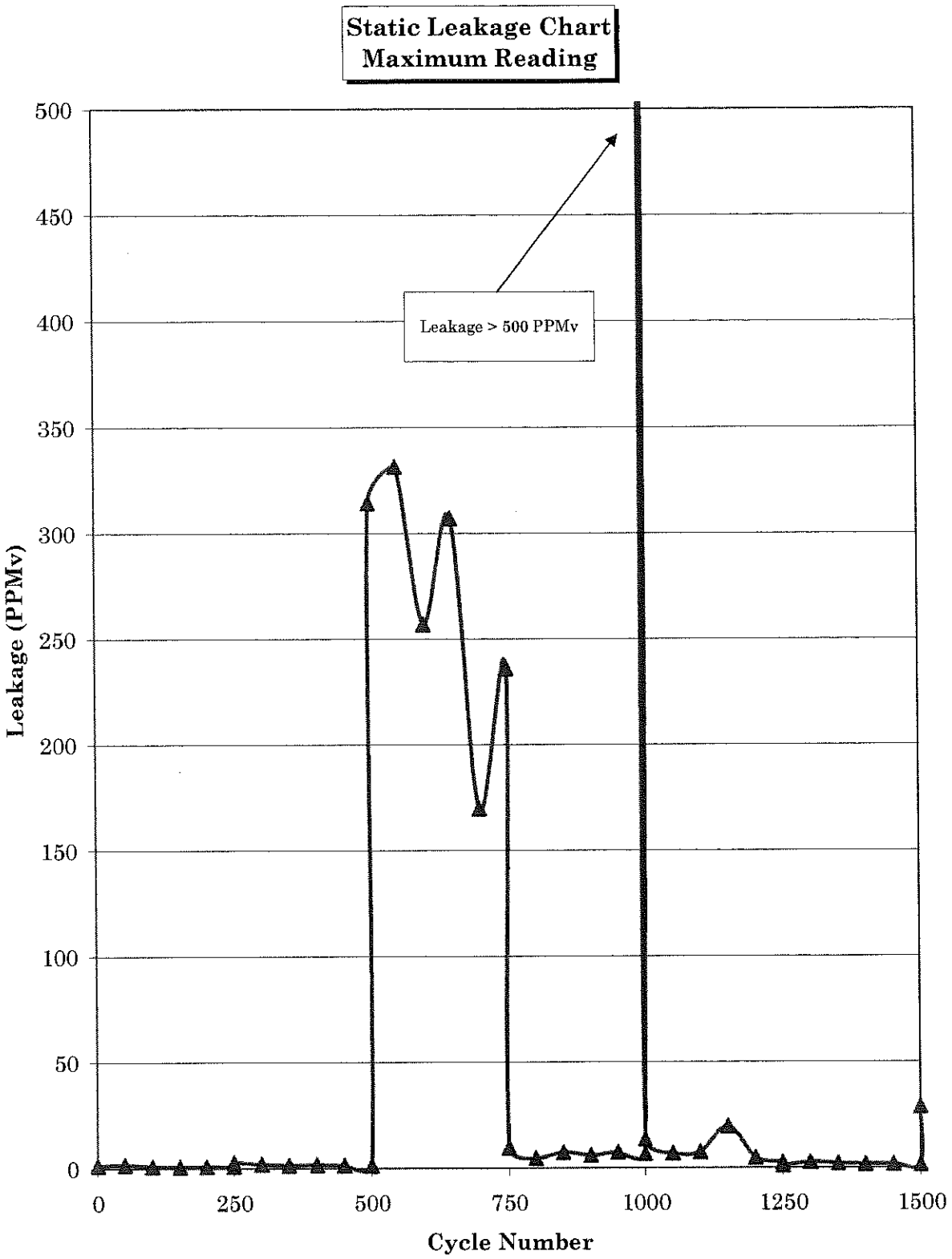
Packing Retorque Notes:

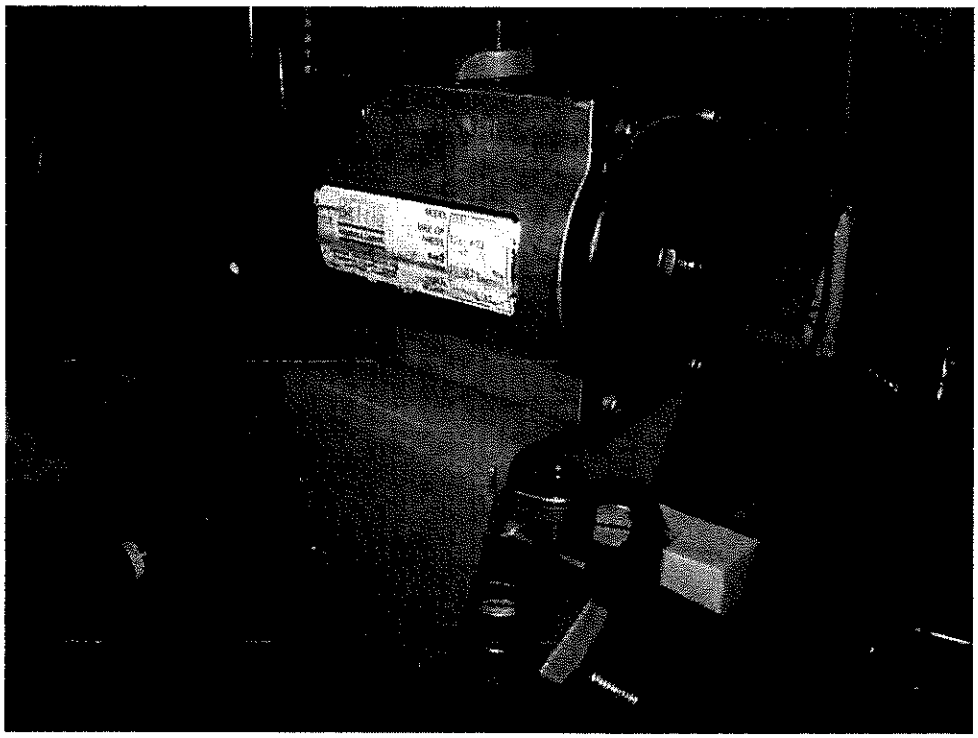
	Before Adjustment		*After Adjustment*		
	Nut Torque		*Nut Torque*		*Number of Flats*
	Side 1	*Side 2*	*Side 1*	*Side 2*	
1	10	10	25	25	3
2					
3					

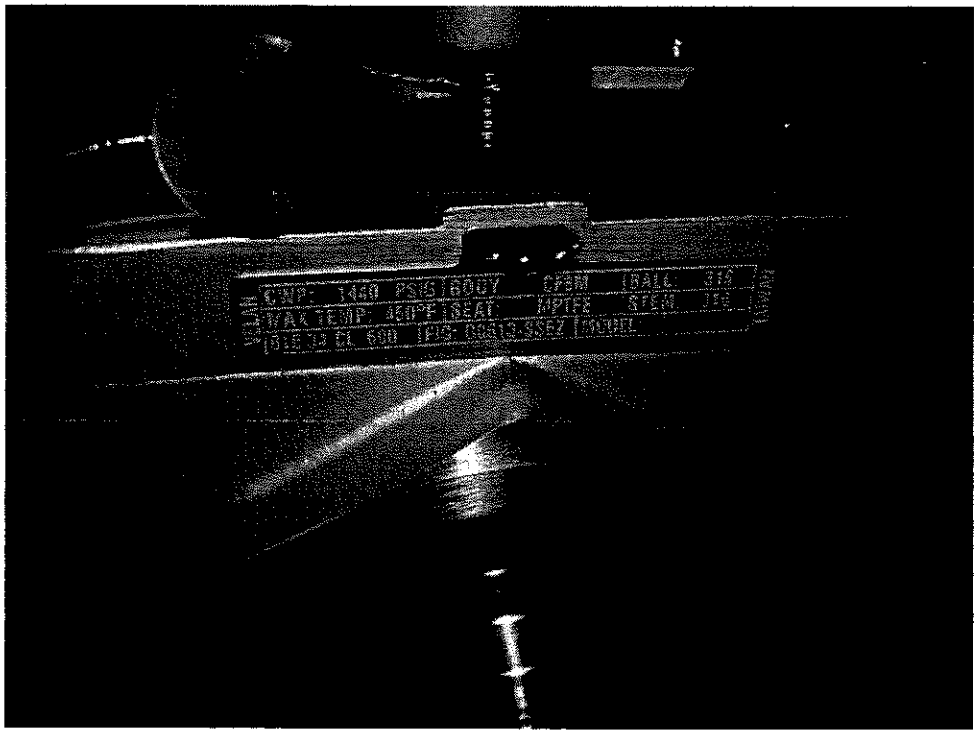
Nut Torque at End of Test: (ft-lb)	20	*<-Side 1*	20	*<-Side 2*

Test Notes:

Yarmouth Research and Technology, LLC







Test Valve

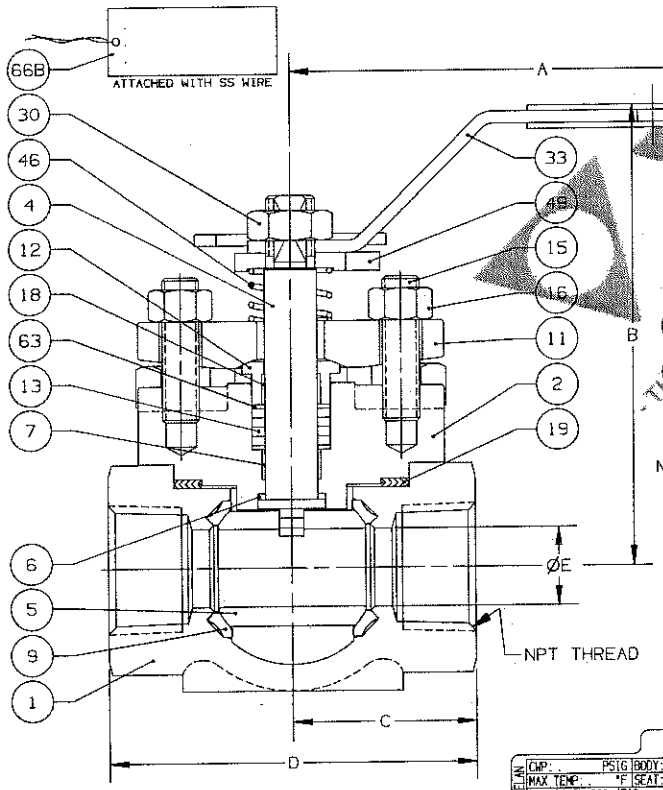
CLASS 600 / PN 110

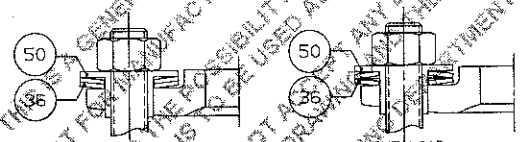
NPS	A	B	C	D	ØE	NPT THREAD	Cv	WT LB
1/2	4.62	3.47	1.31	2.62	0.44	1/2-14	8	2
3/4	4.62	3.60	1.62	3.25	0.56	3/4-14	14	3
1	6.44	4.82	1.88	3.75	0.81	1 -11 1/2	34	6
1 1/2	7.55	5.66	2.44	4.88	1.19	1 1/2-11 1/2	65	14
2	7.55	5.92	3.00	6.00	1.50	2 -11 1/2	104	20
DN							Kv	Kg
15	117.3	88.1	33.3	66.5	11.2	1/2-14	7	1
20	117.3	91.4	41.1	82.6	14.2	3/4-14	12	1
25	163.6	122.4	47.8	95.3	20.6	1 -11 1/2	30	3
40	191.8	143.8	62.0	124.0	30.2	1 1/2-11 1/2	58	6
50	191.8	150.4	76.2	152.4	38.1	2 -11 1/2	92	9

MATERIAL LIST (13-SS*Z)

PART	DESCRIPTION	QTY	MATERIAL	MATL SPEC	REMARKS
1	BODY	1	CF8M	ASTM A351	
2	BONNET	1	CF8M	ASTM A351	
4	STEM	1	316 COND. A	ASTM A276	
5	BALL	1	316 COND. A	ASTM A276	ALT. CF8M ASTM A351
6	THRUST WASHER	1	RPTFE	COMMERCIAL	
7	STEM BUSHING	1	RPTFE	COMMERCIAL	
9C	SEAT *(C)	2	C-RPTFE	COMMERCIAL	
9E	SEAT *(E)	2	MPTFE	COMMERCIAL	MATERIAL AS PER ORDER
9G	SEAT *(G)	2	RPTFE	COMMERCIAL	
9T	SEAT *(T)	2	PTFE	COMMERCIAL	
11	PACKING FLANGE	1	CF8M	ASTM A351	ALT. F316 ASTM A182
12	GLAND BUSHING	1	304	ASTM A276	ALT. CF8 ASTM A351
13	PACKING RING	4	DIE-FORMED FLEXIBLE GRAPHITE		
15	STUD	2	GR B8M CL.2	ASTM A193	
16	NUT	2	GR B8M CL.2	ASTM A194	
18	GLAND BSHG SLV	1	RPTFE	COMMERCIAL	
19	BONNET SEAL	1	316L or 347/GRAPHITE	SPIRAL WOUND	
30	HANDLE NUT	1	304	COMMERCIAL	SECURE WITH LOCTITE
31	LOCK PLATE	1	304	ASTM A240	
33	HANDLE	1	304	ASTM A240	
36	BELLEVILLE WSHR	4	17-7 PH	AMS 5528	NOTE 3 (ALT. H11/H13)
46	SPRING	1	302	ASTM A313	
48	STOP PIN	1	304	ASTM A276	
49	STOP PLATE	1	304	ASTM A240	
50	INNER SLEEVE	2	304	ASTM A276	NOTE 3
56A	HEX. HEAD CAP SCREW	4	GR B8M CL.2	ASTM A193	ALT. STUD/NUT
56B	HEX. HEAD CAP SCREW	1	304	ASTM F593	
63	PACKING WASHER	2	316	ASTM A240	
66A	NAME PLATE	1	302-304	ASTM A240	ALT. SPOTWELDED
66B	TAG PLATE	1	302-304	ASTM A240	OPTIONAL
66D	CE NAME PLATE	1	302-304	ASTM A240	NPS 1 1/2-2 (DN 40-50) ONLY
67	RIVET	2	302-304	ASTM A493	

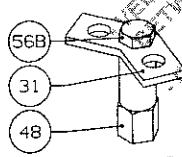
NOTES:
1) VALVES DESIGN IN ACCORDANCE WITH ASME B16.34
2) THE "CE" MARK SHALL BE AFFIXED TO THE VALVE FOR THE COUNTRY WHERE APPLICABLE
3) ADDITIONAL PARTS FOR LIVE LOADED ARRANGEMENT OPTION
4) VALVES ARE FIRE SAFE PER API-607, 4th EDITION



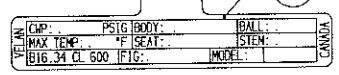


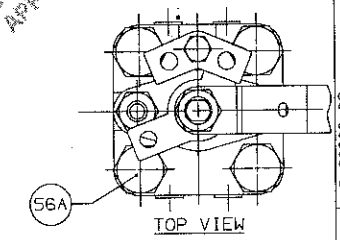
LIVE LOAD ARRANGEMENT OPTION
NPS 1/2,3/4,1 (DN 15,20,25)

LIVE LOAD ARRANGEMENT OPTION
NPS 1-1/2,2 (DN 40,50)



LOCKING DEVICE ARRANGEMENT





TOP VIEW

VELAN
- THIS IS A GENERIC DRAWING / REFERENCE ONLY
- NOT FOR MANUFACTURING / SIZING
- DRAWING IS TO BE USED AS A GUIDELINE ONLY
- VELAN WILL NOT ACCEPT ANY LIABILITY FOR MISUSE OF THE PRODUCT BY THIRD PARTY
- CONSULT ENGINEERING DEPARTMENT FOR APPLICATIONS

REV	DESCRIPTION	DATE	DWN	APVD	IND CERT

VELAN ORDER NO:
CUSTOMER: ORDER NO:
PROJECT: JOB NO:

VELAN

NPS 1/2-2 / DN 15-50
CAST STEEL BALL VALVES
TOP ENTRY - REG. PORT
SCREWED ENDS

CLASS 600 / PN 110

DRAWN : C.A. 96-07-31
APVD : J.R. 09-02-25
IND REV CERTIFIED : J.D. 09-02-25
DWG NO : 6S-G0613-SS*Z-01
SHEET 1 OF 1
REV.D DATE: 09-02-25

