

# **Bridgeton Landfill, LLC**

## **Weekly Data Submittals**

**Week of November 16 - November 21, 2014**

**Required by Section 52.F of Agreed Order, Case No. 13SL-CC01088  
Effective May 13, 2013**

### **Contents:**

**Attachment A – Leachate Levels in Leachate Collection Sumps**

**Attachment B – Temperature Monitoring Probe Analytical Charts**

**Attachment C – Gas Interceptor Wellhead Temperature Graphs**

**Attachment D – Neck-Area Gas Extraction Wellhead Temperature Graphs**

### **Provided Separately:**

- Leachate Level in Leachate Collection Sump Raw Data Excel Spreadsheet**
- Temperature Monitoring Probe Raw Data Excel Spreadsheet**
- Gas Interceptor Well Reading Raw Data Excel Spreadsheet**
- Neck-Area Gas Extraction Well Data Excel Spreadsheet**

**November 28, 2014**

## **Commentary on Data**

### **Attachment A – Leachate Levels in Leachate Collection Sumps**

Leachate Collection Sump (LCS)-1D, -5A, and -6B were partially or fully operational during the weekly reporting period. LCS-1D, while operational at the time of inspection, has a broken transducer.

The pump in LCS-2D was off during the weekly monitoring event due to an “over current” error.

The transducer melted in LCS-3D in March 2014 and is currently non-operational.

LCS-4B still exhibits excess pressure and liquid ejection, so it has not been fitted with a pump; however, the conditions are resulting in leachate removal from that location. Options for pumping from this location are currently under review.

### **Attachment B - Temperature Monitoring Probe Analytical Charts**

The following TMPs indicated generally consistent profiles to previous observations: TMP-1, -2, -3, -4, -6, -8, -9, -10, -11, -14, -16, -17, and -18.

TMP-5, -7, -7R, -12, -13, and -15 have been removed from the presentation based on unreliable thermocouple measurements or other documented issues. With this reporting period, TMP-12 has been added to this list due to fluctuating thermocouple resistance resulting in unreliable temperature readings.

### **Attachment C - Gas Interceptor Wellhead Temperature Graphs**

There are currently water circulation cooling loops installed in seven Gas Interceptor Wells (GIW) (GIW-2 through GIW-7, as well as GIW-10). Wellhead gas temperatures in these wells are all in the low to mid 40°F range.

For the remaining six wells without a cooling system installed (GIW-1, -8, -9, -11, -12, and -13), with the exception of GIW-11, gas temperatures were generally consistent over the past week as well as compared to prior weeks. GIW-11 has been experiencing 20-30 degree fluctuations in gas temperature, which is likely due to its proximity to GIW series wells with cooling loops installed. Note that only one round of gas quality data could be collected during the week due to weather and scheduling issues.

### **Attachment D – Neck Area Gas Extraction Well Data**

Per request of MDNR, weekly gas temperature data is being collected for select gas extraction wells (GEWs) located in the neck area of the landfill. These wells include GEW-08, -09, -10, -38, -39, -40, -41R, -43R, -53, -54, -55, -56R, -109, and -110. Over the past week all 14 wells were monitored. With the exception of GEW-109 and -110 the well temperatures are generally consistent in comparison to prior weeks. GEW-109 and -110 decreased by 46 degrees and 34 degrees, respectively, when compared to the temperatures from the previous week. This is likely due to low flow within each well and low ambient temperatures.

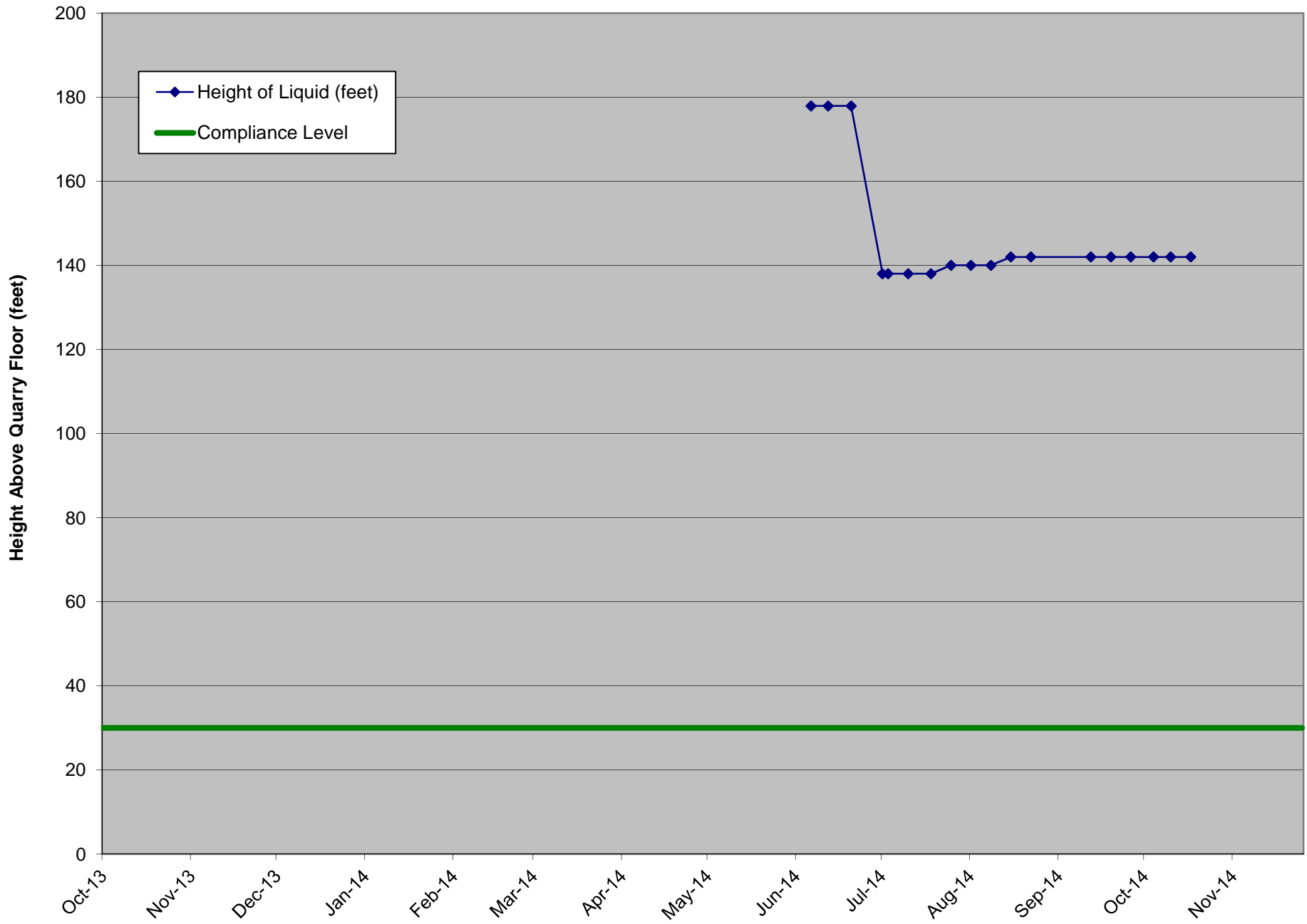
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**ATTACHMENT A**

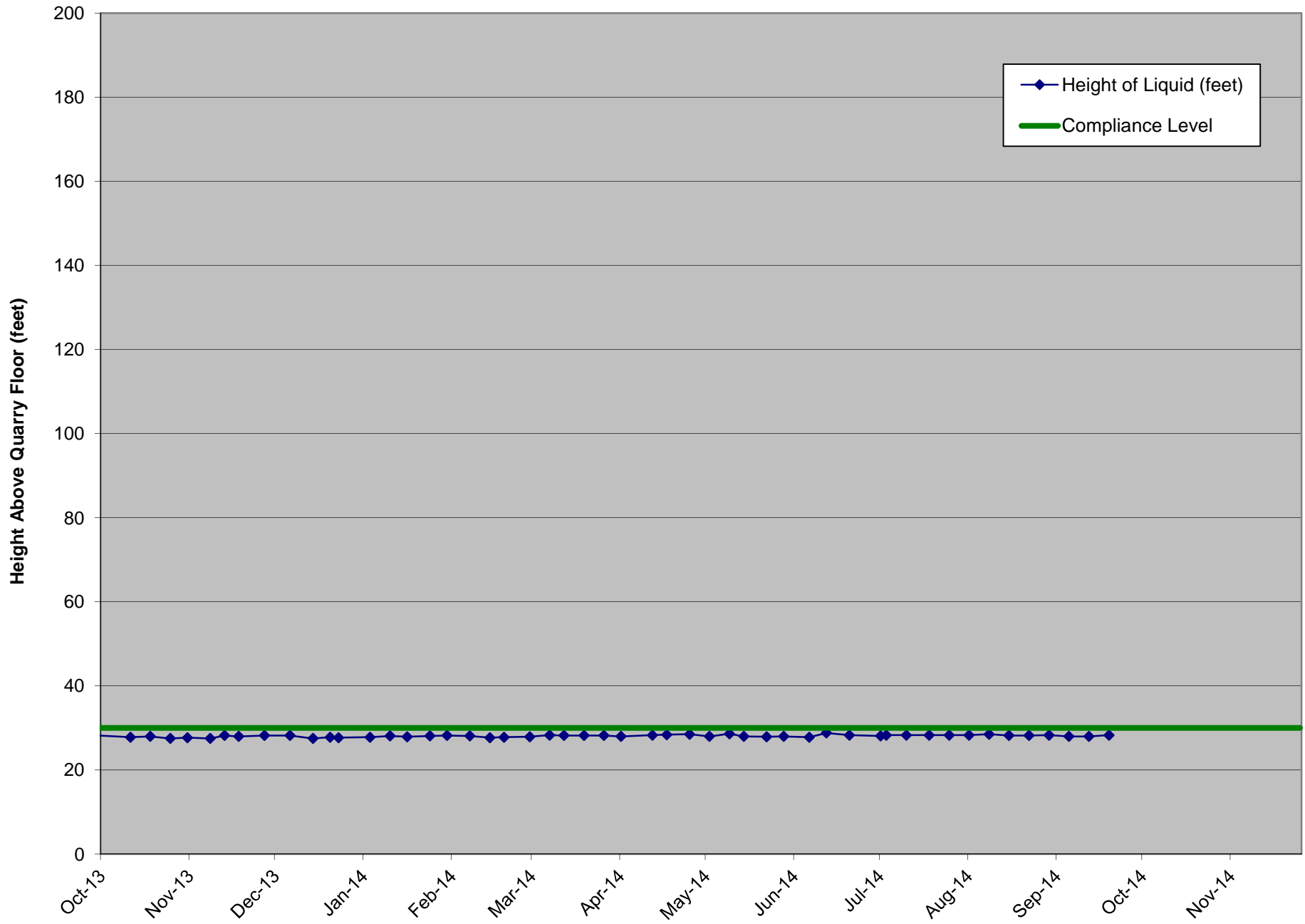
**LEACHATE LEVELS IN LEACHATE COLLECTION SUMPS**

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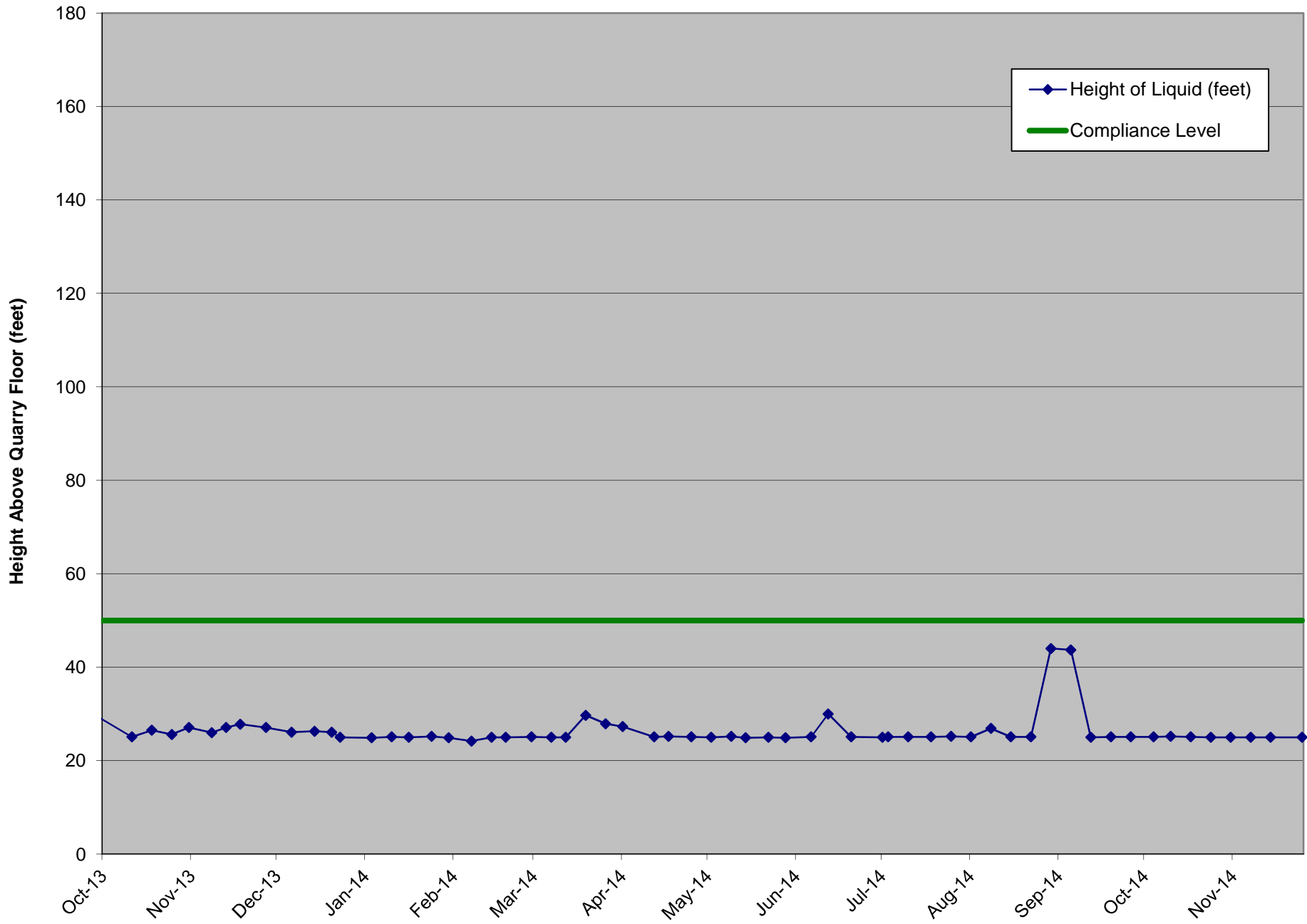
### LCS-1D Liquid Level Above Quarry Floor



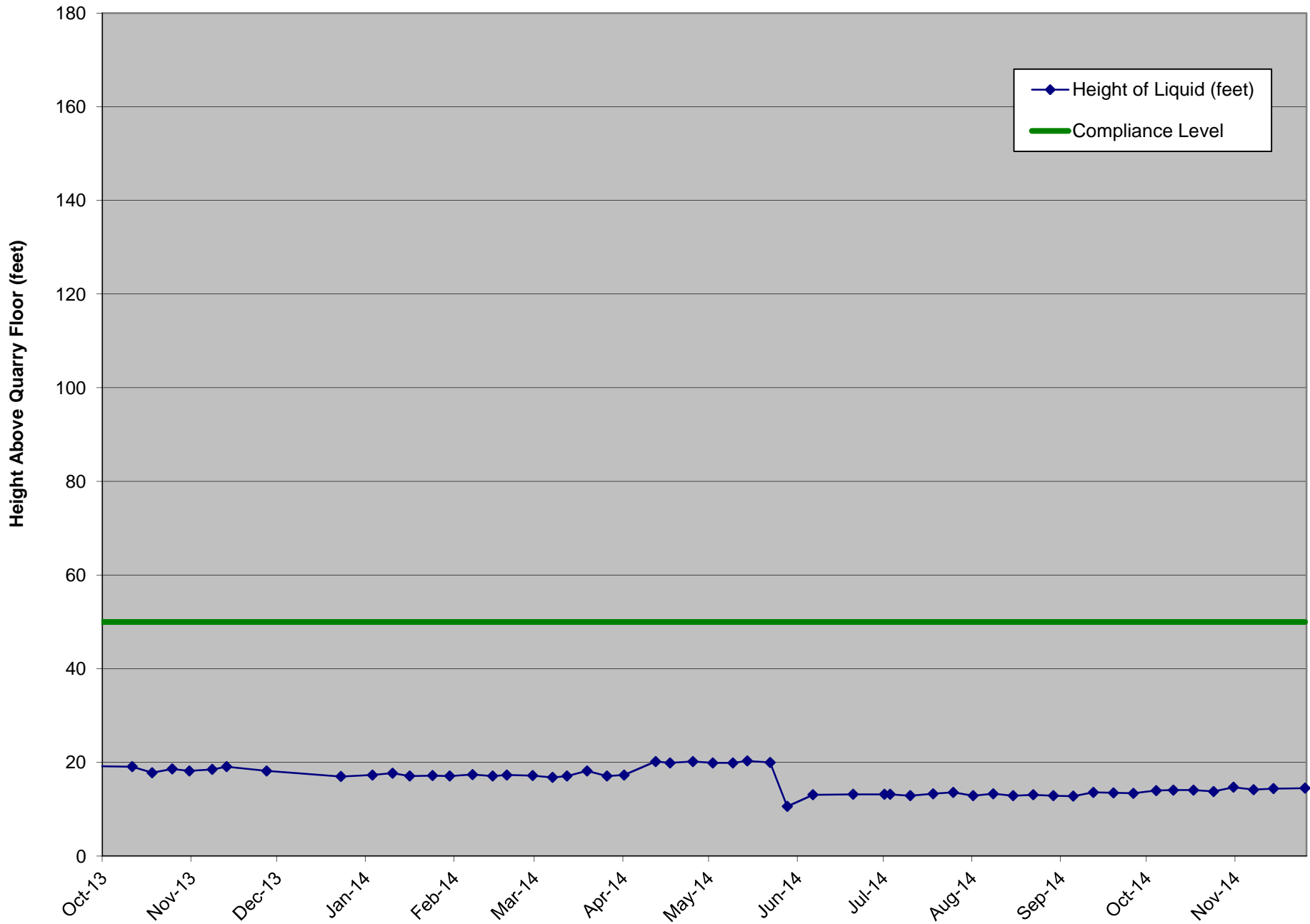
# LCS-2D Liquid Level Above Quarry Floor



### LCS-5A Liquid Level Above Quarry Floor



### LCS-6B Liquid Level Above Quarry Floor



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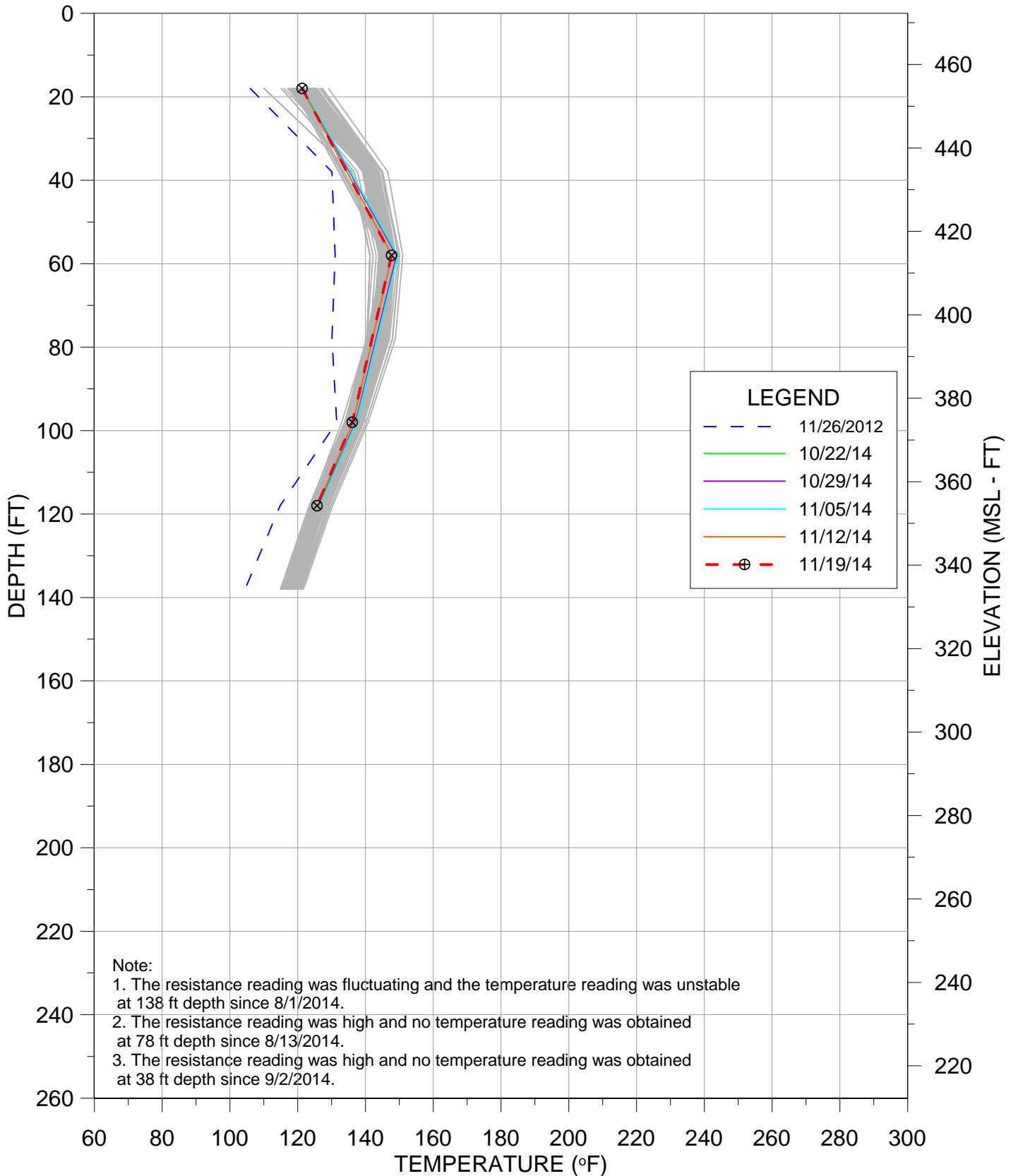
**ATTACHMENT B**

