Bridgeton Landfill, LLC

Weekly Data Submittal

Week of February 8, 2015 – February 14, 2015

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**

February 20, 2015

Commentary on Data

Attachment A – Leachate Levels in Leachate Collection Sumps

Leachate Collection Sump (LCS)-1D, -3D, -4B, -5A, and -6B were partially or fully operational during the weekly reporting period. Several wells have level transducer(s) that are non-functional or are being calibrated.

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

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, -18, -21, -22, -23, -24, -25, -26, -27, -28, and -29. However, it should be noted that the 18-foot interval in TMP-11 increased slightly in the latest reading.

TMP-3R and -4R have been installed and added to the routine monitoring schedule.

TMP-5, -7, -7R, -12, -13, and -15 have been removed from the presentation based on unreliable thermocouple measurements or other documented issues. Note that the TMP graphical notes have been moved to the end of the section so as be fully legible. TMP readings for evaluation of the Heat Extraction System are attached, but not evaluated in this commentary.

Attachment C - Gas Interceptor Wellhead Temperature Graphs

There are currently water circulation cooling loops (Heat Extraction System) installed in seven Gas Interceptor Wells (GIWs) (GIW-02 through GIW-07, as well as GIW-10). The system was offline during this monitoring period to facilitate the conversion of the system from water to the new glycol mixture system and closed loop cooling tower. This is reflected in the 40 degree increase in wellhead gas temperature at GIW-03.

For the remaining six wells without a cooling system installed (GIW-01, -08, -09, -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. Due to the Heat Extraction System being offline, GIW-11 experienced a 40 degree rise in temperature to 169 degrees, still below historical 180 degree high.

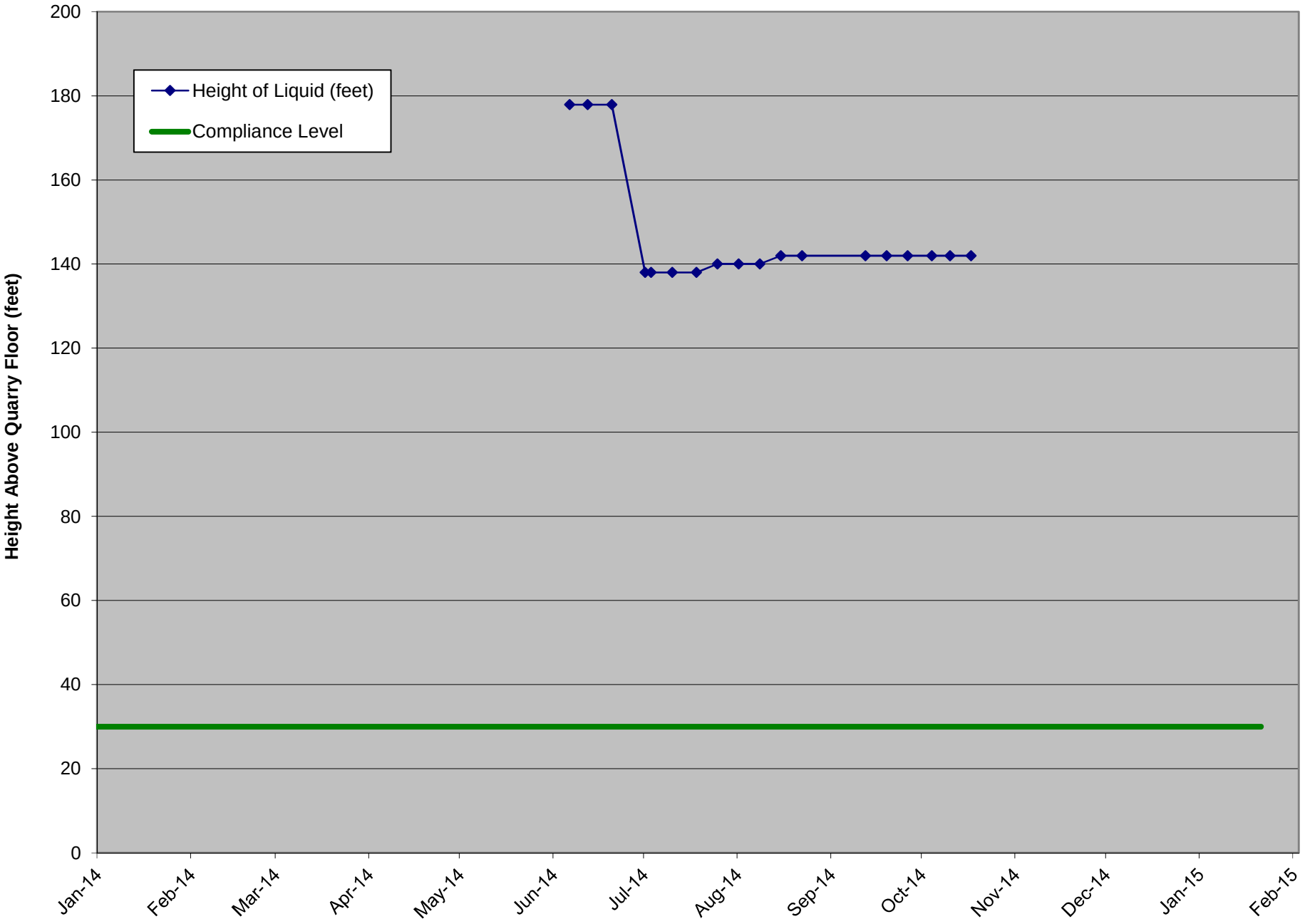
Attachment D – Neck Area Gas Extraction Well Data

