

**Fire Test Report**  
**API Standard 6FB, Third Edition**

*Performed for*

**Zen Wang Co. Ltd.**

**[www.zenwang.com.tw](http://www.zenwang.com.tw)**



**Kammprofile – ZW703**  
**ZW703-316L/FG-316L**  
**316LSS core with 0.5 mm Graphite Layer**  
**6 inch Class 300**

**Project Number: 210201**  
**November 13, 2010**



*Performed by*

**YARMOUTH RESEARCH AND TECHNOLOGY, LLC**

434 Walnut Hill Road  
North Yarmouth, ME 04097 USA  
(207) 829-5359  
[info@yarmouthresearch.com](mailto:info@yarmouthresearch.com)  
[www.yarmouthresearch.com](http://www.yarmouthresearch.com)

# Yarmouth Research and Technology, LLC

## API 6FB FIRE TEST REPORT

<b>Customer:</b>	Zen Wang Co.,Ltd	<b>Date:</b> 11/13/2010
<b>Product Code:</b>	Kammprofile Gasket - ZW703	
	ZW703-316L/FG-316L, 6 inch Class 300	
	316LSS core with 0.5 mm Graphite Layer	
<b>Project Number:</b>	PN210201	
<b>Test Specification:</b>	API 6FB, Third Edition, Nov. 1998	
	Non-Bending, On-shore or Open-offshore Test	
<b>Seal Area OD:</b>	8.50	<b>Seal Area ID:</b> 7.00 inches
<b>Mean Seal Diameter:</b>	7.8	inches ID of fire seal
<b>Mean Circumference:</b>	24.3	inches
<b>Allowable Leakage:</b>	24.3	ml/min
<b>Nominal Test Pressure:</b>	555	psig 75% of ANSI Class 300
<b>YRT Technician:</b>	Matthew J. Wasielewski, P.E.	
	<b>Version of YRT's FIRE-Control 6FB Software: A</b>	
	<b>Equipment Confirmed to be in Calibration to NIST Standards: Yes</b>	

### *Burn and Cool Down Test*

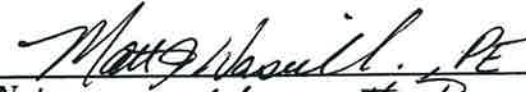
Burn Start Time:	11:03:00	
Burn / Cooldown Duration:	60	minutes
Average Pressure During Burn/Cooldown:	566	psig
Leak Rate During Burn/Cool Down:	2	ml/min
Allowable External Leak Rate:	24.3	ml/min
Amount of Time of Avg. Cal. Block > 1200 deg.:	20.8	minutes
Were Test Conditions Within Compliance?	Yes	
Was the Leakage Below the Allowable?	Yes	

### *Depressurization - Re-pressurization Test*

Average Pressure During Test:	564	psig
Gasket Leak Rate:	0	ml/min
Allowable External Leak Rate:	24.3	ml/min
Was the Leakage Below the Allowable?	Yes	