**TEMPERATURE MONITORING PROBE ANALYTICAL CHARTS**

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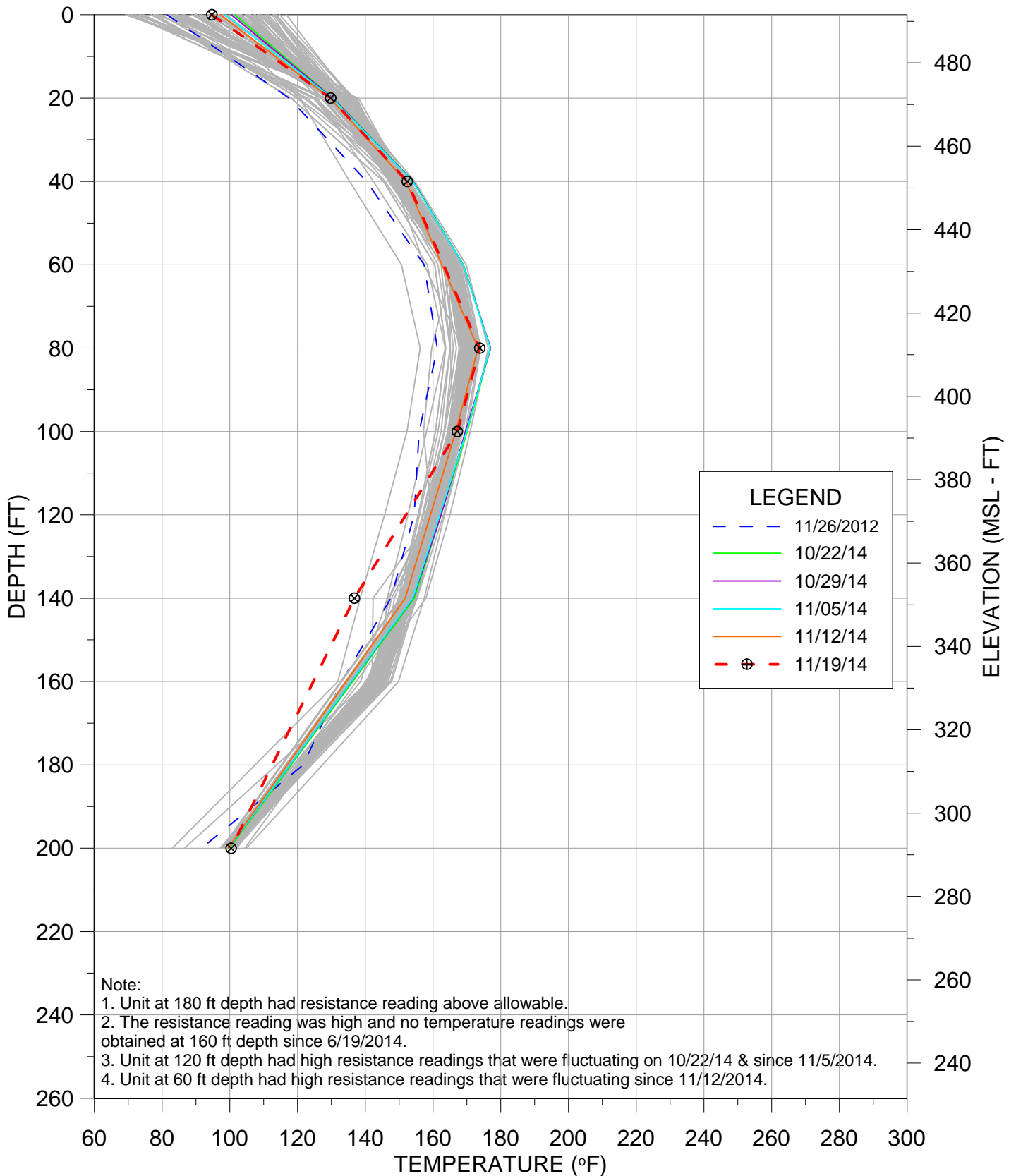


# TMP-1



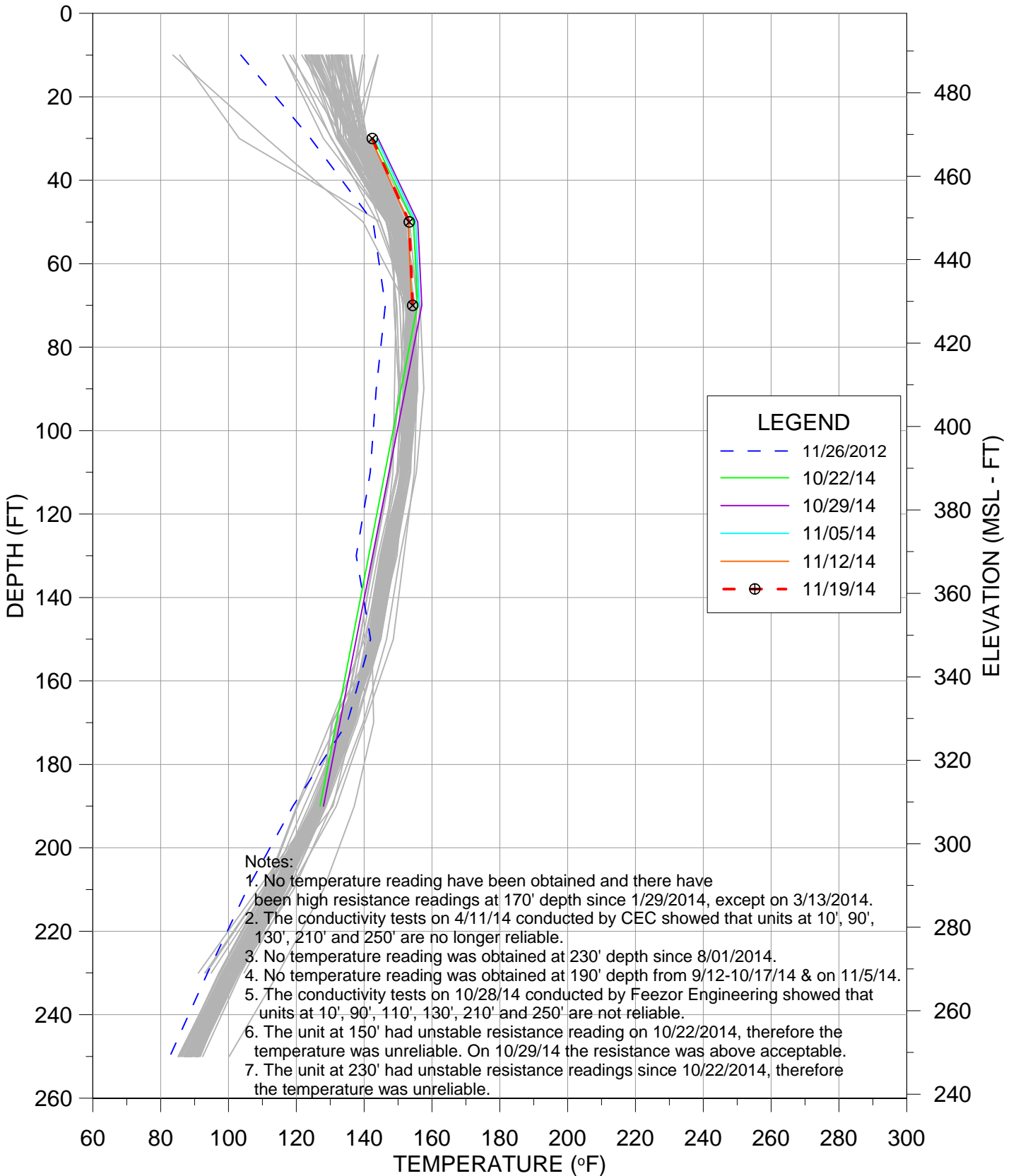
TEMPERATURE VS DEPTH  
BRIDGETON LANDFILL

# TMP-2



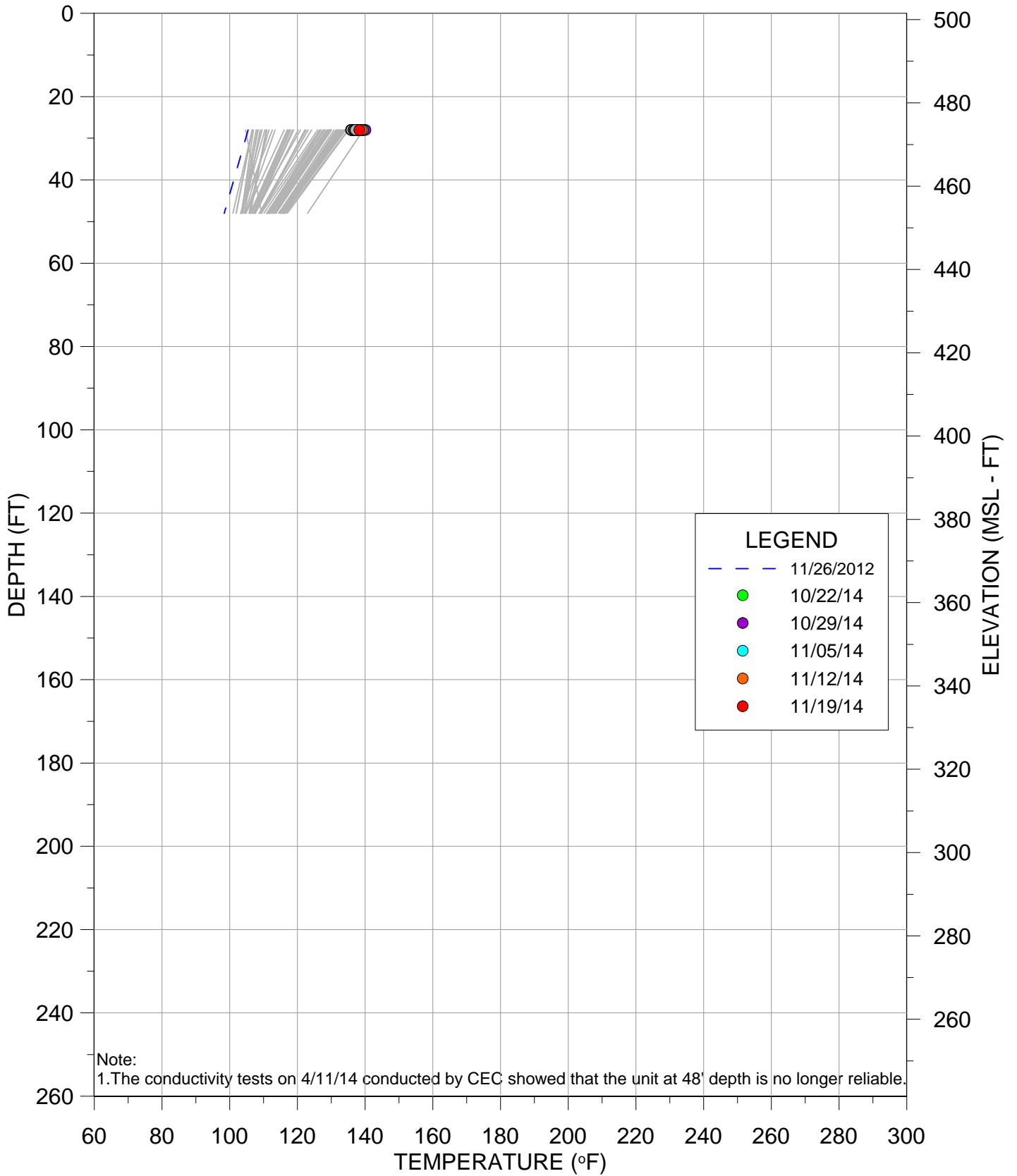
TEMPERATURE VS DEPTH  
BRIDGETON LANDFILL

# TMP-3



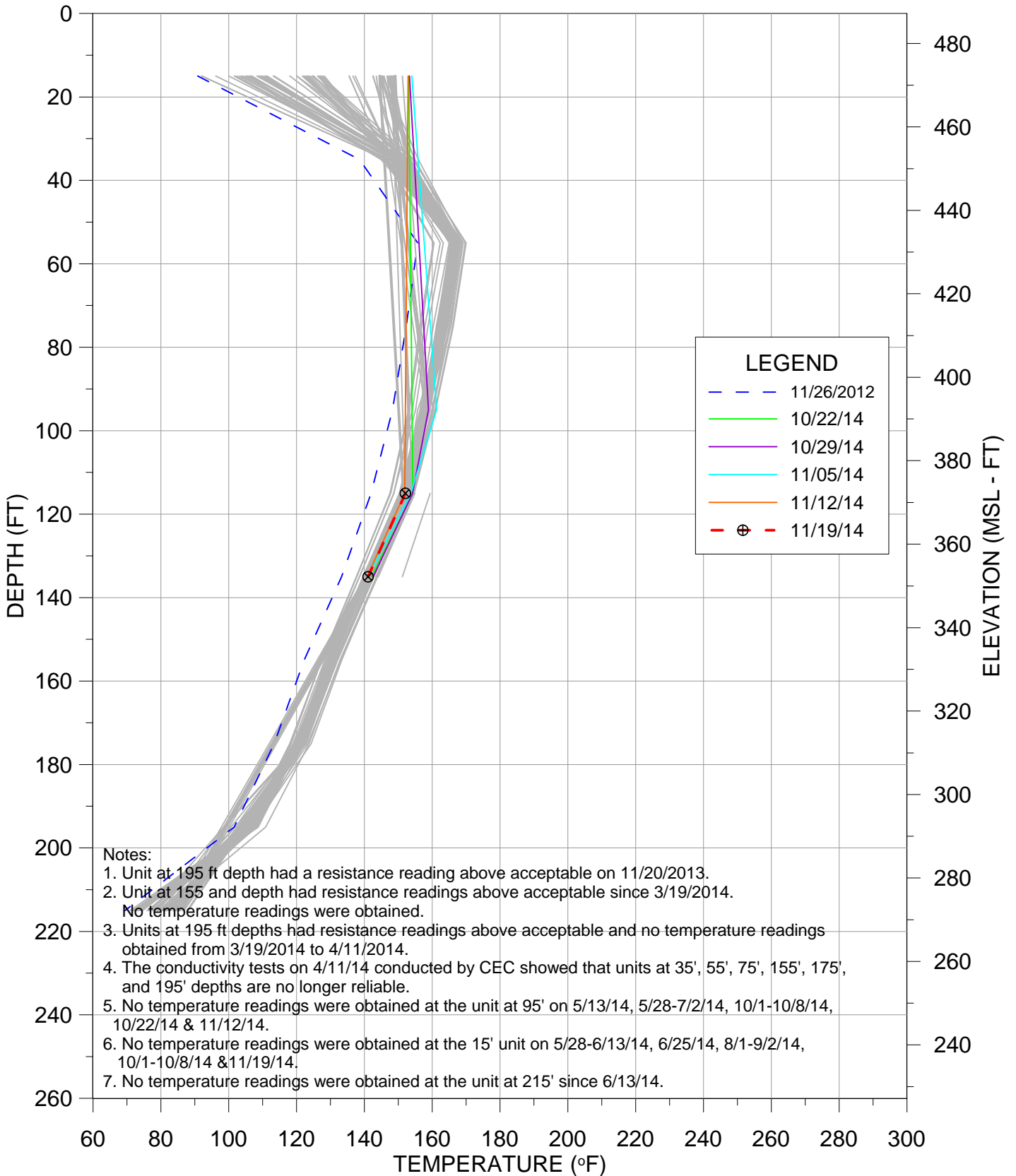
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BRIDGETON LANDFILL

# TMP-4



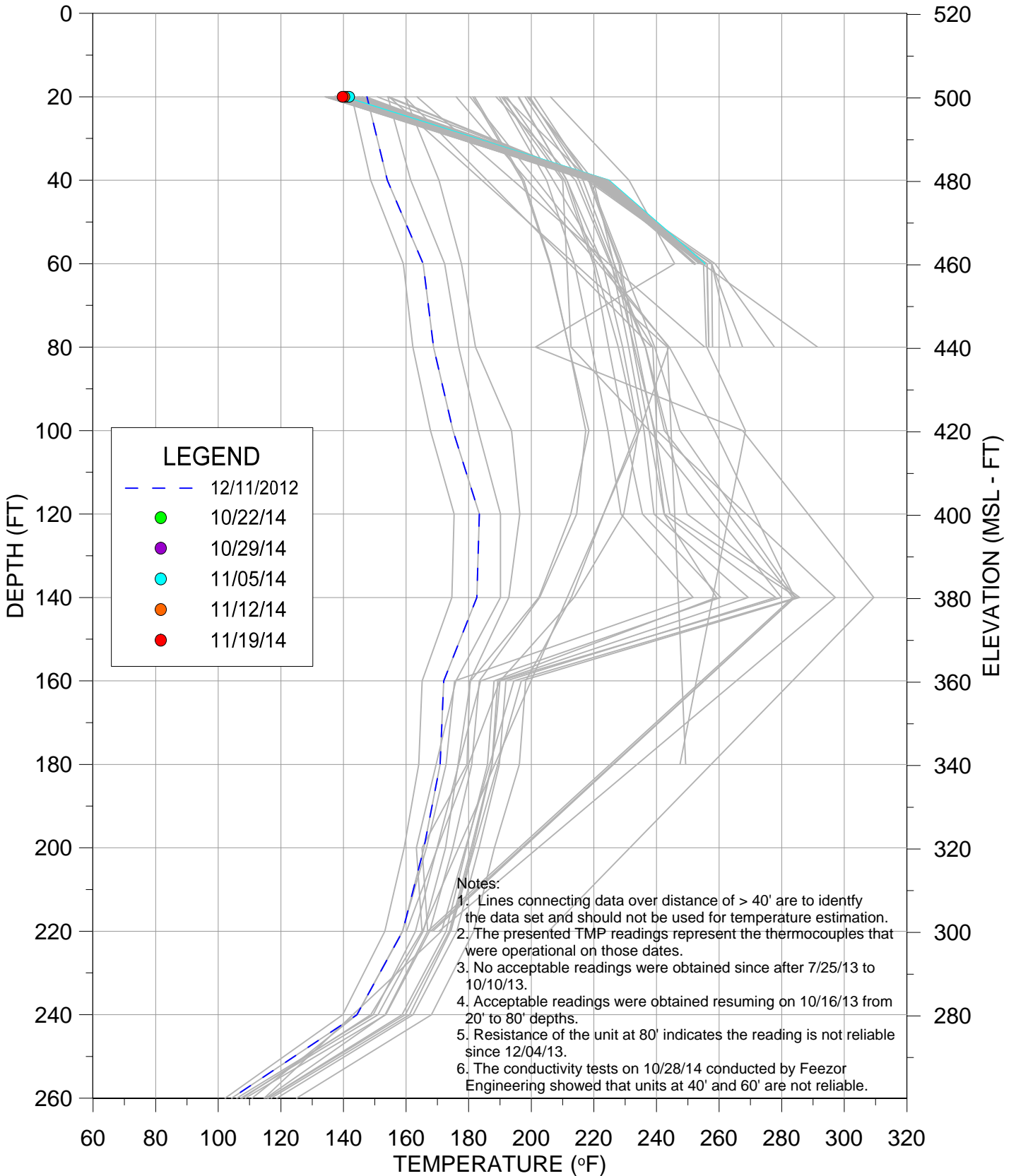
TEMPERATURE VS DEPTH  
BRIDGETON LANDFILL

# TMP-6



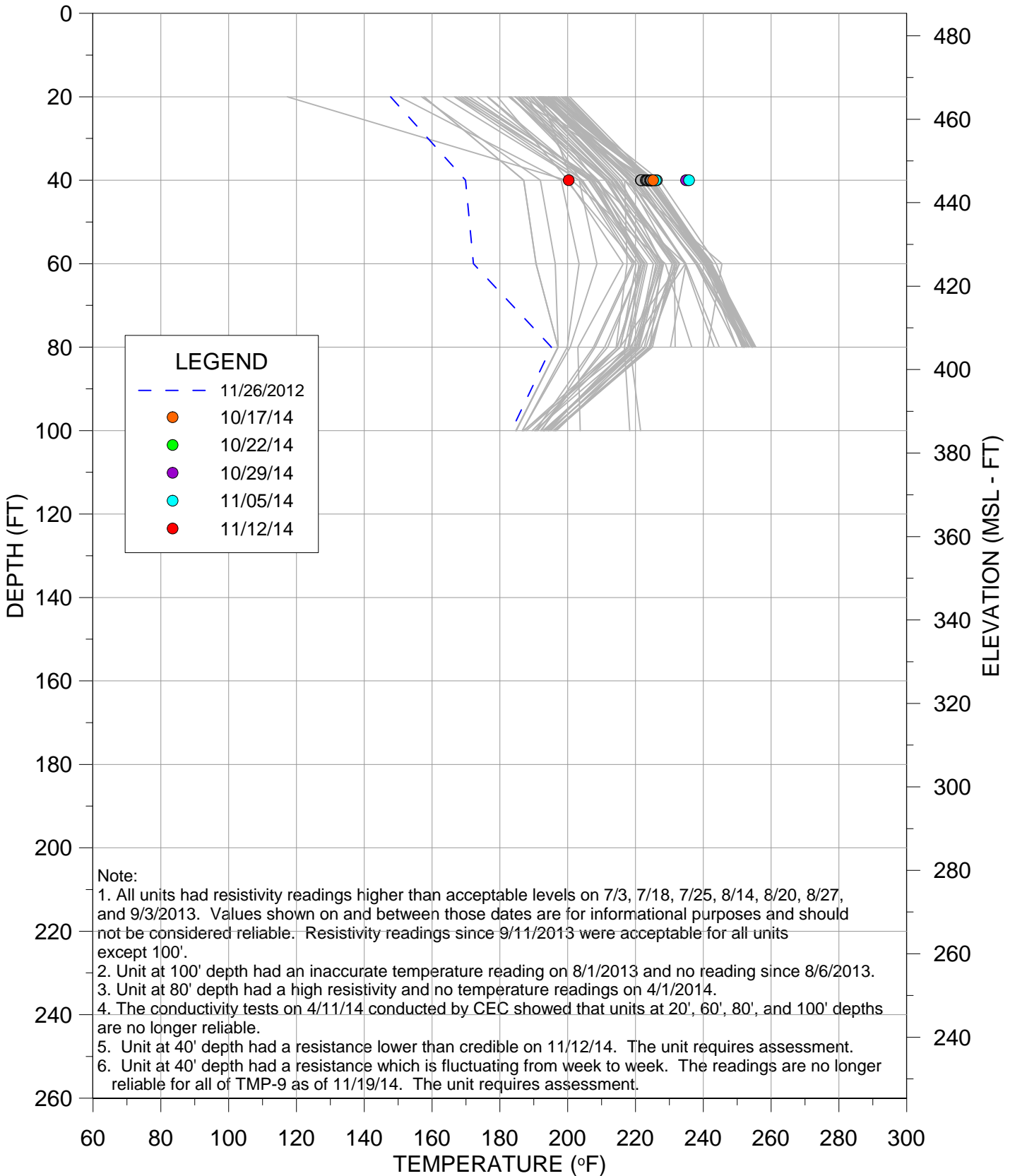
TEMPERATURE VS DEPTH  
BRIDGETON LANDFILL