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-008, -009, -010, -038, -039, -040, -041R, -043R, -053, -054, -055, -056R, -109, and -110. Over the past week all 14 wells were monitored and all well temperatures were consistent in comparison to prior weeks, with the exception of GEW-110. Wellhead temperatures in GEW-110 increased to approximately 175 degrees, which is slightly higher than historic ranges for this well. This is due to gas extraction flows being restored at this well; gas temperature is consistent with nearby GIW-13 and TMP-6 historical maximum temperatures. For the remainder of the wells, temperature fluctuations experienced are within the historical gas temperature norms

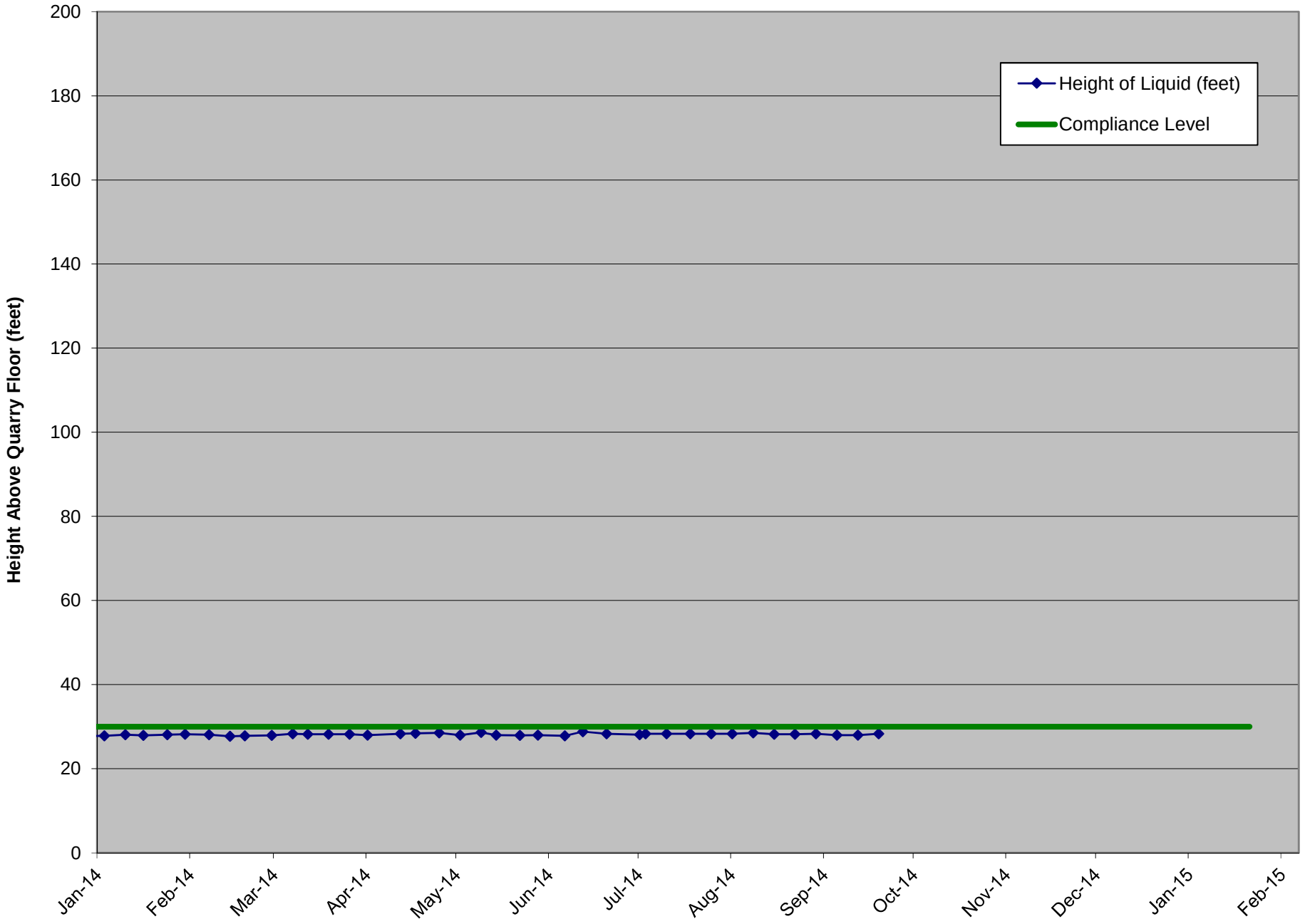
ATTACHMENT A

LEACHATE LEVELS IN LEACHATE COLLECTION SUMPS

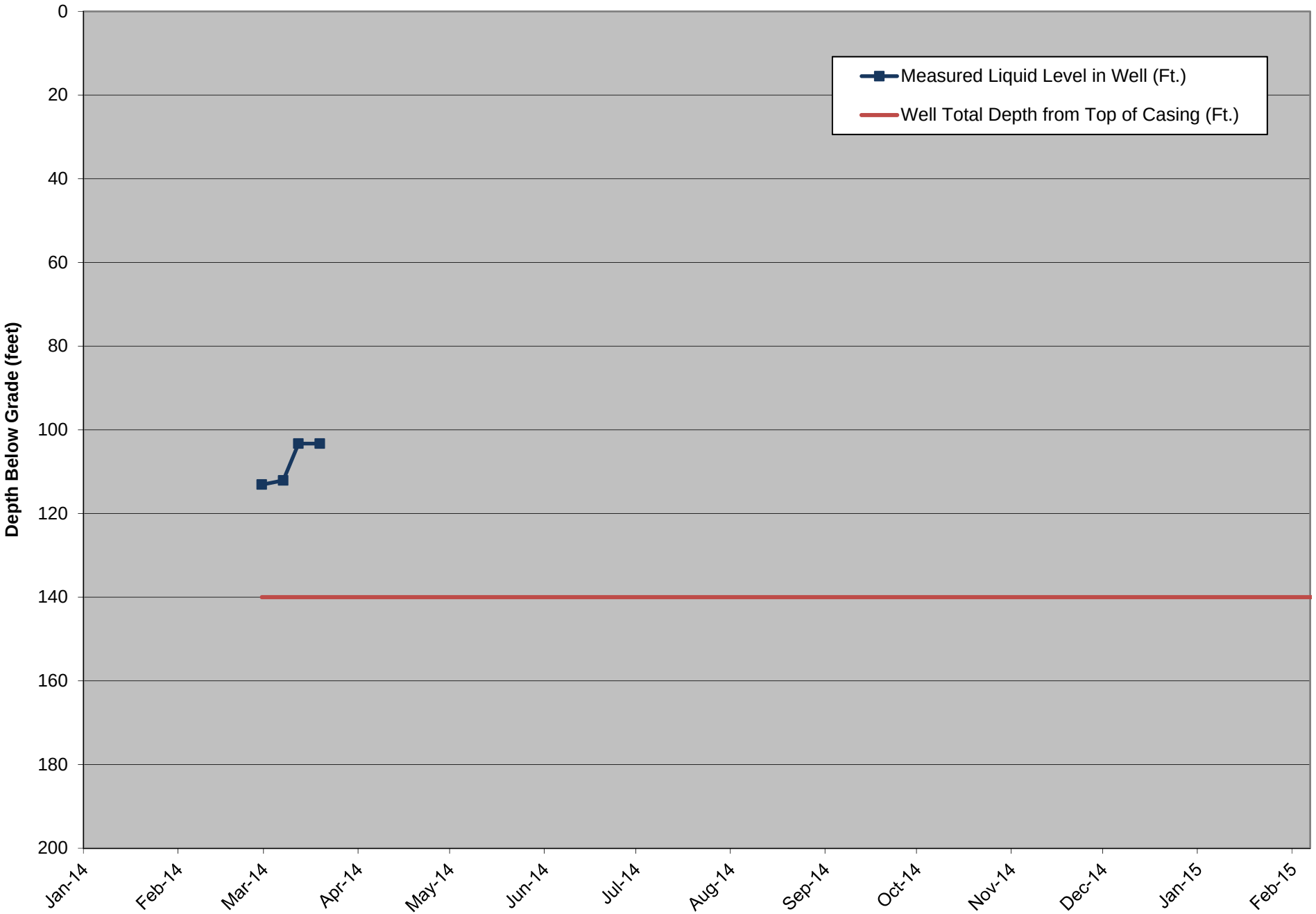
LCS-1D Liquid Level Above Quarry Floor



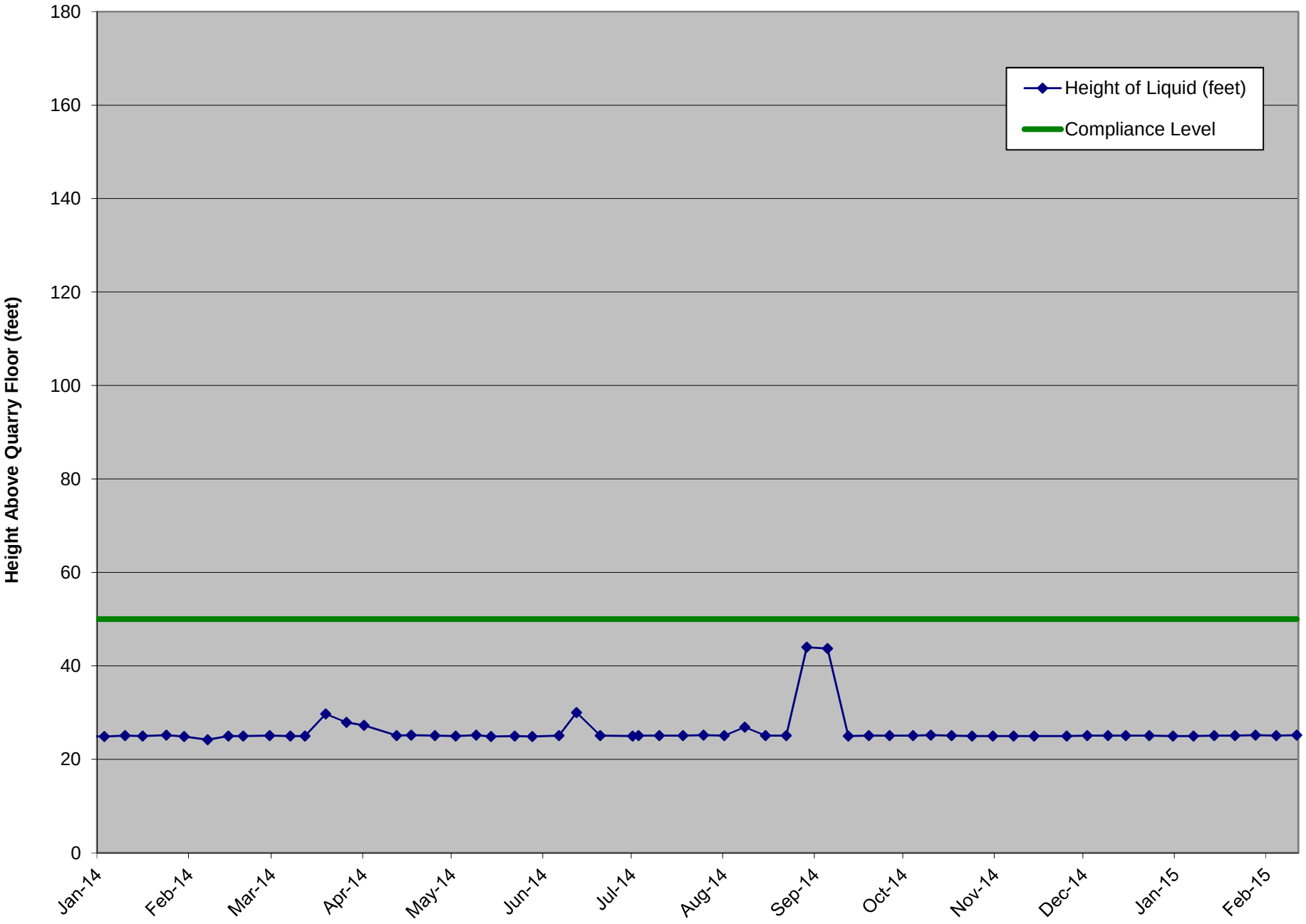
LCS-2D Liquid Level Above Quarry Floor



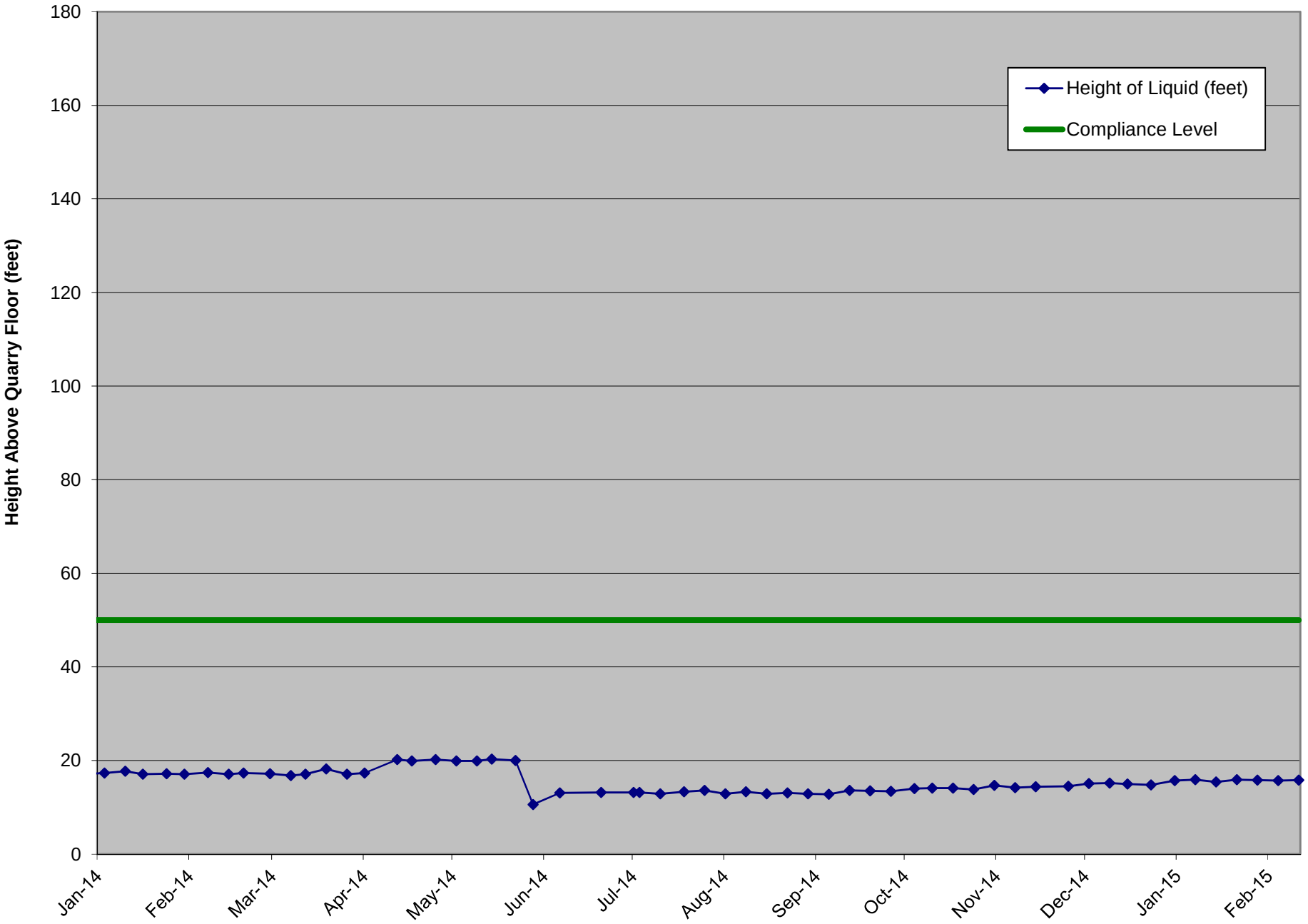
LCS-3D Liquid Level Below Ground Surface