MASTER DWG 6S-G0613-SS*Z-01

REF NO	
6-G0600-02	
9600-457/9999-994	9992-835/9999-995
9602-394/9999-996	9999-997
9604-663/9999-998	

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 0 **Date** 5/19/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
7:26:51 AM	599.3	62.3	62.1	0.7
7:26:52 AM	599.3	61.0	62.3	0.9
7:26:53 AM	599.3	61.2	62.1	1.0
7:26:54 AM	599.3	62.1	61.8	1.3
7:26:55 AM	599.3	62.6	61.7	1.3
7:26:56 AM	599.3	62.3	61.6	1.0
7:26:57 AM	599.3	63.0	61.8	0.7
7:26:58 AM	599.3	62.4	61.6	0.5
7:26:59 AM	599.3	62.7	61.9	0.4
7:27:00 AM	599.3	62.2	61.9	0.3
7:27:01 AM	599.3	62.2	61.9	0.3
7:27:02 AM	599.3	63.2	62.3	0.2
7:27:03 AM	599.3	62.0	62.2	0.1
7:27:04 AM	599.3	61.5	62.1	0.0
7:27:05 AM	599.3	61.7	62.3	0.0
7:27:06 AM	599.3	62.5	61.8	0.1
7:27:07 AM	599.3	62.3	61.7	0.0
7:27:08 AM	599.3	61.6	61.9	0.0
7:27:09 AM	599.3	61.7	62.2	0.1
7:27:10 AM	599.3	61.7	62.1	0.0
7:27:11 AM	599.3	61.4	62.4	0.1
7:27:12 AM	599.3	61.8	62.3	0.1
7:27:13 AM	599.3	62.1	62.0	0.1
7:27:14 AM	599.3	62.5	61.6	0.2
7:27:15 AM	599.3	62.1	62.3	0.2
7:27:16 AM	599.3	62.3	62.2	0.3
7:27:17 AM	599.3	62.4	61.6	0.3
7:27:18 AM	599.3	61.7	61.9	0.3
7:27:19 AM	599.3	61.5	62.3	0.3
7:27:20 AM	599.3	62.1	62.1	0.2
7:27:21 AM	599.3	62.1	62.0	0.2
7:27:22 AM	599.3	62.1	61.7	0.1
7:27:23 AM	599.3	61.2	61.8	0.2
7:27:24 AM	599.3	61.3	62.3	0.2
7:27:25 AM	599.3	62.2	61.9	0.3
7:27:26 AM	599.3	61.6	61.8	0.2
7:27:27 AM	599.3	62.1	62.1	0.2
7:27:28 AM	599.3	61.2	62.2	0.1
7:27:29 AM	599.3	62.5	62.0	0.1
7:27:30 AM	599.3	62.2	62.2	0.0
7:27:31 AM	599.3	61.7	62.1	0.1
7:27:32 AM	599.3	62.1	61.8	0.1
7:27:33 AM	599.3	62.5	62.0	0.1
7:27:34 AM	599.3	61.7	61.7	0.1
7:27:35 AM	599.3	62.1	61.6	0.1
7:27:36 AM	599.3	61.4	62.3	0.1
7:27:37 AM	599.3	62.4	61.9	0.1
7:27:38 AM	599.3	62.1	61.9	0.1
7:27:39 AM	599.3	62.1	62.0	0.1
7:27:40 AM	599.3	62.1	61.9	0.1
7:27:41 AM	599.3	62.6	61.7	0.1
7:27:42 AM	599.3	61.7	62.1	0.1
7:27:43 AM	599.3	61.9	61.9	0.1
7:27:44 AM	599.3	61.8	61.9	0.1
7:27:45 AM	599.3	61.6	61.9	0.1
7:27:46 AM	599.3	61.9	62.2	0.0
7:27:47 AM	599.3	61.5	62.2	0.1
7:27:48 AM	599.3	61.2	62.5	0.1
7:27:49 AM	599.3	61.3	62.1	0.1
7:27:50 AM	599.3	61.9	61.9	0.1
Averages ->	**599.3**	**62.0**	**62.0**	**0.2**
			Maximum ->	**1.3**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 50 **Date** 5/19/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
7:55:36 AM	600.2	66.3	65.6	1.7
7:55:37 AM	600.2	65.7	65.7	1.7
7:55:38 AM	600.2	66.5	65.8	1.6
12:00:00 AM	600.2	66.3	65.9	1.5
7:55:39 AM	600.2	65.4	65.9	1.6
7:55:41 AM	600.2	65.8	65.5	1.5
7:55:42 AM	600.2	65.5	65.7	1.4
7:55:43 AM	600.2	66.1	65.4	1.4
7:55:44 AM	600.2	65.2	66.1	1.4
7:55:45 AM	600.2	66.7	66.2	1.4
7:55:46 AM	600.2	66.5	65.5	1.4
7:55:47 AM	600.2	66.0	65.9	1.3
7:55:48 AM	600.2	66.3	65.2	1.3
7:55:49 AM	600.2	65.9	66.2	1.2
7:55:50 AM	600.2	67.4	66.1	1.2
7:55:51 AM	600.2	65.4	66.0	1.2
7:55:52 AM	600.3	66.8	65.3	1.2
7:55:53 AM	600.2	66.1	66.1	1.2
7:55:54 AM	600.2	66.6	65.8	1.1
7:55:55 AM	600.2	65.8	66.3	1.1
7:55:56 AM	600.2	65.7	66.1	1.0
7:55:57 AM	600.2	66.3	65.9	1.1
7:55:58 AM	600.2	65.4	65.4	1.1
7:55:59 AM	600.2	66.3	65.3	1.1
7:56:00 AM	600.3	65.9	66.1	1.1
7:56:01 AM	600.2	66.3	65.5	1.1
7:56:02 AM	600.2	66.8	65.5	1.1
7:56:03 AM	600.2	66.7	65.3	1.2
7:56:04 AM	600.2	65.7	65.9	1.1
7:56:05 AM	600.2	66.5	66.5	1.1
7:56:06 AM	600.2	66.3	65.5	1.2
7:56:07 AM	600.2	65.8	65.9	1.2
7:56:08 AM	600.2	66.5	65.7	1.2
7:56:09 AM	600.2	65.6	65.6	1.2
7:56:10 AM	600.2	65.9	65.2	1.2
7:56:11 AM	600.2	66.0	65.8	1.2
7:56:12 AM	600.2	65.2	65.9	1.1
7:56:13 AM	600.2	65.8	65.2	1.1
7:56:14 AM	600.2	66.1	65.8	1.1
7:56:15 AM	600.2	65.2	65.6	1.1
7:56:16 AM	600.2	66.3	65.4	1.1
7:56:17 AM	600.2	65.5	65.2	1.1
7:56:18 AM	600.2	65.7	65.7	1.1
7:56:19 AM	600.2	66.3	66.5	1.0
7:56:20 AM	600.2	66.2	65.9	1.0
7:56:21 AM	600.2	64.8	65.7	1.1
7:56:22 AM	600.2	64.6	65.9	1.1
7:56:23 AM	600.2	65.7	65.7	1.1
7:56:24 AM	600.2	66.0	65.9	1.1
7:56:25 AM	600.2	66.1	66.1	1.1
7:56:26 AM	600.2	64.8	65.6	1.1
7:56:27 AM	600.2	65.9	65.9	1.1
7:56:28 AM	600.2	66.2	66.4	1.0
7:56:29 AM	600.2	66.1	65.7	1.0
7:56:30 AM	600.2	64.6	65.2	1.0
7:56:31 AM	600.2	65.8	65.9	1.0
7:56:32 AM	600.2	65.7	66.3	1.0
7:56:33 AM	600.2	66.2	65.8	1.0
7:56:34 AM	600.2	66.4	65.9	1.0
7:56:35 AM	600.2	65.3	65.7	1.0
Averages ->	**600.2**	**65.9**	**65.8**	**1.2**
			Maximum ->	**1.7**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 100 **Date** 5/19/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
8:28:55 AM	600.2	66.1	66.1	0.9
8:28:56 AM	600.2	66.1	64.5	0.8
8:28:57 AM	600.2	66.1	66.3	0.8
8:28:58 AM	600.2	66.1	65.3	0.8
8:28:59 AM	600.2	65.2	65.6	0.8
8:29:00 AM	600.2	65.3	65.2	0.9
8:29:01 AM	600.2	66.4	65.6	0.9
8:29:02 AM	600.2	65.9	65.9	0.9
8:29:03 AM	600.2	66.3	65.9	0.8
8:29:04 AM	600.2	66.3	66.0	0.8
8:29:05 AM	600.2	66.4	65.6	0.9
8:29:06 AM	600.2	65.5	66.1	0.9
8:29:07 AM	600.2	66.0	65.4	0.8
8:29:08 AM	600.2	66.6	65.5	0.9
8:29:09 AM	600.2	66.3	65.4	0.9
8:29:10 AM	600.2	66.5	65.2	0.9
8:29:11 AM	600.2	65.4	65.5	0.9
8:29:12 AM	600.2	64.8	65.8	0.9
8:29:13 AM	600.2	65.6	65.4	0.9
8:29:14 AM	600.2	65.1	65.9	1.0
8:29:15 AM	600.2	65.7	65.9	1.0
8:29:16 AM	600.2	65.7	65.4	0.9
8:29:17 AM	600.2	65.0	65.0	1.0
8:29:18 AM	600.2	66.5	65.9	0.9
8:29:19 AM	600.2	65.9	65.5	0.9
8:29:20 AM	600.2	65.8	65.7	0.9
8:29:21 AM	600.2	65.7	65.7	0.9
8:29:22 AM	600.2	65.4	65.9	0.9
8:29:23 AM	600.2	64.5	65.5	0.9
8:29:24 AM	600.2	65.2	66.0	0.9
8:29:25 AM	600.2	65.2	65.6	0.9
8:29:26 AM	600.2	65.2	65.0	0.8
8:29:27 AM	600.2	66.1	64.9	0.8
8:29:28 AM	600.2	65.3	65.3	0.8
8:29:29 AM	600.2	64.3	66.1	0.8
8:29:30 AM	600.2	66.8	65.7	0.9
8:29:31 AM	600.1	65.4	65.6	0.9
8:29:32 AM	600.2	65.2	66.1	0.9
8:29:33 AM	600.2	65.6	65.7	0.9
8:29:34 AM	600.2	66.1	66.1	0.8
8:29:35 AM	600.2	66.0	65.0	0.8
8:29:36 AM	600.2	66.2	65.6	0.9
8:29:37 AM	600.2	67.0	64.6	0.9
8:29:38 AM	600.2	65.7	65.5	0.9
8:29:39 AM	600.2	65.3	65.6	0.9
8:29:40 AM	600.2	65.3	65.4	0.9
8:29:41 AM	600.2	65.6	65.7	0.9
8:29:42 AM	600.2	66.2	65.7	0.9
8:29:43 AM	600.1	65.9	66.1	0.9
8:29:44 AM	600.2	64.8	65.4	0.9
8:29:45 AM	600.2	66.1	65.1	0.8
8:29:46 AM	600.2	66.4	65.7	0.9
8:29:47 AM	600.2	66.5	65.8	0.8
8:29:48 AM	600.2	66.5	65.7	0.8
8:29:49 AM	600.2	65.4	65.7	0.7
8:29:50 AM	600.2	65.3	65.7	0.7
8:29:51 AM	600.1	66.2	66.1	0.7
8:29:52 AM	600.2	65.7	66.4	0.7
8:29:53 AM	600.2	66.8	66.1	0.7
8:29:54 AM	600.2	67.0	65.3	0.8
Averages ->	**600.2**	**65.8**	**65.6**	**0.9**
			Maximum ->	**1.0**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 150 **Date** 5/19/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
9:00:17 AM	602.2	67.3	66.6	0.6
9:00:18 AM	602.1	67.6	66.0	0.6
9:00:19 AM	602.2	66.7	66.7	0.6
9:00:20 AM	602.2	66.8	66.9	0.6
9:00:21 AM	602.2	67.9	66.7	0.6
9:00:22 AM	602.2	66.5	66.7	0.6
9:00:23 AM	602.2	66.2	66.4	0.6
9:00:24 AM	602.2	66.8	66.3	0.7
9:00:25 AM	602.1	68.2	67.1	0.7
9:00:26 AM	602.2	67.3	66.7	0.7
9:00:27 AM	602.1	67.1	66.5	0.7
9:00:28 AM	602.2	66.9	66.9	0.7
9:00:29 AM	602.1	66.9	66.5	0.7
9:00:30 AM	602.1	66.9	67.1	0.7
9:00:31 AM	602.1	66.0	66.9	0.8
9:00:32 AM	602.2	68.0	66.7	0.8
9:00:33 AM	602.2	66.5	66.5	0.8
9:00:34 AM	602.2	67.2	66.0	0.8
9:00:35 AM	602.1	67.2	66.6	0.8
9:00:36 AM	602.1	67.2	66.2	0.8
9:00:37 AM	602.2	66.9	66.2	0.8
9:00:38 AM	602.1	67.3	66.7	0.7
9:00:39 AM	602.1	66.8	66.9	0.7
9:00:40 AM	602.1	67.7	66.2	0.8
9:00:41 AM	602.2	66.5	66.6	0.8
9:00:42 AM	602.1	66.6	67.2	0.8
9:00:43 AM	602.1	67.3	66.2	0.8
9:00:44 AM	602.2	67.3	66.2	0.8
9:00:45 AM	602.2	67.5	67.1	0.8
9:00:46 AM	602.1	67.4	66.4	0.7
9:00:47 AM	602.1	66.6	66.8	0.7
9:00:48 AM	602.1	67.8	66.7	0.8
9:00:49 AM	602.1	67.7	67.3	0.7
9:00:50 AM	602.1	65.9	66.4	0.7
9:00:51 AM	602.1	66.0	66.4	0.7
9:00:52 AM	602.1	67.0	66.3	0.7
9:00:53 AM	602.1	67.0	66.6	0.7
9:00:54 AM	602.1	67.1	66.5	0.7
9:00:55 AM	602.1	66.2	66.1	0.7
9:00:56 AM	602.1	67.1	67.1	0.7
9:00:57 AM	602.1	66.2	66.4	0.7
9:00:58 AM	602.1	65.6	66.8	0.6
9:00:59 AM	602.1	67.5	66.6	0.6
9:01:00 AM	602.1	67.0	66.8	0.6
9:01:01 AM	602.1	66.0	67.0	0.6
9:01:02 AM	602.1	66.3	67.1	0.6
9:01:03 AM	602.1	66.2	66.8	0.6
9:01:04 AM	602.1	66.9	66.7	0.6
9:01:05 AM	602.1	66.3	66.0	0.6
9:01:06 AM	602.1	66.7	67.1	0.7
9:01:07 AM	602.1	66.7	66.5	0.7
9:01:08 AM	602.1	66.2	66.2	0.8
9:01:09 AM	602.1	66.4	67.1	0.7
9:01:10 AM	602.1	67.2	66.6	0.7
9:01:11 AM	602.1	67.3	66.9	0.7
9:01:12 AM	602.1	67.0	66.4	0.7
9:01:13 AM	602.1	66.4	67.3	0.7
9:01:14 AM	602.1	66.5	66.3	0.7
9:01:15 AM	602.1	67.0	66.7	0.6
9:01:16 AM	602.1	66.7	66.9	0.6
Averages ->	**602.1**	**66.9**	**66.6**	**0.7**
			Maximum ->	**0.8**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 200 **Date** 5/19/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
9:29:45 AM	602.1	68.3	67.3	0.8
9:29:46 AM	602.1	68.0	67.2	0.8
9:29:47 AM	602.1	67.3	67.9	0.8
9:29:48 AM	602.1	67.7	67.9	0.8
9:29:49 AM	602.1	68.3	68.3	0.8
9:29:50 AM	602.1	67.7	67.0	0.8
9:29:51 AM	602.1	68.4	67.7	0.8
9:29:52 AM	602.1	68.1	67.2	0.8
9:29:53 AM	602.1	67.9	67.7	0.8
9:29:54 AM	602.1	67.3	67.4	0.9
9:29:55 AM	602.1	67.2	67.5	0.9
9:29:56 AM	602.1	67.7	67.7	0.9
9:29:57 AM	602.1	66.5	68.1	0.9
9:29:58 AM	602.1	68.8	67.3	0.8
9:29:59 AM	602.0	67.4	67.9	0.8
9:30:00 AM	602.1	67.1	67.9	0.8
9:30:01 AM	602.1	67.3	67.8	0.8
9:30:02 AM	602.1	67.5	67.6	0.8
9:30:03 AM	602.1	68.2	67.7	0.8
9:30:04 AM	602.0	67.0	67.6	0.7
9:30:05 AM	602.0	67.7	67.7	0.8
9:30:06 AM	602.0	68.1	67.3	0.7
9:30:07 AM	602.1	67.0	67.4	0.7
9:30:08 AM	602.0	68.1	67.7	0.7
9:30:09 AM	602.0	68.0	67.7	0.7
9:30:10 AM	602.0	67.4	67.0	0.7
9:30:11 AM	602.0	67.2	67.8	0.7
9:30:12 AM	602.1	67.0	67.8	0.7
9:30:13 AM	602.1	66.8	67.7	0.7
9:30:14 AM	602.1	67.4	67.5	0.7
9:30:15 AM	602.1	67.2	67.3	0.7
9:30:16 AM	602.0	67.7	67.6	0.7
9:30:17 AM	602.1	66.4	67.4	0.7
9:30:18 AM	602.1	68.2	67.2	0.7
9:30:19 AM	602.1	67.9	67.1	0.7
9:30:20 AM	602.1	66.7	67.5	0.7
9:30:21 AM	602.1	67.0	67.6	0.7
9:30:22 AM	602.1	68.6	67.2	0.7
9:30:23 AM	602.1	68.3	67.2	0.7
9:30:24 AM	602.1	67.9	68.1	0.7
9:30:25 AM	602.1	67.6	67.0	0.7
9:30:26 AM	602.1	68.3	67.7	0.7
9:30:27 AM	602.1	68.1	67.9	0.7
9:30:28 AM	602.1	67.7	67.1	0.7
9:30:29 AM	602.1	67.8	67.2	0.7
9:30:30 AM	602.1	68.1	67.7	0.7
9:30:31 AM	602.1	66.6	67.4	0.7
9:30:32 AM	602.1	67.7	67.0	0.7
9:30:33 AM	602.1	69.0	67.9	0.7
9:30:34 AM	602.1	67.3	67.6	0.6
9:30:35 AM	602.0	67.0	67.9	0.6
9:30:36 AM	602.1	68.4	67.1	0.6
9:30:37 AM	602.1	68.2	68.3	0.6
9:30:38 AM	602.1	68.6	68.0	0.6
9:30:39 AM	602.0	67.4	67.0	0.6
9:30:40 AM	602.1	67.8	67.6	0.6
9:30:41 AM	602.1	68.3	68.1	0.6
9:30:42 AM	602.1	67.3	67.8	0.7
9:30:43 AM	602.1	66.1	66.8	0.7
9:30:44 AM	602.0	68.1	67.7	0.7
Averages ->	**602.1**	**67.7**	**67.5**	**0.7**
			Maximum ->	**0.9**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 250 **Date** 5/19/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
10:05:59 AM	601.0	68.3	67.6	0.8
10:06:00 AM	601.0	68.3	67.4	0.8
10:06:01 AM	601.0	69.1	67.4	0.8
10:06:02 AM	601.1	66.8	68.4	0.8
10:06:03 AM	601.1	68.8	67.5	0.7
10:06:04 AM	601.2	66.4	67.2	0.7
10:06:05 AM	601.2	68.4	67.4	0.7
10:06:06 AM	601.2	67.7	67.6	0.7
10:06:07 AM	601.1	67.7	67.2	0.8
10:06:08 AM	601.1	66.8	67.0	0.8
10:06:09 AM	601.0	66.9	67.6	0.7
10:06:10 AM	601.1	67.9	67.4	0.7
10:06:11 AM	601.1	67.5	66.6	0.7
10:06:12 AM	601.0	68.1	66.8	0.7
10:06:13 AM	601.0	67.4	67.1	0.7
10:06:14 AM	601.0	66.2	66.8	0.7
10:06:15 AM	601.0	68.1	67.9	0.6
10:06:16 AM	601.0	67.3	67.4	0.7
10:06:17 AM	601.0	68.1	68.3	0.7
10:06:18 AM	601.0	67.2	67.7	0.6
10:06:19 AM	601.0	68.8	67.6	0.6
10:06:20 AM	601.0	68.0	67.3	0.6
10:06:21 AM	601.0	67.7	67.0	0.6
10:06:22 AM	601.0	68.1	67.6	0.6
10:06:23 AM	601.0	67.0	67.7	0.7
10:06:24 AM	601.0	69.0	67.7	0.7
10:06:25 AM	601.0	67.1	67.7	0.7
10:06:26 AM	601.0	67.1	68.2	0.7
10:06:27 AM	601.0	68.8	67.9	0.7
10:06:28 AM	601.0	67.1	67.7	0.7
10:06:29 AM	601.1	67.5	67.5	0.7
10:06:30 AM	601.0	67.8	67.7	0.7
10:06:31 AM	601.1	68.1	67.4	0.7
10:06:32 AM	601.1	67.6	67.9	0.7
10:06:33 AM	601.0	68.0	67.5	0.7
10:06:34 AM	601.0	67.7	67.0	0.7
10:06:35 AM	601.0	67.0	67.3	0.7
10:06:36 AM	601.0	68.6	68.0	0.7
10:06:37 AM	601.0	68.7	67.9	0.7
10:06:38 AM	601.0	67.7	67.4	0.7
10:06:39 AM	601.0	67.0	67.7	0.7
10:06:40 AM	601.0	68.1	67.0	0.7
10:06:41 AM	601.0	67.4	67.7	0.7
10:06:42 AM	601.0	67.6	67.3	0.8
10:06:43 AM	601.0	68.0	67.6	0.8
10:06:44 AM	601.0	66.9	67.6	0.8
10:06:45 AM	601.0	67.2	68.1	0.8
10:06:46 AM	601.0	67.0	68.0	0.8
10:06:47 AM	601.0	67.1	66.9	0.8
10:06:48 AM	601.0	67.3	67.9	0.8
10:06:49 AM	601.0	67.4	67.2	0.8
10:06:50 AM	601.0	69.3	67.2	0.8
10:06:51 AM	601.0	67.1	67.7	0.8
10:06:52 AM	601.0	68.1	68.2	0.8
10:06:53 AM	601.0	68.2	67.4	0.8
10:06:54 AM	601.0	68.6	67.3	0.8
10:06:55 AM	601.0	66.9	67.1	0.8
10:06:56 AM	601.0	66.4	67.4	0.8
10:06:57 AM	601.0	67.4	67.3	0.9
10:06:58 AM	601.0	67.9	67.3	0.9
Averages ->	**601.0**	**67.7**	**67.5**	**0.7**
12:00:00 AM			**Maximum ->**	**0.9**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 250 **Date** 5/19/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
11:50:01 AM	595.9	394.6	389.0	2.5
11:50:02 AM	595.8	394.1	388.3	2.5
11:50:03 AM	595.8	395.3	388.9	2.5
11:50:04 AM	595.8	394.8	388.3	2.5
11:50:05 AM	595.8	394.7	388.3	2.5
11:50:06 AM	595.8	393.9	388.3	2.5
11:50:07 AM	595.7	395.5	388.4	2.5
11:50:08 AM	595.7	394.7	388.3	2.5
11:50:09 AM	595.7	394.4	388.1	2.5
11:50:10 AM	595.7	393.8	388.8	2.5
11:50:11 AM	595.6	395.3	387.9	2.5
11:50:12 AM	595.6	394.1	388.2	2.5
11:50:13 AM	595.6	394.3	388.1	2.6
11:50:14 AM	595.6	394.8	387.9	2.6
11:50:15 AM	595.5	394.8	388.3	2.6
11:50:16 AM	595.5	394.7	388.3	2.6
11:50:17 AM	595.5	394.5	387.9	2.6
11:50:18 AM	595.4	394.3	388.1	2.6
11:50:19 AM	595.5	394.3	387.5	2.6