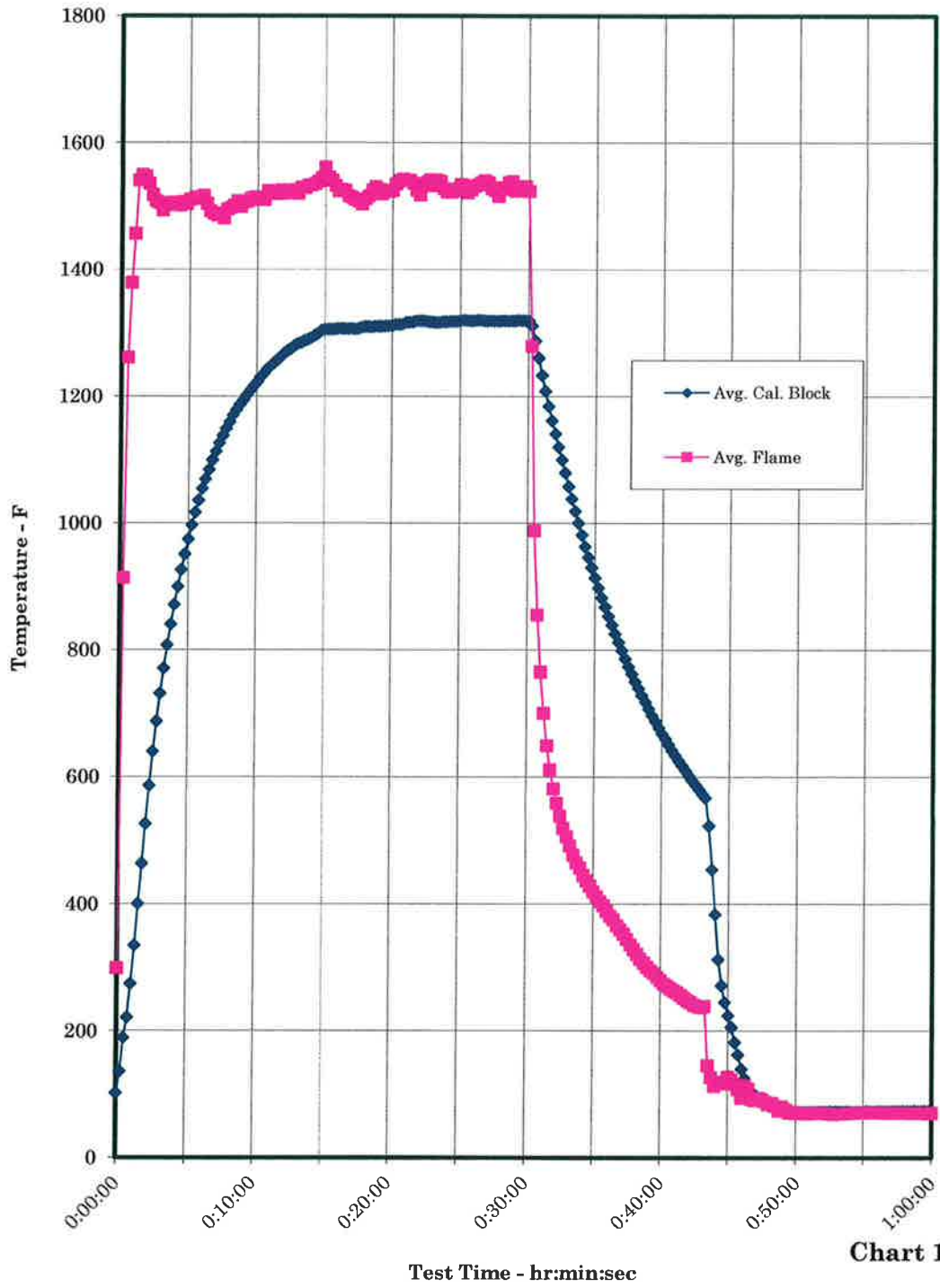
<b>Does the Gasket Pass or Fail API 6FB?</b>	<b>PASS</b>
--	-------------