LCS-5A Liquid Level Above Quarry Floor



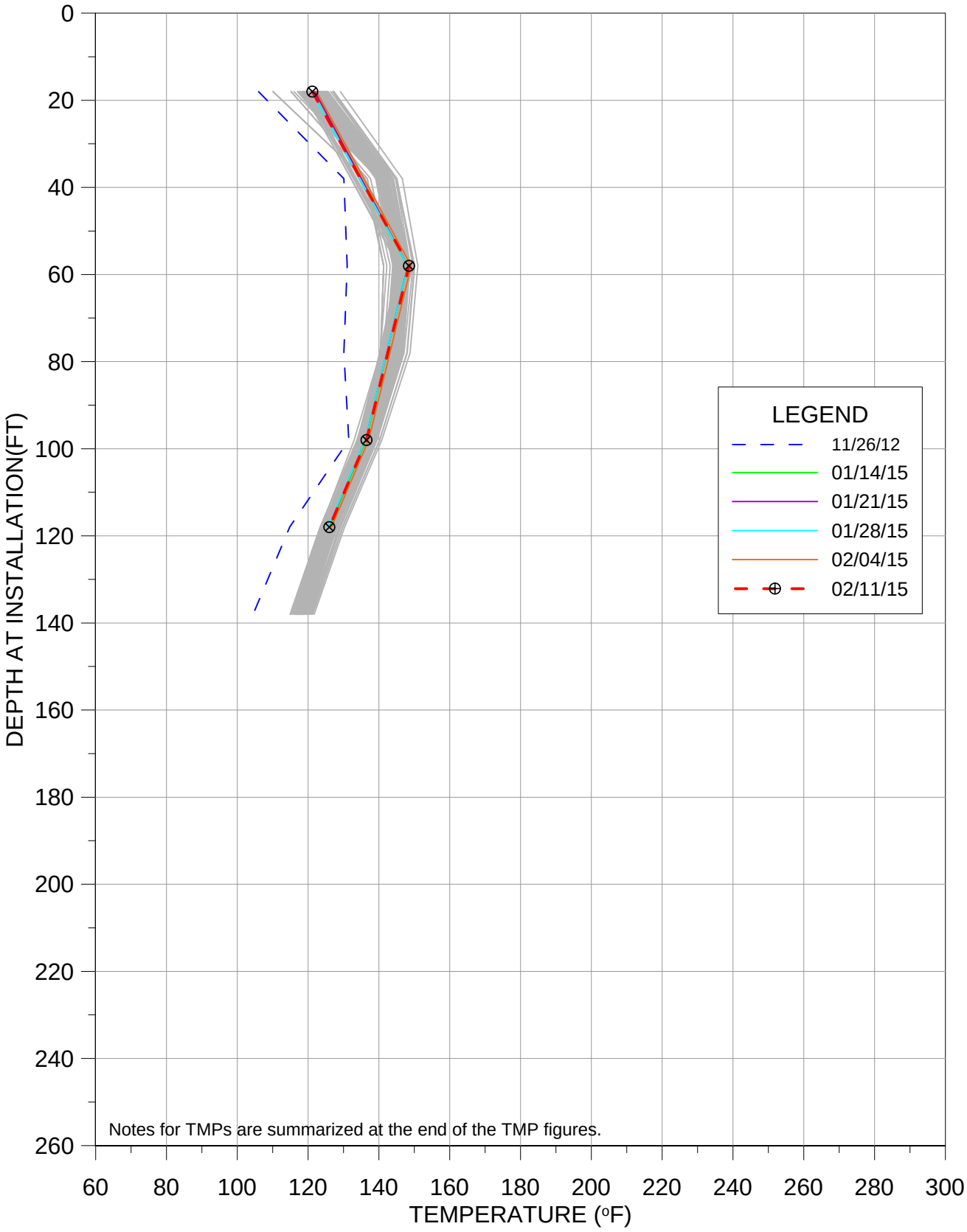
LCS-6B Liquid Level Above Quarry Floor