11:50:20 AM	595.4	394.8	387.8	2.6
11:50:21 AM	595.4	394.9	387.5	2.6
11:50:22 AM	595.4	394.0	387.6	2.7
11:50:23 AM	595.4	393.9	387.5	2.7
11:50:24 AM	595.4	394.1	387.7	2.7
11:50:25 AM	595.4	393.9	387.9	2.7
11:50:26 AM	595.4	394.7	387.5	2.7
11:50:27 AM	595.4	394.6	387.5	2.7
11:50:28 AM	595.3	393.9	388.1	2.7
11:50:29 AM	595.3	394.3	387.9	2.8
11:50:30 AM	595.3	393.5	386.9	2.7
11:50:31 AM	595.3	395.1	387.9	2.7
11:50:32 AM	595.3	394.0	387.2	2.7
11:50:33 AM	595.3	394.5	387.3	2.7
11:50:34 AM	595.3	394.1	387.5	2.7
11:50:35 AM	595.3	393.8	386.9	2.7
11:50:36 AM	595.3	394.5	387.2	2.7
11:50:37 AM	595.3	393.7	386.9	2.7
11:50:38 AM	595.2	394.5	387.5	2.7
11:50:39 AM	595.2	394.1	387.1	2.7
11:50:40 AM	595.2	393.8	387.5	2.7
11:50:41 AM	595.2	394.1	386.9	2.7
11:50:42 AM	595.2	394.5	386.7	2.6
11:50:43 AM	595.2	394.4	387.3	2.7
11:50:44 AM	595.2	393.9	387.5	2.6
11:50:45 AM	595.2	393.9	387.7	2.6
11:50:46 AM	595.1	394.1	387.1	2.6
11:50:47 AM	595.1	394.4	387.3	2.6
11:50:48 AM	595.1	394.5	386.8	2.6
11:50:49 AM	595.1	394.7	387.5	2.6
11:50:50 AM	595.1	395.0	386.4	2.6
11:50:51 AM	595.0	393.9	387.5	2.6
11:50:52 AM	595.1	394.5	387.3	2.6
11:50:53 AM	595.0	394.6	387.0	2.6
11:50:54 AM	595.0	393.9	386.9	2.6
11:50:55 AM	595.0	394.7	387.2	2.6
11:50:56 AM	595.0	394.3	386.9	2.7
11:50:57 AM	595.1	395.1	386.9	2.7
11:50:58 AM	595.0	394.7	387.3	2.6
11:50:59 AM	595.0	394.8	387.5	2.7
11:51:00 AM	595.0	395.1	386.7	2.7
Averages ->	**595.3**	**394.4**	**387.6**	**2.6**
			Maximum ->	**2.8**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 300 **Date** 5/19/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
12:27:00 PM	599.2	401.5	391.8	1.5
12:27:01 PM	599.2	401.0	391.4	1.5
12:27:02 PM	599.2	401.0	391.5	1.6
12:27:03 PM	599.2	401.7	391.8	1.6
12:27:04 PM	599.2	401.0	391.6	1.7
12:27:05 PM	599.2	401.0	391.0	1.7
12:27:06 PM	599.1	401.1	391.6	1.8
12:27:07 PM	599.2	401.3	391.4	1.8
12:27:08 PM	599.1	400.3	391.6	1.8
12:27:09 PM	599.2	401.0	391.4	1.8
12:27:10 PM	599.1	401.2	391.4	1.9
12:27:11 PM	599.2	401.0	391.7	1.9
12:27:12 PM	599.1	400.4	390.9	1.9
12:27:13 PM	599.1	401.3	391.2	1.9
12:27:14 PM	599.2	401.2	391.9	1.9
12:27:15 PM	599.2	400.5	391.3	1.9
12:27:16 PM	599.1	400.4	391.1	1.9
12:27:17 PM	599.2	401.1	391.5	1.9
12:27:18 PM	599.1	400.2	391.2	1.9
12:27:19 PM	599.1	401.3	391.5	1.9
12:27:20 PM	599.2	400.2	391.6	1.8
12:27:21 PM	599.1	400.6	391.0	1.8
12:27:22 PM	599.1	401.2	391.0	1.9
12:27:23 PM	599.1	400.5	391.4	1.8
12:27:24 PM	599.1	400.1	391.0	1.8
12:27:25 PM	599.1	400.1	391.1	1.8
12:27:26 PM	599.1	400.9	391.2	1.8
12:27:27 PM	599.1	400.6	391.2	1.8
12:27:28 PM	599.1	400.8	391.4	1.8
12:27:29 PM	599.1	400.7	391.5	1.8
12:27:30 PM	599.1	401.6	390.7	1.8
12:27:31 PM	599.1	400.9	390.8	1.8
12:27:32 PM	599.1	400.0	391.3	1.8
12:27:33 PM	599.1	401.6	391.0	1.8
12:27:34 PM	599.1	399.9	391.6	1.8
12:27:35 PM	599.1	400.8	391.3	1.8
12:27:36 PM	599.1	401.2	391.2	1.8
12:27:37 PM	599.1	400.9	391.1	1.8
12:27:38 PM	599.1	400.5	391.2	1.8
12:27:39 PM	599.2	400.7	391.2	1.8
12:27:40 PM	599.1	401.2	390.7	1.8
12:27:41 PM	599.1	400.9	391.0	1.9
12:27:42 PM	599.1	400.4	391.0	1.9
12:27:43 PM	599.1	400.6	390.5	1.8
12:27:44 PM	599.1	400.8	391.3	1.8
12:27:45 PM	599.1	400.4	390.8	1.8
12:27:46 PM	599.1	400.6	391.6	1.8
12:27:47 PM	599.1	400.3	391.1	1.8
12:27:48 PM	599.1	400.5	390.6	1.9
12:27:49 PM	599.1	400.4	391.2	1.9
12:27:50 PM	599.1	400.5	391.2	1.9
12:27:51 PM	599.1	400.3	391.4	1.8
12:27:52 PM	599.1	400.4	391.6	1.8
12:27:53 PM	599.1	401.2	391.5	1.8
12:27:54 PM	599.1	400.2	391.2	1.8
12:27:55 PM	599.1	400.8	391.1	1.8
12:27:56 PM	599.1	400.8	391.1	1.8
12:27:57 PM	599.1	400.5	391.5	1.8
12:27:58 PM	599.1	400.9	391.2	1.7
12:27:59 PM	599.1	401.3	391.0	1.7
Averages ->	**599.1**	**400.8**	**391.2**	**1.8**
			Maximum ->	**1.9**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 350 **Date** 5/19/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
1:09:16 PM	599.4	400.9	391.6	1.5
1:09:17 PM	599.4	400.7	390.8	1.5
1:09:18 PM	599.5	400.8	391.6	1.4
1:09:19 PM	599.4	400.8	391.8	1.5
1:09:20 PM	599.5	401.0	391.6	1.4
1:09:21 PM	599.4	400.8	391.3	1.4
1:09:22 PM	599.4	401.1	391.6	1.4
1:09:23 PM	599.4	400.7	391.6	1.4
1:09:24 PM	599.4	400.9	391.0	1.4
1:09:25 PM	599.4	400.6	391.5	1.4
1:09:26 PM	599.4	401.2	391.1	1.3
1:09:27 PM	599.4	400.6	391.0	1.3
1:09:28 PM	599.4	400.6	392.0	1.3
1:09:29 PM	599.4	400.5	390.8	1.3
1:09:30 PM	599.4	400.2	391.0	1.3
1:09:31 PM	599.4	400.1	391.2	1.3
1:09:32 PM	599.4	400.2	391.2	1.3
1:09:33 PM	599.4	400.2	391.1	1.4
1:09:34 PM	599.4	400.0	390.8	1.4
1:09:35 PM	599.3	400.2	390.7	1.4
1:09:36 PM	599.3	400.6	391.0	1.4
1:09:37 PM	599.3	401.1	391.4	1.4
1:09:38 PM	599.3	400.4	391.3	1.4
1:09:39 PM	599.3	400.4	390.1	1.4
1:09:40 PM	599.3	400.8	391.1	1.4
1:09:41 PM	599.3	400.3	390.5	1.4
1:09:42 PM	599.3	400.0	391.1	1.4
1:09:43 PM	599.3	400.0	391.8	1.4
1:09:44 PM	599.3	399.8	391.4	1.4
1:09:45 PM	599.3	400.0	391.0	1.4
1:09:46 PM	599.3	400.2	390.3	1.4
1:09:47 PM	599.3	400.4	391.2	1.4
1:09:48 PM	599.3	400.2	390.7	1.4
1:09:49 PM	599.3	399.8	390.6	1.4
1:09:50 PM	599.3	400.2	390.5	1.4
1:09:51 PM	599.3	400.4	391.3	1.4
1:09:52 PM	599.3	400.4	390.3	1.3
1:09:53 PM	599.3	400.2	391.2	1.3
1:09:54 PM	599.3	400.3	390.9	1.3
1:09:55 PM	599.3	399.4	390.7	1.3
1:09:56 PM	599.3	400.5	391.4	1.3
1:09:57 PM	599.3	399.6	390.4	1.3
1:09:58 PM	599.3	399.9	390.2	1.3
1:09:59 PM	599.3	399.6	390.5	1.3
1:10:00 PM	599.3	400.4	390.7	1.3
1:10:01 PM	599.3	399.8	391.0	1.3
1:10:02 PM	599.2	400.2	390.4	1.3
1:10:03 PM	599.3	400.2	390.6	1.3
1:10:04 PM	599.2	399.5	390.8	1.3
1:10:05 PM	599.3	400.9	391.3	1.3
1:10:06 PM	599.3	400.4	390.9	1.3
1:10:07 PM	599.3	400.7	390.4	1.3
1:10:08 PM	599.3	400.6	391.4	1.3
1:10:09 PM	599.3	401.2	390.4	1.3
1:10:10 PM	599.3	400.7	391.7	1.2
1:10:11 PM	599.3	400.4	391.2	1.2
1:10:12 PM	599.3	400.6	391.1	1.2
1:10:13 PM	599.3	400.9	390.8	1.2
1:10:14 PM	599.3	400.8	391.3	1.2
1:10:15 PM	599.4	400.6	390.8	1.2
Averages ->	**599.3**	**400.4**	**391.0**	**1.4**
			Maximum ->	**1.5**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 400 **Date** 5/19/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
1:44:55 PM	603.4	402.1	391.4	1.4
1:44:56 PM	603.4	402.0	391.7	1.4
1:44:57 PM	603.4	402.1	391.4	1.4
1:44:58 PM	603.3	402.2	392.2	1.4
1:44:59 PM	603.4	401.9	392.1	1.4
1:45:00 PM	603.4	402.0	391.7	1.4
1:45:01 PM	603.4	402.7	392.2	1.4
1:45:02 PM	603.4	402.0	391.2	1.4
1:45:03 PM	603.4	402.3	391.5	1.4
1:45:04 PM	603.5	401.5	391.8	1.4
1:45:05 PM	603.4	402.6	391.8	1.4
1:45:06 PM	603.4	402.1	391.7	1.4
1:45:07 PM	603.4	401.9	391.5	1.3
1:45:08 PM	603.4	402.9	391.9	1.3
1:45:09 PM	603.4	402.3	391.7	1.3
1:45:10 PM	603.4	402.3	391.7	1.3
1:45:11 PM	603.4	401.7	391.6	1.3
1:45:12 PM	603.5	402.0	392.1	1.3
1:45:13 PM	603.4	402.5	391.9	1.3
1:45:14 PM	603.4	402.3	391.8	1.3
1:45:15 PM	603.5	402.5	392.2	1.4
1:45:16 PM	603.4	402.3	392.0	1.4
1:45:17 PM	603.4	401.9	391.2	1.4
1:45:18 PM	603.4	402.0	391.8	1.4
1:45:19 PM	603.4	402.3	392.0	1.4
1:45:20 PM	603.5	402.6	392.0	1.4
1:45:21 PM	603.4	402.0	392.3	1.4
1:45:22 PM	603.4	402.1	392.0	1.4
1:45:23 PM	603.5	402.5	392.0	1.4
1:45:24 PM	603.5	402.2	392.0	1.4
1:45:25 PM	603.4	402.3	391.6	1.4
1:45:26 PM	603.4	401.9	392.0	1.4
1:45:27 PM	603.4	402.1	392.4	1.5
1:45:28 PM	603.4	401.6	392.1	1.5
1:45:29 PM	603.5	402.3	391.8	1.5
1:45:30 PM	603.4	401.5	391.6	1.5
1:45:31 PM	603.4	401.9	392.2	1.5
1:45:32 PM	603.4	401.9	392.6	1.6
1:45:33 PM	603.4	402.3	391.9	1.6
1:45:34 PM	603.5	401.8	391.2	1.6
1:45:35 PM	603.4	401.6	391.6	1.7
1:45:36 PM	603.4	401.7	391.8	1.6
1:45:37 PM	603.5	401.3	391.4	1.7
1:45:38 PM	603.5	401.5	391.8	1.7
1:45:39 PM	603.4	401.2	391.3	1.6
1:45:40 PM	603.5	401.7	392.1	1.7
1:45:41 PM	603.5	402.4	391.6	1.7
1:45:42 PM	603.5	401.9	392.3	1.6
1:45:43 PM	603.5	401.3	392.0	1.6
1:45:44 PM	603.5	401.6	391.8	1.6
1:45:45 PM	603.5	401.6	391.9	1.6
1:45:46 PM	603.5	402.0	391.4	1.6
1:45:47 PM	603.5	401.0	391.1	1.5
1:45:48 PM	603.5	400.8	391.8	1.5
1:45:49 PM	603.5	401.4	391.4	1.5
1:45:50 PM	603.4	401.5	391.4	1.5
1:45:51 PM	603.4	400.8	392.4	1.5
1:45:52 PM	603.5	401.7	391.4	1.5
1:45:53 PM	603.5	401.2	391.2	1.5
1:45:54 PM	603.4	400.6	391.3	1.5
Averages ->	**603.4**	**401.9**	**391.8**	**1.5**
			Maximum ->	**1.7**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 450 **Date** 5/19/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
2:14:16 PM	602.3	400.6	390.7	1.3
2:14:17 PM	602.3	400.7	391.6	1.3
2:14:18 PM	602.4	400.0	391.2	1.3
2:14:19 PM	602.3	400.6	391.6	1.3
2:14:20 PM	602.3	400.4	391.3	1.3
2:14:21 PM	602.3	400.5	390.3	1.4
2:14:22 PM	602.3	400.2	390.7	1.4
2:14:23 PM	602.3	400.3	391.2	1.4
2:14:24 PM	602.3	400.2	390.6	1.4
2:14:25 PM	602.4	400.0	391.0	1.4
2:14:26 PM	602.3	400.2	390.1	1.4
2:14:27 PM	602.4	400.5	391.2	1.4
2:14:28 PM	602.4	400.4	390.9	1.4
2:14:29 PM	602.3	400.6	391.3	1.4
2:14:30 PM	602.3	400.1	390.7	1.4
2:14:31 PM	602.4	400.4	390.9	1.4
2:14:32 PM	602.4	400.5	391.4	1.4
2:14:33 PM	602.3	400.6	391.0	1.4
2:14:34 PM	602.3	400.6	390.3	1.4
2:14:35 PM	602.3	400.0	391.1	1.4
2:14:36 PM	602.3	400.6	390.2	1.4
2:14:37 PM	602.3	400.9	391.0	1.4
2:14:38 PM	602.3	400.5	390.3	1.4
2:14:39 PM	602.3	400.6	390.4	1.4
2:14:40 PM	602.3	400.2	391.1	1.4
2:14:41 PM	602.3	401.0	391.0	1.4
2:14:42 PM	602.3	401.4	391.1	1.4
2:14:43 PM	602.3	401.1	390.7	1.4
2:14:44 PM	602.3	401.2	391.0	1.4
2:14:45 PM	602.3	400.4	390.4	1.4
2:14:46 PM	602.3	400.4	390.8	1.4
2:14:47 PM	602.3	401.2	391.0	1.4
2:14:48 PM	602.3	401.0	390.6	1.4
2:14:49 PM	602.3	401.0	391.4	1.4
2:14:50 PM	602.3	401.0	391.0	1.4
2:14:51 PM	602.3	401.1	391.2	1.4
2:14:52 PM	602.3	401.1	391.2	1.4
2:14:53 PM	602.3	401.3	391.4	1.4
2:14:54 PM	602.3	400.2	391.1	1.4
2:14:55 PM	602.3	400.9	391.4	1.4
2:14:56 PM	602.3	400.8	391.1	1.3
2:14:57 PM	602.3	401.0	391.0	1.3
2:14:58 PM	602.3	400.6	390.7	1.3
2:14:59 PM	602.3	401.1	390.8	1.3
2:15:00 PM	602.3	401.2	391.2	1.3
2:15:01 PM	602.3	401.4	391.2	1.3
2:15:02 PM	602.3	401.9	391.7	1.3
2:15:03 PM	602.3	402.3	391.6	1.3
2:15:04 PM	602.3	401.4	391.1	1.3
2:15:05 PM	602.3	400.8	390.8	1.3
2:15:06 PM	602.4	401.2	391.6	1.3
2:15:07 PM	602.3	401.8	390.5	1.4
2:15:08 PM	602.3	401.7	391.8	1.4
2:15:09 PM	602.3	401.3	390.7	1.4
2:15:10 PM	602.3	402.3	392.0	1.4
2:15:11 PM	602.4	401.9	391.7	1.3
2:15:12 PM	602.4	401.7	391.1	1.3
2:15:13 PM	602.3	401.0	391.2	1.3
2:15:14 PM	602.4	402.5	391.0	1.3
2:15:15 PM	602.4	402.2	391.7	1.2
Averages ->	**602.3**	**400.9**	**391.0**	**1.4**
			Maximum ->	**1.4**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 500 **Date** 5/19/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
2:51:35 PM	600.4	401.2	391.3	1.2
2:51:36 PM	600.4	400.8	391.4	1.2
2:51:37 PM	600.4	400.2	391.0	1.2
2:51:38 PM	600.4	400.6	391.6	1.2
2:51:39 PM	600.5	400.1	391.0	1.2
2:51:40 PM	600.4	401.0	391.6	1.2
2:51:41 PM	600.4	400.4	390.8	1.2
2:51:42 PM	600.4	401.3	391.2	1.2
2:51:43 PM	600.4	400.1	391.0	1.2
2:51:44 PM	600.4	401.0	391.5	1.2
2:51:45 PM	600.4	400.6	391.0	1.2
2:51:46 PM	600.4	400.3	391.2	1.2
2:51:47 PM	600.4	400.2	391.2	1.2
2:51:48 PM	600.4	400.0	390.9	1.2
2:51:49 PM	600.4	400.2	391.0	1.2
2:51:50 PM	600.4	400.6	391.5	1.2
2:51:51 PM	600.4	400.4	391.3	1.2
2:51:52 PM	600.4	399.6	390.1	1.2
2:51:53 PM	600.4	399.8	390.9	1.1
2:51:54 PM	600.4	400.4	391.1	1.2
2:51:55 PM	600.4	401.0	391.5	1.2
2:51:56 PM	600.4	400.2	390.4	1.1
2:51:57 PM	600.4	400.7	391.2	1.2
2:51:58 PM	600.4	400.3	391.4	1.1
2:51:59 PM	600.3	399.8	391.0	1.1
2:52:00 PM	600.3	400.6	391.2	1.1
2:52:01 PM	600.3	400.2	391.1	1.2
2:52:02 PM	600.3	400.0	391.1	1.2
2:52:03 PM	600.3	400.2	391.0	1.2
2:52:04 PM	600.3	400.4	391.1	1.1
2:52:05 PM	600.3	400.2	390.2	1.2
2:52:06 PM	600.3	400.4	390.7	1.2
2:52:07 PM	600.3	399.6	391.0	1.2
2:52:08 PM	600.3	400.9	391.3	1.2
2:52:09 PM	600.3	400.2	390.7	1.2
2:52:10 PM	600.3	400.4	391.4	1.2
2:52:11 PM	600.3	400.5	390.4	1.2
2:52:12 PM	600.3	400.1	390.8	1.2
2:52:13 PM	600.3	399.6	390.5	1.2
2:52:14 PM	600.3	400.0	390.6	1.1
2:52:15 PM	600.3	399.1	389.4	1.1
2:52:16 PM	600.3	399.6	390.5	1.1
2:52:17 PM	600.3	399.1	390.1	1.1
2:52:18 PM	600.3	400.2	391.2	1.1
2:52:19 PM	600.3	399.0	390.5	1.1
2:52:20 PM	600.3	399.7	390.5	1.0
2:52:21 PM	600.3	399.2	390.1	1.0
2:52:22 PM	600.3	399.6	390.7	1.0
2:52:23 PM	600.3	400.0	390.1	1.0
2:52:24 PM	600.3	399.9	391.2	1.0
2:52:25 PM	600.3	399.6	390.9	1.0
2:52:26 PM	600.2	399.6	390.8	1.0
2:52:27 PM	600.3	399.6	389.8	1.0
2:52:28 PM	600.3	399.4	390.4	1.0
2:52:29 PM	600.3	399.6	390.6	1.0
2:52:30 PM	600.3	399.5	390.3	1.0
2:52:31 PM	600.3	399.2	390.3	1.0
2:52:32 PM	600.3	399.2	390.1	1.0
2:52:33 PM	600.2	399.3	390.5	1.0
2:52:34 PM	600.2	398.9	390.2	1.0
Averages ->	**600.3**	**400.1**	**390.8**	**1.1**
			Maximum ->	**1.2**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 500 **Date** 5/20/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
7:49:43 AM	597.6	70.1	70.2	286.5
7:49:44 AM	597.6	70.0	69.4	285.2
7:49:45 AM	597.5	70.9	69.6	277.3
7:49:46 AM	597.5	70.1	69.6	276.6
7:49:47 AM	597.5	70.1	70.0	271.0
7:49:48 AM	597.5	70.1	69.7	265.3
7:49:49 AM	597.4	69.9	69.4	267.5
7:49:50 AM	597.4	70.5	69.7	261.9
7:49:51 AM	597.3	69.2	70.3	259.5
7:49:52 AM	597.3	70.3	70.2	256.7
7:49:53 AM	597.3	70.6	69.6	258.4
7:49:54 AM	597.2	70.0	69.5	252.0
7:49:55 AM	597.2	70.1	69.9	251.8
7:49:56 AM	597.2	70.1	69.9	246.2
7:49:57 AM	597.2	69.9	70.1	246.5
7:49:58 AM	597.2	69.8	69.9	243.3
7:49:59 AM	597.1	69.8	70.0	240.4
7:50:00 AM	597.1	69.8	70.1	240.1
7:50:01 AM	597.2	70.5	69.8	236.5
7:50:02 AM	597.1	70.0	69.8	236.9
7:50:03 AM	597.1	70.1	69.5	234.9
7:50:04 AM	597.1	69.8	69.8	235.0
7:50:05 AM	597.1	70.0	69.8	232.1