# TMP-8

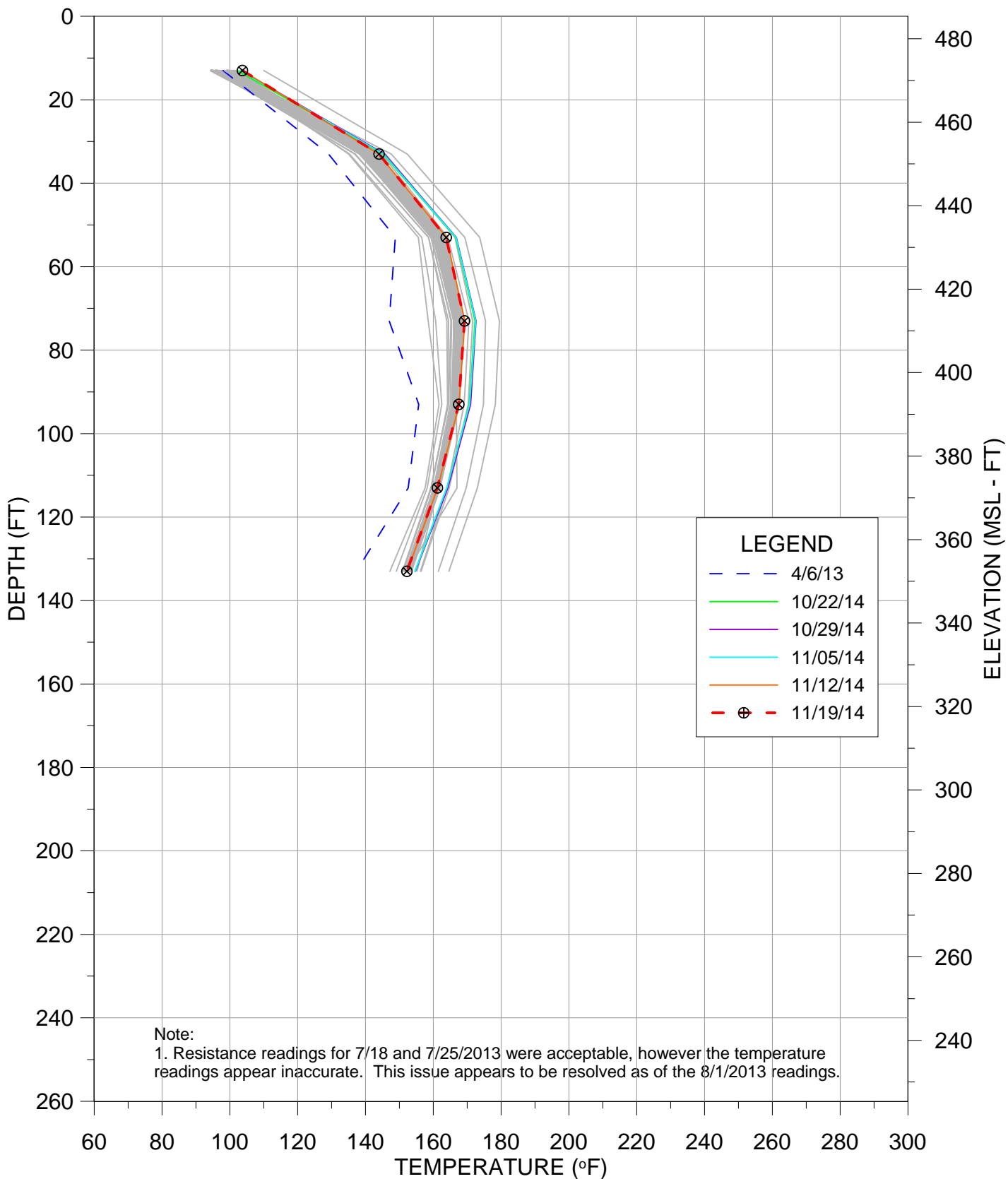


TEMPERATURE VS DEPTH  
BRIDGETON LANDFILL

# TMP-9



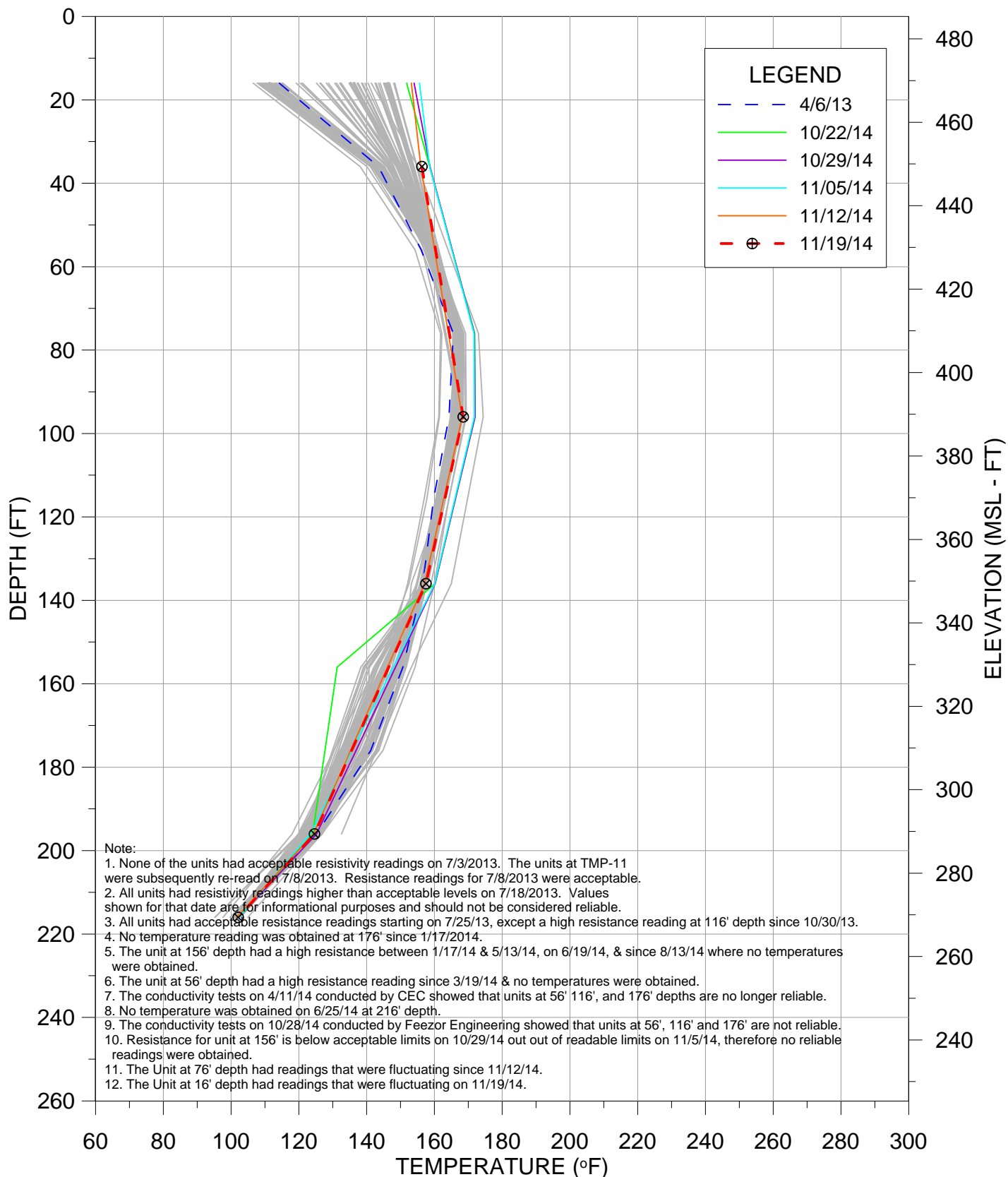
# TMP-10



TEMPERATURE VS DEPTH  
BRIDGETON LANDFILL

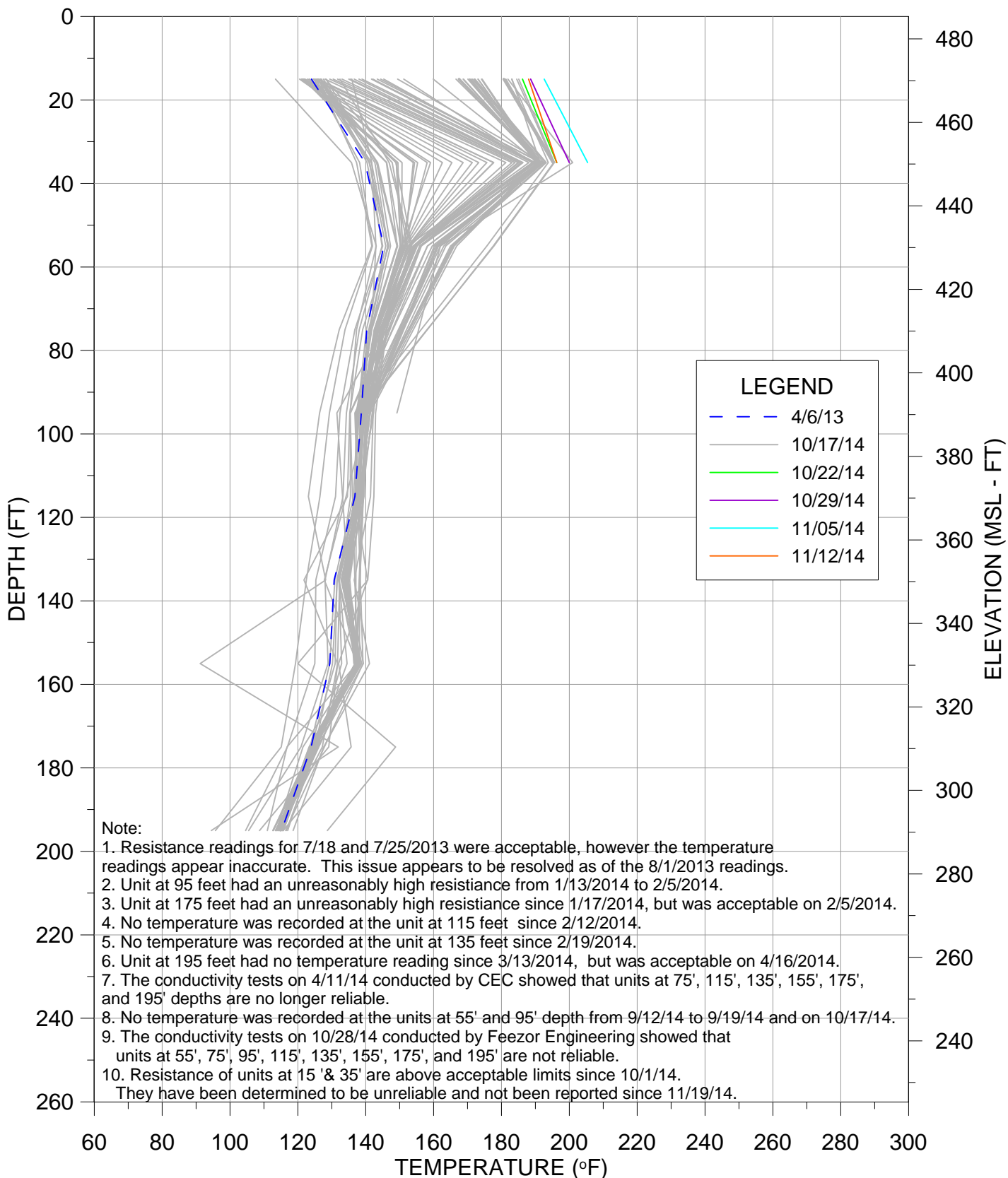


# TMP-11



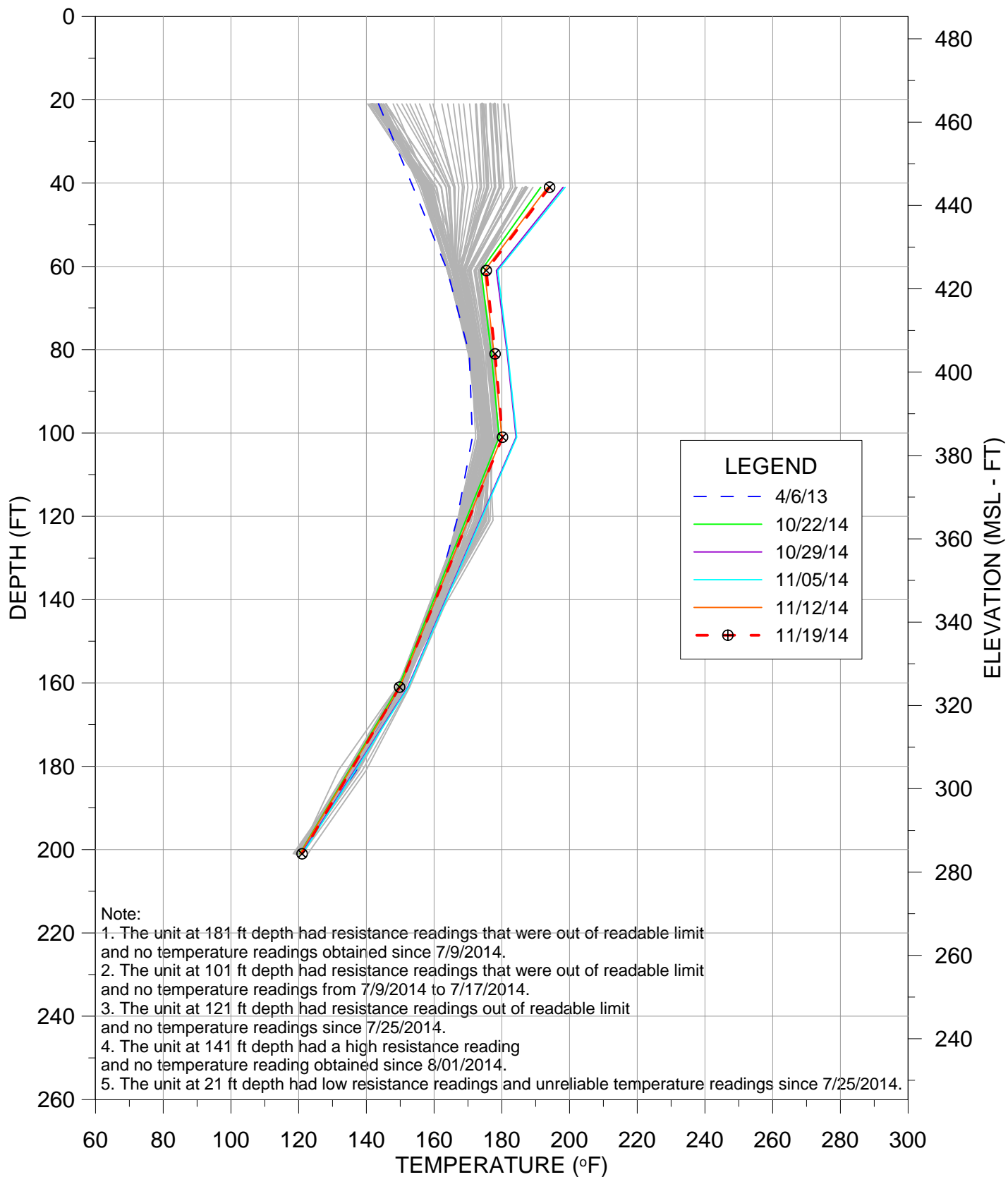
TEMPERATURE VS DEPTH  
BRIDGETON LANDFILL

# TMP-12



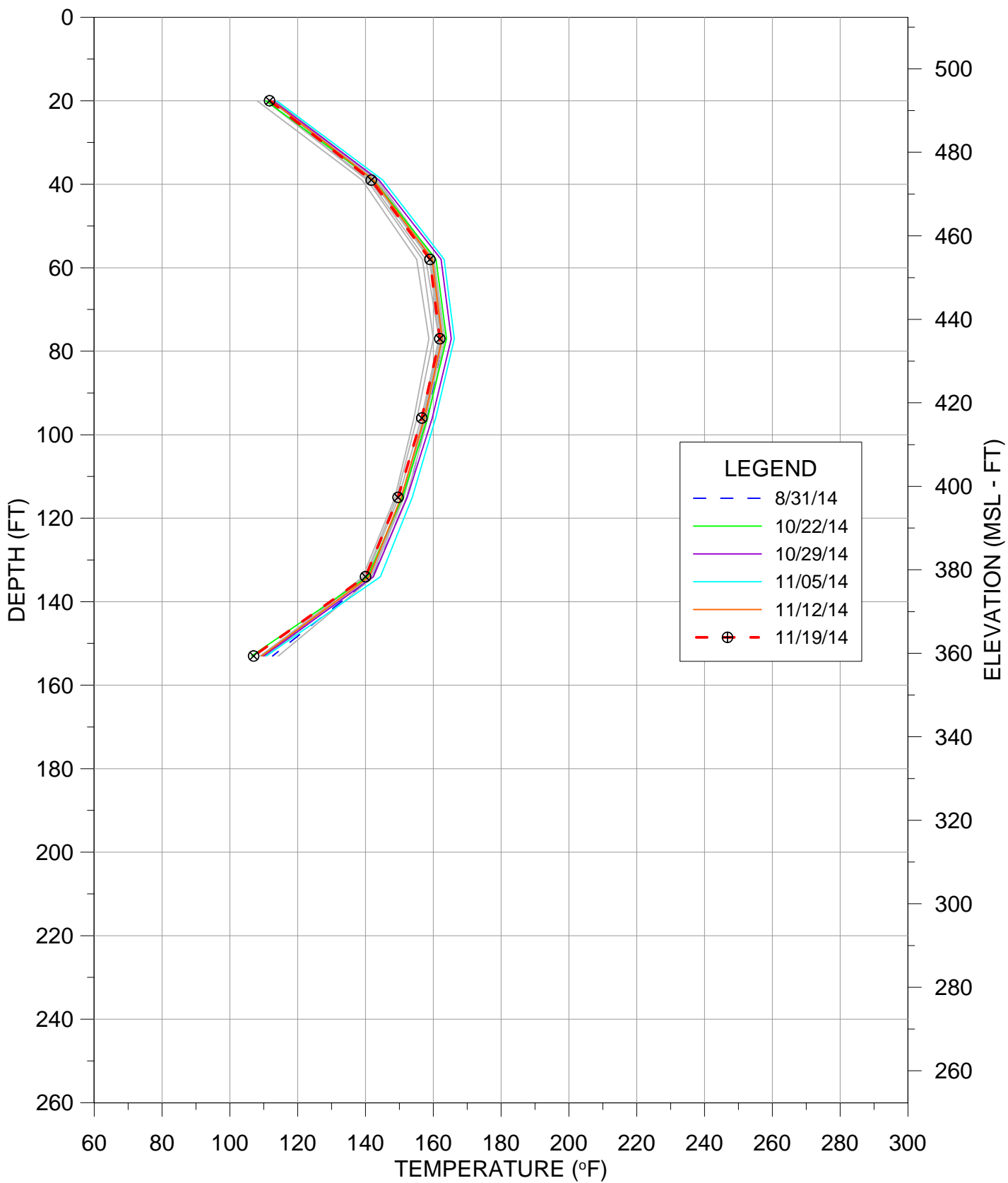
TEMPERATURE VS DEPTH  
BRIDGETON LANDFILL

# TMP-14



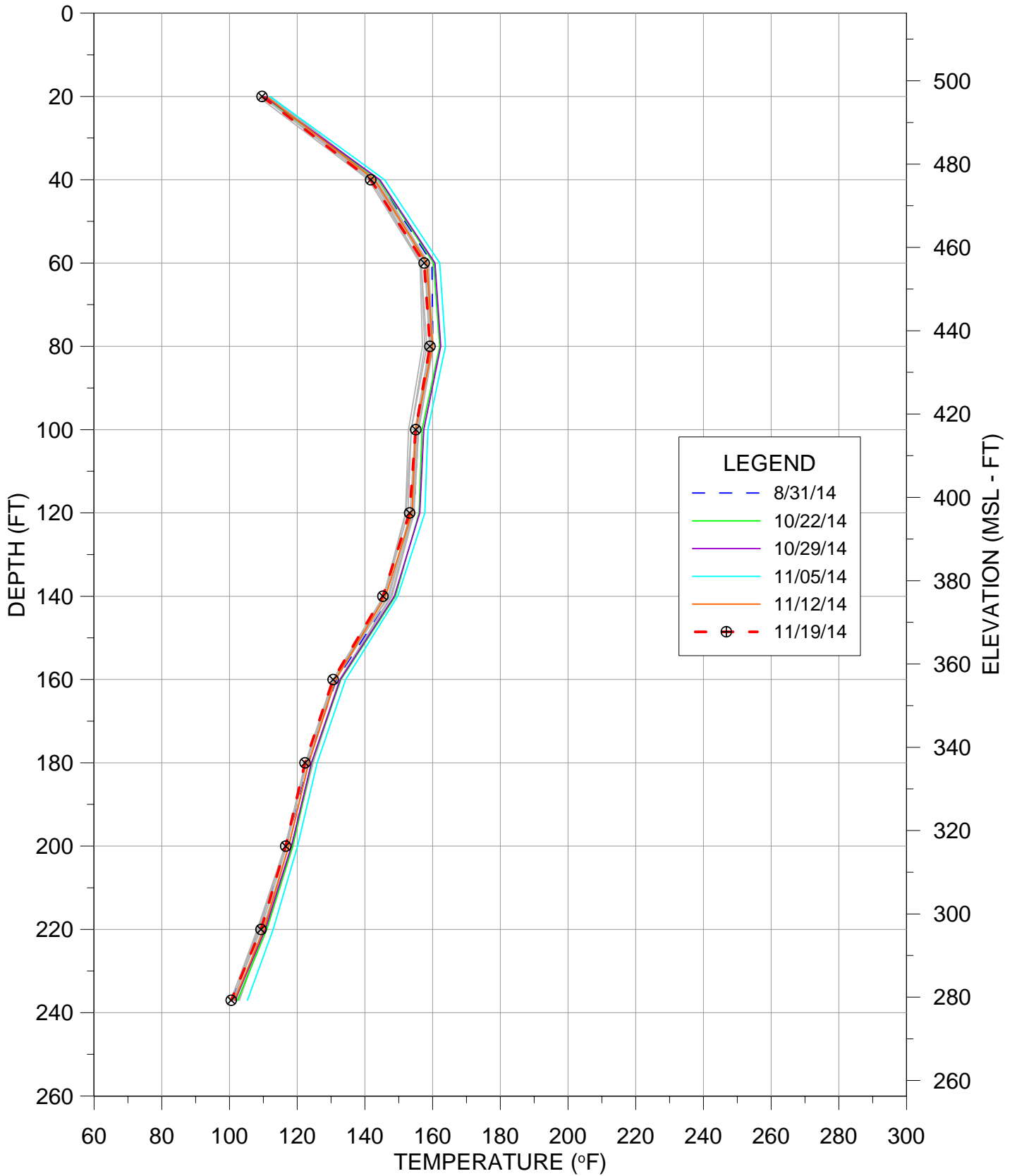
TEMPERATURE VS DEPTH  
BRIDGETON LANDFILL

# TMP-16



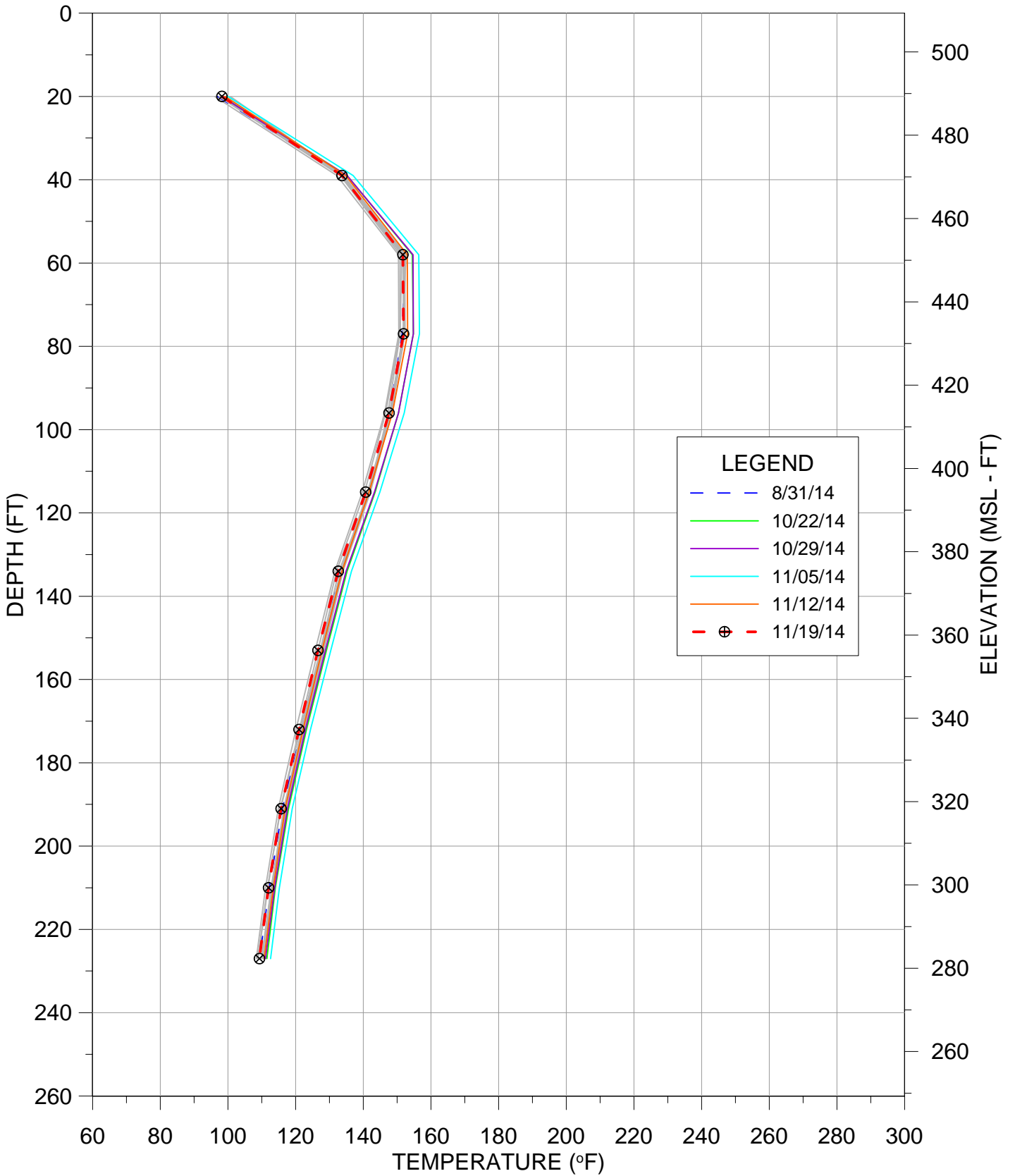
TEMPERATURE VS DEPTH  
BRIDGETON LANDFILL