ATTACHMENT B

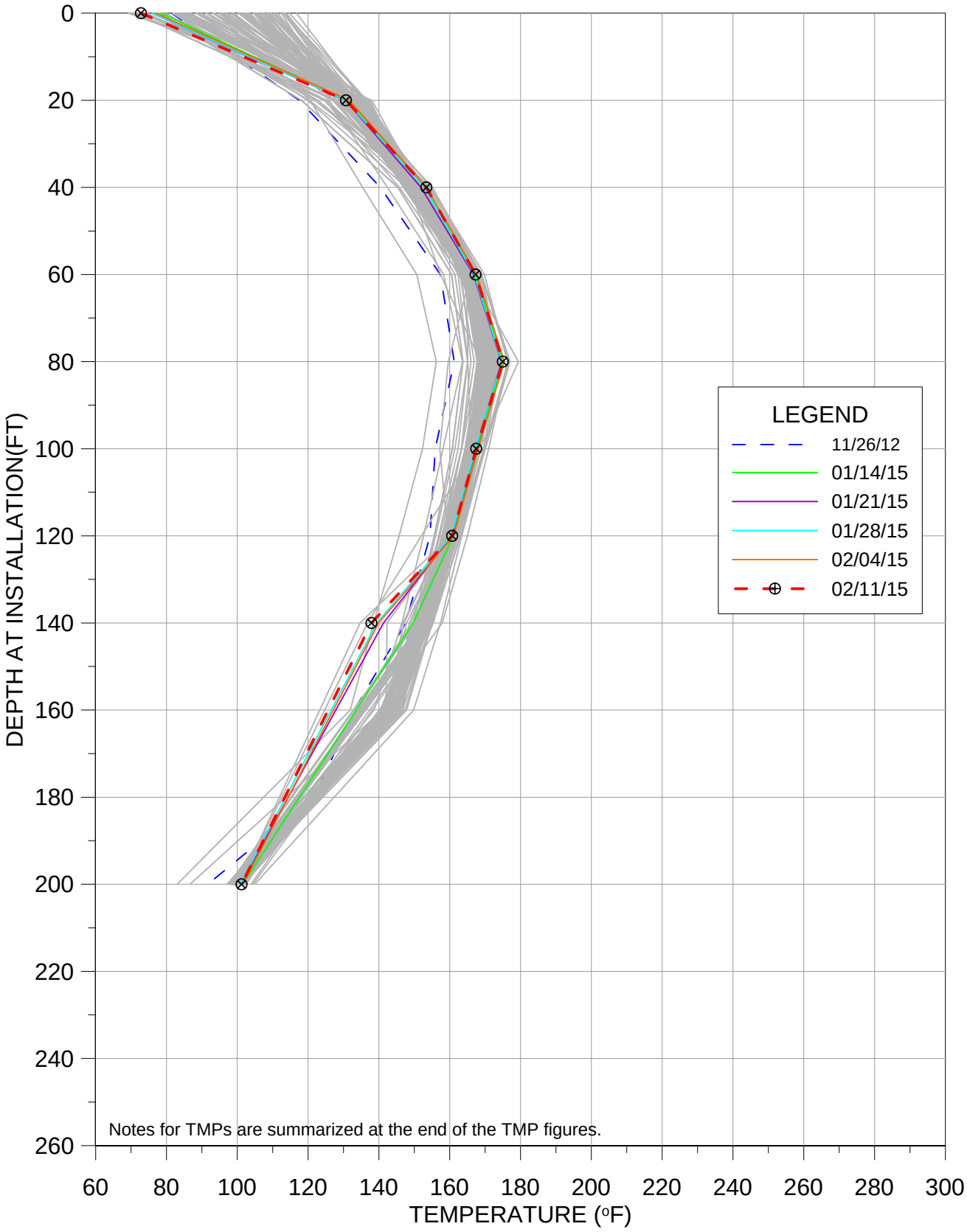
TEMPERATURE MONITORING PROBE ANALYTICAL CHARTS

TMP-1