7:50:06 AM	597.1	70.2	69.8	233.7
7:50:07 AM	597.1	70.3	69.7	234.1
7:50:08 AM	597.0	70.3	69.7	230.8
7:50:09 AM	597.1	70.2	69.8	227.9
7:50:10 AM	597.0	69.9	69.8	227.0
7:50:11 AM	597.0	70.1	69.4	226.1
7:50:12 AM	597.0	70.1	69.6	220.4
7:50:13 AM	597.0	70.3	69.7	223.7
7:50:14 AM	597.1	70.1	69.9	219.9
7:50:15 AM	597.1	69.8	69.8	219.1
7:50:16 AM	597.2	70.3	69.6	220.8
7:50:17 AM	597.3	69.8	70.1	219.0
7:50:18 AM	597.2	69.4	70.5	220.2
7:50:19 AM	597.1	70.0	69.8	219.2
7:50:20 AM	597.0	69.6	70.2	221.0
7:50:21 AM	597.0	70.1	69.9	221.0
7:50:22 AM	596.9	70.3	70.1	220.9
7:50:23 AM	596.9	69.6	69.8	222.4
7:50:24 AM	596.8	70.0	70.3	223.9
7:50:25 AM	596.8	69.8	70.1	225.9
7:50:26 AM	596.7	70.1	69.6	227.0
7:50:27 AM	596.7	70.0	69.8	233.0
7:50:28 AM	596.7	70.4	69.4	237.7
7:50:29 AM	596.6	69.4	70.4	242.5
7:50:30 AM	596.6	69.8	69.7	250.3
7:50:31 AM	596.6	69.8	69.8	257.2
7:50:32 AM	596.5	70.3	69.9	263.5
7:50:33 AM	596.5	69.9	69.9	267.0
7:50:34 AM	596.5	69.4	69.9	275.6
7:50:35 AM	596.5	70.1	69.8	282.2
7:50:36 AM	596.4	70.1	69.4	282.9
7:50:37 AM	596.4	70.0	69.8	291.0
7:50:38 AM	596.4	70.1	69.8	299.3
7:50:39 AM	596.3	70.1	70.0	301.4
7:50:40 AM	596.3	70.2	70.2	306.2
7:50:41 AM	596.3	69.8	70.1	310.2
7:50:42 AM	596.3	70.4	69.4	314.3
Averages ->	**597.0**	**70.0**	**69.8**	**249.7**
			Maximum ->	**314.3**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 550 **Date** 5/20/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
8:32:18 AM	597.4	71.6	71.1	328.7
8:32:19 AM	597.4	72.5	71.3	331.5
8:32:20 AM	597.4	71.3	71.6	328.6
8:32:21 AM	597.6	71.4	71.4	326.3
8:32:22 AM	597.6	71.6	71.4	328.0
8:32:23 AM	597.6	71.7	71.6	328.9
8:32:24 AM	597.4	71.9	71.6	325.7
8:32:25 AM	597.4	71.4	71.9	325.8
8:32:26 AM	597.3	71.4	71.1	324.7
8:32:27 AM	597.3	71.6	71.4	319.8
8:32:28 AM	597.2	71.3	71.9	321.5
8:32:29 AM	597.2	71.5	70.9	317.1
8:32:30 AM	597.1	72.3	71.6	314.7
8:32:31 AM	597.1	71.1	71.4	314.5
8:32:32 AM	597.1	71.7	71.2	310.4
8:32:33 AM	597.0	71.6	71.2	307.4
8:32:34 AM	597.1	71.2	70.9	304.8
8:32:35 AM	597.0	71.4	71.5	304.2
8:32:36 AM	596.9	72.1	71.0	303.7
8:32:37 AM	596.9	71.9	71.7	304.0
8:32:38 AM	596.9	71.9	71.4	303.0
8:32:39 AM	596.9	71.5	71.4	304.3
8:32:40 AM	596.9	71.5	71.1	304.2
8:32:41 AM	596.9	72.1	71.4	308.0
8:32:42 AM	596.8	71.4	71.4	306.2
8:32:43 AM	596.9	70.9	71.4	310.2
8:32:44 AM	596.9	71.5	71.3	311.7
8:32:45 AM	596.8	71.4	71.4	313.1
8:32:46 AM	596.8	71.6	71.6	314.0
8:32:47 AM	596.9	71.4	71.2	314.6
8:32:48 AM	596.9	71.6	71.4	315.0
8:32:49 AM	596.9	71.7	71.7	315.6
8:32:50 AM	596.9	71.5	71.2	313.3
8:32:51 AM	596.9	72.1	71.4	313.4
8:32:52 AM	596.8	71.3	71.8	311.8
8:32:53 AM	596.8	71.8	71.4	309.6
8:32:54 AM	596.8	71.8	70.9	307.7
8:32:55 AM	596.8	71.2	71.1	306.5
8:32:56 AM	596.8	71.9	71.4	305.4
8:32:57 AM	596.8	71.5	71.7	303.1
8:32:58 AM	596.7	71.8	71.4	297.8
8:32:59 AM	596.8	71.4	71.9	294.2
8:33:00 AM	596.7	71.4	71.9	294.3
8:33:01 AM	596.7	71.7	71.2	291.5
8:33:02 AM	596.7	71.7	70.8	288.5
8:33:03 AM	596.6	71.4	71.4	287.0
8:33:04 AM	596.6	71.2	71.5	283.1
8:33:05 AM	596.6	71.9	71.4	279.9
8:33:06 AM	596.7	71.5	71.5	276.0
8:33:07 AM	596.8	71.6	71.6	273.3
8:33:08 AM	596.9	71.2	71.9	269.4
8:33:09 AM	597.1	71.2	71.8	264.3
8:33:10 AM	597.0	72.1	71.3	261.1
8:33:11 AM	596.9	71.6	71.2	258.8
8:33:12 AM	596.8	71.7	71.3	255.6
8:33:13 AM	596.7	71.2	71.9	253.7
8:33:14 AM	596.6	71.6	71.6	249.4
8:33:15 AM	596.6	71.7	71.4	249.1
8:33:16 AM	596.6	71.6	71.5	247.6
8:33:17 AM	596.5	71.4	71.5	249.9
Averages ->	**596.9**	**71.6**	**71.4**	**299.8**
			Maximum ->	**331.5**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 600 **Date** 5/20/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
9:05:41 AM	601.1	71.9	71.5	257.0
9:05:42 AM	601.1	71.7	71.4	253.7
9:05:43 AM	601.1	71.6	71.4	250.9
9:05:44 AM	601.0	71.8	71.1	249.3
9:05:45 AM	601.1	71.4	71.2	249.5
9:05:46 AM	601.1	71.6	71.8	247.0
9:05:47 AM	601.2	71.9	71.1	245.5
9:05:48 AM	601.3	72.0	71.1	241.8
9:05:49 AM	601.3	71.4	71.4	240.7
9:05:50 AM	601.3	72.1	71.0	240.3
9:05:51 AM	601.5	71.2	71.4	238.3
9:05:52 AM	601.5	71.1	71.4	241.8
9:05:53 AM	601.4	71.6	71.4	241.0
9:05:54 AM	601.3	71.0	70.9	242.7
9:05:55 AM	601.3	71.9	71.4	242.9
9:05:56 AM	601.3	71.6	71.1	247.9
9:05:57 AM	601.2	71.3	71.4	249.0
9:05:58 AM	601.1	71.6	70.9	249.7
9:05:59 AM	601.1	71.0	72.0	249.5
9:06:00 AM	601.1	71.0	71.4	247.3
9:06:01 AM	601.0	71.8	71.3	249.6
9:06:02 AM	601.0	71.3	71.2	246.5
9:06:03 AM	601.0	71.4	71.7	249.9
9:06:04 AM	601.0	71.2	71.4	246.0
9:06:05 AM	601.0	71.0	71.4	241.0
9:06:06 AM	600.9	71.4	71.0	241.7
9:06:07 AM	600.9	71.4	71.4	244.6
9:06:08 AM	600.9	71.9	71.1	241.8
9:06:09 AM	600.8	71.4	71.5	240.2
9:06:10 AM	600.8	71.4	71.6	238.6
9:06:11 AM	600.8	71.3	72.1	236.1
9:06:12 AM	600.8	72.1	71.0	239.3
9:06:13 AM	600.8	71.5	71.4	239.5
9:06:14 AM	600.8	71.6	71.3	240.0
9:06:15 AM	600.8	71.5	71.2	239.2
9:06:16 AM	600.7	71.9	71.4	237.7
9:06:17 AM	600.7	71.4	71.6	241.6
9:06:18 AM	600.7	71.3	71.2	239.3
9:06:19 AM	600.7	71.9	71.3	237.6
9:06:20 AM	600.7	71.8	71.6	236.6
9:06:21 AM	600.7	71.5	71.5	236.9
9:06:22 AM	600.6	71.4	71.5	236.5
9:06:23 AM	600.7	71.6	71.6	234.1
9:06:24 AM	600.6	71.0	71.4	232.8
9:06:25 AM	600.6	71.6	71.3	231.2
9:06:26 AM	600.6	71.6	71.2	230.9
9:06:27 AM	600.7	71.4	71.4	226.1
9:06:28 AM	600.6	71.2	71.4	224.2
9:06:29 AM	600.7	71.4	71.0	221.5
9:06:30 AM	600.7	71.3	71.4	217.6
9:06:31 AM	600.7	71.4	71.4	213.7
9:06:32 AM	600.7	71.2	71.3	211.3
9:06:33 AM	600.6	71.7	71.3	209.0
9:06:34 AM	600.6	71.2	70.7	207.5
9:06:35 AM	600.6	71.6	71.0	204.3
9:06:36 AM	600.6	71.7	71.2	204.5
9:06:37 AM	600.6	71.6	71.2	204.9
9:06:38 AM	600.5	71.0	71.7	204.8
9:06:39 AM	600.5	71.5	71.5	205.0
9:06:40 AM	600.5	72.1	71.6	205.2
Averages ->	**600.9**	**71.5**	**71.3**	**235.2**
			Maximum ->	**257.0**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 650 **Date** 5/20/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
9:33:51 AM	598.7	72.8	72.5	291.1
9:33:52 AM	598.7	72.6	72.3	294.9
9:33:53 AM	598.7	72.7	72.0	295.7
9:33:54 AM	598.7	72.4	72.3	302.2
9:33:55 AM	598.7	72.5	72.4	302.7
9:33:56 AM	598.7	72.2	72.3	303.8
9:33:57 AM	598.7	72.1	72.3	307.0
9:33:58 AM	598.6	72.7	72.5	305.5
9:33:59 AM	598.6	72.6	72.3	305.7
9:34:00 AM	598.6	72.5	72.1	299.5
9:34:01 AM	598.6	72.7	72.5	298.4
9:34:02 AM	598.6	71.9	71.7	292.0
9:34:03 AM	598.6	72.4	72.0	285.9
9:34:04 AM	598.6	72.7	71.9	277.6
9:34:05 AM	598.6	72.3	71.8	274.0
9:34:06 AM	598.6	73.5	71.9	269.5
9:34:07 AM	598.6	72.6	71.6	264.4
9:34:08 AM	598.6	72.4	72.0	259.1
9:34:09 AM	598.6	72.0	72.2	258.7
9:34:10 AM	598.5	72.4	72.6	257.4
9:34:11 AM	598.5	73.2	72.1	256.5
9:34:12 AM	598.5	73.2	72.3	255.0
9:34:13 AM	598.5	72.4	71.9	257.7
9:34:14 AM	598.5	72.6	72.5	259.4
9:34:15 AM	598.5	72.3	72.2	257.6
9:34:16 AM	598.4	72.7	72.2	256.7
9:34:17 AM	598.4	72.7	72.3	257.5
9:34:18 AM	598.5	72.5	71.8	259.6
9:34:19 AM	598.4	72.2	72.3	257.0
9:34:20 AM	598.4	72.6	71.9	249.3
9:34:21 AM	598.4	72.7	72.5	244.1
9:34:22 AM	598.4	72.5	72.3	234.6
9:34:23 AM	598.4	72.7	71.9	226.3
9:34:24 AM	598.4	72.3	72.0	218.6
9:34:25 AM	598.4	72.2	71.9	217.6
9:34:26 AM	598.4	73.0	72.1	211.7
9:34:27 AM	598.4	73.0	72.1	206.3
9:34:28 AM	598.4	72.6	72.1	205.6
9:34:29 AM	598.3	72.3	72.3	203.5
9:34:30 AM	598.3	72.5	71.9	201.9
9:34:31 AM	598.3	72.5	72.3	200.5
9:34:32 AM	598.3	72.7	72.3	199.7
9:34:33 AM	598.3	72.1	72.1	201.4
9:34:34 AM	598.3	73.2	71.6	200.1
9:34:35 AM	598.3	72.3	71.8	198.9
9:34:36 AM	598.2	72.5	72.0	198.8
9:34:37 AM	598.3	72.1	72.0	202.1
9:34:38 AM	598.2	72.4	72.3	200.5
9:34:39 AM	598.2	72.3	71.9	200.1
9:34:40 AM	598.2	72.4	72.1	199.6
9:34:41 AM	598.2	72.8	71.9	201.5
9:34:42 AM	598.2	72.4	71.6	201.7
9:34:43 AM	598.2	72.1	72.1	198.4
9:34:44 AM	598.2	72.5	71.5	196.0
9:34:45 AM	598.2	72.6	72.3	197.4
9:34:46 AM	598.2	72.5	71.6	197.6
9:34:47 AM	598.1	72.4	71.9	196.6
9:34:48 AM	598.1	72.7	72.2	194.2
9:34:49 AM	598.1	72.7	71.6	195.1
9:34:50 AM	598.1	73.0	72.0	193.0
Averages ->	**598.4**	**72.5**	**72.1**	**240.9**
			Maximum ->	**307.0**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 700 **Date** 5/20/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
10:05:46 AM	608.5	73.0	72.1	153.5
10:05:47 AM	608.5	72.1	72.0	153.9
10:05:48 AM	608.5	72.7	72.1	157.6
10:05:49 AM	608.4	72.4	72.3	157.5
10:05:50 AM	608.4	72.3	72.0	155.1
10:05:51 AM	608.4	72.7	72.3	155.5
10:05:52 AM	608.6	72.3	72.3	152.4
10:05:53 AM	608.4	72.3	72.5	147.2
10:05:54 AM	608.4	72.0	72.7	148.1
10:05:55 AM	608.3	72.3	72.4	145.9
10:05:56 AM	608.2	72.3	72.3	146.4
10:05:57 AM	608.1	72.3	72.4	145.4
10:05:58 AM	608.1	72.8	72.3	147.4
10:05:59 AM	608.0	72.2	72.0	150.5
10:06:00 AM	608.0	72.5	72.5	150.1
10:06:01 AM	608.0	72.2	72.2	150.8
10:06:02 AM	608.0	72.5	72.5	150.6
10:06:03 AM	607.9	72.3	72.5	153.6
10:06:04 AM	607.8	72.0	72.1	152.7
10:06:05 AM	607.8	72.2	72.6	154.0
10:06:06 AM	607.7	72.7	71.9	155.5
10:06:07 AM	607.7	72.1	72.2	159.2
10:06:08 AM	607.7	72.5	72.7	160.5
10:06:09 AM	607.6	72.3	72.4	163.8
10:06:10 AM	607.6	72.5	72.3	165.1
10:06:11 AM	607.6	72.4	72.5	165.6
10:06:12 AM	607.6	72.6	72.2	166.6
10:06:13 AM	607.6	72.7	72.2	169.7
10:06:14 AM	607.5	72.5	71.9	168.9
10:06:15 AM	607.5	72.5	72.6	167.5
10:06:16 AM	607.5	72.7	72.2	166.3
10:06:17 AM	607.5	72.8	72.3	160.2
10:06:18 AM	607.5	73.2	72.3	157.9
10:06:19 AM	607.5	72.1	72.0	150.5
10:06:20 AM	607.5	72.5	72.2	149.7
10:06:21 AM	607.5	72.1	72.1	144.3
10:06:22 AM	607.5	71.8	72.6	144.3
10:06:23 AM	607.5	72.4	72.6	141.4
10:06:24 AM	607.5	72.3	72.2	142.2
10:06:25 AM	607.4	72.0	72.4	141.9
10:06:26 AM	607.4	72.0	72.3	141.0
10:06:27 AM	607.3	71.9	72.3	143.1
10:06:28 AM	607.4	72.2	72.3	143.8
10:06:29 AM	607.3	73.1	72.2	145.8
10:06:30 AM	607.3	72.5	72.1	144.2
10:06:31 AM	607.2	72.1	72.6	144.9
10:06:32 AM	607.2	72.7	72.1	146.0
10:06:33 AM	607.2	71.9	72.0	145.3
10:06:34 AM	607.2	71.9	72.2	145.3
10:06:35 AM	607.2	71.6	72.0	145.2
10:06:36 AM	607.2	72.3	72.1	145.0
10:06:37 AM	607.2	72.1	71.9	143.9
10:06:38 AM	607.1	72.7	72.5	145.2
10:06:39 AM	607.1	72.4	72.4	142.1
10:06:40 AM	607.0	72.6	72.1	144.9
10:06:41 AM	607.0	71.8	72.3	144.3
10:06:42 AM	607.1	72.3	72.1	143.4
10:06:43 AM	607.1	72.5	71.9	142.4
10:06:44 AM	607.2	72.4	71.8	141.8
10:06:45 AM	607.2	72.3	72.2	142.3
Averages ->	**607.7**	**72.4**	**72.2**	**150.8**
			Maximum ->	**169.7**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 750 **Date** 5/20/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
10:44:31 AM	597.9	72.1	71.6	234.9
10:44:32 AM	597.8	72.1	72.1	236.1
10:44:33 AM	597.8	72.1	72.6	235.4
10:44:34 AM	597.8	72.0	72.3	234.0
10:44:35 AM	597.7	72.1	71.8	230.0
10:44:36 AM	597.7	72.1	72.1	228.9
10:44:37 AM	597.8	72.7	72.3	227.4
10:44:38 AM	597.7	72.0	71.7	225.4
10:44:39 AM	597.7	72.2	72.2	224.8
10:44:40 AM	597.8	72.1	71.8	225.9
10:44:41 AM	597.7	72.5	72.5	229.1
10:44:42 AM	597.7	72.3	72.1	232.8
10:44:43 AM	597.7	71.9	71.6	232.2
10:44:44 AM	597.7	71.9	72.3	230.9
10:44:45 AM	597.7	71.5	71.9	234.6
10:44:46 AM	597.7	72.4	71.6	232.2
10:44:47 AM	597.7	72.3	71.8	230.4
10:44:48 AM	597.8	72.7	72.1	230.9
10:44:49 AM	597.7	72.4	71.9	231.6
10:44:50 AM	597.7	72.1	71.6	230.9
10:44:51 AM	597.7	71.9	71.9	229.7
10:44:52 AM	597.7	72.1	71.8	227.5
10:44:53 AM	597.9	71.6	71.9	228.3
10:44:54 AM	597.9	72.3	72.5	227.9
10:44:55 AM	597.8	72.3	72.4	229.1
10:44:56 AM	597.8	71.9	71.9	230.4
10:44:57 AM	597.7	71.4	71.8	230.6
10:44:58 AM	597.7	71.8	71.6	230.4
10:44:59 AM	597.7	72.2	71.7	229.2
10:45:00 AM	597.6	72.4	71.6	226.1
10:45:01 AM	597.6	72.4	71.8	222.8
10:45:02 AM	597.6	72.0	71.7	220.1
10:45:03 AM	597.6	71.8	71.9	216.2
10:45:04 AM	597.5	71.8	72.2	214.2
10:45:05 AM	597.5	71.5	71.9	211.2
10:45:06 AM	597.6	72.2	72.1	209.7
10:45:07 AM	597.5	70.9	71.3	208.0
10:45:08 AM	597.4	72.2	71.8	206.7
10:45:09 AM	597.5	72.4	72.0	205.7
10:45:10 AM	597.4	72.2	71.9	204.8
10:45:11 AM	597.4	72.0	71.7	203.4
10:45:12 AM	597.4	71.9	72.1	201.8
10:45:13 AM	597.4	72.8	72.4	201.1
10:45:14 AM	597.4	72.3	72.3	201.1
10:45:15 AM	597.4	71.9	71.7	200.0
10:45:16 AM	597.3	71.9	71.7	200.3
10:45:17 AM	597.3	72.3	72.1	200.0
10:45:18 AM	597.3	71.6	71.9	198.5
10:45:19 AM	597.3	71.9	72.0	200.1
10:45:20 AM	597.3	72.5	72.3	198.0
10:45:21 AM	597.3	71.9	71.6	199.1
10:45:22 AM	597.2	71.9	71.9	199.1
10:45:23 AM	597.3	72.2	71.9	196.8
10:45:24 AM	597.2	72.0	71.7	197.3
10:45:25 AM	597.2	72.0	71.9	196.0
10:45:26 AM	597.2	72.1	71.9	197.7
10:45:27 AM	597.2	72.4	71.7	195.6
10:45:28 AM	597.2	71.9	71.9	196.3
10:45:29 AM	597.2	72.1	71.7	196.1
10:45:30 AM	597.2	72.1	72.3	196.8
Averages ->	**597.6**	**72.1**	**71.9**	**216.7**
			Maximum ->	**236.1**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 750 **Date** 5/20/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
12:35:09 PM	600.1	385.8	375.0	9.3
12:35:10 PM	600.1	385.7	374.2	9.5
12:35:11 PM	600.1	386.2	374.2	9.5
12:35:12 PM	600.1	385.5	374.2	9.5
12:35:13 PM	600.1	385.6	374.4	9.4
12:35:14 PM	600.1	386.4	374.2	9.6
12:35:15 PM	600.1	386.0	374.3	9.4
12:35:16 PM	600.1	386.2	374.6	9.4
12:35:17 PM	600.1	385.8	374.7	9.4
12:35:18 PM	600.1	385.9	374.4	9.3
12:35:19 PM	600.1	385.8	374.6	9.2
12:35:20 PM	600.1	385.6	374.4	9.2
12:35:21 PM	600.1	385.9	374.6	9.3
12:35:22 PM	600.1	386.1	374.2	9.3
12:35:23 PM	600.1	385.7	374.6	9.5
12:35:24 PM	600.1	386.2	374.3	9.3
12:35:25 PM	600.1	386.8	374.5	9.2
12:35:26 PM	600.1	386.4	374.8	9.2
12:35:27 PM	600.1	385.6	374.6	9.2
12:35:28 PM	600.1	385.9	374.6	9.1
12:35:29 PM	600.1	386.8	374.7	9.1
12:35:30 PM	600.1	386.2	374.5	9.1
12:35:31 PM	600.1	386.0	374.8	9.1
12:35:32 PM	600.1	386.4	374.6	9.1
12:35:33 PM	600.1	386.4	374.5	9.0
12:35:34 PM	600.1	386.8	375.4	9.1