# TMP-17



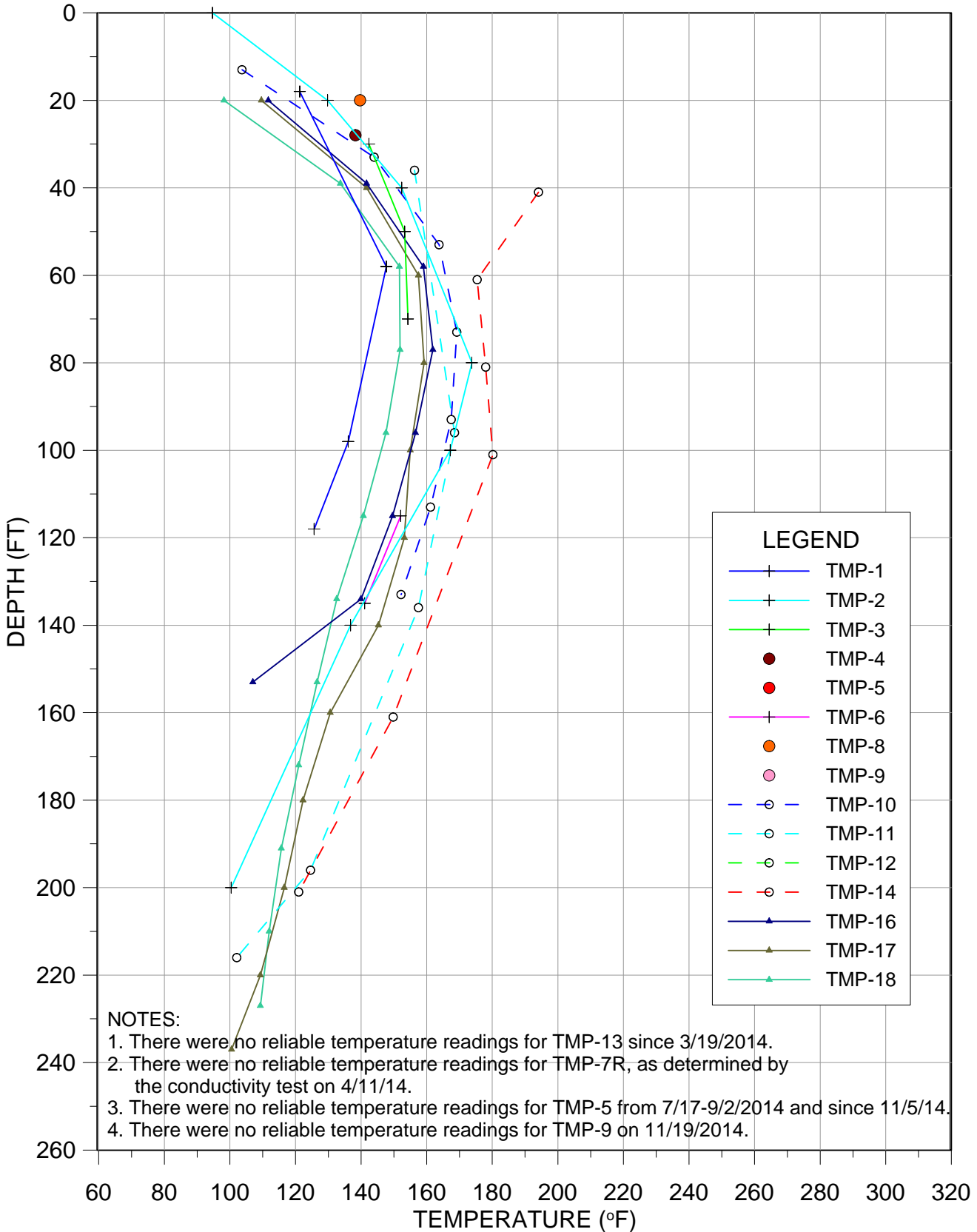
TEMPERATURE VS DEPTH  
BRIDGETON LANDFILL

# TMP-18



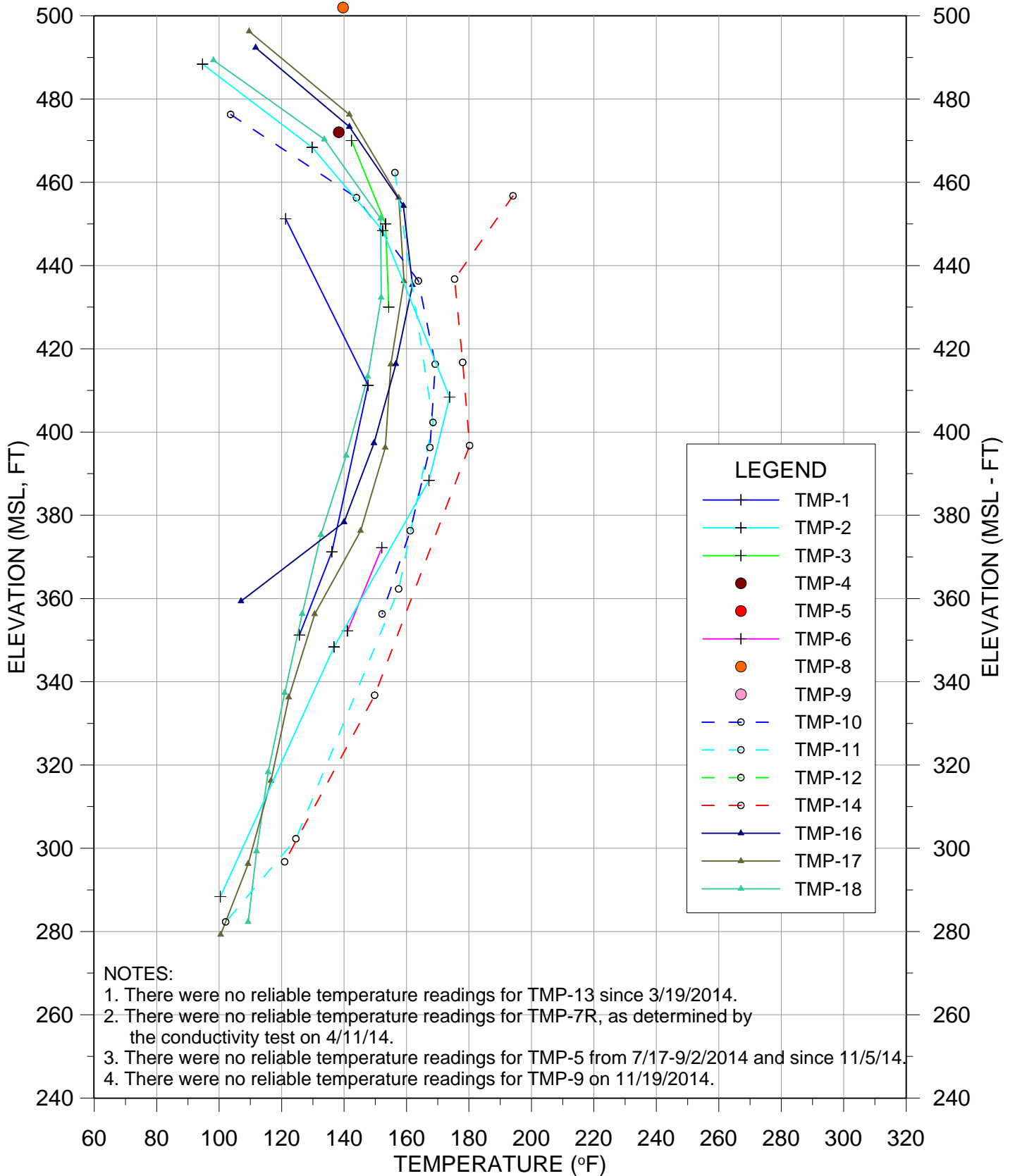
TEMPERATURE VS DEPTH  
BRIDGETON LANDFILL

# 11/19/2014 -DEPTH



TEMPERATURE VS DEPTH  
BRIDGETON LANDFILL

# 11/19/2014 - ELEVATION

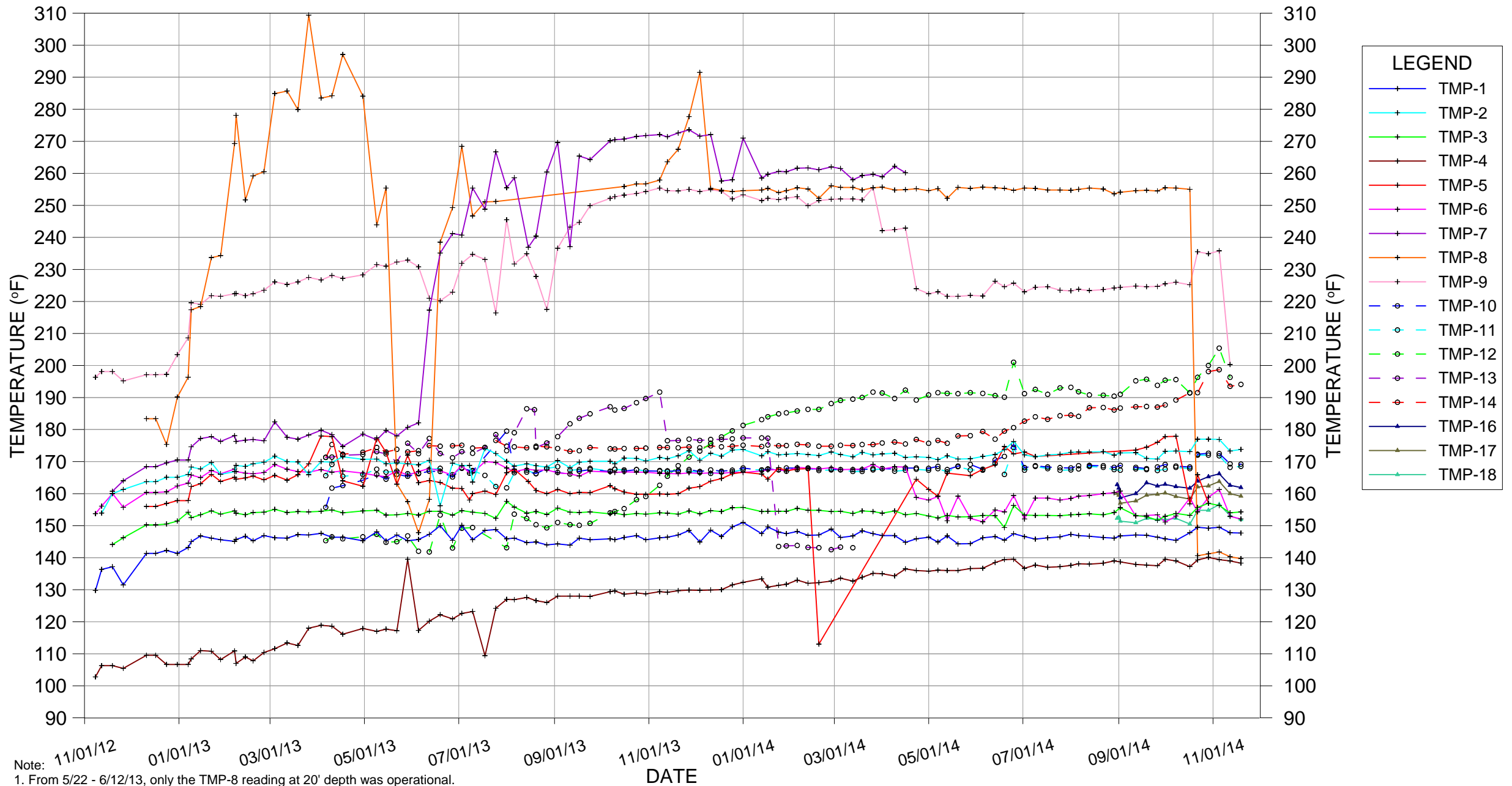


**NOTES:**

1. There were no reliable temperature readings for TMP-13 since 3/19/2014.
2. There were no reliable temperature readings for TMP-7R, as determined by the conductivity test on 4/11/14.
3. There were no reliable temperature readings for TMP-5 from 7/17-9/2/2014 and since 11/5/14.
4. There were no reliable temperature readings for TMP-9 on 11/19/2014.



# MAXIMUM TEMPERATURES

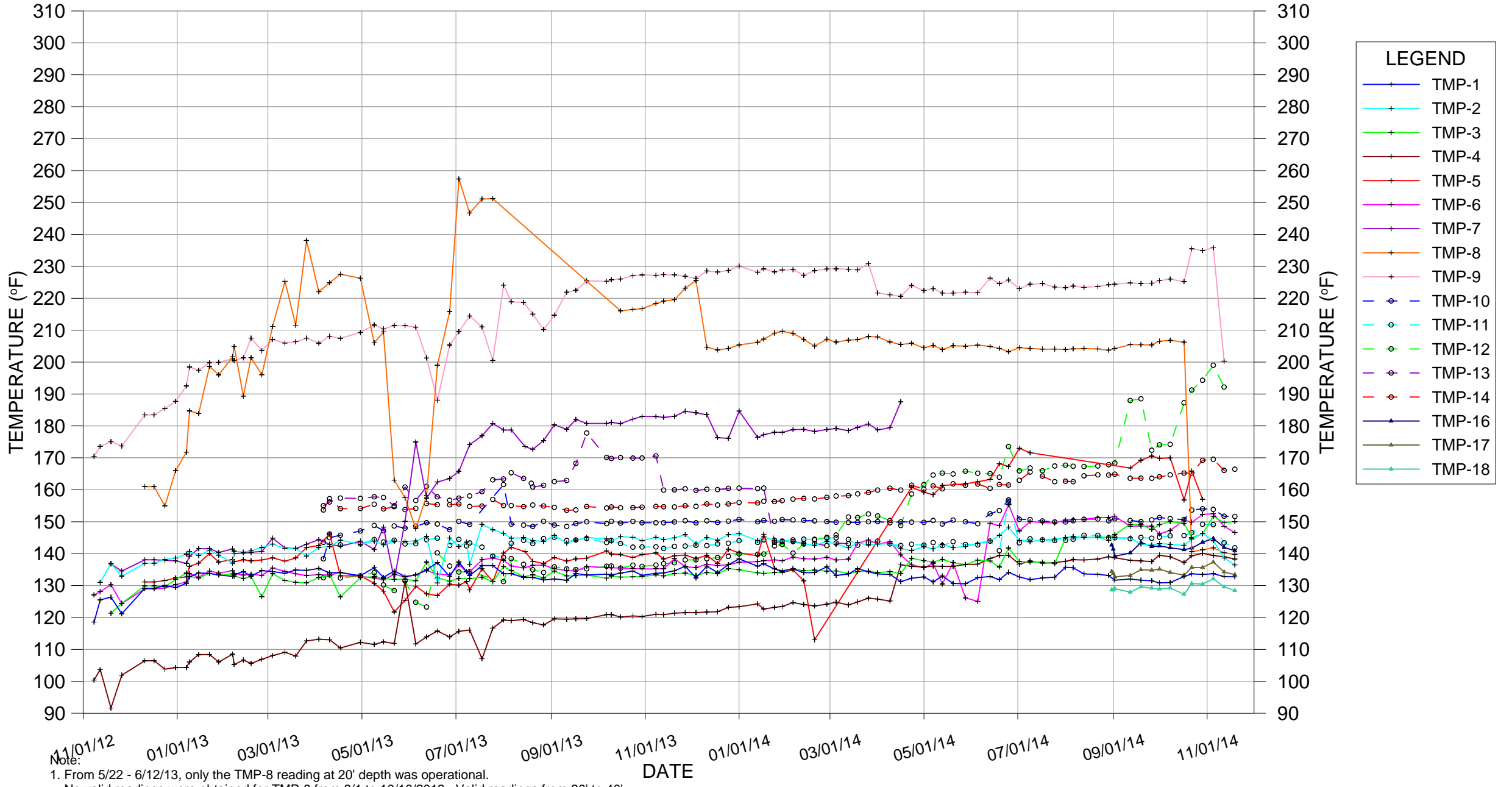


Note: 11/01/12 01/01/13 03/01/13 05/01/13 07/01/13 09/01/13 11/01/13 01/01/14 03/01/14 05/01/14 07/01/14 09/01/14 11/01/14

1. From 5/22 - 6/12/13, only the TMP-8 reading at 20' depth was operational.  
No valid readings were obtained for TMP-8 from 8/1 to 10/10/2013. Valid readings from 20' to 40' resumed on 10/16/2013.
2. A new OMEGA dial was installed at TMP-7R on 6/12/2013 enabling more valid readings.
3. No valid readings were obtained for TMP-10 and TMP-12 on 7/18/2013 or 7/25/2013.
4. End terminals were replaced just prior to the 8/6/2013 readings with type T Omega connectors (part # SMPW-CC-T-M) on all TMPs except for TMP-8.

TEMPERATURE VS TIME  
BRIDGETON LANDFILL

# AVERAGE TEMPERATURES



LEGEND	
—+—	TMP-1
—+—	TMP-2
—+—	TMP-3
—+—	TMP-4
—+—	TMP-5
—+—	TMP-6
—+—	TMP-7
—+—	TMP-8
—+—	TMP-9
—○—	TMP-10
—○—	TMP-11
—○—	TMP-12
—○—	TMP-13
—○—	TMP-14
—▲—	TMP-16
—▲—	TMP-17
—▲—	TMP-18

Note:

1. From 5/22 - 6/12/13, only the TMP-8 reading at 20' depth was operational. No valid readings were obtained for TMP-8 from 8/1 to 10/10/2013. Valid readings from 20' to 40' resumed on 10/16/2013.
2. A new OMEGA dial was installed at TMP-7R on 6/12/2013 enabling more valid readings.
3. No valid readings were obtained for TMP-10 and TMP-12 on 7/18/2013 or 7/25/2013.
4. End terminals were replaced just prior to the 8/6/2013 readings with type T Omega connectors (part # SMPW-CC-T-M) on all TMPs except for TMP-8.

TEMPERATURE VS TIME  
BRIDGETON LANDFILL

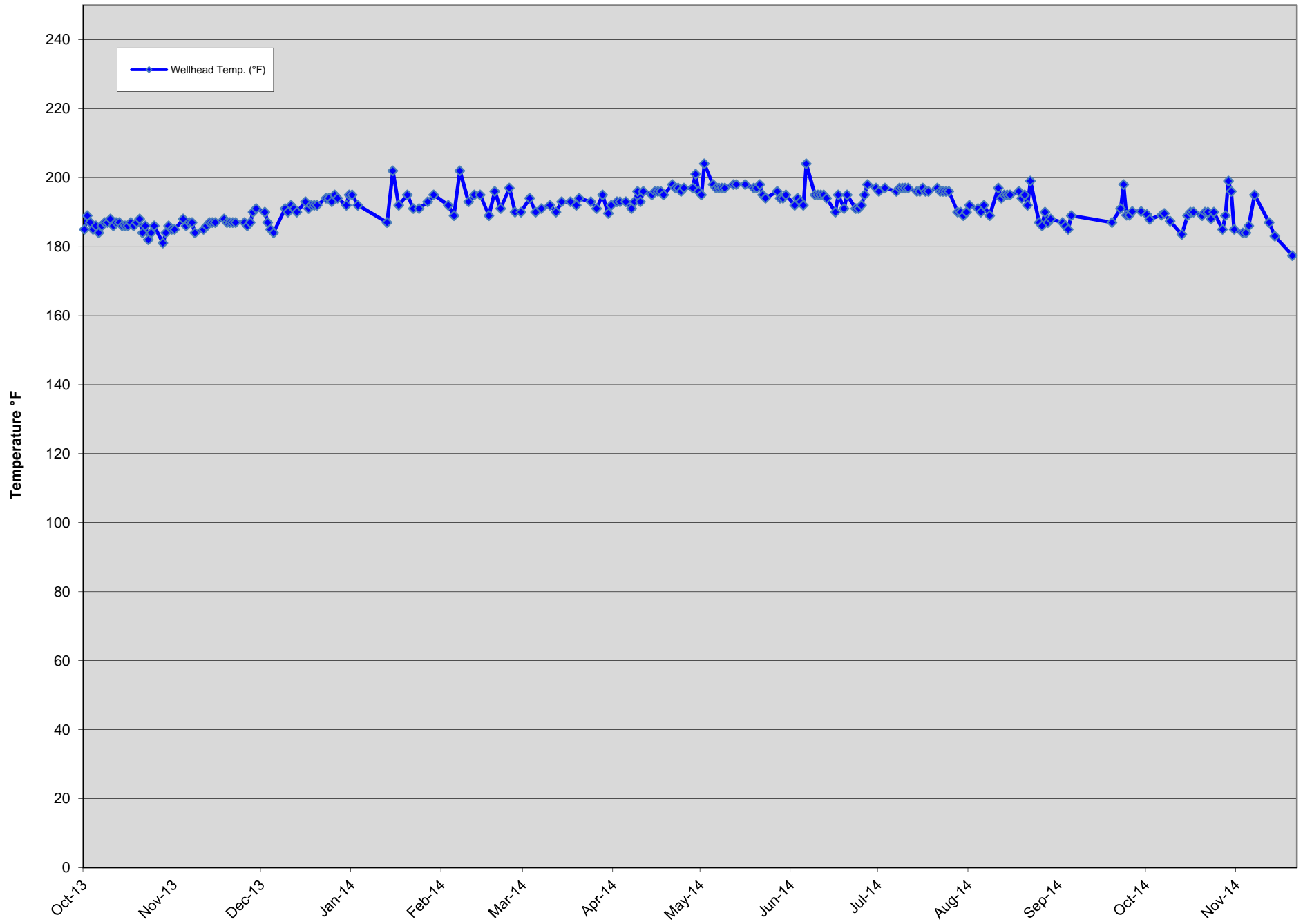
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**ATTACHMENT C**