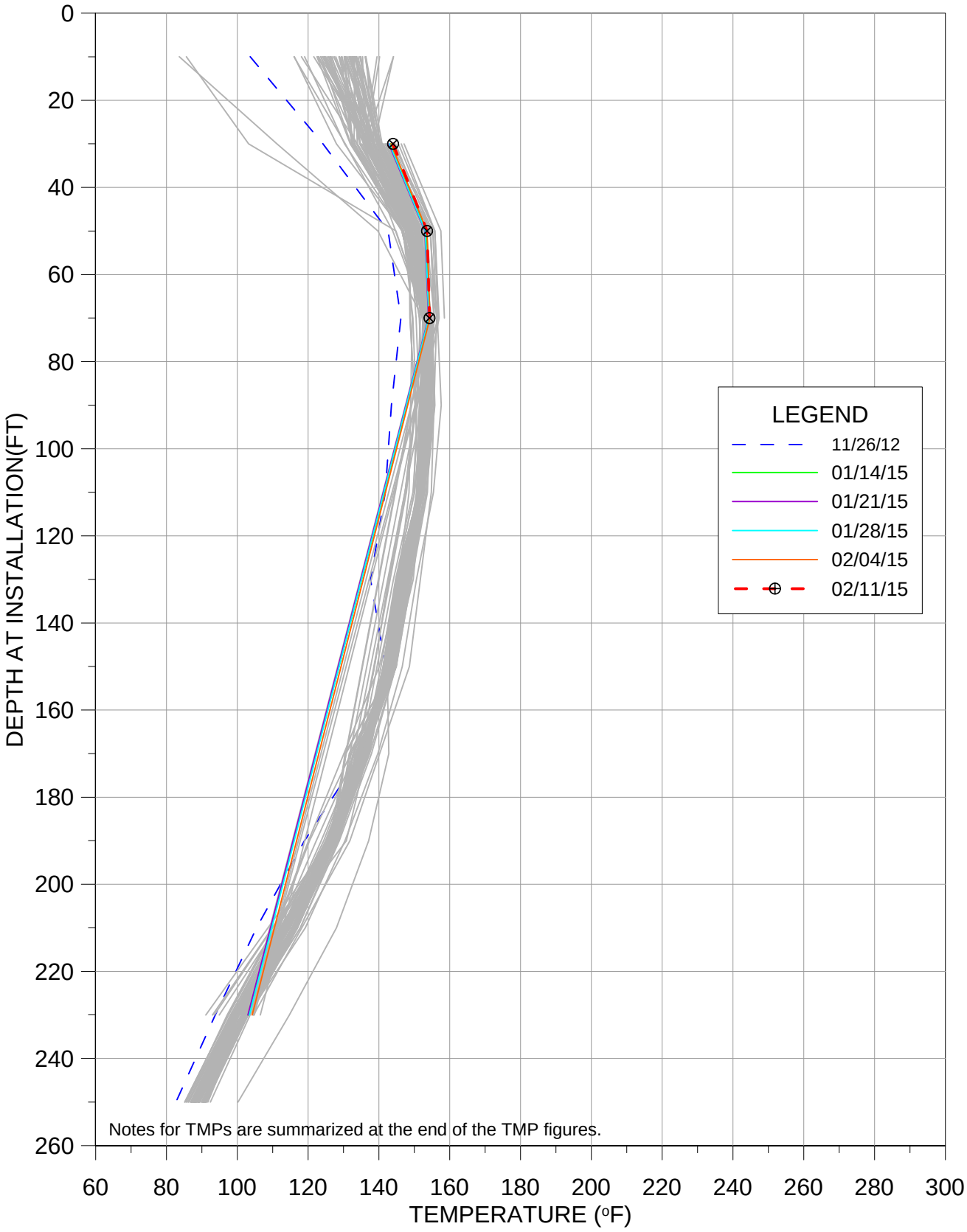
TEMPERATURE VS DEPTH
BRIDGETON LANDFILL

TMP-2



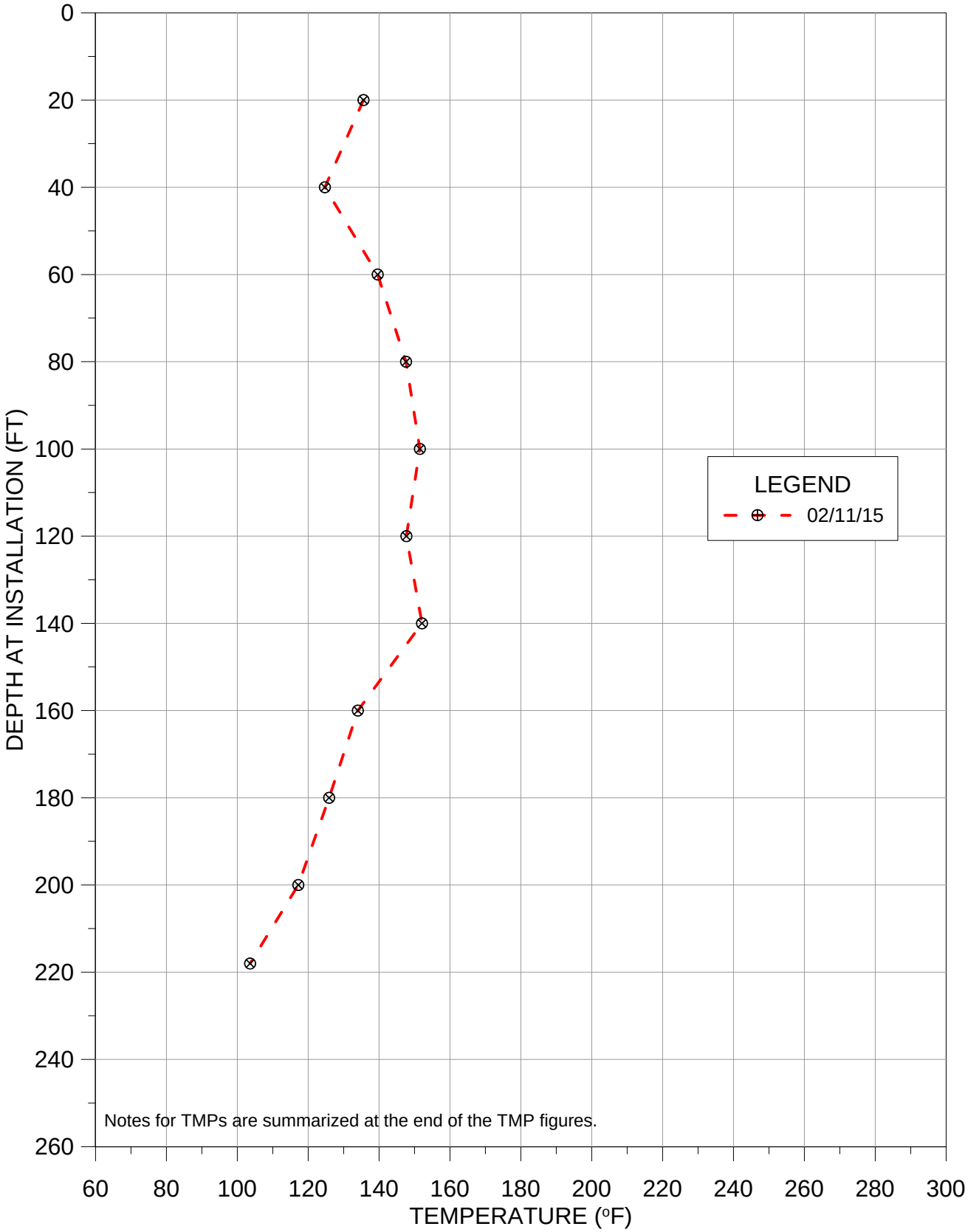
TEMPERATURE VS DEPTH