### *Witnesses*

  
 Note: Yarmouth Research



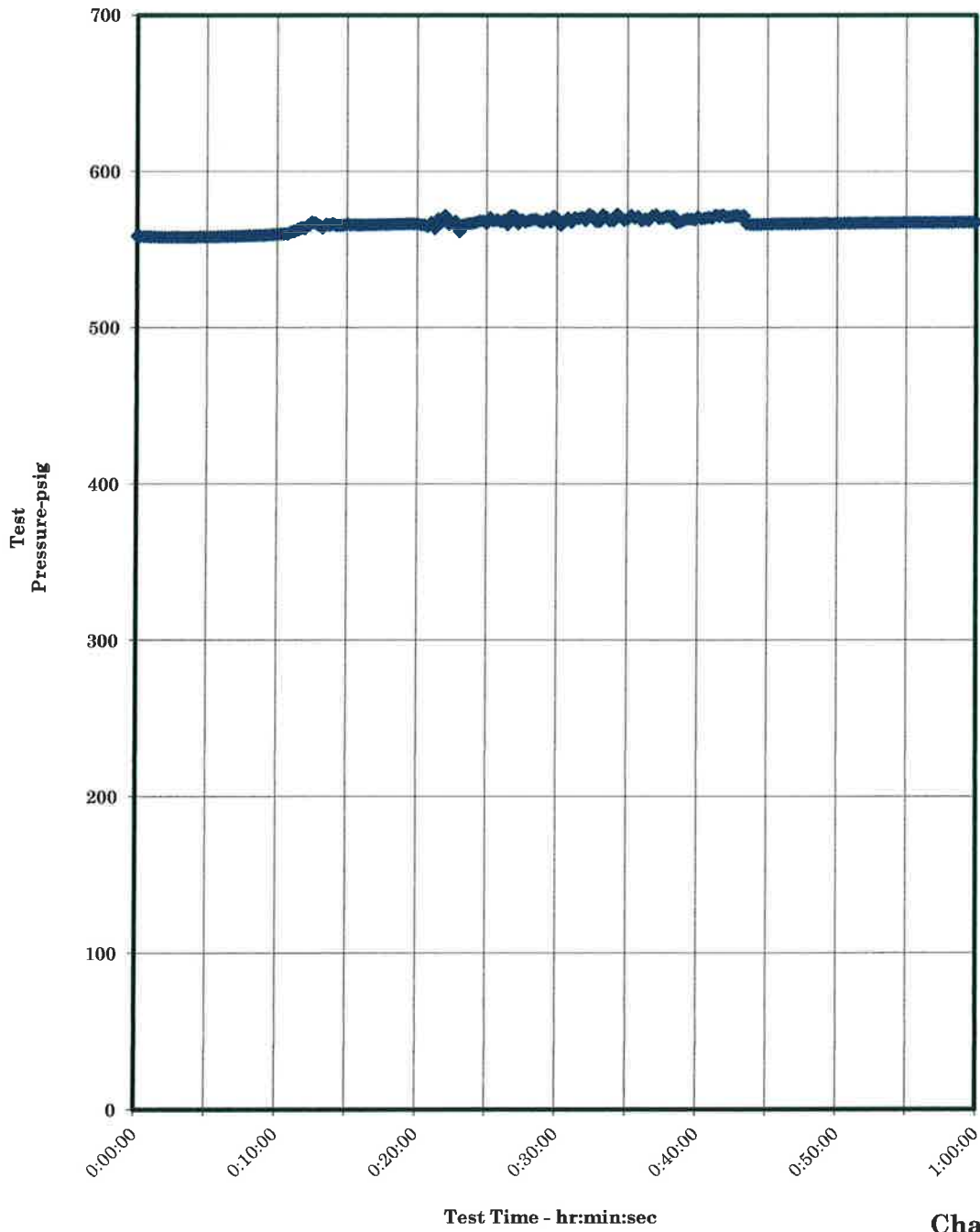
**Temperature versus Time Chart**



**Chart 1**

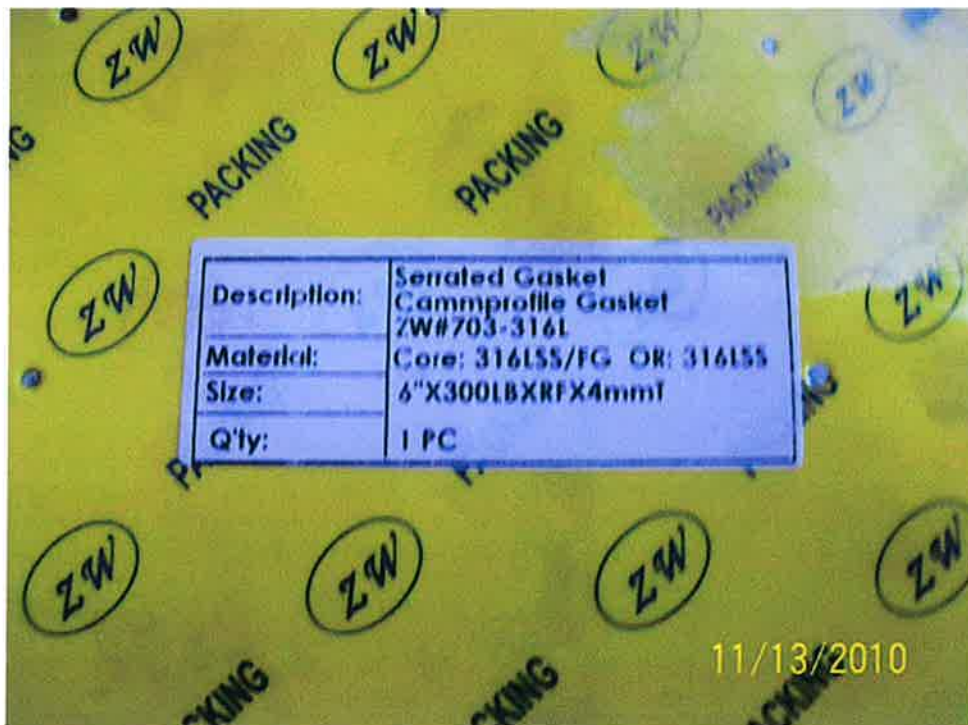
# Yarmouth Research and Technology, LLC

**Pressure verses Time Chart**



**Chart 2**

Yarmouth Research and Technology, LLC



Gasket Before Test

Yarmouth Research and Technology, LLC



Gasket Fire Test

Yarmouth Research and Technology, LLC



Gasket After Test

# Yarmouth Research and Technology, LLC

## Fire Test Information

Customer: Zen Wang Co., Ltd

Date: 11/13/2010

Product Code: Kamprofile Gasket - ZW703

Project Number: PN210201

## Fire Test Raw Data

Time	Pressure (psig)	Water Volume (mls)	Cal. 1 Block Temp - F	Cal. 2 Block Temp - F	Cal. 3 Block Temp - F	Cal. 4 Block Temp - F	Average Block Temp - F	Flame 1 Temp - F	Flame 2 Temp - F	Flame 3 Temp - F	Flame 4 Temp - F	Average Flame Temp - F
11:03:00	559	39632	66	157	84	102	102	529	86	432	147	299
11:03:15	559	39615	115	181	119	130	136	1021	629	1149	857	914
11:03:30	559	39633	151	223	191	193	190	1346	1042	1387	1270	1261
11:03:45	558	39631	175	232	235	245	222	1468	1278	1404	1367	1379
11:04:00	558	39633	215	282	303	298	275	1529	1411	1426	1461	1457
11:04:15	558	39636	263	349	377	351	335	1566	1581	1512	1505	1541
11:04:30	558	39641	344	415	438	404	400	1569	1599	1518	1513	1550