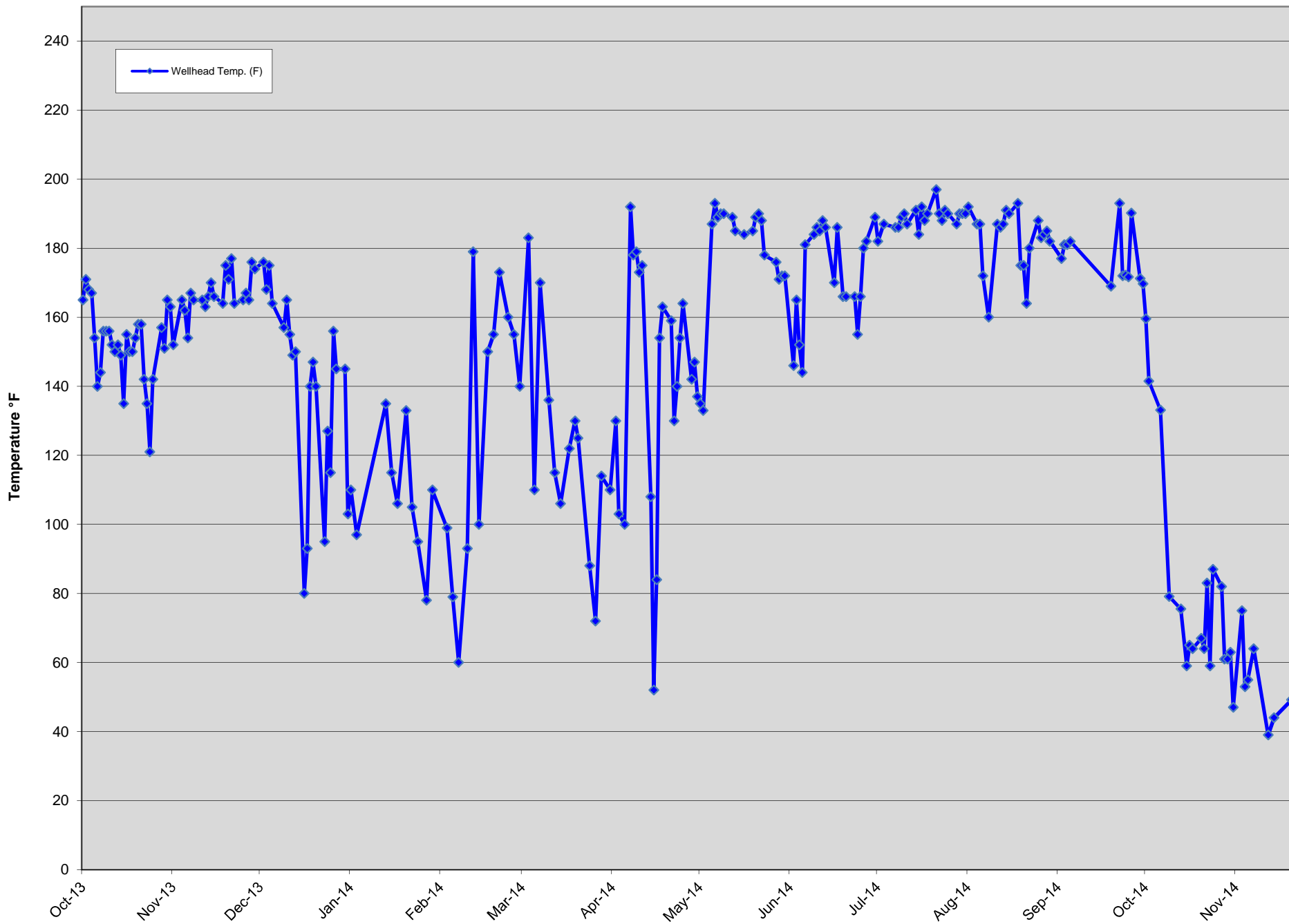
**GAS INTERCEPTOR WELLHEAD TEMPERATURE GRAPHS**

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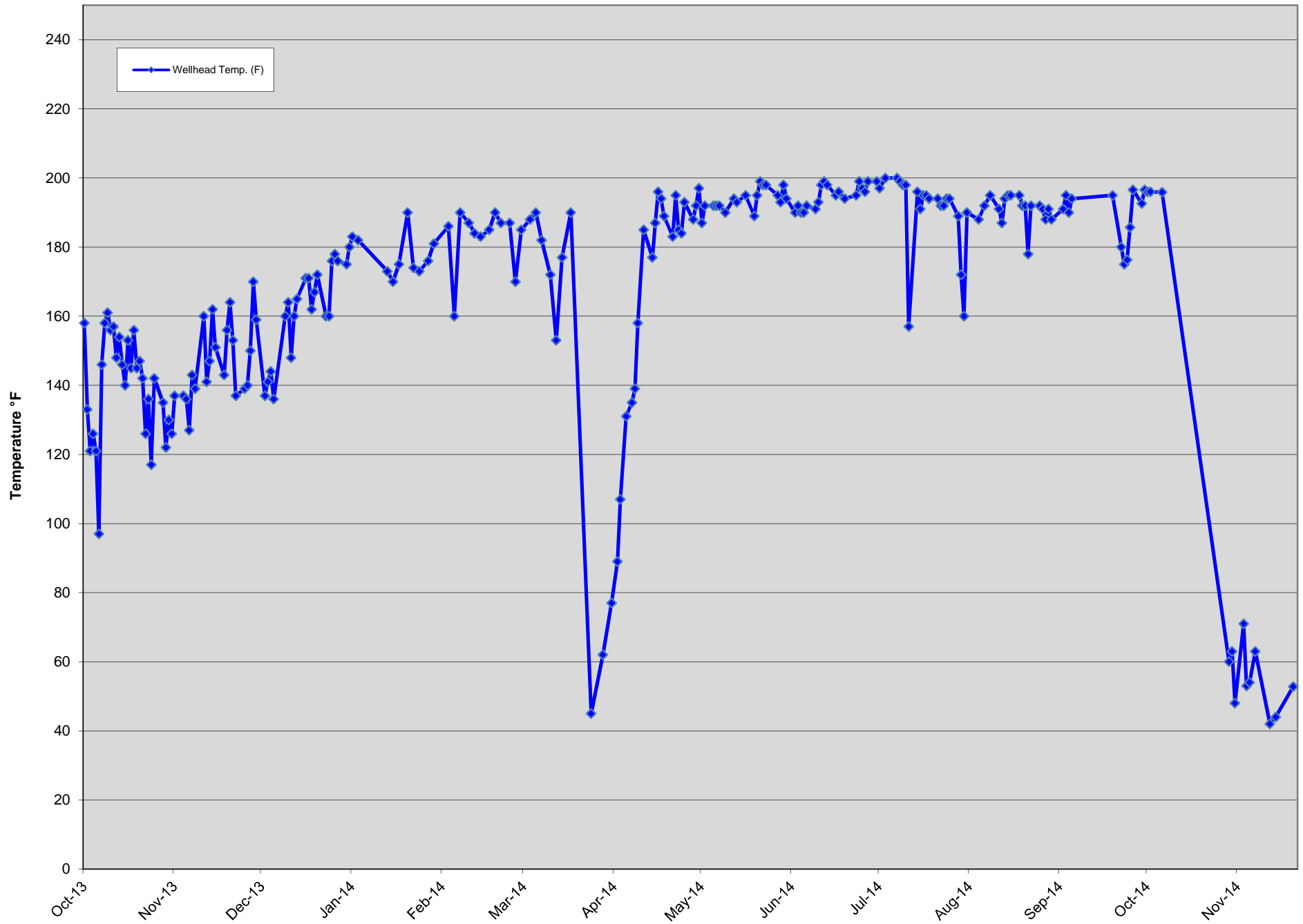
# GIW-1 Wellhead Temperatures