12:35:35 PM	600.1	386.6	374.5	9.3
12:35:36 PM	600.1	386.0	374.9	9.2
12:35:37 PM	600.1	386.6	374.6	9.3
12:35:38 PM	600.2	386.2	374.4	9.5
12:35:39 PM	600.2	386.2	374.5	9.3
12:35:40 PM	600.2	386.0	374.4	9.4
12:35:41 PM	600.1	386.6	374.8	9.3
12:35:42 PM	600.1	385.9	374.7	9.1
12:35:43 PM	600.1	386.6	374.6	9.1
12:35:44 PM	600.1	386.3	374.6	9.3
12:35:45 PM	600.1	386.2	374.8	9.2
12:35:46 PM	600.1	386.7	375.2	9.2
12:35:47 PM	600.1	386.7	374.8	9.5
12:35:48 PM	600.1	386.6	374.9	9.3
12:35:49 PM	600.1	386.6	374.8	9.3
12:35:50 PM	600.1	387.4	375.8	9.2
12:35:51 PM	600.1	386.9	375.2	9.1
12:35:52 PM	600.1	386.2	374.7	9.2
12:35:53 PM	600.1	386.1	375.3	9.1
12:35:54 PM	600.2	386.4	374.8	9.1
12:35:55 PM	600.2	387.0	375.1	9.2
12:35:56 PM	600.2	386.9	375.0	9.2
12:35:57 PM	600.2	386.6	375.2	9.2
12:35:58 PM	600.2	386.6	375.3	9.5
12:35:59 PM	600.2	387.0	375.5	9.1
12:36:00 PM	600.2	386.7	375.1	9.2
12:36:01 PM	600.2	386.8	375.6	9.3
12:36:02 PM	600.2	386.8	375.4	9.2
12:36:03 PM	600.2	386.3	375.1	9.4
12:36:04 PM	600.2	386.9	375.6	9.4
12:36:05 PM	600.2	386.6	375.4	9.2
12:36:06 PM	600.2	387.0	375.8	9.5
12:36:07 PM	600.3	387.0	375.8	9.4
12:36:08 PM	600.3	386.6	375.2	9.5
Averages ->	**600.1**	**386.3**	**374.8**	**9.3**
			Maximum ->	**9.6**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 800 **Date** 5/20/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
1:05:03 PM	600.2	402.6	391.2	4.6
1:05:04 PM	600.2	402.1	391.1	4.6
1:05:05 PM	600.2	402.2	391.3	4.6
1:05:06 PM	600.2	402.0	391.3	4.6
1:05:07 PM	600.2	402.4	390.8	4.7
1:05:08 PM	600.2	402.4	391.4	4.6
1:05:09 PM	600.3	402.2	390.9	4.6
1:05:10 PM	600.3	402.5	391.3	4.6
1:05:11 PM	600.3	402.8	391.5	4.6
1:05:12 PM	600.3	402.6	391.5	4.5
1:05:13 PM	600.3	402.2	391.5	4.4
1:05:14 PM	600.3	402.0	391.5	4.5
1:05:15 PM	600.3	402.4	391.3	4.6
1:05:16 PM	600.3	403.0	391.1	4.6
1:05:17 PM	600.3	402.4	391.5	4.6
1:05:18 PM	600.3	402.9	391.3	4.6
1:05:19 PM	600.3	402.3	391.3	4.6
1:05:20 PM	600.3	402.6	391.4	4.6
1:05:21 PM	600.3	403.0	391.4	4.6
1:05:22 PM	600.3	402.7	391.1	4.6
1:05:23 PM	600.3	402.4	391.2	4.6
1:05:24 PM	600.2	402.6	391.4	4.6
1:05:25 PM	600.3	402.8	391.1	4.6
1:05:26 PM	600.2	403.0	391.2	4.6
1:05:27 PM	600.2	402.6	391.6	4.5
1:05:28 PM	600.2	402.6	391.8	4.5
1:05:29 PM	600.3	402.4	391.2	4.5
1:05:30 PM	600.3	403.5	391.1	4.5
1:05:31 PM	600.2	402.3	391.7	4.6
1:05:32 PM	600.2	402.6	391.7	4.6
1:05:33 PM	600.3	402.7	391.7	4.6
1:05:34 PM	600.2	402.6	391.3	4.6
1:05:35 PM	600.2	402.9	391.5	4.6
1:05:36 PM	600.2	402.7	391.1	4.5
1:05:37 PM	600.2	402.4	391.5	4.5
1:05:38 PM	600.2	403.0	391.4	4.5
1:05:39 PM	600.2	402.7	391.9	4.6
1:05:40 PM	600.2	402.8	391.6	4.7
1:05:41 PM	600.2	403.1	391.8	4.6
1:05:42 PM	600.2	402.8	391.3	4.6
1:05:43 PM	600.2	402.6	391.5	4.4
1:05:44 PM	600.2	403.3	391.3	4.5
1:05:45 PM	600.2	402.9	391.5	4.4
1:05:46 PM	600.2	402.8	391.4	4.5
1:05:47 PM	600.2	403.0	391.2	4.3
1:05:48 PM	600.1	403.1	391.6	4.2
1:05:49 PM	600.1	402.8	391.5	4.4
1:05:50 PM	600.2	402.7	391.3	4.3
1:05:51 PM	600.2	403.1	392.0	4.5
1:05:52 PM	600.2	402.7	392.2	4.4
1:05:53 PM	600.2	402.6	391.6	4.4
1:05:54 PM	600.2	403.0	391.5	4.4
1:05:55 PM	600.2	402.7	391.8	4.5
1:05:56 PM	600.2	402.6	391.6	4.5
1:05:57 PM	600.1	402.2	391.6	4.6
1:05:58 PM	600.1	402.9	391.3	4.6
1:05:59 PM	600.2	402.3	392.0	4.6
1:06:00 PM	600.1	402.4	391.2	4.6
1:06:01 PM	600.1	402.6	391.5	4.5
1:06:02 PM	600.1	402.6	391.8	4.6
Averages ->	**600.2**	**402.6**	**391.4**	**4.5**
			Maximum ->	**4.7**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 850 **Date** 5/20/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
1:40:26 PM	602.8	402.9	391.5	6.0
1:40:27 PM	602.7	402.7	392.0	6.1
1:40:28 PM	602.7	402.5	391.8	6.2
1:40:29 PM	602.7	402.5	392.2	6.4
1:40:30 PM	602.7	402.6	391.9	6.6
1:40:31 PM	602.7	403.0	391.4	6.8
1:40:32 PM	602.7	403.4	391.5	6.7
1:40:33 PM	602.7	403.0	392.0	6.8
1:40:34 PM	602.7	402.9	392.0	6.8
1:40:35 PM	602.7	403.2	391.9	6.7
1:40:36 PM	602.7	403.2	391.5	6.8
1:40:37 PM	602.7	403.1	391.5	6.8
1:40:38 PM	602.7	403.0	391.5	6.7
1:40:39 PM	602.7	403.2	391.8	6.6
1:40:40 PM	602.7	403.0	391.8	6.7
1:40:41 PM	602.7	403.4	391.3	6.8
1:40:42 PM	602.7	403.2	391.8	6.6
1:40:43 PM	602.7	403.0	391.8	6.8
1:40:44 PM	602.7	402.9	391.9	6.9
1:40:45 PM	602.7	402.5	392.1	7.0
1:40:46 PM	602.7	403.4	391.9	7.0
1:40:47 PM	602.7	402.9	392.0	7.0
1:40:48 PM	602.7	403.0	391.6	7.0
1:40:49 PM	602.7	403.6	391.5	7.1
1:40:50 PM	602.7	403.4	392.3	7.2
1:40:51 PM	602.7	403.0	391.8	7.2
1:40:52 PM	602.8	403.3	391.7	7.3
1:40:53 PM	602.7	403.8	391.7	7.2
1:40:54 PM	602.7	402.8	392.3	7.3
1:40:55 PM	602.7	403.2	391.3	7.3
1:40:56 PM	602.7	403.2	392.2	7.3
1:40:57 PM	602.7	402.8	392.3	7.4
1:40:58 PM	602.7	403.0	392.2	7.3
1:40:59 PM	602.7	403.1	392.1	7.1
1:41:00 PM	602.7	403.2	392.1	7.1
1:41:01 PM	602.7	403.0	391.9	7.0
1:41:02 PM	602.7	402.9	392.1	6.9
1:41:03 PM	602.7	403.3	391.6	6.9
1:41:04 PM	602.7	402.5	392.5	6.9
1:41:05 PM	602.7	402.7	392.1	6.8
1:41:06 PM	602.7	403.0	391.8	6.7
1:41:07 PM	602.6	402.3	392.3	6.6
1:41:08 PM	602.7	402.2	392.2	6.6
1:41:09 PM	602.7	402.8	391.8	6.7
1:41:10 PM	602.6	402.7	391.9	6.7
1:41:11 PM	602.7	403.0	391.8	6.7
1:41:12 PM	602.7	402.2	391.9	6.7
1:41:13 PM	602.7	403.0	391.9	6.8
1:41:14 PM	602.7	402.7	391.5	6.8
1:41:15 PM	602.7	403.0	391.9	6.7
1:41:16 PM	602.6	402.2	391.7	6.8
1:41:17 PM	602.6	402.6	391.4	6.9
1:41:18 PM	602.7	403.0	391.3	6.9
1:41:19 PM	602.6	402.4	391.9	6.8
1:41:20 PM	602.6	402.7	391.9	6.8
1:41:21 PM	602.6	402.0	391.7	6.7
1:41:22 PM	602.6	402.5	391.5	6.5
1:41:23 PM	602.6	402.2	391.7	6.5
1:41:24 PM	602.6	402.0	391.2	6.3
1:41:25 PM	602.6	401.4	392.1	6.1
Averages ->	**602.7**	**402.9**	**391.8**	**6.8**
			Maximum ->	**7.4**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 900 **Date** 5/20/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
2:13:50 PM	600.5	400.7	390.9	4.6
2:13:51 PM	600.5	401.0	390.9	4.6
2:13:52 PM	600.5	401.0	390.7	4.5
2:13:53 PM	600.5	401.0	390.5	4.5
2:13:54 PM	600.4	401.2	390.5	4.4
2:13:55 PM	600.4	400.9	390.8	4.4
2:13:56 PM	600.4	400.6	390.9	4.3
2:13:57 PM	600.4	400.8	390.9	4.3
2:13:58 PM	600.4	400.8	390.6	4.3
2:13:59 PM	600.4	400.8	390.7	4.2
2:14:00 PM	600.4	400.7	390.7	4.4
2:14:01 PM	600.3	401.3	390.5	4.6
2:14:02 PM	600.3	400.9	390.5	4.6
2:14:03 PM	600.3	401.4	390.3	4.7
2:14:04 PM	600.3	401.1	390.9	4.6
2:14:05 PM	600.3	401.0	390.7	4.7
2:14:06 PM	600.3	400.8	390.9	4.7
2:14:07 PM	600.2	401.1	390.7	4.6
2:14:08 PM	600.3	401.0	390.6	4.6
2:14:09 PM	600.2	401.2	390.9	4.6
2:14:10 PM	600.2	400.7	391.0	4.6
2:14:11 PM	600.2	401.4	390.9	4.6
2:14:12 PM	600.3	400.8	390.8	4.7
2:14:13 PM	600.2	401.4	391.1	4.7
2:14:14 PM	600.2	400.8	391.1	4.7
2:14:15 PM	600.2	401.2	390.7	4.8
2:14:16 PM	600.2	401.0	390.1	4.6
2:14:17 PM	600.2	401.6	390.5	4.7
2:14:18 PM	600.2	401.7	390.9	4.8
2:14:19 PM	600.2	401.6	390.9	4.9
2:14:20 PM	600.2	401.8	390.9	4.9
2:14:21 PM	600.2	401.4	390.7	5.0
2:14:22 PM	600.2	401.5	390.8	5.0
2:14:23 PM	600.2	401.3	390.9	5.0
2:14:24 PM	600.2	401.8	390.9	5.1
2:14:25 PM	600.2	401.1	391.2	5.1
2:14:26 PM	600.2	401.6	391.1	4.8
2:14:27 PM	600.2	401.4	390.7	4.9
2:14:28 PM	600.2	401.5	390.7	4.9
2:14:29 PM	600.2	401.6	390.9	4.9
2:14:30 PM	600.2	401.2	390.7	5.0
2:14:31 PM	600.2	401.8	390.7	5.1
2:14:32 PM	600.2	402.1	391.1	5.0
2:14:33 PM	600.2	402.0	391.3	5.0
2:14:34 PM	600.2	401.9	390.9	5.2
2:14:35 PM	600.2	402.0	390.5	5.1
2:14:36 PM	600.2	402.0	391.3	5.4
2:14:37 PM	600.2	402.0	390.9	5.6
2:14:38 PM	600.2	402.1	390.8	5.7
2:14:39 PM	600.2	402.0	391.3	5.5
2:14:40 PM	600.2	402.3	391.3	5.5
2:14:41 PM	600.2	402.1	390.9	5.4
2:14:42 PM	600.2	401.9	391.3	5.4
2:14:43 PM	600.2	402.0	391.1	5.5
2:14:44 PM	600.2	402.5	390.9	5.5
2:14:45 PM	600.2	402.4	391.3	5.6
2:14:46 PM	600.2	402.6	391.3	5.6
2:14:47 PM	600.2	402.2	391.1	5.9
2:14:48 PM	600.2	402.2	391.3	6.0
2:14:49 PM	600.2	401.9	391.4	6.1
Averages ->	**600.3**	**401.5**	**390.9**	**4.9**
			Maximum ->	**6.1**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 950 **Date** 5/20/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
2:45:44 PM	599.2	402.1	391.9	7.3
2:45:45 PM	599.1	402.9	391.7	7.4
2:45:46 PM	599.2	402.7	391.5	7.1
2:45:47 PM	599.1	402.6	391.7	7.1
2:45:48 PM	599.1	402.1	391.9	7.0
2:45:49 PM	599.1	402.0	391.6	6.9
2:45:50 PM	599.1	402.8	391.3	6.8
2:45:51 PM	599.1	402.1	391.9	6.7
2:45:52 PM	599.2	402.6	391.2	6.4
2:45:53 PM	599.1	402.4	391.5	6.4
2:45:54 PM	599.1	401.8	391.7	6.5
2:45:55 PM	599.1	401.8	391.8	6.4
2:45:56 PM	599.1	401.5	392.0	6.5
2:45:57 PM	599.1	402.2	391.2	6.4
2:45:58 PM	599.1	401.9	391.2	6.2
2:45:59 PM	599.0	401.4	391.7	6.2
2:46:00 PM	599.1	401.8	391.5	6.2
2:46:01 PM	599.0	401.6	391.7	6.1
2:46:02 PM	599.0	401.9	391.0	6.3
2:46:03 PM	599.0	401.8	390.9	6.3
2:46:04 PM	599.0	402.2	391.0	6.3
2:46:05 PM	599.0	401.9	390.9	6.1
2:46:06 PM	599.0	402.0	391.4	6.0
2:46:07 PM	599.0	401.8	391.4	5.9
2:46:08 PM	599.0	401.2	392.1	5.8
2:46:09 PM	599.0	401.1	391.8	5.5
2:46:10 PM	599.0	401.4	391.1	5.4
2:46:11 PM	599.0	401.5	391.1	5.2
2:46:12 PM	598.9	401.2	391.3	5.5
2:46:13 PM	598.9	401.4	390.7	5.4
2:46:14 PM	598.9	401.0	391.3	5.4
2:46:15 PM	598.9	401.4	391.6	5.4
2:46:16 PM	598.9	401.0	391.1	5.4
2:46:17 PM	598.9	400.8	391.1	5.3
2:46:18 PM	598.9	400.8	390.9	5.3
2:46:19 PM	598.8	401.2	391.2	5.3
2:46:20 PM	598.9	401.0	390.6	5.3
2:46:21 PM	598.8	401.0	391.5	5.3
2:46:22 PM	598.9	401.0	390.9	5.1
2:46:23 PM	598.9	400.8	390.7	5.1
2:46:24 PM	598.9	400.7	391.3	4.9
2:46:25 PM	598.9	400.6	391.0	5.0
2:46:26 PM	598.9	400.6	391.1	4.9
2:46:27 PM	598.9	401.0	390.7	4.8
2:46:28 PM	598.9	400.8	390.3	4.9
2:46:29 PM	598.9	400.8	390.5	4.8
2:46:30 PM	598.9	400.4	390.7	4.9
2:46:31 PM	598.9	400.6	391.1	4.9
2:46:32 PM	598.9	400.9	390.6	4.8
2:46:33 PM	598.9	400.8	390.2	4.9
2:46:34 PM	598.8	400.2	390.7	4.9
2:46:35 PM	598.8	400.9	390.9	5.0
2:46:36 PM	598.8	400.6	390.4	5.1
2:46:37 PM	598.8	401.0	390.5	5.1
2:46:38 PM	598.8	400.6	390.4	5.1
2:46:39 PM	598.8	400.8	390.8	5.0
2:46:40 PM	598.8	400.8	390.7	5.0
2:46:41 PM	598.8	401.1	390.4	5.0
2:46:42 PM	598.8	400.7	390.5	4.9
2:46:43 PM	598.8	400.8	390.7	5.0
Averages ->	**599.0**	**401.4**	**391.1**	**5.7**
			Maximum ->	**7.4**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 1000 **Date** 5/20/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
3:20:27 PM	601.6	402.7	391.7	5.0
3:20:28 PM	601.6	402.4	391.7	5.2
3:20:29 PM	601.6	402.5	391.8	5.4
3:20:30 PM	601.6	402.8	391.5	5.5
3:20:31 PM	601.6	402.9	392.3	5.7
3:20:32 PM	601.6	402.8	391.9	5.9
3:20:33 PM	601.6	402.4	392.1	6.0
3:20:34 PM	601.6	403.0	391.6	6.1
3:20:35 PM	601.6	402.8	391.9	6.1
3:20:36 PM	601.6	402.8	392.1	6.2
3:20:37 PM	601.6	403.0	391.7	6.2
3:20:38 PM	601.6	403.2	392.0	6.2
3:20:39 PM	601.6	403.1	391.9	6.3
3:20:40 PM	601.6	403.4	391.6	6.3
3:20:41 PM	601.6	403.1	392.0	6.3
3:20:42 PM	601.6	403.0	391.7	6.4
3:20:43 PM	601.6	403.2	391.7	6.4
3:20:44 PM	601.6	402.8	392.3	6.4
3:20:45 PM	601.6	403.6	391.2	6.4
3:20:46 PM	601.6	402.9	391.7	6.4
3:20:47 PM	601.6	403.6	391.5	6.4
3:20:48 PM	601.6	403.2	392.3	6.3
3:20:49 PM	601.6	403.4	392.2	6.3
3:20:50 PM	601.6	403.2	392.3	6.3
3:20:51 PM	601.6	403.6	391.9	6.3
3:20:52 PM	601.5	402.8	392.5	6.3
3:20:53 PM	601.6	403.6	392.5	6.3
3:20:54 PM	601.6	403.0	392.0	6.3
3:20:55 PM	601.6	403.5	392.0	6.3
3:20:56 PM	601.6	402.8	392.1	6.4
3:20:57 PM	601.6	402.6	392.0	6.5
3:20:58 PM	601.6	402.8	391.9	6.6
3:20:59 PM	601.6	402.8	391.9	6.6
3:21:00 PM	601.7	403.3	391.9	6.7
3:21:01 PM	601.6	403.1	391.9	6.7
3:21:02 PM	601.7	402.8	391.7	6.7
3:21:03 PM	601.7	402.5	392.2	6.6
3:21:04 PM	601.7	403.3	391.9	6.6
3:21:05 PM	601.7	402.8	391.9	6.5
3:21:06 PM	601.7	402.6	391.8	6.5
3:21:07 PM	601.7	402.8	391.7	6.5
3:21:08 PM	601.7	402.4	392.0	6.5
3:21:09 PM	601.7	403.1	391.5	6.6
3:21:10 PM	601.7	402.8	391.8	6.6
3:21:11 PM	601.6	402.8	391.9	6.6
3:21:12 PM	601.6	403.1	391.7	6.6
3:21:13 PM	601.6	403.2	391.8	6.6
3:21:14 PM	601.6	402.9	391.7	6.6
3:21:15 PM	601.6	402.7	391.9	6.7
3:21:16 PM	601.6	403.3	391.4	6.7
3:21:17 PM	601.6	402.8	391.9	6.7
3:21:18 PM	601.5	402.0	391.9	6.7
3:21:19 PM	601.5	401.7	392.3	6.7
3:21:20 PM	601.4	402.6	391.6	6.7
3:21:21 PM	601.4	402.1	391.8	6.6
3:21:22 PM	601.4	402.3	391.6	6.6
3:21:23 PM	601.4	401.6	392.1	6.5
3:21:24 PM	601.4	402.2	391.7	6.4
3:21:25 PM	601.5	401.9	391.9	6.2
3:21:26 PM	601.4	401.9	391.5	6.1
Averages ->	**601.6**	**402.8**	**391.9**	**6.3**
			Maximum ->	**6.7**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 1000 **Date** 5/21/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
8:39:57 AM	605.3	71.1	71.1	7.1
8:39:58 AM	605.2	71.5	71.0	6.8
8:39:59 AM	605.2	71.6	71.1	6.7
8:40:00 AM	605.1	71.6	71.2	6.2
8:40:01 AM	605.1	71.2	71.1	6.0
8:40:02 AM	605.1	71.7	71.4	5.8
8:40:03 AM	605.1	71.0	71.4	5.5
8:40:04 AM	605.0	71.2	71.4	5.5
8:40:05 AM	604.9	71.9	71.2	5.4
8:40:06 AM	604.9	71.0	71.2	5.4
8:40:07 AM	604.8	71.6	71.6	5.5
8:40:08 AM	604.8	71.3	71.6	5.8
8:40:09 AM	604.7	71.0	71.9	5.8
8:40:10 AM	604.7	71.0	71.7	6.1
8:40:11 AM	604.7	71.3	71.1	6.2
8:40:12 AM	604.6	71.4	71.2	6.3
8:40:13 AM	604.5	71.4	71.4	6.4
8:40:14 AM	604.5	71.0	71.5	6.5
8:40:15 AM	604.5	71.6	71.1	6.5
8:40:16 AM	604.4	71.4	71.2	6.7
8:40:17 AM	604.4	71.2	71.2	6.5
8:40:18 AM	604.4	71.2	71.7	6.5
8:40:19 AM	604.3	71.3	71.6	6.9
8:40:20 AM	604.3	71.2	71.0	7.5
8:40:21 AM	604.2	70.9	71.2	8.3
8:40:22 AM	604.1	71.2	71.4	9.4
8:40:23 AM	604.1	71.5	71.4	10.6
8:40:24 AM	604.0	70.9	71.8	11.7
8:40:25 AM	604.0	71.3	71.1	12.6
8:40:26 AM	603.9	71.0	71.4	13.3
8:40:27 AM	603.9	71.3	71.2	13.6
8:40:28 AM	603.9	71.2	71.2	13.5
8:40:29 AM	603.8	71.4	71.2	13.1
8:40:30 AM	603.8	71.3	71.2	12.5