11:04:45	558	39641	424	480	495	457	464	1573	1588	1510	1519	1548
11:05:00	558	39642	511	539	548	508	527	1567	1539	1521	1517	1536
11:05:15	558	39676	597	598	599	557	587	1564	1488	1513	1507	1518
11:05:30	558	39676	670	641	646	604	640	1560	1455	1514	1504	1508
11:05:45	558	39662	726	686	691	649	688	1562	1447	1516	1497	1506
11:06:00	558	39654	775	728	733	691	732	1563	1408	1509	1495	1494
11:06:15	558	39656	816	765	773	731	771	1561	1434	1521	1492	1502
11:06:30	558	39667	850	803	810	769	808	1566	1453	1514	1490	1506
11:06:45	558	39660	879	835	845	804	841	1560	1470	1510	1485	1506
11:07:00	558	39663	906	868	877	837	872	1566	1458	1514	1480	1505
11:07:15	558	39685	930	895	907	868	900	1562	1461	1513	1471	1502
11:07:30	558	39687	953	922	935	897	927	1570	1468	1523	1467	1507
11:07:45	558	39694	973	947	961	924	951	1571	1456	1518	1468	1503
11:08:00	558	39688	995	971	986	948	975	1571	1491	1522	1461	1511
11:08:15	558	39700	1018	993	1008	970	997	1574	1500	1522	1453	1512
11:08:30	558	39728	1036	1013	1028	992	1017	1565	1524	1535	1434	1515
11:08:45	558	39702	1053	1031	1047	1013	1036	1567	1534	1532	1425	1515
11:09:00	558	39709	1071	1050	1066	1032	1055	1570	1558	1530	1409	1517
11:09:15	559	39736	1082	1066	1083	1048	1070	1571	1522	1531	1392	1504
11:09:30	558	39735	1094	1081	1098	1065	1085	1575	1505	1531	1359	1493