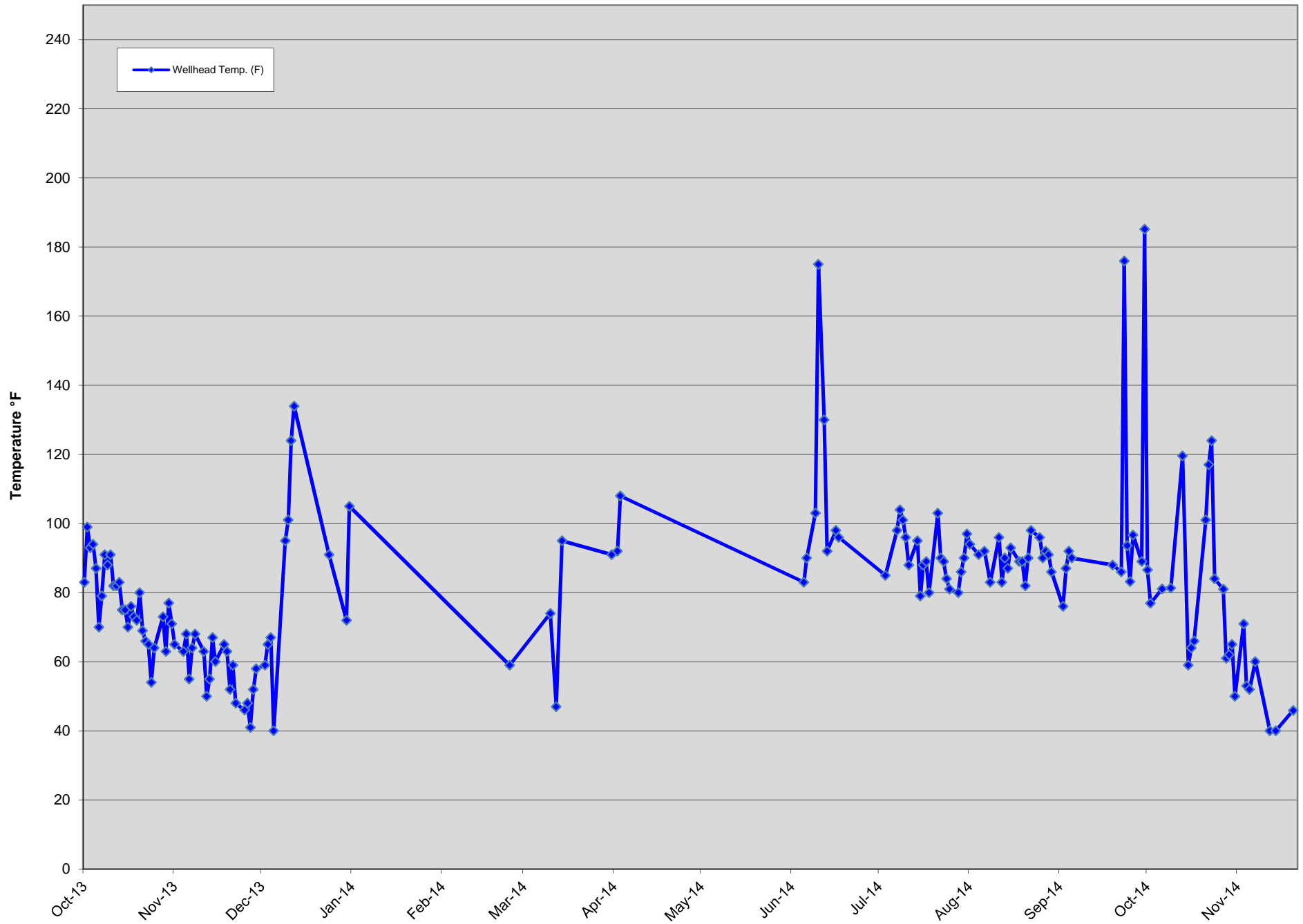
# GIW-2 Wellhead Temperatures



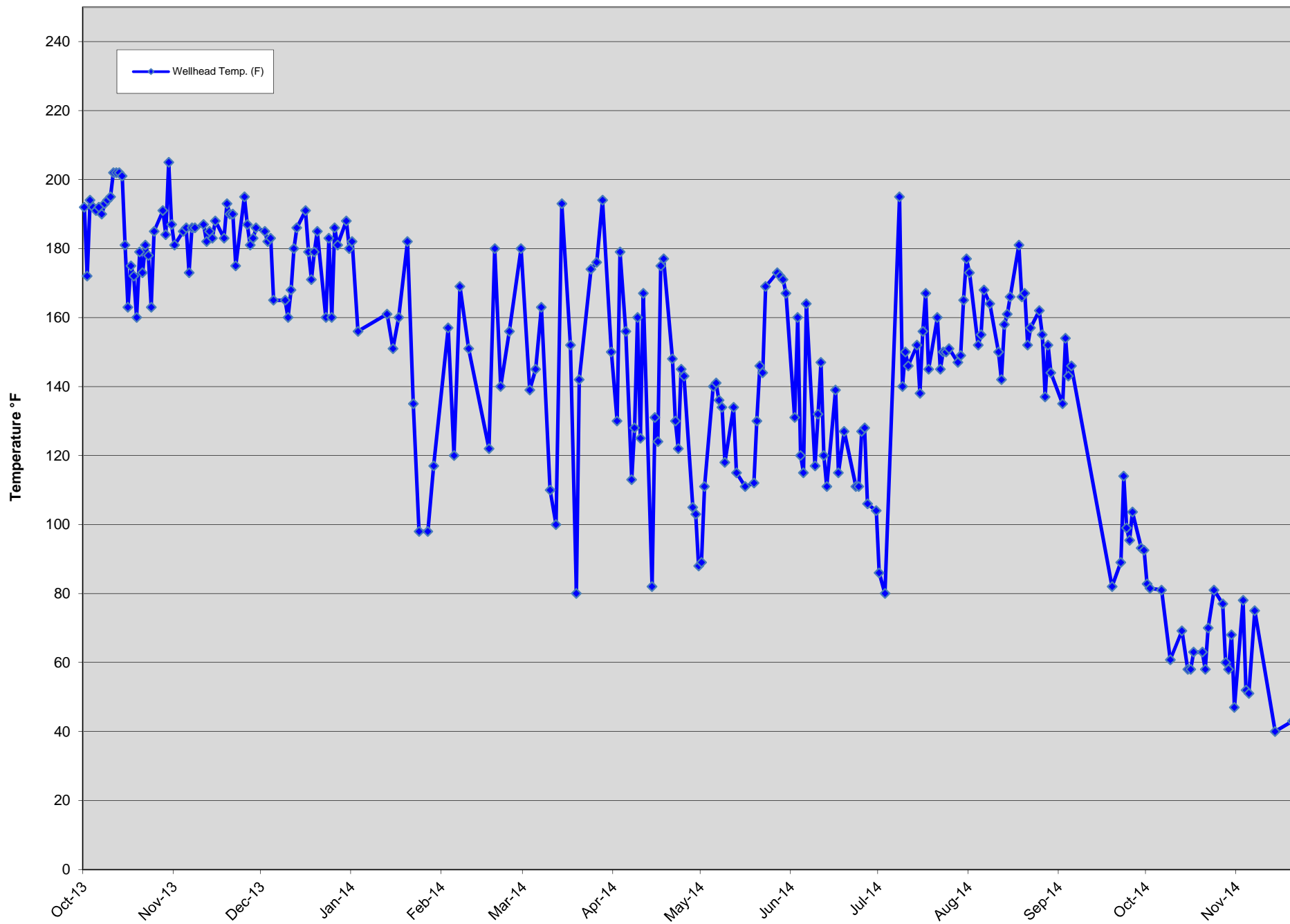
# GIW-3 Wellhead Temperatures



# GIW-4 Wellhead Temperatures

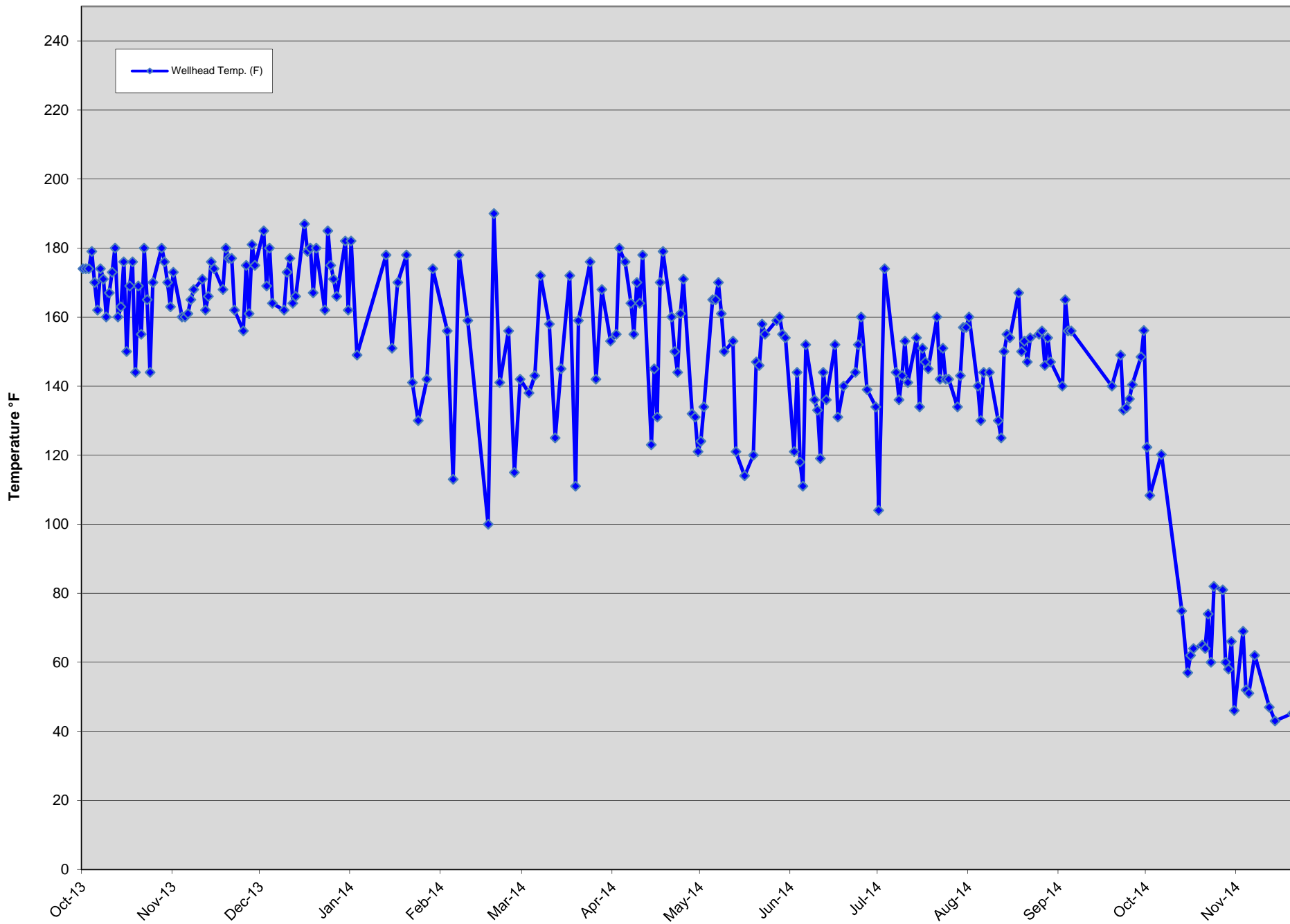


# GIW-5 Wellhead Temperatures

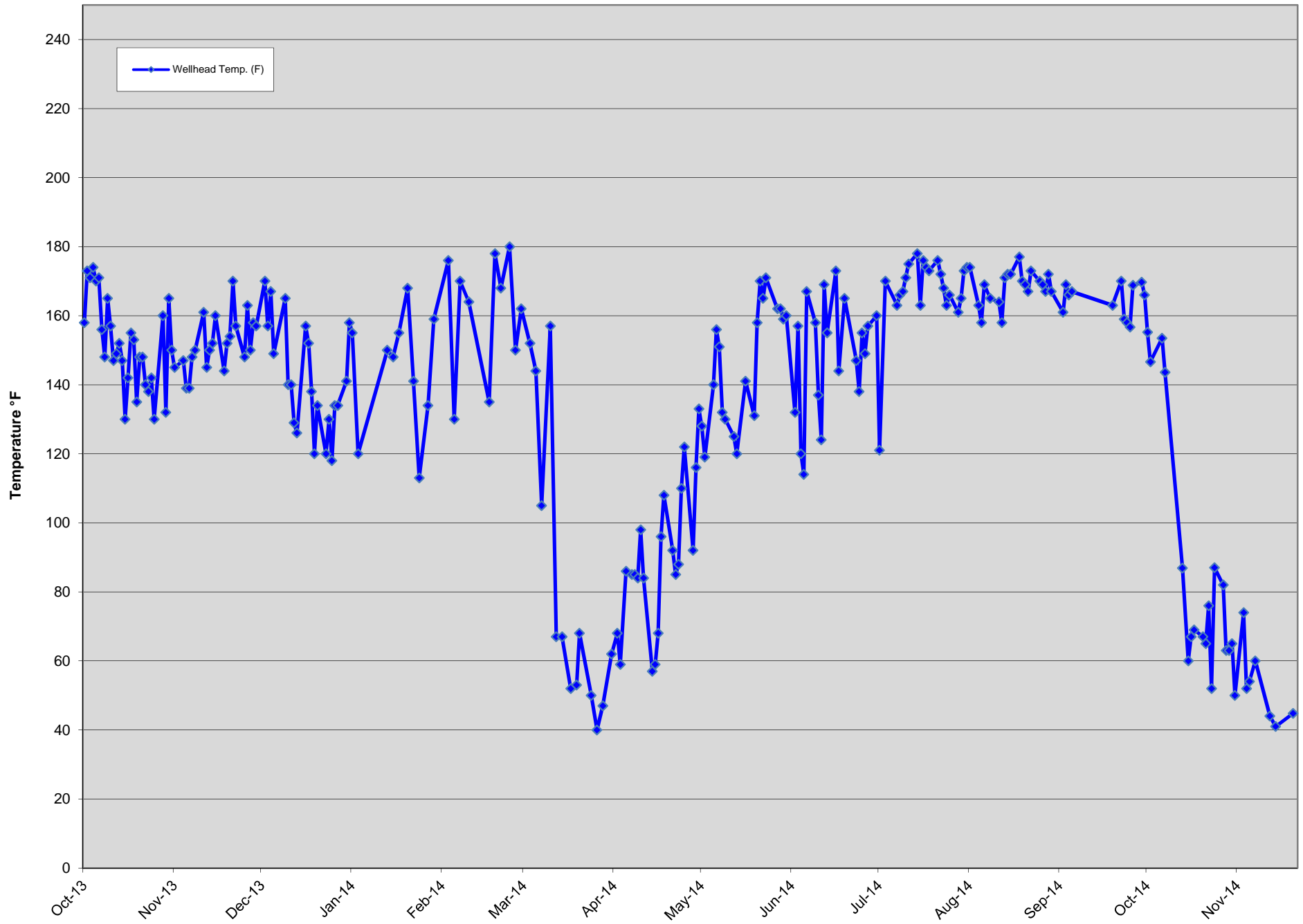




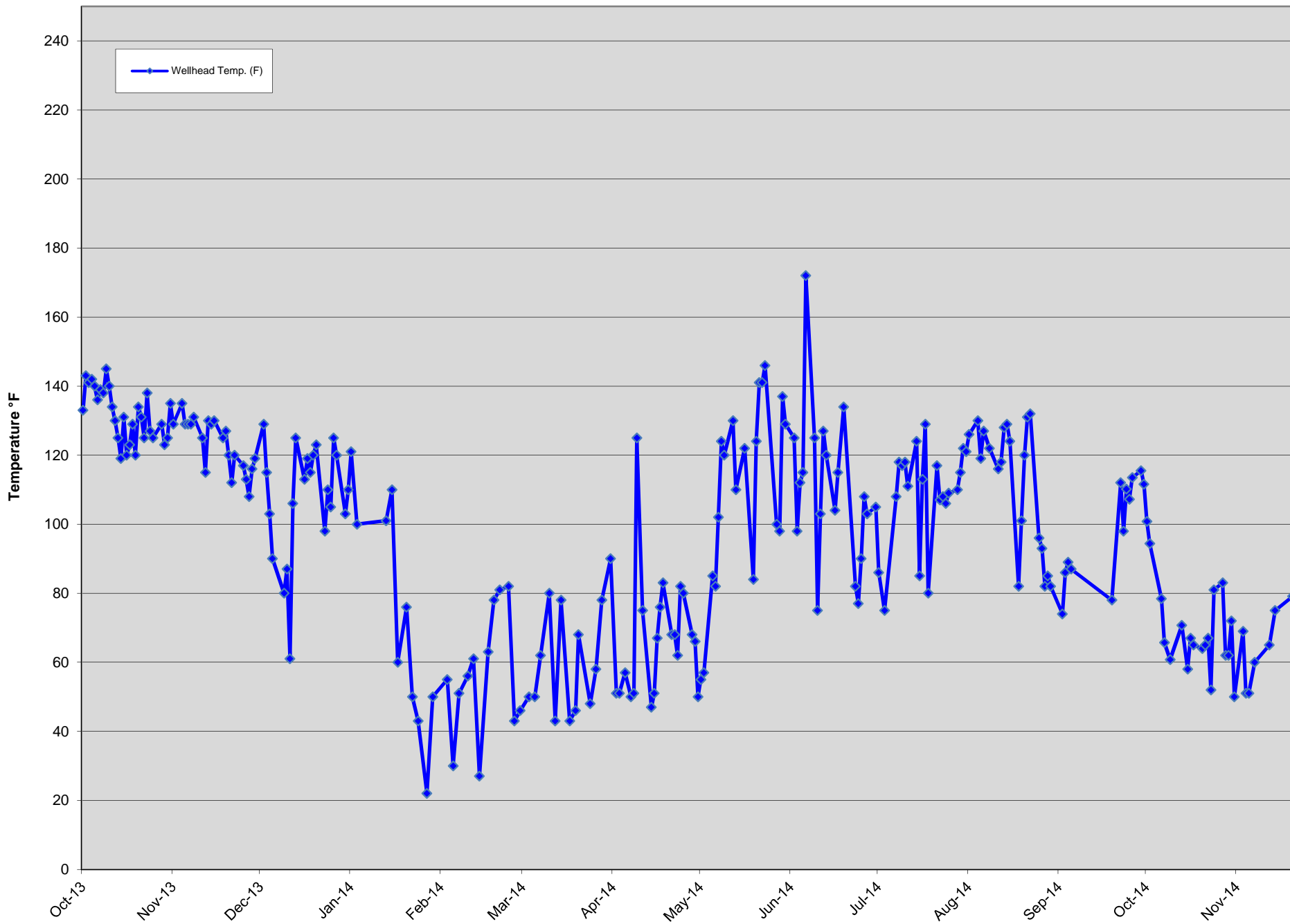
# GIW-6 Wellhead Temperatures



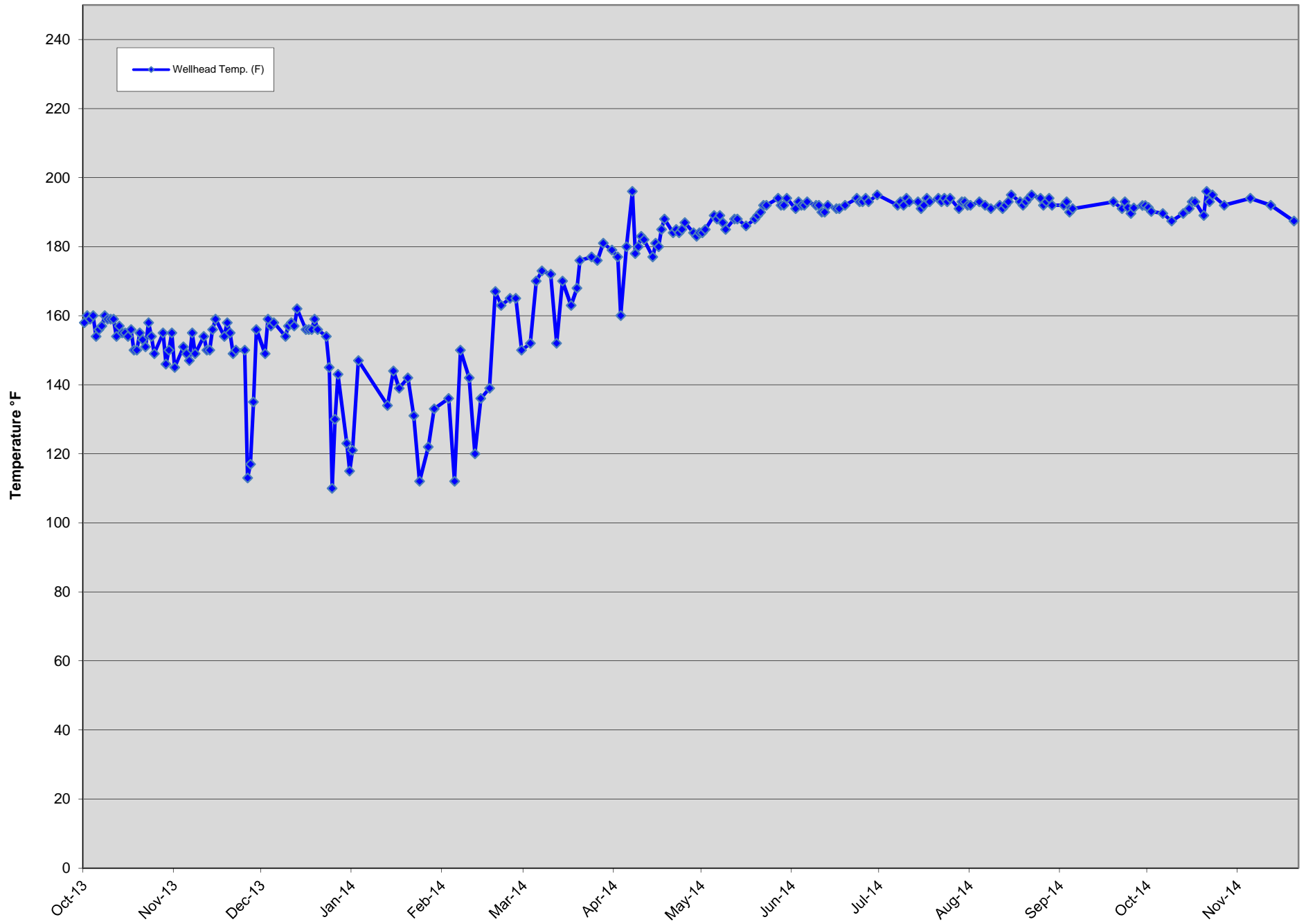
# GIW-7 Wellhead Temperatures



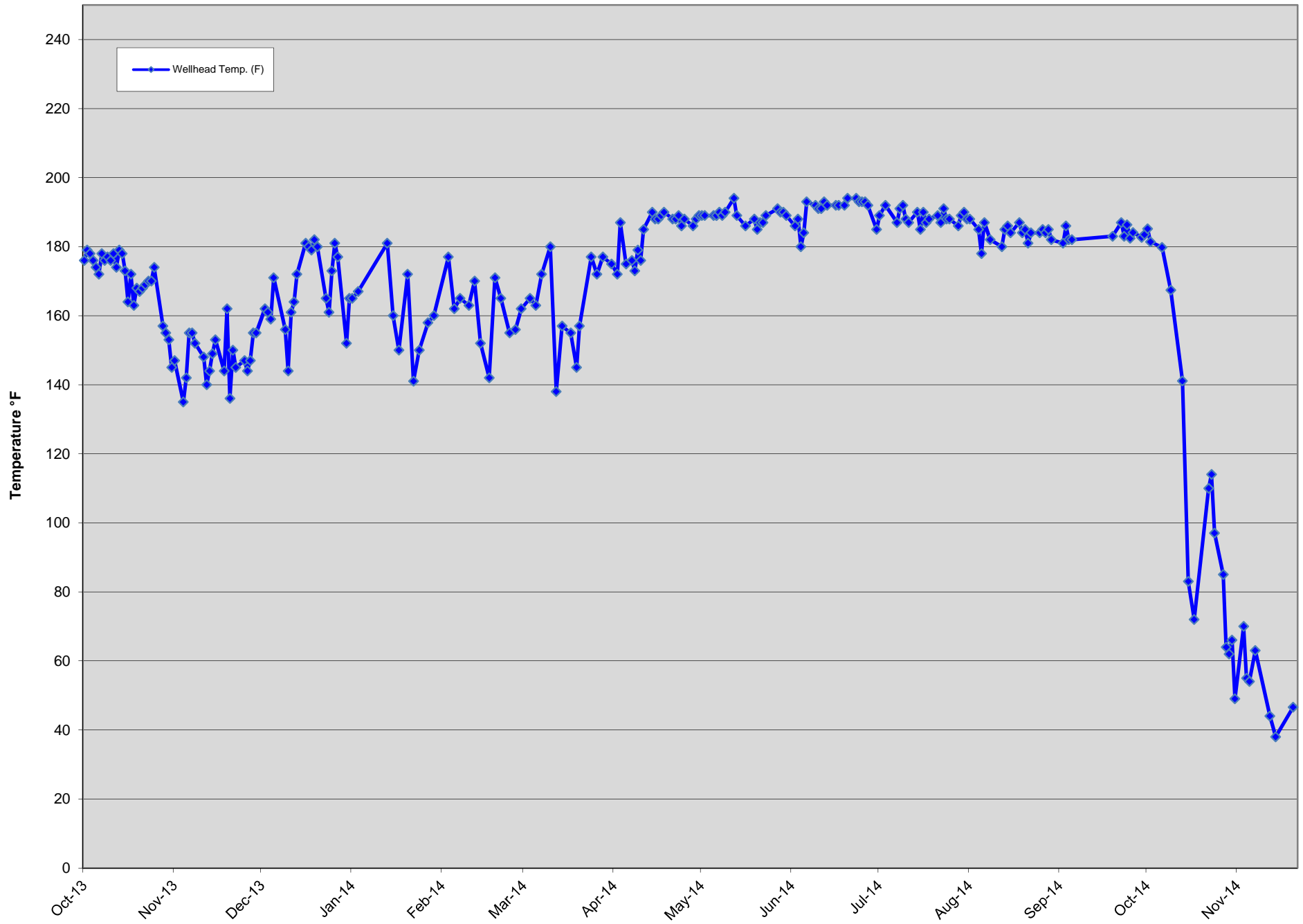
# GIW-8 Wellhead Temperatures



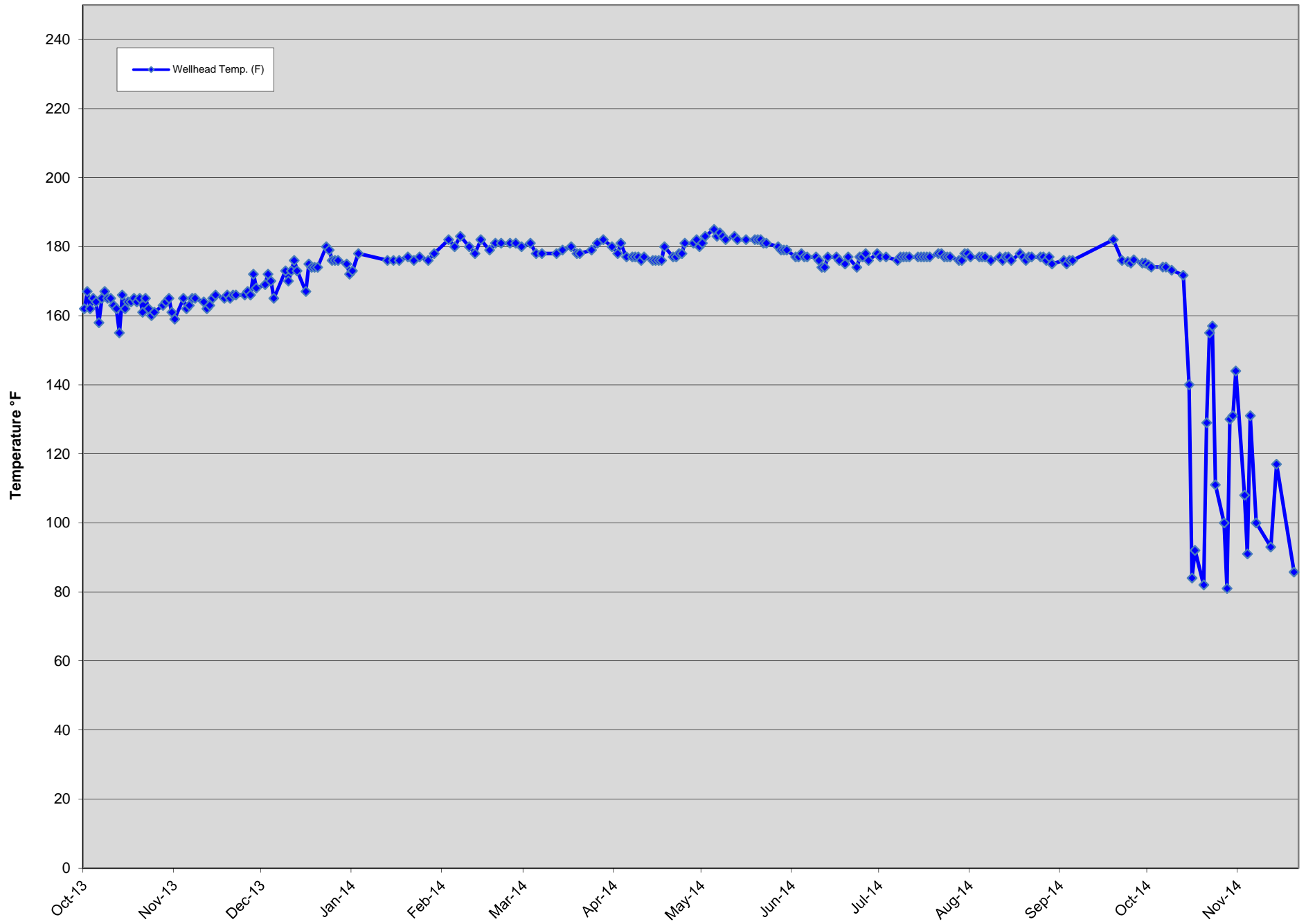
# GIW-9 Wellhead Temperatures



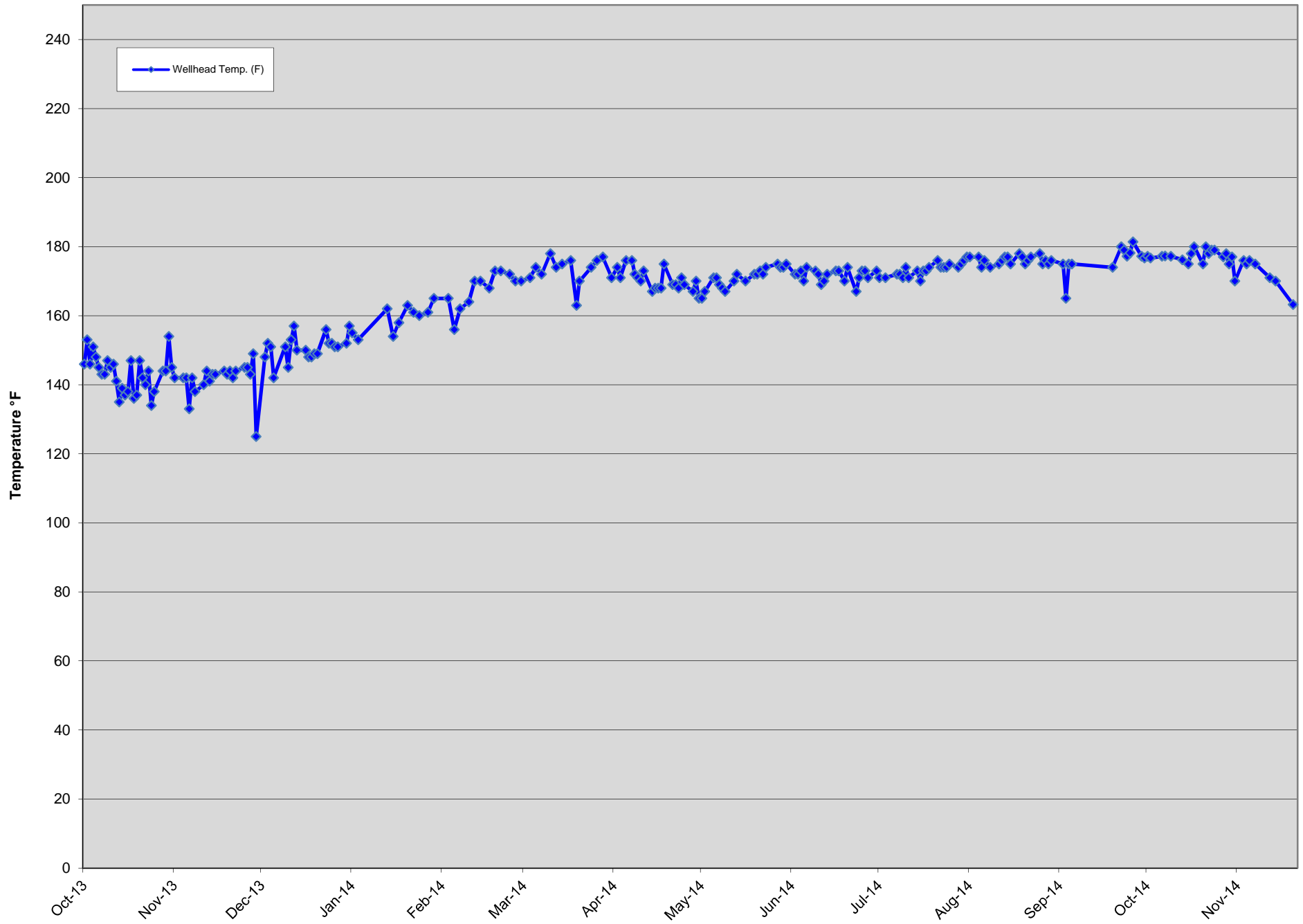
# GIW-10 Wellhead Temperatures



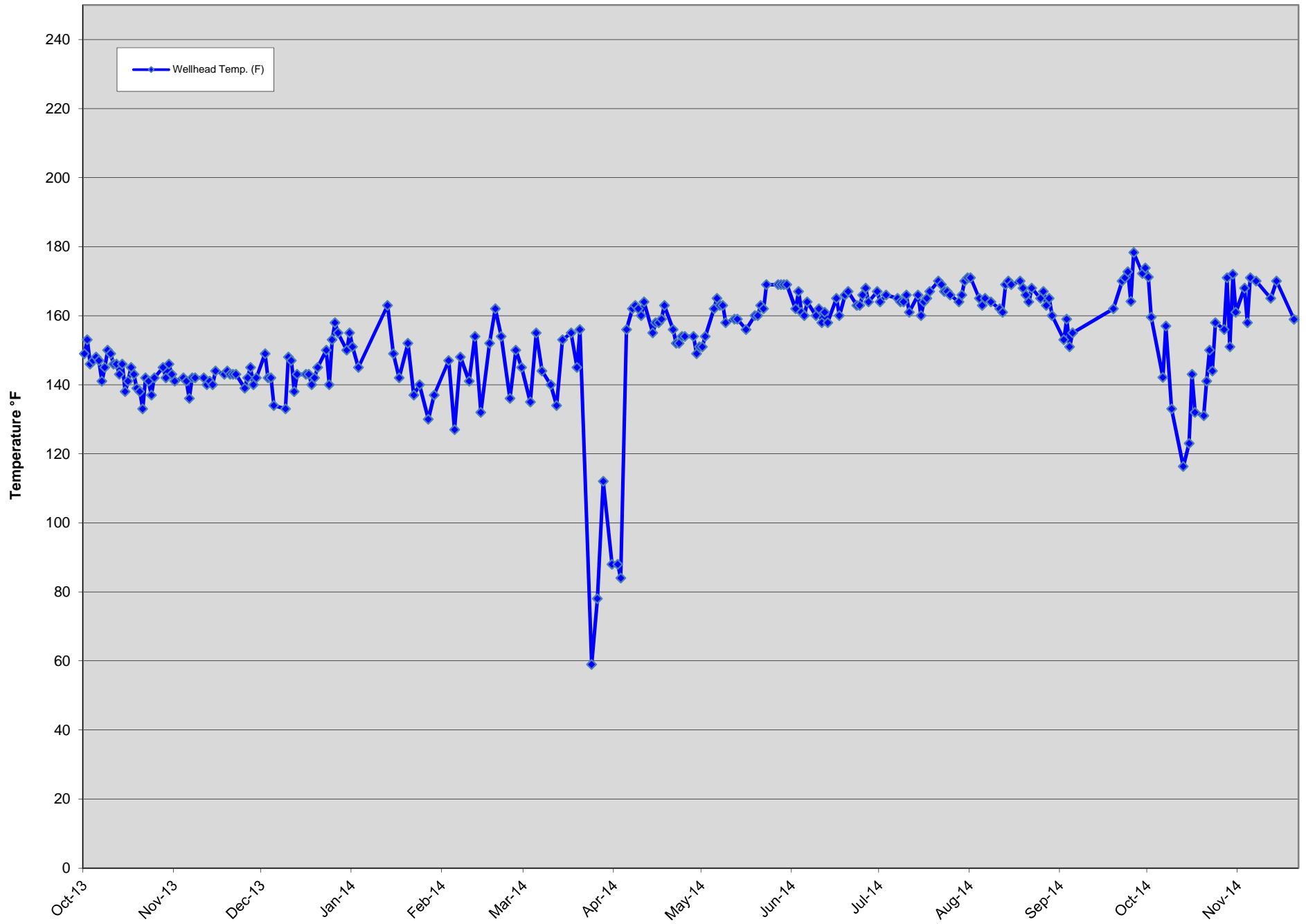
# GIW-11 Wellhead Temperatures



# GIW-12 Wellhead Temperatures



# GIW-13 Wellhead Temperatures





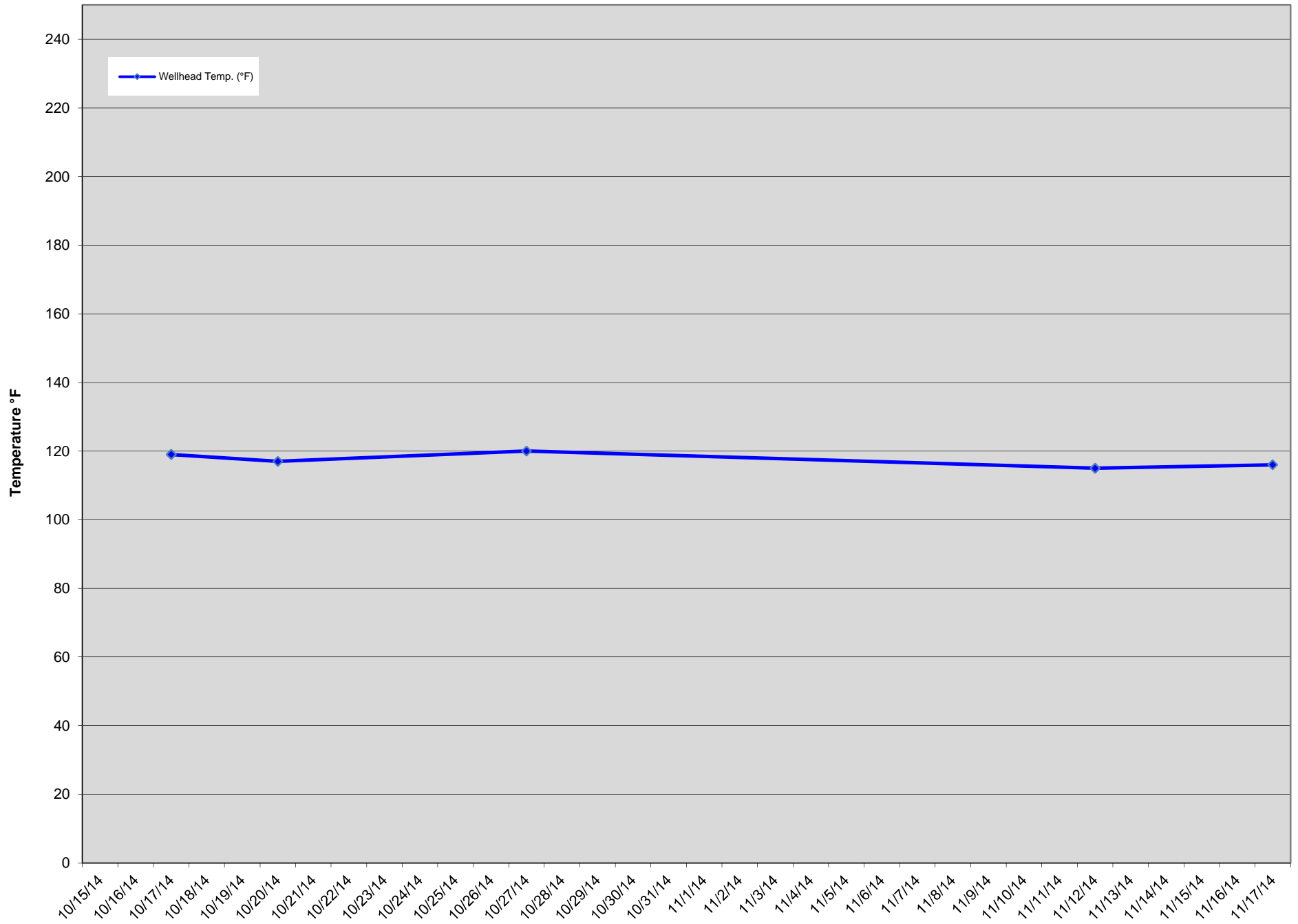
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**ATTACHMENT D**