8:40:31 AM	603.8	71.4	71.2	11.8
8:40:32 AM	603.8	71.6	70.9	11.2
8:40:33 AM	603.7	70.6	71.2	10.7
8:40:34 AM	603.7	71.0	71.2	10.3
8:40:35 AM	603.6	71.0	70.9	9.9
8:40:36 AM	603.6	71.5	70.5	9.8
8:40:37 AM	603.5	71.6	71.3	9.9
8:40:38 AM	603.5	71.0	71.6	9.5
8:40:39 AM	603.5	71.9	70.8	9.4
8:40:40 AM	603.4	71.6	71.3	9.3
8:40:41 AM	603.3	71.9	70.6	9.2
8:40:42 AM	603.3	71.8	71.4	9.1
8:40:43 AM	603.3	71.6	71.0	9.0
8:40:44 AM	603.2	71.4	71.2	8.9
8:40:45 AM	603.2	71.4	70.7	8.8
8:40:46 AM	603.1	71.0	71.3	8.7
8:40:47 AM	603.1	71.2	71.0	8.8
8:40:48 AM	603.1	70.8	71.4	8.6
8:40:49 AM	603.1	70.9	71.6	8.7
8:40:50 AM	603.0	71.0	71.2	8.6
8:40:51 AM	603.0	71.2	71.2	8.6
8:40:52 AM	602.9	71.3	71.0	8.5
8:40:53 AM	602.8	71.2	71.0	8.7
8:40:54 AM	602.8	71.4	71.1	8.6
8:40:55 AM	602.8	71.1	71.2	8.7
8:40:56 AM	602.7	71.0	71.6	8.8
Averages ->	**604.0**	**71.3**	**71.2**	**8.5**
			Maximum ->	**13.6**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 1050 **Date** 5/21/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
9:12:50 AM	600.2	73.0	72.1	4.8
9:12:51 AM	600.2	72.4	72.5	4.9
9:12:52 AM	600.2	73.1	72.3	4.8
9:12:53 AM	600.1	73.3	72.5	4.6
9:12:54 AM	600.2	72.6	72.4	4.5
9:12:55 AM	600.2	72.6	72.1	4.7
9:12:56 AM	600.1	72.9	72.8	4.8
9:12:57 AM	600.0	72.5	72.8	4.9
9:12:58 AM	600.1	72.9	71.9	5.0
9:12:59 AM	600.0	72.8	72.2	4.9
9:13:00 AM	599.9	73.0	72.3	4.7
9:13:01 AM	599.9	73.1	72.4	4.6
9:13:02 AM	599.9	72.5	72.5	4.5
9:13:03 AM	599.8	72.7	72.5	4.1
9:13:04 AM	599.8	72.2	72.1	4.0
9:13:05 AM	599.8	73.4	72.2	3.7
9:13:06 AM	599.7	72.8	72.6	3.4
9:13:07 AM	599.7	72.9	72.5	3.2
9:13:08 AM	599.7	72.1	72.5	3.1
9:13:09 AM	599.6	73.2	72.3	2.9
9:13:10 AM	599.6	72.5	72.5	3.0
9:13:11 AM	599.5	72.3	72.7	2.9
9:13:12 AM	599.5	72.5	72.4	3.1
9:13:13 AM	599.5	73.4	71.8	3.3
9:13:14 AM	599.4	72.4	72.7	3.2
9:13:15 AM	599.5	72.7	72.3	3.5
9:13:16 AM	599.3	73.0	72.3	3.6
9:13:17 AM	599.3	72.5	72.5	3.5
9:13:18 AM	599.3	72.3	72.3	3.6
9:13:19 AM	599.2	72.5	72.3	3.7
9:13:20 AM	599.2	72.7	72.5	3.7
9:13:21 AM	599.2	72.7	72.3	3.6
9:13:22 AM	599.2	73.0	72.4	3.7
9:13:23 AM	599.1	73.3	72.5	3.7
9:13:24 AM	599.0	72.5	72.6	3.8
9:13:25 AM	599.1	72.8	72.3	3.8
9:13:26 AM	599.1	73.0	72.5	3.8
9:13:27 AM	599.0	73.2	72.3	3.9
9:13:28 AM	598.9	72.7	72.7	4.3
9:13:29 AM	598.9	72.8	72.7	4.8
9:13:30 AM	598.9	72.9	73.1	5.4
9:13:31 AM	598.9	72.7	72.5	6.0
9:13:32 AM	598.8	72.9	72.6	6.6
9:13:33 AM	598.8	72.5	72.5	6.7
9:13:34 AM	598.7	72.5	72.4	6.9
9:13:35 AM	598.7	72.7	72.6	6.7
9:13:36 AM	598.7	73.0	72.3	6.7
9:13:37 AM	598.7	72.9	72.3	6.5
9:13:38 AM	598.6	73.0	72.3	6.3
9:13:39 AM	598.6	72.5	72.7	6.4
9:13:40 AM	598.6	72.3	72.6	6.4
9:13:41 AM	598.6	73.0	72.3	6.2
9:13:42 AM	598.6	72.4	72.7	6.2
9:13:43 AM	598.4	72.7	73.0	6.1
9:13:44 AM	598.4	72.9	72.3	5.9
9:13:45 AM	598.4	72.5	72.9	6.1
9:13:46 AM	598.4	72.7	72.0	6.2
9:13:47 AM	598.4	72.9	72.3	6.1
9:13:48 AM	598.2	72.5	72.6	6.0
9:13:49 AM	598.3	72.3	72.3	5.9
Averages ->	**599.3**	**72.7**	**72.4**	**4.7**
			Maximum ->	**6.9**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 1100 **Date** 5/21/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
9:47:26 AM	597.4	74.3	73.6	3.0
9:47:27 AM	597.3	74.5	73.3	3.1
9:47:28 AM	597.3	75.1	73.5	3.2
9:47:29 AM	597.3	74.4	73.5	3.5
9:47:30 AM	597.3	74.1	73.2	3.6
9:47:31 AM	597.2	74.4	73.3	3.7
9:47:32 AM	597.1	74.3	73.2	3.7
9:47:33 AM	597.2	74.6	73.5	3.7
9:47:34 AM	597.1	74.8	73.4	3.4
9:47:35 AM	597.0	74.4	73.9	3.1
9:47:36 AM	597.0	74.3	73.5	2.9
9:47:37 AM	597.0	74.3	73.2	2.7
9:47:38 AM	597.0	74.6	73.6	2.7
9:47:39 AM	596.9	75.0	73.1	2.7
9:47:40 AM	596.9	74.4	73.9	2.6
9:47:41 AM	596.9	74.3	73.3	2.8
9:47:42 AM	596.9	74.4	73.0	3.0
9:47:43 AM	596.8	74.1	73.8	3.3
9:47:44 AM	596.8	74.1	73.3	3.3
9:47:45 AM	596.8	74.6	73.7	3.6
9:47:46 AM	596.8	74.5	73.9	3.8
9:47:47 AM	596.7	74.3	73.5	4.2
9:47:48 AM	596.7	74.6	73.5	4.4
9:47:49 AM	596.7	74.5	73.4	4.9
9:47:50 AM	596.6	74.8	73.4	5.3
9:47:51 AM	596.6	74.1	73.7	5.6
9:47:52 AM	596.5	74.9	73.2	6.1
9:47:53 AM	596.5	74.2	73.6	6.8
9:47:54 AM	596.5	73.8	73.5	7.2
9:47:55 AM	596.4	74.3	73.8	7.4
9:47:56 AM	596.4	74.3	73.3	7.3
9:47:57 AM	596.4	74.3	73.8	7.4
9:47:58 AM	596.3	74.1	73.7	7.3
9:47:59 AM	596.3	75.0	73.2	7.0
9:48:00 AM	596.3	74.4	73.8	6.6
9:48:01 AM	596.3	74.5	73.5	6.2
9:48:02 AM	596.2	74.3	73.6	6.1
9:48:03 AM	596.2	74.1	73.9	6.2
9:48:04 AM	596.2	74.8	73.4	6.4
9:48:05 AM	596.1	74.3	73.2	6.6
9:48:06 AM	596.1	73.9	73.4	7.0
9:48:07 AM	596.0	74.2	73.6	7.4
9:48:08 AM	596.0	74.5	73.3	7.4
9:48:09 AM	595.9	74.5	73.2	7.5
9:48:10 AM	595.8	74.5	73.4	7.5
9:48:11 AM	595.9	74.5	73.5	7.4
9:48:12 AM	595.8	74.4	73.4	7.3
9:48:13 AM	595.8	74.5	73.3	7.1
9:48:14 AM	595.7	74.5	73.8	6.8
9:48:15 AM	595.8	74.3	73.8	6.6
9:48:16 AM	595.7	73.9	74.0	6.3
9:48:17 AM	595.7	74.4	73.8	6.3
9:48:18 AM	595.7	74.3	74.2	6.1
9:48:19 AM	595.7	74.3	73.7	6.1
9:48:20 AM	595.6	74.2	73.5	5.7
9:48:21 AM	595.6	74.2	74.0	5.9
9:48:22 AM	595.5	74.1	73.4	5.6
9:48:23 AM	595.5	74.5	72.9	5.7
9:48:24 AM	595.5	74.3	74.1	5.6
9:48:25 AM	595.5	74.3	73.5	5.4
Averages ->	**596.4**	**74.4**	**73.5**	**5.3**
			Maximum ->	**7.5**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 1150 **Date** 5/21/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
10:18:36 AM	603.1	75.0	74.5	11.8
10:18:37 AM	603.1	75.2	74.4	12.2
10:18:38 AM	603.0	74.5	73.9	12.4
10:18:39 AM	602.9	75.1	73.9	12.7
10:18:40 AM	602.8	74.7	74.7	13.1
10:18:41 AM	602.8	75.1	74.5	14.0
10:18:42 AM	602.7	75.0	74.6	15.2
10:18:43 AM	602.7	74.8	74.1	16.4
10:18:44 AM	602.6	74.7	74.4	17.0
10:18:45 AM	602.6	75.1	74.1	17.4
10:18:46 AM	602.5	74.9	74.3	17.7
10:18:47 AM	602.5	74.4	74.6	17.8
10:18:48 AM	602.4	75.0	73.9	17.7
10:18:49 AM	602.3	74.6	74.8	17.3
10:18:50 AM	602.3	75.4	74.5	17.2
10:18:51 AM	602.2	74.9	74.6	16.9
10:18:52 AM	602.1	74.8	74.5	16.6
10:18:53 AM	602.1	74.5	74.5	16.1
10:18:54 AM	602.1	74.5	74.5	15.6
10:18:55 AM	602.0	75.3	74.5	15.4
10:18:56 AM	602.0	75.9	74.2	15.6
10:18:57 AM	602.0	75.3	74.2	15.7
10:18:58 AM	601.9	74.8	74.3	16.1
10:18:59 AM	601.9	75.7	75.1	16.0
10:19:00 AM	601.8	74.5	74.8	16.2
10:19:01 AM	601.8	75.1	74.3	16.1
10:19:02 AM	601.7	74.9	74.4	16.4
10:19:03 AM	601.7	75.4	73.9	16.6
10:19:04 AM	601.6	74.8	74.8	17.1
10:19:05 AM	601.0	75.5	85.1	17.3
10:19:06 AM	601.5	75.2	74.1	17.4
10:19:07 AM	601.4	74.9	74.6	17.9
10:19:08 AM	601.4	74.5	74.9	17.9
10:19:09 AM	601.3	75.0	74.4	17.9
10:19:10 AM	601.4	75.1	74.5	18.2
10:19:11 AM	601.3	75.2	74.4	18.6
10:19:12 AM	601.2	75.0	74.3	18.9
10:19:13 AM	601.2	74.9	74.3	19.2
10:19:14 AM	601.1	75.1	74.1	19.5
10:19:15 AM	601.1	75.3	74.2	19.6
10:19:16 AM	601.0	75.2	74.5	19.7
10:19:17 AM	601.0	75.2	74.1	19.6
10:19:18 AM	600.9	74.2	74.6	19.7
10:19:19 AM	600.9	74.4	74.3	19.4
10:19:20 AM	600.8	75.0	74.2	19.1
10:19:21 AM	600.8	75.0	74.2	18.8
10:19:22 AM	600.8	74.9	74.6	18.0
10:19:23 AM	600.7	75.0	74.4	17.6
10:19:24 AM	600.6	75.0	74.3	17.6
10:19:25 AM	600.7	74.7	74.4	17.8
10:19:26 AM	600.6	75.2	74.4	18.0
10:19:27 AM	600.5	74.5	74.4	18.2
10:19:28 AM	600.5	74.8	74.3	18.5
10:19:29 AM	600.4	74.6	74.3	18.5
10:19:30 AM	600.4	75.1	74.5	18.1
10:19:31 AM	600.4	75.1	74.3	17.9
10:19:32 AM	600.3	74.3	74.1	17.7
10:19:33 AM	600.2	75.0	74.2	17.2
10:19:34 AM	600.2	74.9	74.7	16.7
10:19:35 AM	600.2	74.8	74.3	16.7
Averages ->	**601.6**	**74.9**	**74.6**	**17.1**
			Maximum ->	**19.7**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 1200 **Date** 5/21/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
10:50:35 AM	593.3	73.3	74.3	4.5
10:50:36 AM	593.3	73.2	74.3	4.5
10:50:37 AM	593.3	73.4	74.8	4.5
10:50:38 AM	593.3	74.1	74.3	4.5
10:50:39 AM	593.3	73.4	73.9	4.5
10:50:40 AM	593.2	73.8	74.4	4.5
10:50:41 AM	593.3	73.6	74.7	4.5
10:50:42 AM	593.3	73.6	75.0	4.6
10:50:43 AM	593.3	73.4	74.3	4.7
10:50:44 AM	593.3	74.0	74.1	4.6
10:50:45 AM	593.3	73.7	74.6	4.5
10:50:46 AM	593.2	73.7	74.5	4.4
10:50:47 AM	593.2	74.5	74.2	4.4
10:50:48 AM	593.2	73.9	74.8	4.5
10:50:49 AM	593.3	74.2	74.4	4.3
10:50:50 AM	593.2	73.5	74.3	4.3
10:50:51 AM	593.2	74.0	74.7	4.4
10:50:52 AM	593.2	74.1	74.1	4.5
10:50:53 AM	593.2	73.9	74.5	4.3
10:50:54 AM	593.2	74.2	74.5	4.3
10:50:55 AM	593.2	73.9	74.4	4.2
10:50:56 AM	593.2	74.1	74.5	4.3
10:50:57 AM	593.2	74.6	74.4	4.3
10:50:58 AM	593.2	73.9	74.3	4.3
10:50:59 AM	593.2	74.5	74.2	4.3
10:51:00 AM	593.2	73.8	74.5	4.3
10:51:01 AM	593.2	74.1	74.3	4.3
10:51:02 AM	593.2	74.2	74.4	4.3
10:51:03 AM	593.1	74.2	74.3	4.2
10:51:04 AM	593.2	74.3	74.2	4.2
10:51:05 AM	593.1	74.3	74.4	4.3
10:51:06 AM	593.1	74.6	74.8	4.3
10:51:07 AM	593.1	74.2	74.3	4.3
10:51:08 AM	593.1	74.8	74.5	4.3
10:51:09 AM	593.1	73.9	74.5	4.3
10:51:10 AM	593.1	74.4	74.2	4.4
10:51:11 AM	593.1	74.1	74.3	4.6
10:51:12 AM	593.1	74.4	74.6	4.6
10:51:13 AM	593.1	74.1	74.3	4.6
10:51:14 AM	593.1	73.9	74.2	4.7
10:51:15 AM	593.1	74.8	74.3	4.6
10:51:16 AM	593.1	74.1	74.4	4.7
10:51:17 AM	593.0	74.5	74.2	4.8
10:51:18 AM	593.1	74.6	73.9	4.8
10:51:19 AM	593.0	74.3	74.3	4.7
10:51:20 AM	593.0	74.3	74.3	4.7
10:51:21 AM	593.0	73.9	74.5	4.6
10:51:22 AM	593.0	74.5	74.4	4.5
10:51:23 AM	593.0	74.5	74.4	4.5
10:51:24 AM	593.0	74.8	74.5	4.5
10:51:25 AM	593.0	75.2	74.0	4.5
10:51:26 AM	593.0	75.0	74.1	4.5
10:51:27 AM	593.1	74.1	74.9	4.5
10:51:28 AM	593.0	74.9	74.5	4.3
10:51:29 AM	593.0	74.3	74.7	4.3
10:51:30 AM	593.0	74.3	74.4	4.4
10:51:31 AM	593.0	74.7	74.0	4.5
10:51:32 AM	593.0	74.6	73.9	4.3
10:51:33 AM	593.0	74.6	74.4	4.4
10:51:34 AM	593.0	74.7	74.2	4.4
Averages ->	**593.1**	**74.2**	**74.4**	**4.4**
			Maximum ->	**4.8**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 1250 **Date** 5/21/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
11:22:21 AM	592.2	74.1	73.7	2.0
11:22:22 AM	592.2	74.0	74.1	1.9
11:22:23 AM	592.2	74.7	74.1	2.0
11:22:24 AM	592.1	74.6	74.0	1.9
11:22:25 AM	592.2	74.1	74.3	1.9
11:22:26 AM	592.2	74.3	73.9	1.8
11:22:27 AM	592.2	74.8	73.7	1.9
11:22:28 AM	592.2	74.6	73.9	1.9
11:22:29 AM	592.2	74.4	74.0	1.9
11:22:30 AM	592.2	74.9	74.1	2.0
11:22:31 AM	592.2	74.2	73.9	1.8
11:22:32 AM	592.2	74.5	73.7	1.9
11:22:33 AM	592.2	74.2	74.3	1.9
11:22:34 AM	592.2	74.2	73.6	1.8
11:22:35 AM	592.2	74.1	73.9	1.9
11:22:36 AM	592.2	74.8	74.4	1.8
11:22:37 AM	592.2	74.8	74.2	2.0
11:22:38 AM	592.1	73.8	74.0	2.0
11:22:39 AM	592.2	74.6	74.1	2.0
11:22:40 AM	592.2	73.9	74.3	2.0
11:22:41 AM	592.1	74.1	74.8	2.1
11:22:42 AM	592.2	74.3	74.3	2.1
11:22:43 AM	592.2	74.1	74.1	2.0
11:22:44 AM	592.2	74.4	74.2	2.0
11:22:45 AM	592.2	74.1	74.2	2.1
11:22:46 AM	592.2	73.9	73.6	2.0
11:22:47 AM	592.2	74.3	74.1	2.1
11:22:48 AM	592.2	74.4	74.3	2.1
11:22:49 AM	592.2	74.3	73.9	2.0
11:22:50 AM	592.2	74.5	74.2	2.1
11:22:51 AM	592.2	74.1	74.2	2.2
11:22:52 AM	592.2	74.1	73.8	2.0
11:22:53 AM	592.2	74.0	74.2	2.1
11:22:54 AM	592.2	73.9	74.3	2.2
11:22:55 AM	592.2	74.5	74.2	2.0
11:22:56 AM	592.2	74.1	73.9	2.1
11:22:57 AM	592.2	73.7	73.4	2.2
11:22:58 AM	592.3	74.2	74.2	2.1
11:22:59 AM	592.3	74.3	73.7	1.9
11:23:00 AM	592.3	74.3	74.5	2.2
11:23:01 AM	592.3	73.9	74.0	2.0
11:23:02 AM	592.3	74.0	74.1	2.0
11:23:03 AM	592.4	73.9	74.1	2.1
11:23:04 AM	592.3	74.3	73.9	2.0
11:23:05 AM	592.3	74.1	74.3	2.0
11:23:06 AM	592.2	74.3	74.3	2.2
11:23:07 AM	592.2	74.6	74.0	2.1
11:23:08 AM	592.3	73.7	74.0	2.0
11:23:09 AM	592.3	74.1	73.8	2.0
11:23:10 AM	592.3	74.4	74.1	2.1
11:23:11 AM	592.3	74.4	73.9	2.4
11:23:12 AM	592.3	73.9	74.2	2.5
11:23:13 AM	592.3	74.7	73.9	2.3
11:23:14 AM	592.3	74.3	74.1	2.3
11:23:15 AM	592.3	74.3	73.8	2.3
11:23:16 AM	592.3	74.2	73.6	2.5
11:23:17 AM	592.2	74.3	73.9	2.3
11:23:18 AM	592.3	74.0	73.8	2.6
11:23:19 AM	592.3	74.2	74.1	2.3
11:23:20 AM	592.3	74.1	73.9	2.5
Averages ->	**592.2**	**74.2**	**74.0**	**2.1**
			Maximum ->	**2.6**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 1250 **Date** 5/21/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
2:06:01 PM	601.9	397.9	392.1	0.8
2:06:02 PM	601.9	398.2	391.8	0.6
2:06:03 PM	601.9	398.0	391.7	0.7
2:06:04 PM	602.0	397.4	391.4	0.6
2:06:05 PM	602.0	397.5	392.0	0.4
2:06:06 PM	602.0	397.6	391.6	0.5
2:06:07 PM	601.9	397.6	391.6	0.5
2:06:08 PM	601.9	397.1	391.8	0.4
2:06:09 PM	601.9	397.8	391.7	0.4
2:06:10 PM	601.9	397.4	391.6	0.4
2:06:11 PM	601.9	397.0	391.4	0.7
2:06:12 PM	602.0	397.3	391.4	0.7
2:06:13 PM	602.0	397.1	391.7	0.7
2:06:14 PM	602.0	396.6	391.7	0.8
2:06:15 PM	602.0	396.8	391.5	0.8
2:06:16 PM	602.0	396.4	391.6	0.7
2:06:17 PM	602.0	396.6	391.8	1.0
2:06:18 PM	601.9	396.2	391.2	1.0
2:06:19 PM	602.0	396.6	391.5	0.8
2:06:20 PM	602.0	396.5	391.6	1.0
2:06:21 PM	602.0	396.1	391.2	0.8
2:06:22 PM	602.0	395.9	391.4	0.5
2:06:23 PM	602.0	395.4	391.1	0.7
2:06:24 PM	602.0	395.8	391.5	0.6
2:06:25 PM	602.0	395.7	391.5	0.4
2:06:26 PM	602.0	395.1	391.1	0.4
2:06:27 PM	602.0	394.9	391.0	0.5
2:06:28 PM	602.0	395.0	391.2	0.5
2:06:29 PM	602.0	395.6	391.0	0.6
2:06:30 PM	602.0	394.6	390.9	0.7
2:06:31 PM	602.0	394.8	391.0	0.7
2:06:32 PM	602.1	394.8	390.8	0.6
2:06:33 PM	602.0	394.1	391.0	0.5
2:06:34 PM	602.0	394.2	391.2	0.5
2:06:35 PM	602.0	394.4	391.0	0.5
2:06:36 PM	602.0	393.8	391.0	0.5
2:06:37 PM	602.0	393.8	390.8	0.5
2:06:38 PM	602.1	393.5	391.2	0.5
2:06:39 PM	602.1	393.5	390.7	0.4
2:06:40 PM	602.0	393.3	391.0	0.3
2:06:41 PM	602.0	393.1	391.0	0.4
2:06:42 PM	602.0	393.2	390.8	0.5
2:06:43 PM	602.0	393.8	390.8	0.5
2:06:44 PM	602.1	393.3	390.6	0.3
2:06:45 PM	602.1	393.1	391.0	0.3
2:06:46 PM	602.1	393.5	390.8	0.3
2:06:47 PM	602.1	392.6	390.5	0.5
2:06:48 PM	602.1	392.8	390.7	0.5
2:06:49 PM	602.1	392.9	390.6	0.2
2:06:50 PM	602.1	393.1	391.0	0.3
2:06:51 PM	602.0	393.1	390.6	0.5
2:06:52 PM	602.1	392.7	391.0	0.5
2:06:53 PM	602.1	393.3	390.4	0.4