**Yarmouth Research and Technology, LLC**

11:09:45	559	39761	1106	1100	1113	1081	1100	1572	1494	1539	1350	1489
11:10:00	559	39741	1118	1113	1127	1095	1113	1569	1495	1528	1351	1486
11:10:15	559	39745	1128	1128	1140	1109	1126	1569	1499	1539	1344	1488
11:10:30	559	39753	1139	1139	1152	1121	1138	1573	1458	1542	1351	1481
11:10:45	559	39758	1149	1152	1163	1132	1149	1575	1518	1539	1349	1495
11:11:00	559	39755	1157	1164	1174	1143	1160	1579	1521	1540	1352	1498
11:11:15	559	39771	1167	1176	1184	1154	1170	1582	1521	1547	1357	1502
11:11:30	559	39796	1174	1186	1193	1163	1179	1584	1537	1551	1362	1509
11:11:45	559	39786	1180	1192	1202	1173	1187	1587	1495	1552	1363	1499
11:12:00	559	39809	1187	1198	1210	1182	1194	1586	1528	1549	1363	1507
11:12:15	559	39807	1195	1205	1217	1190	1202	1589	1528	1552	1363	1508
11:12:30	560	39826	1200	1214	1224	1198	1209	1587	1541	1552	1370	1513
11:12:45	560	39833	1205	1222	1231	1207	1216	1584	1558	1554	1362	1515
11:13:00	560	39852	1213	1228	1237	1213	1223	1582	1556	1547	1372	1514
11:13:15	560	39861	1220	1238	1243	1220	1230	1580	1540	1552	1369	1510
11:13:30	560	39968	1224	1246	1248	1227	1236	1577	1540	1549	1375	1510
11:13:45	560	40050	1231	1257	1254	1232	1244	1583	1579	1556	1380	1525
11:14:00	561	39878	1234	1260	1259	1239	1248	1580	1578	1553	1381	1523
11:14:15	562	40109	1239	1264	1264	1244	1253	1587	1567	1563	1376	1523
11:14:30	563	40119	1242	1271	1268	1250	1258	1591	1546	1561	1382	1520
11:14:45	564	40327	1247	1276	1273	1255	1263	1585	1564	1562	1391	1526
11:15:00	564	40057	1254	1281	1277	1260	1268	1588	1539	1563	1392	1521
11:15:15	566	39447	1260	1281	1281	1266	1272	1593	1534	1563	1392	1521
11:15:30	567	40949	1264	1282	1284	1270	1275	1594	1550	1562	1381	1522
11:15:45	567	41424	1270	1287	1288	1274	1280	1596	1559	1563	1387	1526
11:16:00	565	41383	1270	1293	1292	1278	1283	1592	1532	1562	1395	1520
11:16:15	564	40257	1270	1291	1295	1284	1285	1596	1553	1570	1402	1530
11:16:30	566	40508	1276	1290	1298	1287	1288	1593	1571	1564	1389	1529
11:16:45	566	40567	1279	1289	1301	1291	1290	1591	1576	1563	1404	1534
11:17:00	566	40754	1281	1292	1303	1294	1293	1591	1587	1555	1403	1534
11:17:15	565	40249	1283	1296	1306	1299	1296	1595	1580	1563	1404	1536
11:17:30	565	40125	1283	1303	1309	1302	1299	1601	1579	1563	1415	1540
11:17:45	566	40895	1289	1311	1311	1305	1304	1602	1591	1563	1424	1545
11:18:00	567	40829	1292	1310	1313	1308	1306	1604	1661	1558	1425	1562
11:18:15	566	40552	1290	1305	1315	1312	1306	1581	1634	1535	1434	1546
11:18:30	566	40306	1287	1304	1317	1315	1306	1571	1640	1529	1424	1541
11:18:45	566	40502	1286	1304	1318	1316	1306	1574	1606	1528	1425	1533
11:19:00	566	40567	1286	1303	1320	1319	1307	1580	1569	1529	1419	1524