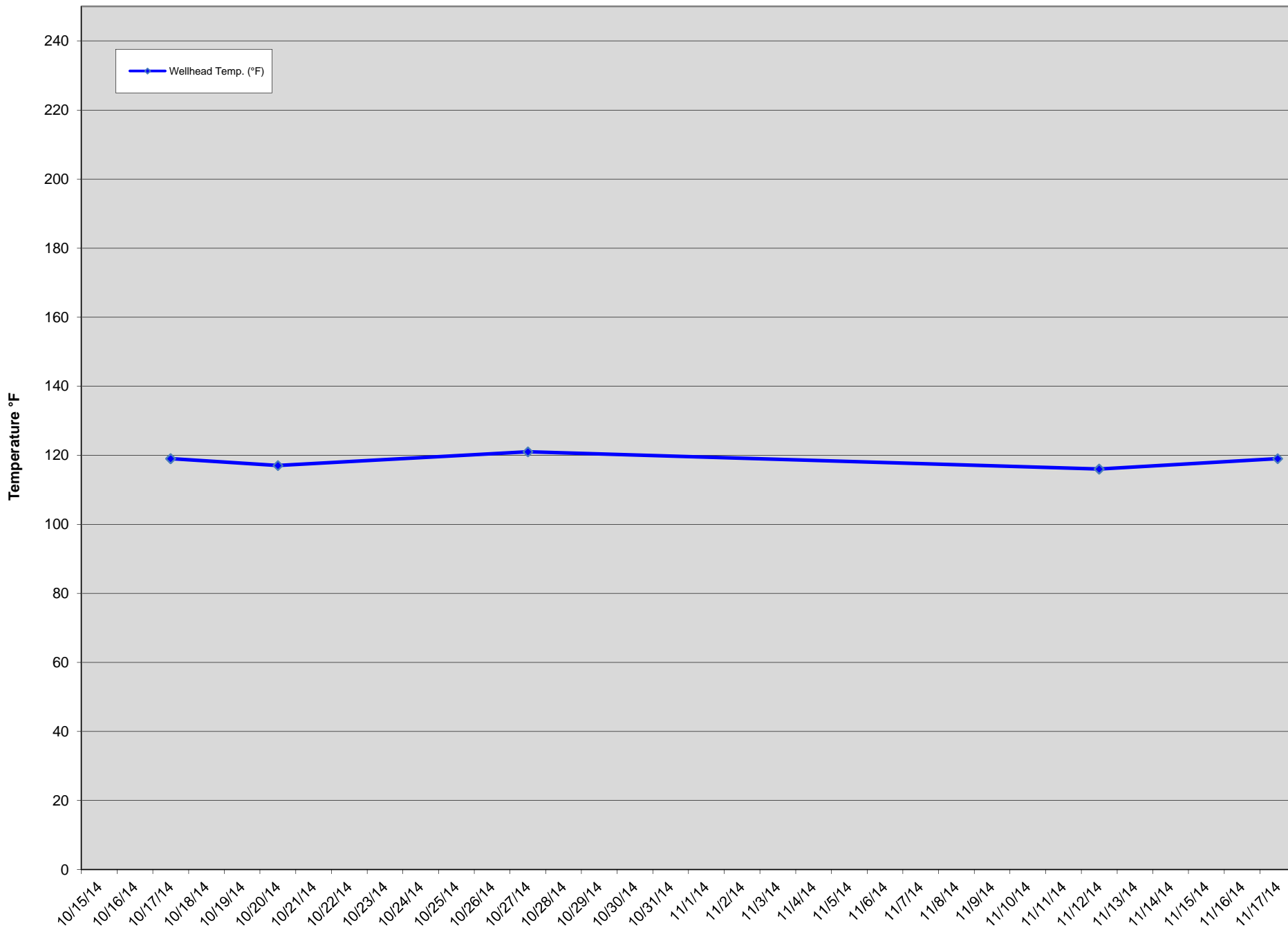
**NECK-AREA GAS EXTRACTION WELL DATA**

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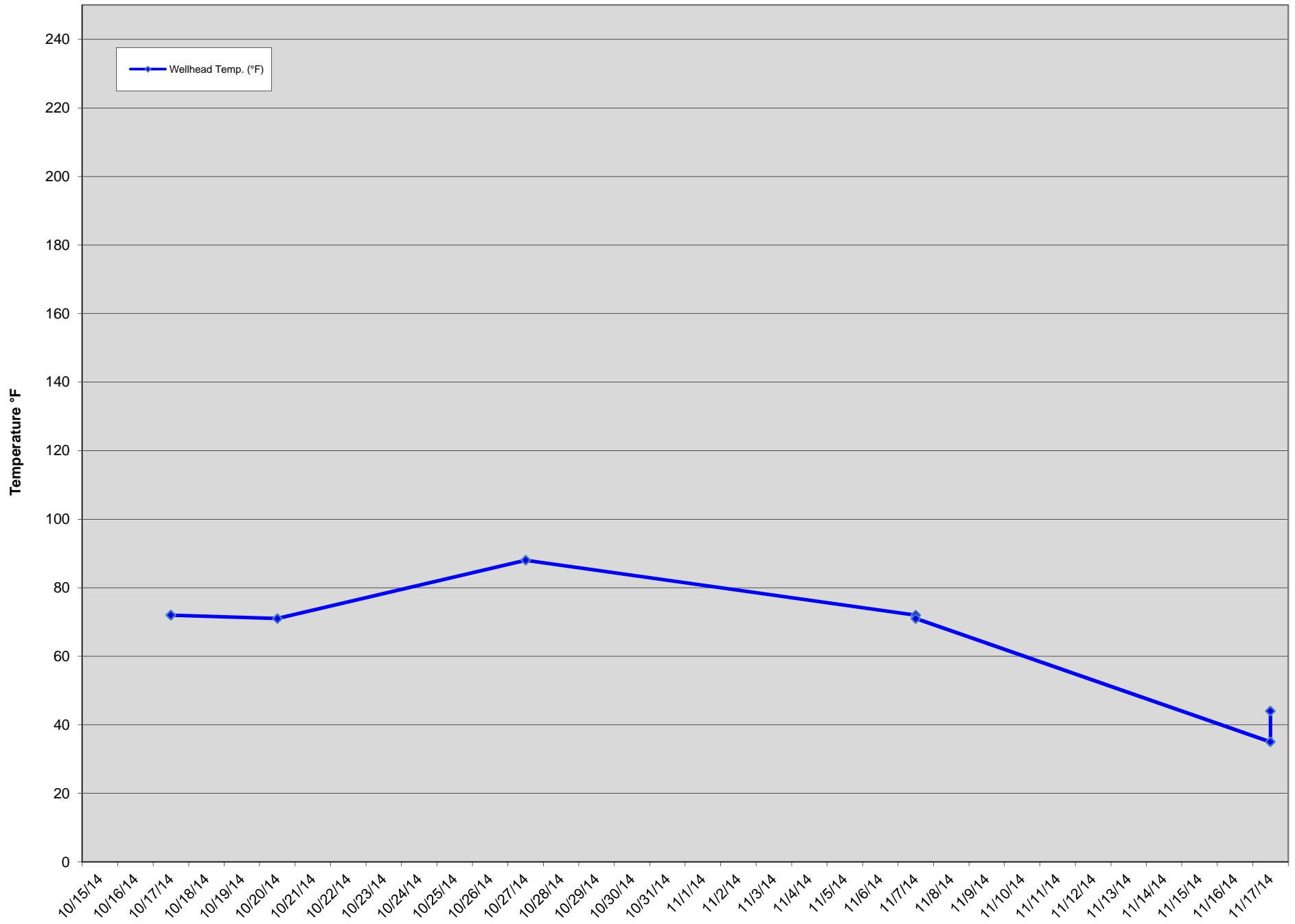
# GEW-08 Wellhead Temperatures