2:06:54 PM	602.1	393.1	390.8	0.5
2:06:55 PM	602.1	392.9	390.8	0.5
2:06:56 PM	602.1	392.5	390.3	0.4
2:06:57 PM	602.1	393.0	390.5	0.3
2:06:58 PM	602.1	392.7	390.7	0.5
2:06:59 PM	602.1	392.7	390.6	0.5
2:07:00 PM	602.1	393.4	390.6	0.4
Averages ->	**602.0**	**395.0**	**391.1**	**0.5**
			Maximum ->	**1.0**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 1300 **Date** 5/21/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
2:36:16 PM	597.1	395.0	389.1	2.6
2:36:17 PM	597.1	395.0	389.9	2.6
2:36:18 PM	597.1	395.4	389.4	2.6
2:36:19 PM	597.2	395.6	389.7	2.6
2:36:20 PM	597.2	395.8	389.1	2.6
2:36:21 PM	597.1	395.2	389.3	2.6
2:36:22 PM	597.2	395.1	389.6	2.6
2:36:23 PM	597.2	395.2	388.9	2.6
2:36:24 PM	597.2	396.3	390.1	2.6
2:36:25 PM	597.1	395.4	389.6	2.6
2:36:26 PM	597.1	394.5	389.4	2.6
2:36:27 PM	597.2	395.6	389.7	2.6
2:36:28 PM	597.2	395.8	389.2	2.6
2:36:29 PM	597.1	395.4	390.3	2.6
2:36:30 PM	597.1	395.0	389.3	2.6
2:36:31 PM	597.2	395.0	389.7	2.6
2:36:32 PM	597.1	395.0	389.6	2.6
2:36:33 PM	597.2	395.2	389.5	2.6
2:36:34 PM	597.2	395.1	389.9	2.6
2:36:35 PM	597.1	395.5	389.5	2.5
2:36:36 PM	597.1	395.8	389.0	2.5
2:36:37 PM	597.1	395.2	388.9	2.5
2:36:38 PM	597.1	395.8	389.1	2.5
2:36:39 PM	597.1	395.5	389.7	2.5
2:36:40 PM	597.1	396.0	389.1	2.6
2:36:41 PM	597.1	394.8	389.5	2.6
2:36:42 PM	597.1	395.3	389.8	2.6
2:36:43 PM	597.2	395.5	389.7	2.6
2:36:44 PM	597.2	395.9	389.4	2.5
2:36:45 PM	597.2	395.5	389.5	2.5
2:36:46 PM	597.2	395.5	389.5	2.5
2:36:47 PM	597.2	395.0	389.5	2.5
2:36:48 PM	597.2	395.4	389.8	2.5
2:36:49 PM	597.2	396.3	389.1	2.5
2:36:50 PM	597.2	395.3	389.3	2.5
2:36:51 PM	597.1	395.6	389.5	2.5
2:36:52 PM	597.1	395.9	389.1	2.5
2:36:53 PM	597.1	395.9	389.3	2.5
2:36:54 PM	597.2	395.4	389.2	2.5
2:36:55 PM	597.2	395.2	389.2	2.5
2:36:56 PM	597.2	395.2	389.1	2.5
2:36:57 PM	597.2	395.1	389.7	2.6
2:36:58 PM	597.2	395.6	389.7	2.6
2:36:59 PM	597.2	394.8	389.7	2.6
2:37:00 PM	597.1	395.0	389.3	2.5
2:37:01 PM	597.1	396.5	388.9	2.5
2:37:02 PM	597.2	395.6	389.2	2.5
2:37:03 PM	597.2	395.0	389.3	2.4
2:37:04 PM	597.2	395.4	389.6	2.4
2:37:05 PM	597.2	395.6	389.4	2.4
2:37:06 PM	597.2	395.0	390.0	2.5
2:37:07 PM	597.1	395.2	389.7	2.5
2:37:08 PM	597.1	395.5	389.1	2.5
2:37:09 PM	597.1	396.0	389.4	2.5
2:37:10 PM	597.2	395.2	389.9	2.5
2:37:11 PM	597.1	395.2	389.4	2.5
2:37:12 PM	597.1	395.9	389.3	2.6
2:37:13 PM	597.1	396.0	389.4	2.6
2:37:14 PM	597.2	395.6	389.6	2.6
2:37:15 PM	597.2	395.5	389.4	2.5
Averages ->	**597.2**	**395.4**	**389.4**	**2.5**
			Maximum ->	**2.6**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 1350 **Date** 5/21/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
3:09:12 PM	599.2	395.2	389.6	1.2
3:09:13 PM	599.3	396.0	389.8	1.3
3:09:14 PM	599.2	395.5	389.1	1.3
3:09:15 PM	599.3	394.9	389.6	1.3
3:09:16 PM	599.2	395.8	389.3	1.3
3:09:17 PM	599.2	395.8	389.7	1.3
3:09:18 PM	599.2	395.6	389.4	1.3
3:09:19 PM	599.3	395.1	389.8	1.4
3:09:20 PM	599.2	395.7	389.1	1.4
3:09:21 PM	599.2	395.8	389.4	1.4
3:09:22 PM	599.3	395.6	390.1	1.4
3:09:23 PM	599.2	395.7	389.5	1.4
3:09:24 PM	599.3	395.4	389.9	1.3
3:09:25 PM	599.2	395.9	389.5	1.4
3:09:26 PM	599.2	395.4	389.3	1.5
3:09:27 PM	599.3	396.0	389.9	1.6
3:09:28 PM	599.3	395.0	390.3	1.7
3:09:29 PM	599.2	396.0	389.7	1.9
3:09:30 PM	599.3	395.5	389.6	2.0
3:09:31 PM	599.3	395.7	389.9	2.1
3:09:32 PM	599.3	396.3	389.5	2.1
3:09:33 PM	599.2	395.9	389.5	2.1
3:09:34 PM	599.2	396.4	389.6	2.1
3:09:35 PM	599.2	395.4	389.3	2.0
3:09:36 PM	599.3	396.1	390.1	1.9
3:09:37 PM	599.2	396.0	389.7	1.8
3:09:38 PM	599.2	396.2	389.4	1.7
3:09:39 PM	599.2	395.5	389.7	1.6
3:09:40 PM	599.3	395.6	389.9	1.5
3:09:41 PM	599.3	396.0	388.8	1.5
3:09:42 PM	599.3	395.2	389.8	1.5
3:09:43 PM	599.3	395.2	390.3	1.5
3:09:44 PM	599.2	395.9	389.4	1.6
3:09:45 PM	599.2	395.8	390.1	1.6
3:09:46 PM	599.2	395.6	389.7	1.5
3:09:47 PM	599.2	395.9	389.5	1.5
3:09:48 PM	599.3	396.1	389.7	1.5
3:09:49 PM	599.2	395.6	390.0	1.5
3:09:50 PM	599.1	395.6	389.9	1.5
3:09:51 PM	599.2	395.9	389.7	1.5
3:09:52 PM	599.2	395.8	389.5	1.5
3:09:53 PM	599.2	396.2	389.7	1.5
3:09:54 PM	599.3	395.8	389.3	1.5
3:09:55 PM	599.3	395.6	389.9	1.5
3:09:56 PM	599.3	395.9	390.2	1.5
3:09:57 PM	599.3	395.6	389.5	1.4
3:09:58 PM	599.3	396.2	389.7	1.4
3:09:59 PM	599.3	395.7	389.5	1.4
3:10:00 PM	599.3	395.5	389.7	1.5
3:10:01 PM	599.3	395.6	390.1	1.5
3:10:02 PM	599.3	396.0	389.9	1.5
3:10:03 PM	599.2	395.7	390.1	1.5
3:10:04 PM	599.2	395.8	390.0	1.5
3:10:05 PM	599.3	395.4	390.1	1.5
3:10:06 PM	599.3	396.0	390.0	1.5
3:10:07 PM	599.2	395.5	389.9	1.5
3:10:08 PM	599.3	396.0	389.6	1.4
3:10:09 PM	599.2	396.6	389.3	1.4
3:10:10 PM	599.2	396.5	389.7	1.4
3:10:11 PM	599.2	395.9	389.7	1.4
Averages ->	**599.2**	**395.8**	**389.7**	**1.5**
			Maximum ->	**2.1**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 1400 **Date** 5/21/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
3:47:38 PM	599.5	396.2	390.7	1.6
3:47:39 PM	599.5	396.3	390.4	1.6
3:47:40 PM	599.6	396.5	390.6	1.7
3:47:41 PM	599.5	396.4	390.3	1.7
3:47:42 PM	599.6	397.0	390.3	1.7
3:47:43 PM	599.6	396.9	390.3	1.7
3:47:44 PM	599.5	396.8	390.3	1.7
3:47:45 PM	599.5	396.5	390.5	1.6
3:47:46 PM	599.5	396.5	390.2	1.6
3:47:47 PM	599.5	396.7	390.7	1.5
3:47:48 PM	599.5	396.8	390.9	1.5
3:47:49 PM	599.5	396.2	390.5	1.4
3:47:50 PM	599.5	396.1	390.4	1.4
3:47:51 PM	599.5	396.0	390.5	1.4
3:47:52 PM	599.5	396.7	390.7	1.5
3:47:53 PM	599.5	396.5	390.3	1.5
3:47:54 PM	599.5	396.1	390.6	1.6
3:47:55 PM	599.6	396.4	390.7	1.6
3:47:56 PM	599.5	396.8	390.5	1.6
3:47:57 PM	599.6	396.2	391.4	1.6
3:47:58 PM	599.5	396.8	390.1	1.6
3:47:59 PM	599.5	396.5	390.3	1.6
3:48:00 PM	599.5	397.1	390.9	1.6
3:48:01 PM	599.6	397.2	391.5	1.6
3:48:02 PM	599.6	396.5	390.4	1.6
3:48:03 PM	599.5	396.2	391.3	1.5
3:48:04 PM	599.6	396.1	390.4	1.5
3:48:05 PM	599.6	396.3	391.0	1.5
3:48:06 PM	599.6	396.1	391.0	1.4
3:48:07 PM	599.6	396.2	390.6	1.4
3:48:08 PM	599.6	396.7	391.1	1.4
3:48:09 PM	599.6	396.4	390.8	1.4
3:48:10 PM	599.6	396.6	390.7	1.4
3:48:11 PM	599.6	396.0	390.7	1.4
3:48:12 PM	599.6	396.7	390.5	1.4
3:48:13 PM	599.6	396.7	390.7	1.5
3:48:14 PM	599.6	397.2	390.8	1.5
3:48:15 PM	599.6	396.5	391.2	1.6
3:48:16 PM	599.6	395.8	390.9	1.6
3:48:17 PM	599.6	396.8	390.9	1.6
3:48:18 PM	599.6	396.2	391.0	1.6
3:48:19 PM	599.6	395.9	390.6	1.6
3:48:20 PM	599.6	396.2	391.3	1.5
3:48:21 PM	599.5	396.2	390.3	1.5
3:48:22 PM	599.6	396.3	390.5	1.6
3:48:23 PM	599.6	396.0	390.5	1.6
3:48:24 PM	599.6	396.3	391.0	1.6
3:48:25 PM	599.6	396.9	390.5	1.6
3:48:26 PM	599.6	396.0	390.9	1.5
3:48:27 PM	599.6	396.5	390.6	1.5
3:48:28 PM	599.5	396.0	390.6	1.5
3:48:29 PM	599.6	396.4	390.4	1.5
3:48:30 PM	599.6	396.5	391.4	1.4
3:48:31 PM	599.6	396.8	391.2	1.4
3:48:32 PM	599.6	396.4	391.1	1.4
3:48:33 PM	599.6	396.8	390.7	1.4
3:48:34 PM	599.6	397.1	391.2	1.4
3:48:35 PM	599.6	396.6	391.0	1.4
3:48:36 PM	599.6	396.6	390.2	1.4
3:48:37 PM	599.6	397.1	390.3	1.4
Averages ->	**599.6**	**396.5**	**390.7**	**1.5**
			Maximum ->	**1.7**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 1450 **Date** 5/21/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
4:17:51 PM	600.1	396.3	390.9	1.8
4:17:52 PM	600.1	396.2	390.9	1.2
4:17:53 PM	600.1	396.7	391.4	1.2
4:17:54 PM	600.1	396.6	391.4	1.1
4:17:55 PM	600.1	396.0	390.7	1.0
4:17:56 PM	600.1	395.8	391.4	1.0
4:17:57 PM	600.1	396.0	390.7	0.9
4:17:58 PM	600.0	396.9	391.2	0.8
4:17:59 PM	600.0	395.8	391.2	0.8
4:18:00 PM	600.0	396.2	390.9	0.8
4:18:01 PM	600.1	396.5	390.7	0.9
4:18:02 PM	600.1	395.9	391.1	1.0
4:18:03 PM	600.0	395.8	391.0	1.1
4:18:04 PM	600.1	395.4	390.8	1.2
4:18:05 PM	600.1	396.4	391.0	1.2
4:18:06 PM	600.1	395.7	390.5	1.2
4:18:07 PM	600.1	396.4	390.4	1.2
4:18:08 PM	600.1	396.0	391.4	1.2
4:18:09 PM	600.1	395.4	391.2	1.2
4:18:10 PM	600.0	396.0	391.1	1.2
4:18:11 PM	600.1	396.1	391.2	1.2
4:18:12 PM	600.0	396.0	391.1	1.2
4:18:13 PM	600.1	396.2	391.1	1.1
4:18:14 PM	600.1	396.3	390.6	1.1
4:18:15 PM	600.1	396.0	391.2	1.1
4:18:16 PM	600.1	395.9	391.4	1.1
4:18:17 PM	600.1	396.5	391.0	1.1
4:18:18 PM	600.1	396.6	391.0	1.1
4:18:19 PM	600.1	395.8	391.0	1.1
4:18:20 PM	600.1	396.2	390.6	1.1
4:18:21 PM	600.1	395.7	390.9	1.1
4:18:22 PM	600.1	396.2	390.8	1.1
4:18:23 PM	600.1	396.3	391.0	1.2
4:18:24 PM	600.1	395.7	390.9	1.3
4:18:25 PM	600.1	396.1	391.6	1.3
4:18:26 PM	600.0	396.2	390.6	1.3
4:18:27 PM	600.0	396.3	391.0	1.3
4:18:28 PM	600.1	395.7	391.6	1.3
4:18:29 PM	600.1	396.0	390.7	1.3
4:18:30 PM	600.0	396.2	391.5	1.4
4:18:31 PM	600.1	396.3	390.8	1.5
4:18:32 PM	600.1	396.4	391.6	1.5
4:18:33 PM	600.1	395.7	390.8	1.6
4:18:34 PM	600.1	396.6	391.1	1.6
4:18:35 PM	600.1	396.0	391.3	1.6
4:18:36 PM	600.1	396.6	391.6	1.6
4:18:37 PM	600.1	396.1	391.3	1.6
4:18:38 PM	600.1	396.6	390.7	1.7
4:18:39 PM	600.0	395.8	391.4	1.7
4:18:40 PM	600.0	395.9	390.9	1.7
4:18:41 PM	600.0	396.7	390.7	1.6
4:18:42 PM	600.0	395.6	391.1	1.5
4:18:43 PM	600.1	396.5	391.6	1.4
4:18:44 PM	600.1	396.4	391.4	1.3
4:18:45 PM	600.1	395.8	390.8	1.3
4:18:46 PM	600.1	396.0	391.2	1.2
4:18:47 PM	600.1	395.6	391.0	1.2
4:18:48 PM	600.1	395.8	390.9	1.2
4:18:49 PM	600.1	395.7	391.1	1.2
4:18:50 PM	600.1	395.7	391.3	1.1
Averages ->	**600.1**	**396.1**	**391.1**	**1.2**
			Maximum ->	**1.7**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 1500 **Date** 5/21/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
4:53:58 PM	602.0	396.8	391.0	1.2
4:53:59 PM	602.0	397.1	390.7	1.3
4:54:00 PM	601.9	396.2	390.9	1.3
4:54:01 PM	602.0	396.3	391.3	1.3
4:54:02 PM	602.0	396.8	391.0	1.3
4:54:03 PM	602.0	396.3	391.2	1.2
4:54:04 PM	602.0	396.8	390.7	1.2
4:54:05 PM	602.0	396.2	390.8	1.2
4:54:06 PM	602.0	396.3	391.2	1.2
4:54:07 PM	601.9	396.5	391.3	1.2
4:54:08 PM	602.0	396.1	390.7	1.3
4:54:09 PM	602.0	396.9	391.0	1.3
4:54:10 PM	602.0	396.3	390.5	1.4
4:54:11 PM	601.9	396.6	391.0	1.4
4:54:12 PM	601.9	396.8	391.2	1.4
4:54:13 PM	602.0	397.4	391.4	1.3
4:54:14 PM	602.0	396.8	391.2	1.3
4:54:15 PM	602.0	396.2	391.2	1.2
4:54:16 PM	602.0	396.2	390.8	1.3
4:54:17 PM	602.0	395.9	391.1	1.3
4:54:18 PM	601.9	396.5	390.7	1.4
4:54:19 PM	601.9	396.3	391.4	1.4
4:54:20 PM	602.0	396.8	391.2	1.4
4:54:21 PM	602.0	395.8	391.2	1.4
4:54:22 PM	601.9	396.2	391.7	1.4
4:54:23 PM	602.0	396.8	390.9	1.4
4:54:24 PM	601.9	396.2	391.1	1.3
4:54:25 PM	601.9	396.2	390.7	1.3
4:54:26 PM	602.0	396.6	391.0	1.3
4:54:27 PM	602.0	395.9	391.2	1.3
4:54:28 PM	602.0	396.7	391.2	1.2
4:54:29 PM	601.9	396.3	390.8	1.2
4:54:30 PM	602.0	396.7	391.5	1.2
4:54:31 PM	602.0	396.5	391.0	1.2
4:54:32 PM	601.9	396.5	390.8	1.2
4:54:33 PM	601.9	396.0	390.5	1.2
4:54:34 PM	601.9	396.4	390.7	1.2
4:54:35 PM	602.0	395.9	391.2	1.2
4:54:36 PM	602.0	396.1	390.6	1.2
4:54:37 PM	602.0	396.5	390.9	1.2
4:54:38 PM	602.0	396.7	391.1	1.2
4:54:39 PM	601.9	396.1	391.0	1.2
4:54:40 PM	602.0	396.7	391.0	1.2
4:54:41 PM	602.0	396.1	391.0	1.2
4:54:42 PM	601.9	396.7	391.3	1.2
4:54:43 PM	602.0	396.6	391.7	1.3
4:54:44 PM	601.9	396.5	390.7	1.3
4:54:45 PM	601.9	396.6	391.2	1.4
4:54:46 PM	602.0	396.4	391.0	1.4
4:54:47 PM	601.9	397.1	390.5	1.5
4:54:48 PM	602.0	396.3	391.0	1.5
4:54:49 PM	601.9	396.2	391.3	1.5
4:54:50 PM	601.9	396.2	390.7	1.4
4:54:51 PM	601.9	395.9	391.3	1.4
4:54:52 PM	601.9	396.1	391.0	1.4
4:54:53 PM	601.9	396.6	391.4	1.4
4:54:54 PM	601.9	396.4	391.4	1.4
4:54:55 PM	601.9	396.6	391.2	1.4
4:54:56 PM	602.0	396.5	390.8	1.4
4:54:57 PM	602.0	396.2	391.1	1.5
Averages ->	**602.0**	**396.4**	**391.0**	**1.3**
			Maximum ->	**1.5**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 1500 **Date** 5/22/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
8:44:31 AM	599.1	70.5	70.3	28.9
8:44:32 AM	599.0	71.2	71.0	28.6
8:44:33 AM	599.1	70.8	70.8	28.3
8:44:34 AM	599.1	70.7	70.7	28.2
8:44:35 AM	599.1	71.0	71.0	27.9
8:44:36 AM	599.1	70.7	71.0	27.8
8:44:37 AM	599.1	71.1	70.9	27.6
8:44:38 AM	599.1	71.2	71.1	27.2
8:44:39 AM	599.1	70.7	71.0	27.0
8:44:40 AM	599.1	71.5	71.0	26.8
8:44:41 AM	599.1	70.7	70.6	26.7
8:44:42 AM	599.1	71.4	71.2	26.4
8:44:43 AM	599.1	71.2	71.0	26.1
8:44:44 AM	599.0	70.7	70.7	25.9
8:44:45 AM	599.1	70.8	70.8	25.8
8:44:46 AM	599.0	71.2	70.7	25.2
8:44:47 AM	599.1	70.5	71.2	25.0
8:44:48 AM	599.1	71.0	71.1	25.0
8:44:49 AM	599.1	70.9	70.6	25.0
8:44:50 AM	599.1	71.0	70.5	24.7
8:44:51 AM	599.1	71.3	71.3	25.0
8:44:52 AM	599.1	71.0	71.2	24.8
8:44:53 AM	599.1	71.4	71.0	24.8
8:44:54 AM	599.1	71.5	71.4	24.8
8:44:55 AM	599.1	71.4	71.0	24.7
8:44:56 AM	599.1	71.1	71.3	24.9
8:44:57 AM	599.1	71.2	71.3	25.0
8:44:58 AM	599.1	71.4	71.0	25.2
8:44:59 AM	599.1	70.5	70.8	25.5
8:45:00 AM	599.1	70.9	71.1	25.7
8:45:01 AM	599.1	70.6	71.1	25.9
8:45:02 AM	599.0	71.2	71.0	26.0
8:45:03 AM	599.1	71.5	71.2	26.4
8:45:04 AM	599.1	70.7	70.7	26.6
8:45:05 AM	599.1	71.0	71.4	26.8
8:45:06 AM	599.1	70.7	70.9	27.3
8:45:07 AM	599.1	71.0	70.7	27.4
8:45:08 AM	599.1	71.0	71.4	27.8
8:45:09 AM	599.0	70.8	71.2	27.8
8:45:10 AM	599.0	71.2	71.0	28.0
8:45:11 AM	599.0	71.3	71.0	28.3
8:45:12 AM	599.0	70.5	70.7	28.3
8:45:13 AM	599.1	70.5	70.7	28.5
8:45:14 AM	599.0	70.9	70.5	28.6
8:45:15 AM	598.9	70.9	71.1	28.5
8:45:16 AM	599.1	71.2	70.6	28.4
8:45:17 AM	599.0	71.3	70.8	28.4
8:45:18 AM	599.0	70.6	71.1	28.5
8:45:19 AM	599.0	70.6	71.1	28.4
8:45:20 AM	599.0	71.0	70.9	28.4
8:45:21 AM	599.0	71.0	71.0	28.3
8:45:22 AM	599.1	71.2	71.1	28.2
8:45:23 AM	599.0	71.0	71.2	28.1
8:45:24 AM	599.1	70.8	70.6	28.3
8:45:25 AM	599.0	71.1	71.1	28.7
8:45:26 AM	599.0	70.8	71.0	28.6
8:45:27 AM	598.9	70.9	71.2	28.5
8:45:28 AM	599.1	71.4	71.0	28.8
8:45:29 AM	599.1	71.0	71.0	28.8
8:45:30 AM	599.1	71.3	71.3	28.9
Averages ->	**599.0**	**71.0**	**71.0**	**27.1**
			Maximum ->	**28.9**