**Yarmouth Research and Technology, LLC**

11:19:15	566	40555	1284	1301	1322	1321	1307	1576	1573	1533	1424	1527
11:19:30	566	40606	1280	1300	1323	1323	1307	1573	1581	1533	1412	1525
11:19:45	566	40552	1278	1299	1324	1325	1307	1586	1547	1531	1402	1517
11:20:00	566	40561	1278	1297	1326	1327	1307	1583	1547	1534	1393	1514
11:20:15	566	40552	1278	1291	1327	1329	1306	1586	1533	1530	1394	1511
11:20:30	566	40587	1280	1288	1328	1331	1307	1587	1515	1535	1397	1509
11:20:45	566	40574	1280	1291	1329	1334	1309	1579	1503	1538	1395	1504
11:21:00	566	40578	1282	1292	1330	1335	1310	1590	1527	1538	1394	1512
11:21:15	566	40563	1280	1290	1331	1338	1310	1584	1550	1545	1387	1517
11:21:30	566	40563	1278	1288	1332	1339	1309	1579	1579	1548	1398	1526
11:21:45	566	40542	1279	1288	1333	1341	1310	1577	1601	1545	1400	1531
11:22:00	567	40555	1280	1286	1334	1342	1311	1587	1563	1554	1403	1527
11:22:15	567	40558	1279	1284	1335	1344	1311	1585	1555	1550	1390	1520
11:22:30	567	40545	1281	1281	1335	1346	1311	1582	1588	1550	1381	1525
11:22:45	567	40559	1279	1281	1336	1348	1311	1590	1559	1554	1390	1523
11:23:00	567	40590	1282	1279	1337	1349	1312	1584	1572	1552	1394	1526
11:23:15	566	39759	1284	1281	1338	1351	1314	1588	1593	1553	1406	1535
11:23:30	566	35582	1282	1280	1339	1353	1314	1578	1622	1559	1404	1541
11:23:45	565	39182	1283	1279	1340	1353	1314	1591	1607	1564	1409	1543
11:24:00	567	40549	1290	1280	1341	1354	1316	1590	1608	1567	1402	1542
11:24:15	564	39649	1292	1279	1341	1355	1317	1584	1623	1559	1398	1541
11:24:30	570	38269	1292	1280	1342	1354	1317	1589	1601	1558	1397	1536
11:24:45	568	40598	1300	1279	1342	1355	1319	1585	1574	1557	1388	1526
11:25:00	572	40782	1301	1280	1342	1355	1320	1585	1548	1554	1385	1518
11:25:15	566	39307	1299	1281	1342	1356	1320	1581	1611	1556	1394	1536
11:25:30	567	40366	1296	1280	1342	1356	1319	1586	1630	1553	1383	1538
11:25:45	568	40324	1292	1281	1342	1356	1318	1588	1634	1554	1392	1542
11:26:00	562	35283	1289	1280	1343	1357	1317	1584	1599	1559	1388	1533
11:26:15	566	39670	1288	1279	1343	1356	1317	1589	1636	1555	1386	1542
11:26:30	566	38958	1286	1281	1344	1356	1317	1595	1631	1555	1375	1539
11:26:45	567	40233	1288	1282	1344	1356	1318	1589	1585	1554	1384	1528
11:27:00	567	40467	1291	1281	1343	1356	1318	1585	1570	1557	1377	1522
11:27:15	568	40640	1291	1282	1344	1356	1318	1586	1585	1553	1365	1522
11:27:30	568	41239	1289	1283	1344	1357	1318	1592	1576	1553	1375	1524
11:27:45	568	40526	1291	1282	1344	1357	1319	1582	1596	1553	1381	1528
11:28:00	567	40177	1291	1283	1345	1358	1319	1588	1611	1553	1387	1535
11:28:15	570	39258	1293	1284	1346	1358	1320	1590	1606	1551	1383	1533
11:28:30	569	40552	1293	1282	1346	1358	1320	1578	1573	1559	1377	1522