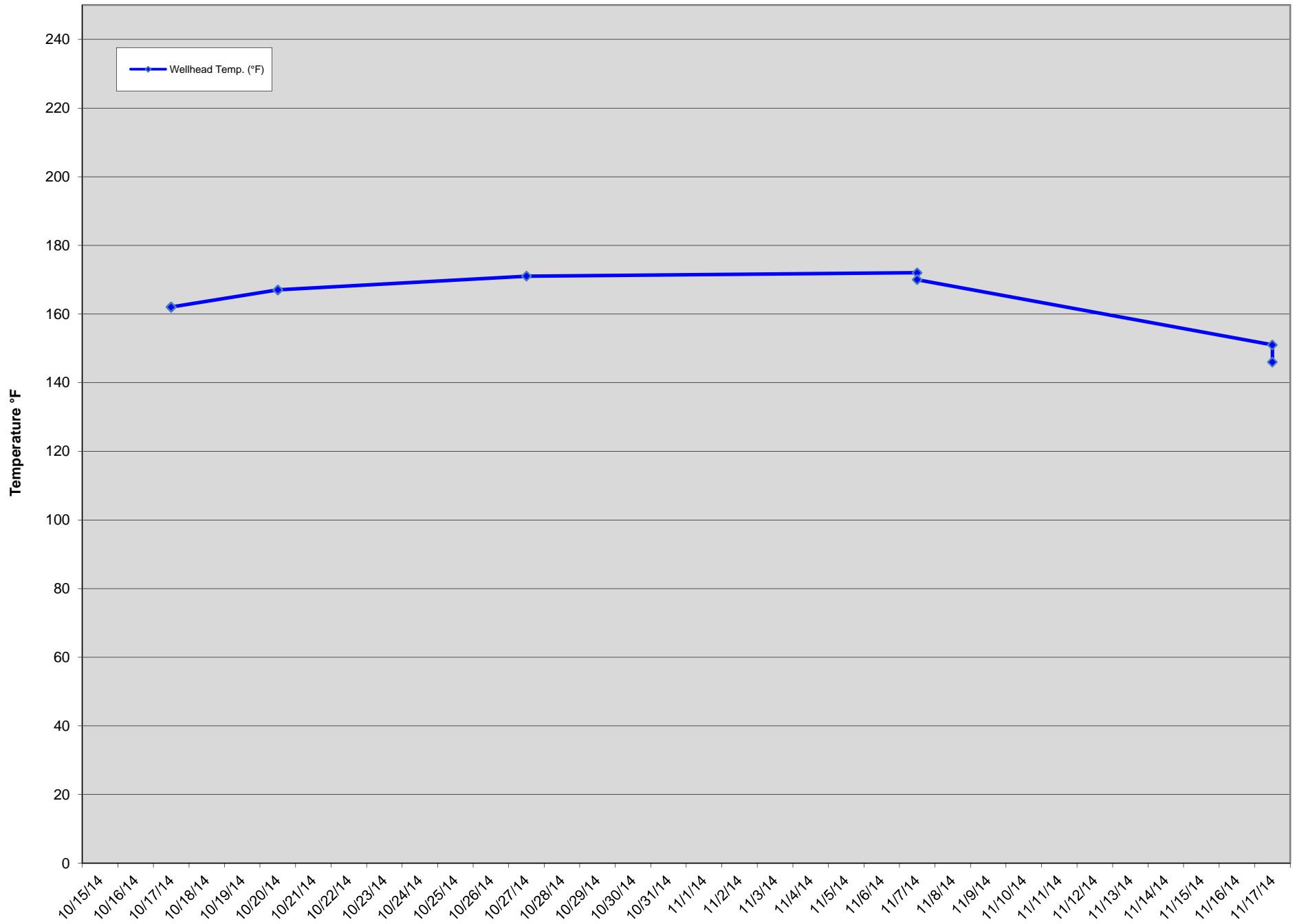
# GEW-09 Wellhead Temperatures



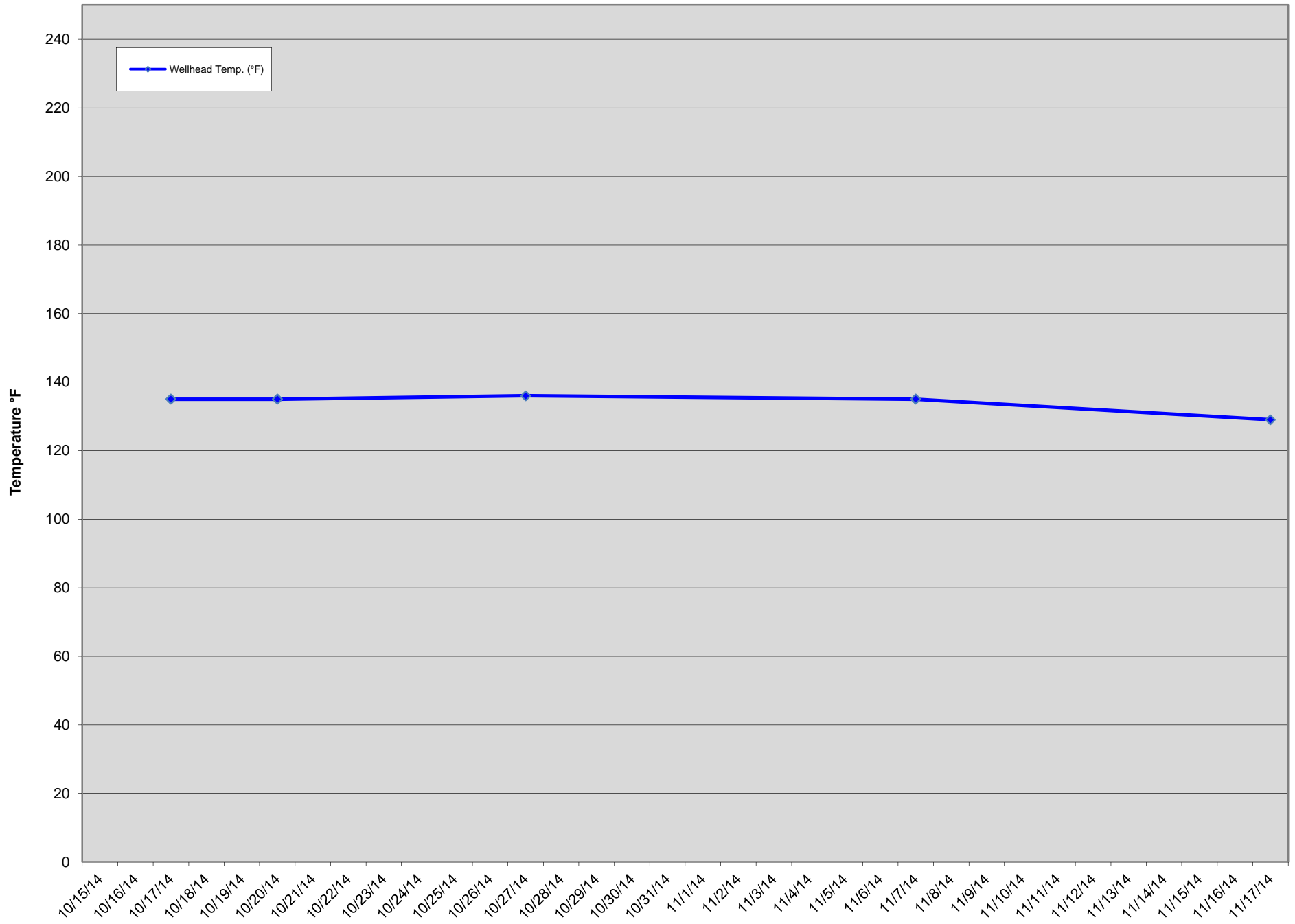
# GEW-10 Wellhead Temperatures



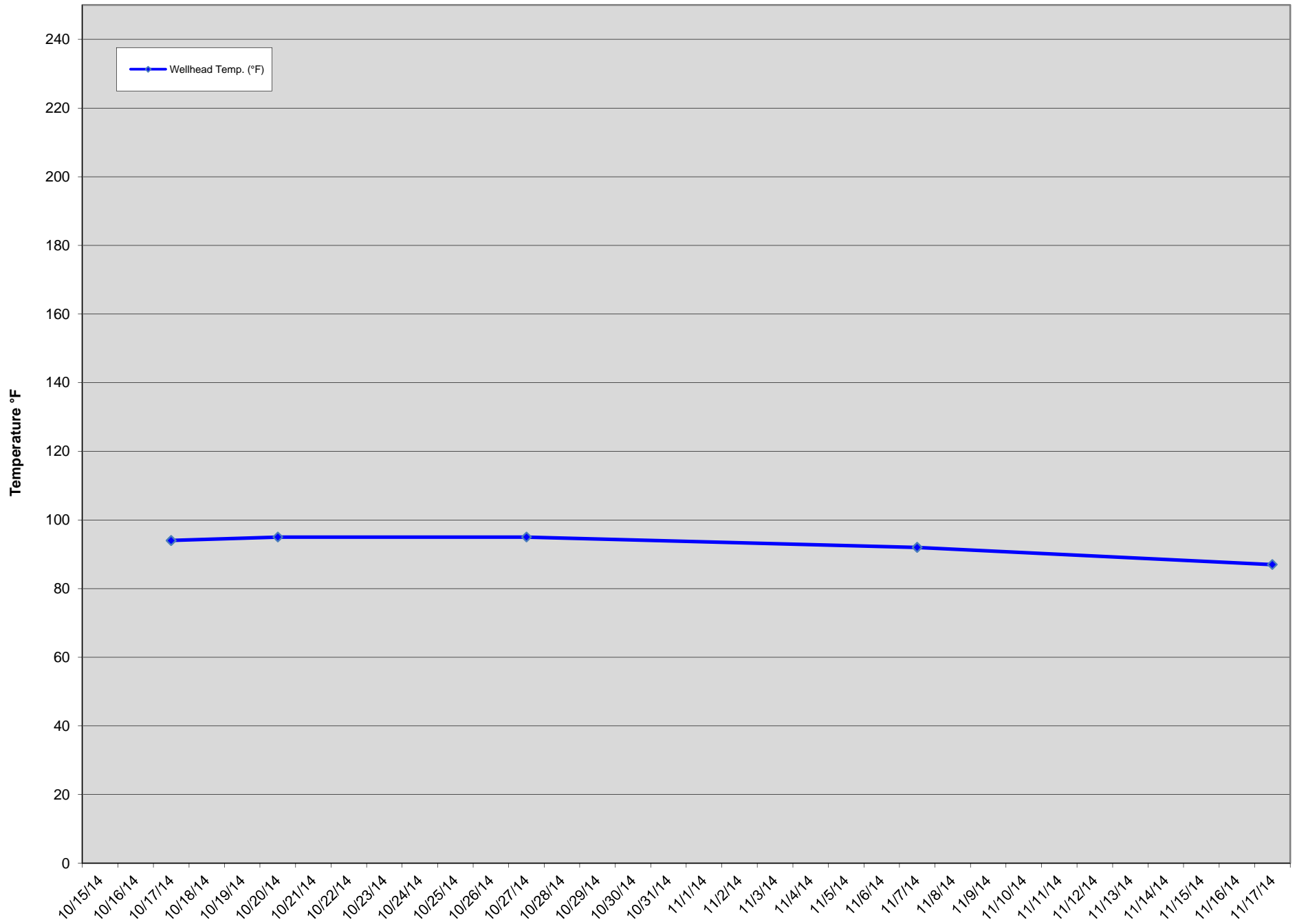
# GEW-38 Wellhead Temperatures



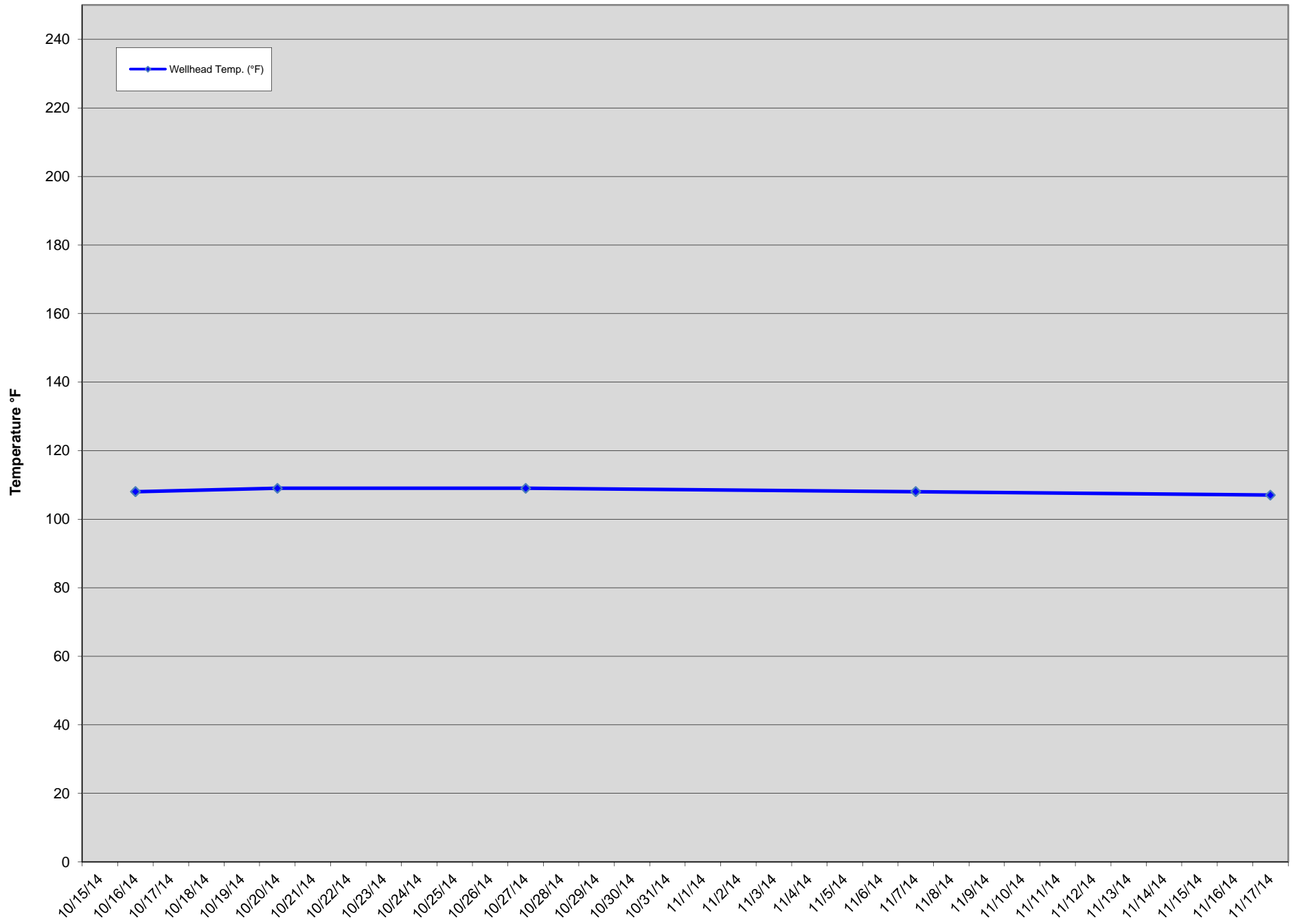
# GEW-39 Wellhead Temperatures



# GEW-40 Wellhead Temperatures

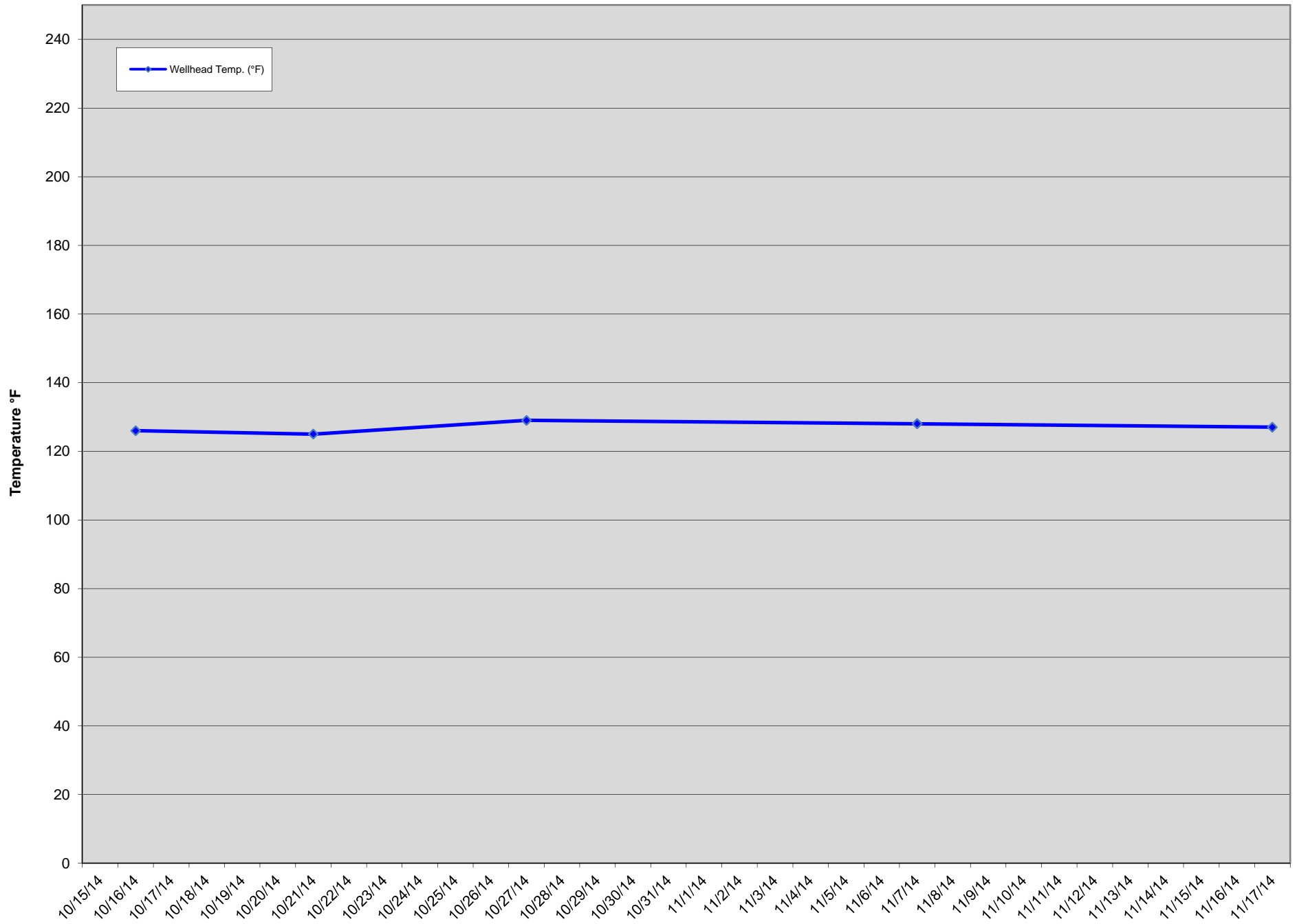


# GEW-41R Wellhead Temperatures

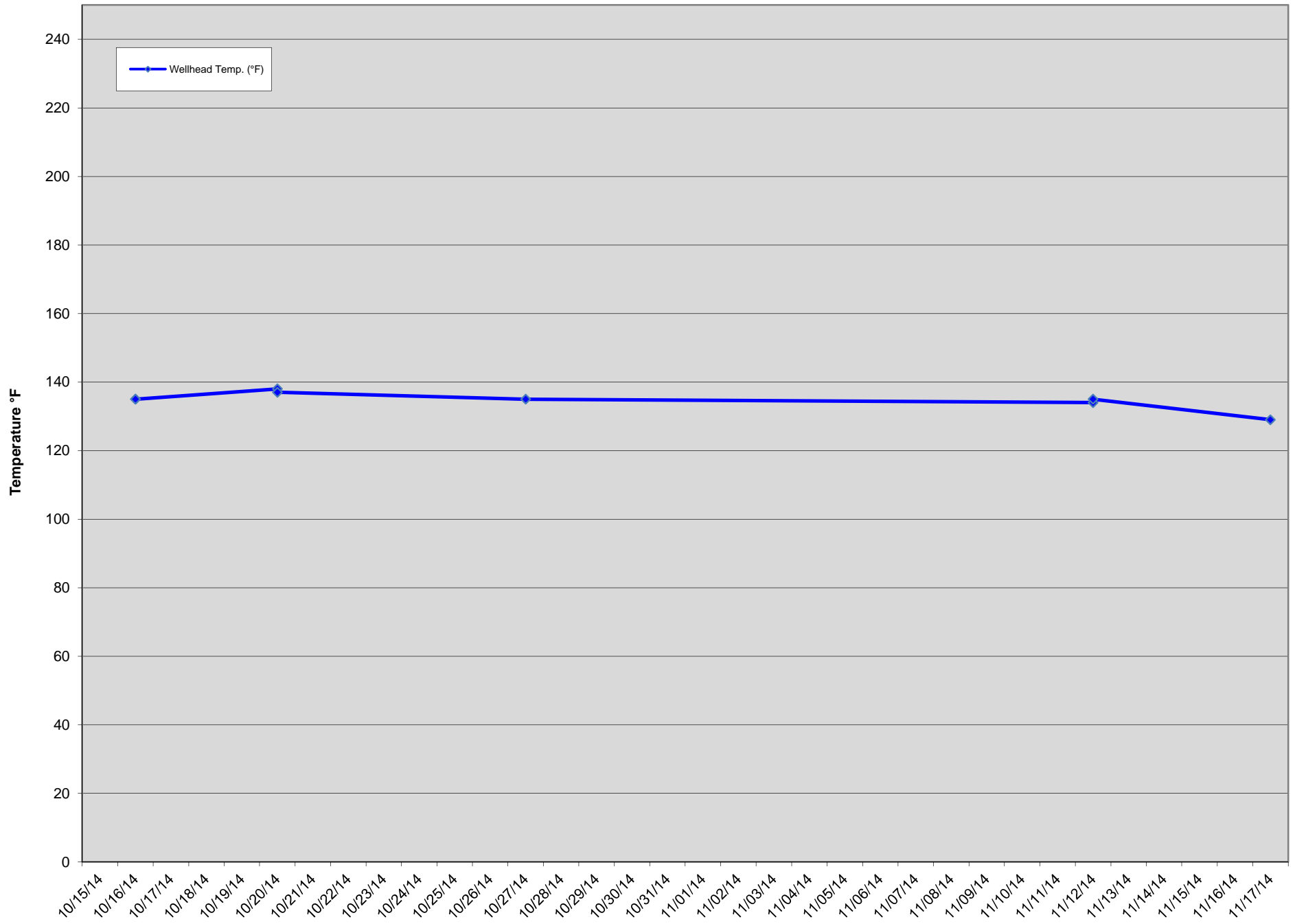




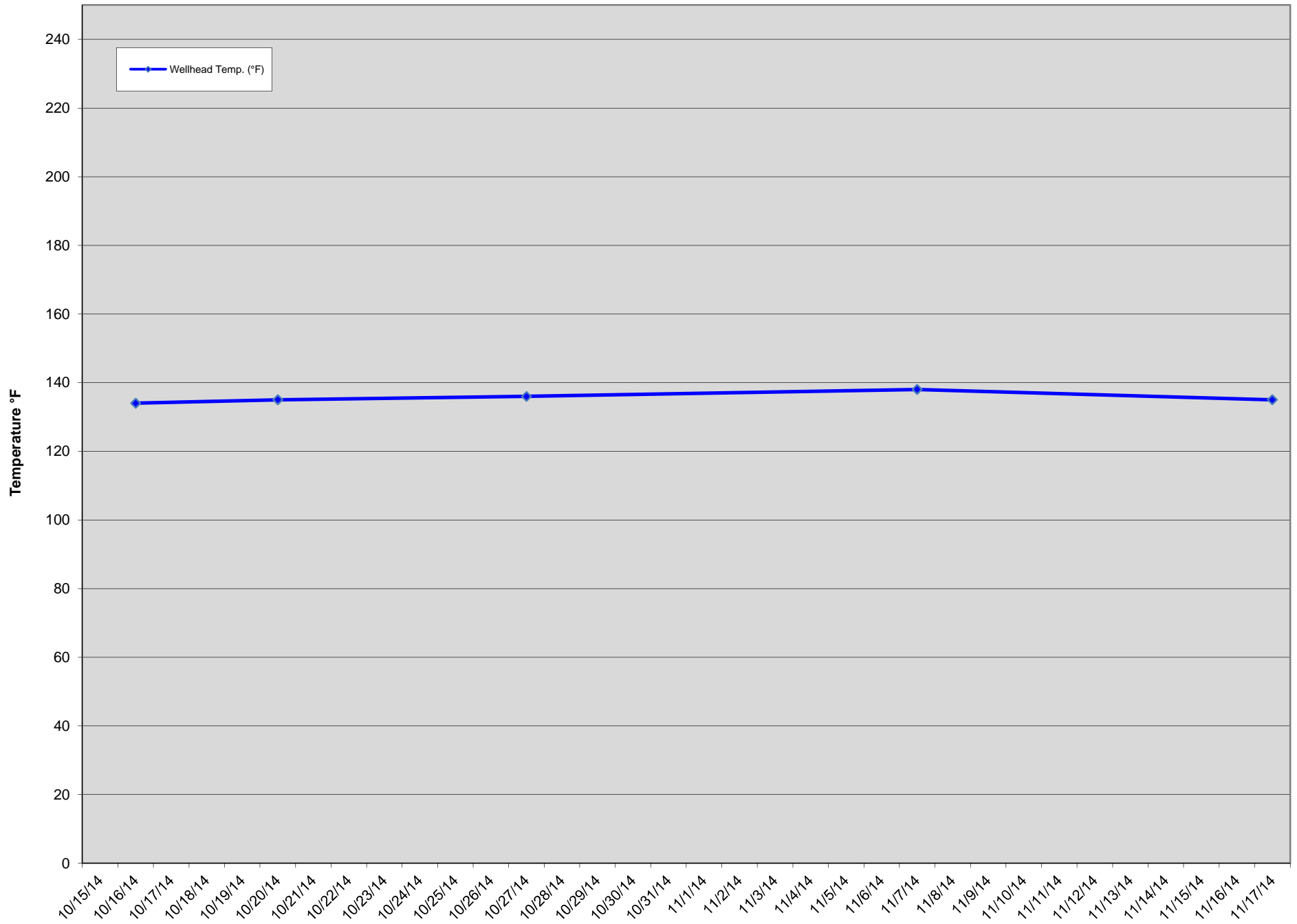
# GEW-43R Wellhead Temperatures



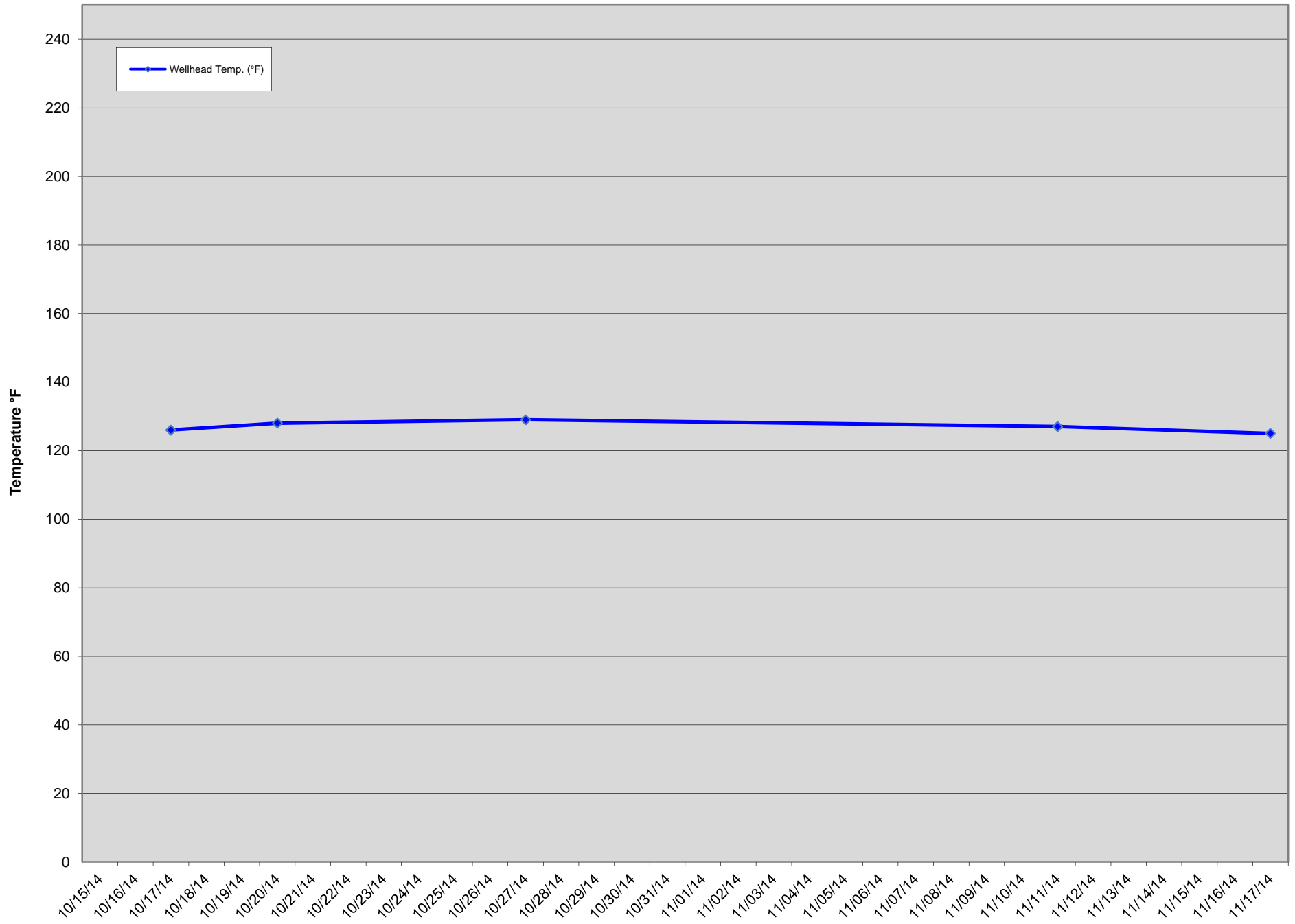
# GEW-53 Wellhead Temperatures



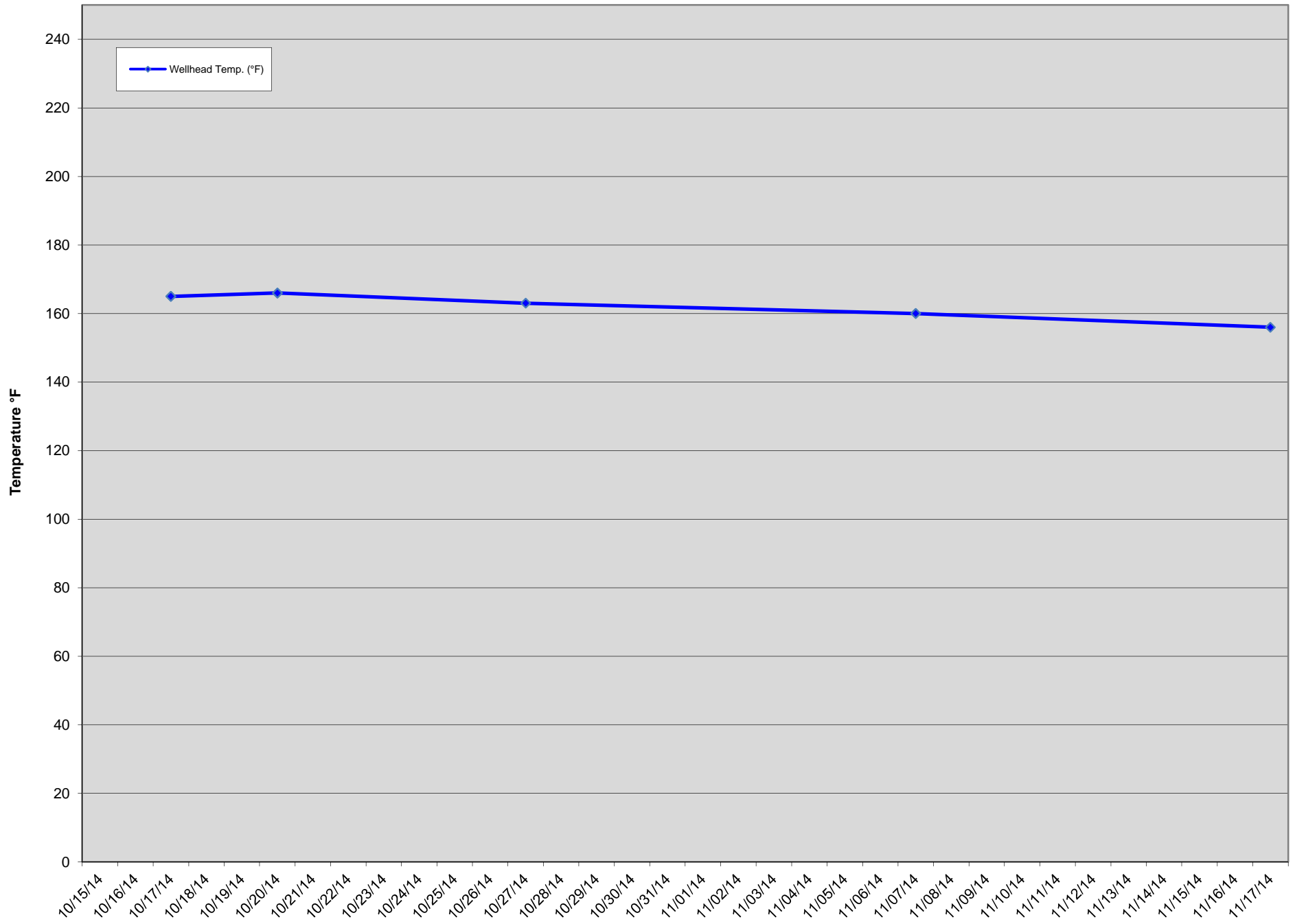
# GEW-54 Wellhead Temperatures



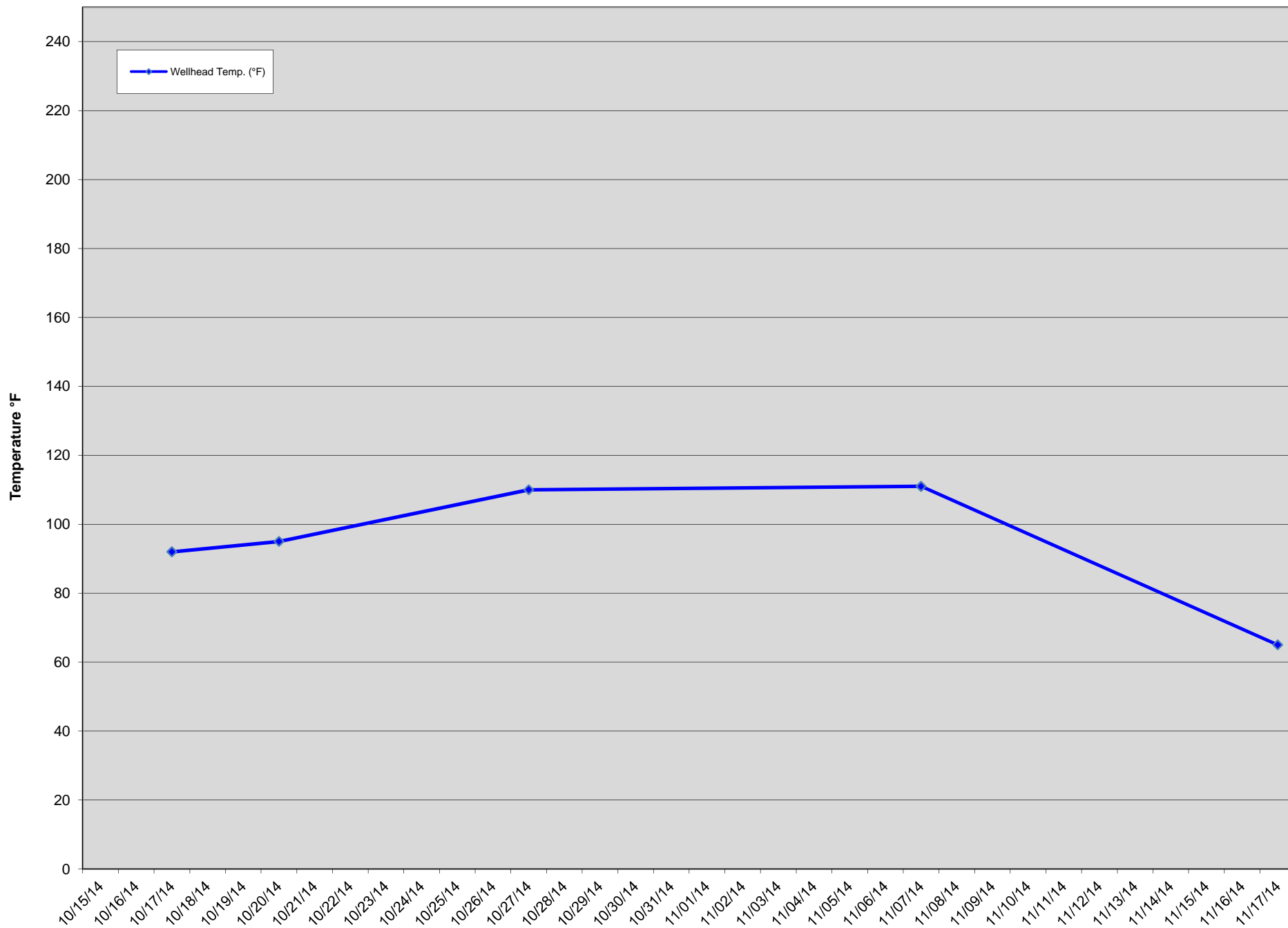
# GEW-55 Wellhead Temperatures



# GEW-56R Wellhead Temperatures



# GEW-109 Wellhead Temperatures



# GEW-110 Wellhead Temperatures