Yarmouth Research and Technology, LLC

Valve Description: 2 inch Class 600 Velan Top Entry Ball Valve

Cycle Number: 1000 **Date** 5/21/2010

Time	Pressure (psig)	Bonnet Temp. (deg. F)	Inside Temp. (deg. F)	PPMv Reading
8:04:15 AM	598.5	71.6	72.5	667
8:04:16 AM	598.5	72.3	71.8	665
8:04:17 AM	598.4	72.9	71.2	679
8:04:18 AM	598.4	71.8	72.5	673
8:04:19 AM	598.3	72.1	71.8	672
8:04:20 AM	598.3	72.3	71.4	671
8:04:21 AM	598.2	72.0	71.9	674
8:04:22 AM	598.2	72.3	71.8	682
8:04:23 AM	598.1	71.9	72.2	682
8:04:24 AM	598.1	71.9	72.0	680
8:04:25 AM	598.0	72.1	71.5	687
8:04:26 AM	598.0	71.5	72.3	684
8:04:27 AM	598.0	72.1	71.6	680
8:04:28 AM	597.9	71.6	72.1	686
8:04:29 AM	597.9	71.8	71.6	682
8:04:30 AM	597.8	71.6	71.7	681
8:04:31 AM	597.8	72.5	71.3	683
8:04:32 AM	597.8	72.5	71.8	683
8:04:33 AM	597.7	71.8	71.9	682
8:04:34 AM	597.6	71.9	72.3	686
8:04:35 AM	597.6	72.3	71.7	687
8:04:36 AM	597.6	72.0	72.3	697
8:04:37 AM	597.6	71.6	71.9	689
8:04:38 AM	597.5	72.1	71.7	686
8:04:39 AM	597.5	72.9	71.6	690
8:04:40 AM	597.4	71.8	72.4	692
8:04:41 AM	597.4	72.1	71.9	694
8:04:42 AM	597.3	71.1	71.8	684
8:04:43 AM	597.2	72.7	71.7	698
8:04:44 AM	597.2	71.9	71.9	693
8:04:45 AM	597.2	71.9	72.4	691
8:04:46 AM	597.2	72.0	72.0	690
8:04:47 AM	597.1	71.9	72.0	695
8:04:48 AM	597.1	72.0	72.3	703
8:04:49 AM	597.0	71.8	71.9	698
8:04:50 AM	597.0	71.9	72.1	696
8:04:51 AM	597.0	71.9	71.9	700
8:04:52 AM	596.9	72.1	71.9	692
8:04:53 AM	597.0	71.5	72.0	698
8:04:54 AM	596.9	71.9	71.9	701
8:04:55 AM	596.8	71.9	71.7	701
8:04:56 AM	596.7	72.2	72.1	702
8:04:57 AM	596.7	72.1	72.3	694
8:04:58 AM	596.7	72.1	72.0	702
8:04:59 AM	596.7	71.7	71.9	704
8:05:00 AM	596.6	71.7	72.1	701
8:05:01 AM	596.5	71.4	71.6	710
8:05:02 AM	596.5	72.2	71.7	703
8:05:03 AM	596.4	71.8	71.9	705
8:05:04 AM	596.4	72.0	71.9	704
8:05:05 AM	596.4	71.9	71.9	697
8:05:06 AM	596.4	71.2	71.9	694
8:05:07 AM	596.4	72.4	71.6	695
8:05:08 AM	596.3	71.8	71.6	691
8:05:09 AM	596.3	71.5	71.7	698
8:05:10 AM	596.2	72.1	72.0	685
8:05:11 AM	596.1	72.2	72.0	675
8:05:12 AM	596.1	72.2	71.9	671
8:05:13 AM	596.1	72.5	71.7	664
8:05:14 AM	596.1	71.7	71.7	659
Averages ->	**597.2**	**72.0**	**71.9**	**688**
			Maximum ->	**710**

RWTÜV

CERTIFICATE

We herewith certify the equivalence of shaft sealing for

VELAN BALL VALVES
Class 150

Valve manufacturer:

VELAN INC.
Granby, QC 2J2 1E7, CAN

to stem sealing with bellow seal and additional safety packing.

This comparison is based on the requirements as described in TA-Luft, Section 3.1.8.4

The certificate may only be used in conjunction with our attestation of .02.12.1997, Ref. No. .2.7.9-819/96, Order No. 714 067 01.

The required tightness was achieved on 1 representative test specimen with 225/110 psi internal pressure, 75/437 °F sealing temperature and nearly 2000 cycles.

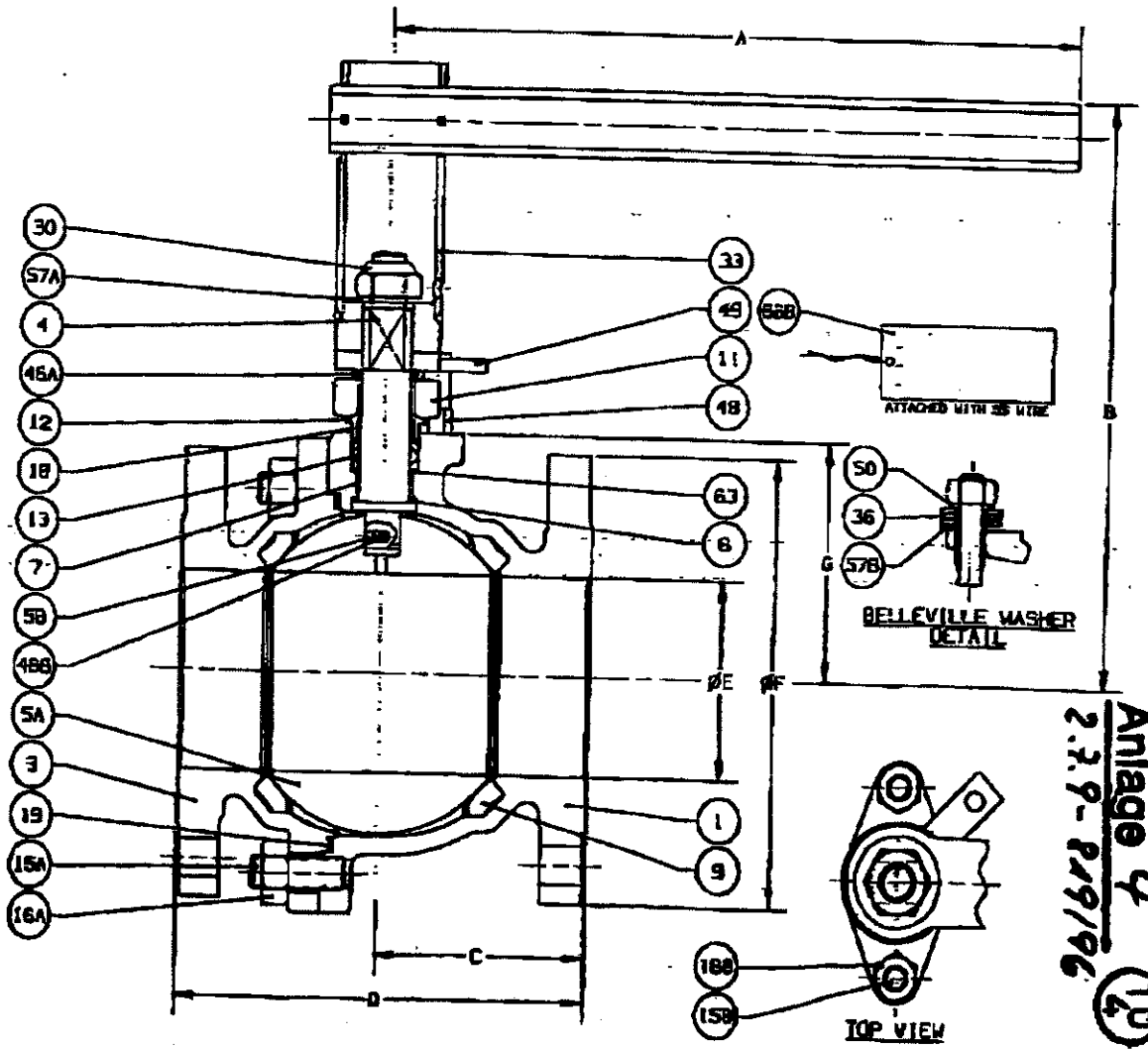
Essen, 02.12.1997

RWTÜV
Anlagentechnik GmbH
Department for
Steam and Pressure Technology
Essen

The Authorised Inspector

CLASS 150

NPS	A	B	C	D	ØE	ØF	G	Cv	WT
									LB
2	10.38	7.44	2.89	7.00	2.00	6.00	2.88	430	24
2.5	11.97	8.97	3.25	7.50	2.50	7.00	3.59	720	44
3	11.91	9.38	3.77	8.00	3.00	7.50	4.00	1020	52
4	19.88	12.33	4.52	9.00	4.00	9.00	4.88	2000	90
6	25.88	14.56	6.25	13.50	6.00	11.00	6.88	5500	196
DN								Kv	Kg
50	264	189	73	178	51	152	73	361	11
65	302	228	83	191	64	178	91	638	20
80	302	238	95	203	76	191	102	901	24
100	305	313	115	229	102	229	124	1770	41
150	657	370	158	394	152	279	170	4870	88



PART	DESCRIPTION	QTY	MATERIAL	MATL SPEC	REMARKS
1	BODY	1	CF8M	ASTM A351	
3	BODY END	1	CF8M	ASTM A351	
4	STEM	1	316 COND. B	ASTM A276	NOTE 2
5A	BALL	1	CF8M	ASTM A351	
5B	GROUNDING BALL	1	316	ASTM A276	
6	THRUST WASHER	1	RPTFE		
7	STEM BUSHING	1	RPTFE		
9	SEAT	2	RPTFE		NPS 2(DN 50)NONE
11	PACKING FLANGE	1	CF316	ASTM A182	
12	GLAND BUSHING	1	304	ASTM A276	
13	PACKING RING	3	PTFE		
15A	STUD	-	GR 88M CL.2	ASTM A193	
15B	STUD	2	GR 88M CL.2	ASTM A193	
16A	NUT	-	GR 8M	ASTM A194	
16B	NUT	2	GR 8M	ASTM A194	
18	GLAND BSHG SLV	1	RPTFE		
19	GASKET	1	316/GRAPHITE	SPIRAL WOUND	
30	HANDLE NUT	1	CS	PLATED	SELF LOCKI
33	HANDLE	1	CS W/CS TYPE F	ASTM A108/A53	
36	BELLEVILLE WSHR	-	17-7 PH	AMS 5528	
46A	SPRING	1	302	ASTM A313	
46B	SPRING	1	302	ASTM A313	
48	STOP PIN	2	CS	PLATED	
49	STOP PLATE	1	CA-15	ASTM A217	
50	SLEEVE	2	304	ASTM A276	
57A	WASHER	1	CS	PLATED	
57B	WASHER	1	CS	PLATED	
63	PACKING WASHER	2	316	ASTM A240	NPS 2(DN 50)QTY:1
66A	NAMEPLATE	1	SS	COMMERCIAL	SPOTWELDED
66B	TAG PLATE	1	SS	COMMERCIAL	OPTIONAL

MATERIAL LIST (13-SS6A-2)

NOTES:

1) VALVES DESIGN IN ACCORDANCE WITH ASME B16.34
2) NPS 6 (DN 150) 316 LEVEL 2 ASTM A479

Anlage 4
2.3.8-P16/96

REV	DESCRIPTION	DATE	DWN	APVD

VELAN ORDER NO:
CUSTOMER:
ORDER NO:
PROJECT:
JOB NO:

VELAN

NPS 2-6 / DN 50-150
CAST STEEL BALL VALVES
SPLIT BODY - FULL PORT
FLANGED ENDS

CLASS 150 / PN 20

DRAWN: W.PAQUIN 97-08-26
APVD: 97-08-26
DWG NO: SF-01413-SS6A-16
SHEET 1 OF 1
REV.0 97-08-26

REF NO: MASTER DWG: SF-01413-SS6A-16

ID=+49 201 8252888 LTK.WOT 5.05 11/07 0.VEZ.1371.0174.SSMTOO VELAN GROUP MULLION

Vogt
No Response

Smith, Vanessa (A)

From: Smith, Vanessa (A)
Sent: Friday, February 15, 2013 10:52 AM
To: 'Lew Allen (lallen@flowserve.com)'
Cc: DeVine, Dan (DJ); Burdick, Matthew (MJ); rchristian@columbiapipe.com; Dahl, Kathy (KA)
Subject: Vogt and Worcester 2013 Low E Technology Determination
Attachments: DOW Michigan Low-E Valve Questionnaire.docx

Good Morning,

As you may recall, in late 2011 Dow Chemical Michigan Operations entered a Consent Decree requiring Low Emission valves and/or packing to be installed in the Covered Process Units. In early 2012, a questionnaire was sent to you to determine if your products met the specifications of the Consent Decree. Unfortunately, we did not receive a completed questionnaire in 2012. We are now working on our 2013 Low Emission Technology determinations according to the Consent Decree and attached is the questionnaire that was previously sent.

Could you please review and complete the questionnaire? Also, please provide any applicable testing data.

Thank you for your time and assistance with this matter. **All responses must be received by February 28th** in order for us to review and make our 2013 determinations.
Sincerely,

Vanessa Smith
The Dow Chemical Company
nvironmental Delivery Specialist
fice: (989) 638-7774
Cell: (989) 213-7258

Xomox / Tufline
No Response

Smith, Vanessa (A)

From: Smith, Vanessa (A)
Sent: Thursday, February 07, 2013 12:12 PM
To: Anderson, Rick
Cc: 'Russ Christian'; 'Dayries, Richard [HDS]'; DeVine, Dan (DJ); Burdick, Matthew (MJ); Dahl, Kathy (KA)
Subject: Xomox: 2013 Low E Technology
Attachments: FW: Xomox Reply to Dow's LDAR Fugitive Emissions Questionaire-follow up; FW: Xomox Reply to Dow's LDAR Fugitive Emissions Questionaire

Good Afternoon,

As you may recall, in late 2011 Dow Chemical Michigan Operations entered a Consent Decree requiring Low Emission valves and/or packing to be installed in the Covered Process Units. In early 2012, a questionnaire was sent to you to determine if your products met the specifications of the Consent Decree. Attached are the completed questionnaires and any supporting data that you provided.

Per the Consent Decree, each year we must revalidate the Low Emission valves and/or packing determinations. Please review the attached information that you provided in 2012 upon which we based our original determination. Once reviewed, please reply to the questions below:

1. **Are the valves or packing that met the Low-E definition per the Dow Chemical Consent Decree in 2012 last year still Low-E? See definition below.**

2. **Do you have any valves or packing that qualify as Low-E per the definitions below since the last time the questionnaire was answered? If yes, please include the testing data.**

"Low-Emissions Valve" or "Low-E Valve" shall mean either (i) or (ii) as follows:

(i) A valve (including its specific packing assembly) for which the manufacturer has issued a written warranty that it will not emit fugitives at greater than 100 ppm, and that, if it does so emit at any time in the first five years, the manufacturer will replace the valve; provided however, that no valve shall qualify as "Low-E" by reason of written warranty unless the valve (including its specific packing assembly) either:

(a) first was tested by the manufacturer or a qualified testing firm pursuant to generally-accepted good engineering practices for testing fugitive emissions and the results of the testing reasonably support the warranty; or

(b) is as an Extension of another valve that qualified as "Low-E" per the definition of "Extension" listed below.

Or

(ii) A valve (including its specific packing assembly) that:

(a) Has been tested by the manufacturer or a qualified testing firm pursuant to generally-accepted good engineering practices for testing fugitive emissions and that, during the test, at no time leaked at greater than 500 ppm, and on average, leaked at less than 100 ppm; or

(b) Is an Extension of another valve that qualified as "Low-E" per the definition of "Extension" listed below.

NOTE: "Extension" shall mean that: (i) the tested and untested valves were produced by the same manufacturer to the same or essentially equivalent quality requirements; (ii) the characteristics of the valve that affect sealing performance (e.g., type of valve, stem motion, tolerances, surface finishes, loading arrangement, and stem and body seal material, design, and construction) are the same or essentially equivalent as between the tested valve and the untested valve; and (iii) the temperature and pressure ratings of the tested valve are at least as high as the temperature and pressure ratings of the untested valve.

Thank you for your time and assistance with this matter. **All responses must be received by February 28th** in order for us to review and make our 2013 determinations.
Sincerely,

Vanessa Smith
Environmental Delivery Specialist
Dow Automotive/Dow Pharma
Office: (989) 638-7774
Cell: (989) 213-7258