**Yarmouth Research and Technology, LLC**

11:28:45	569	41310	1290	1282	1347	1358	1319	1580	1597	1555	1373	1526
11:29:00	568	39109	1291	1281	1347	1359	1320	1587	1608	1557	1375	1532
11:29:15	569	40537	1293	1281	1348	1359	1320	1589	1607	1557	1383	1534
11:29:30	566	40905	1291	1282	1348	1359	1320	1586	1614	1562	1387	1537
11:29:45	572	39997	1290	1281	1348	1359	1320	1595	1619	1561	1388	1541
11:30:00	571	42534	1290	1280	1347	1358	1319	1595	1618	1556	1381	1538
11:30:15	567	39829	1290	1280	1348	1359	1319	1590	1586	1556	1379	1528
11:30:30	569	40532	1290	1279	1348	1359	1319	1576	1585	1562	1376	1525
11:30:45	568	39944	1289	1279	1348	1360	1319	1582	1553	1557	1370	1516
11:31:00	568	40320	1291	1278	1348	1360	1319	1591	1589	1556	1383	1530
11:31:15	569	38573	1290	1279	1349	1360	1320	1594	1578	1555	1382	1527
11:31:30	569	40528	1289	1280	1348	1359	1319	1590	1619	1559	1383	1538
11:31:45	568	40121	1289	1280	1349	1360	1320	1593	1623	1560	1380	1539
11:32:00	568	38654	1288	1281	1349	1360	1320	1586	1587	1555	1369	1524
11:32:15	570	40526	1288	1281	1350	1362	1320	1590	1599	1550	1369	1527
11:32:30	568	39420	1287	1281	1350	1361	1320	1592	1601	1553	1369	1529
11:32:45	571	39817	1285	1282	1350	1362	1320	1587	1608	1549	1381	1531
11:33:00	570	40547	1285	1282	1350	1361	1320	1582	1588	1548	1376	1524
11:33:15	566	37940	1255	1281	1348	1360	1311	1293	1342	1346	1134	1279
11:33:30	568	40725	1199	1277	1333	1341	1288	1058	827	1073	995	988
11:33:45	570	40510	1147	1270	1310	1315	1261	906	707	897	911	855
11:34:00	568	40264	1103	1257	1284	1289	1233	800	619	790	852	765
11:34:15	570	40256	1065	1244	1259	1264	1208	720	554	716	811	700
11:34:30	570	41678	1033	1229	1235	1240	1184	658	503	662	773	649
11:34:45	571	39523	1005	1211	1212	1219	1162	611	464	623	749	612
11:35:00	569	39694	979	1193	1192	1200	1141	570	430	598	728	592
11:35:15	572	41453	956	1171	1171	1182	1120	535	403	581	717	559
11:35:30	571	41273	935	1154	1150	1161	1100	507	381	563	703	539
11:35:45	568	39703	914	1136	1129	1140	1080	483	363	546	685	519
11:36:00	568	39685	896	1114	1107	1117	1059	463	348	530	681	506
11:36:15	572	39721	878	1095	1086	1096	1039	444	334	516	671	491
11:36:30	571	40508	860	1075	1065	1076	1019	428	322	503	654	477
11:36:45	568	39591	843	1058	1045	1056	1001	413	311	495	642	465
11:37:00	569	40042	828	1037	1025	1036	982	400	301	483	642	457
11:37:15	573	41031	813	1016	1006	1018	963	387	292	470	631	445
11:37:30	571	40502	799	998	988	1000	946	376	284	462	624	437
11:37:45	569	40350	786	982	970	982	930	365	276	457	617	429
11:38:00	570	40873	772	965	953	965	914	355	270	445	606	419