BRIDGETON LANDFILL

TMP-3



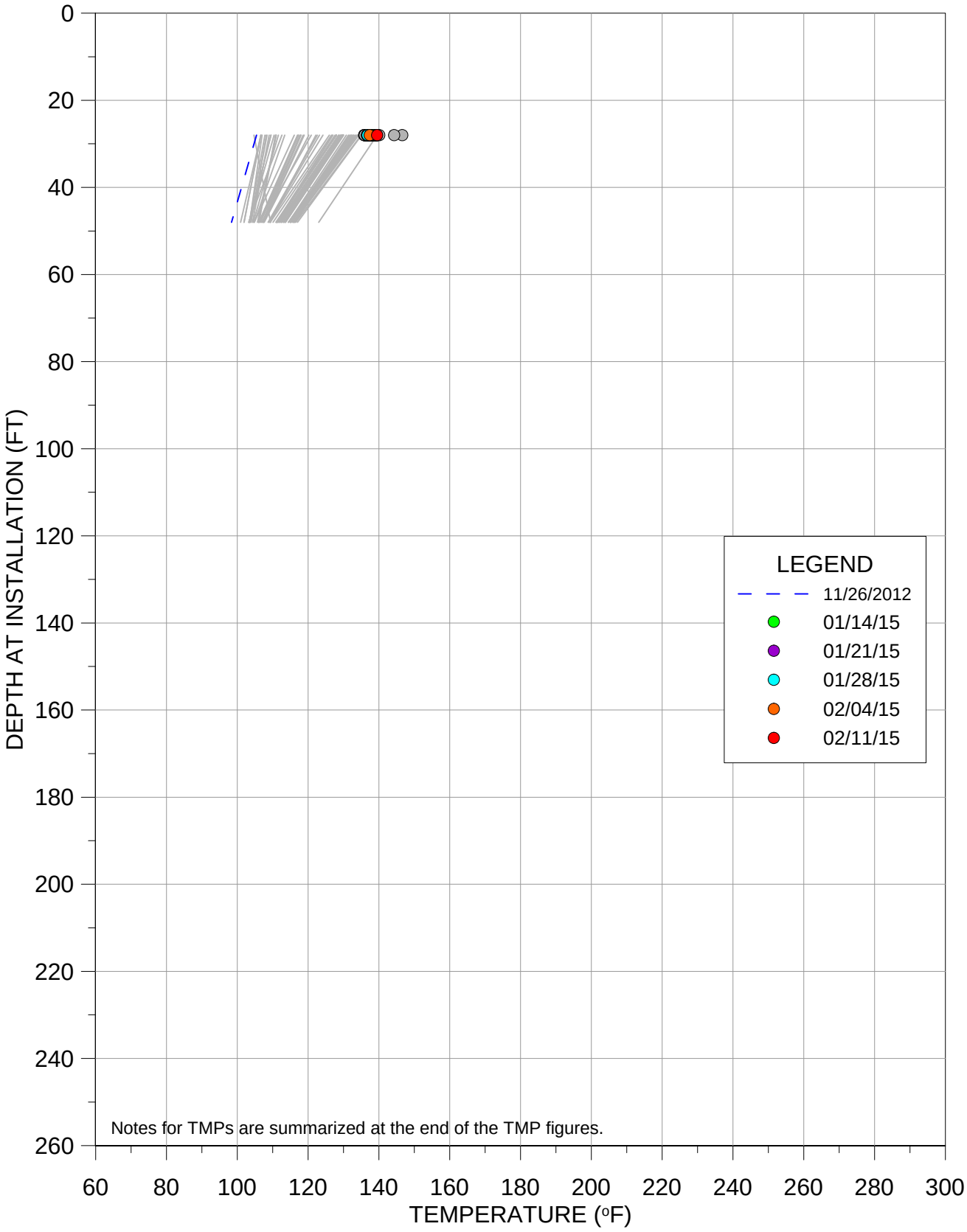
TEMPERATURE VS DEPTH
BRIDGETON LANDFILL

TMP-3R



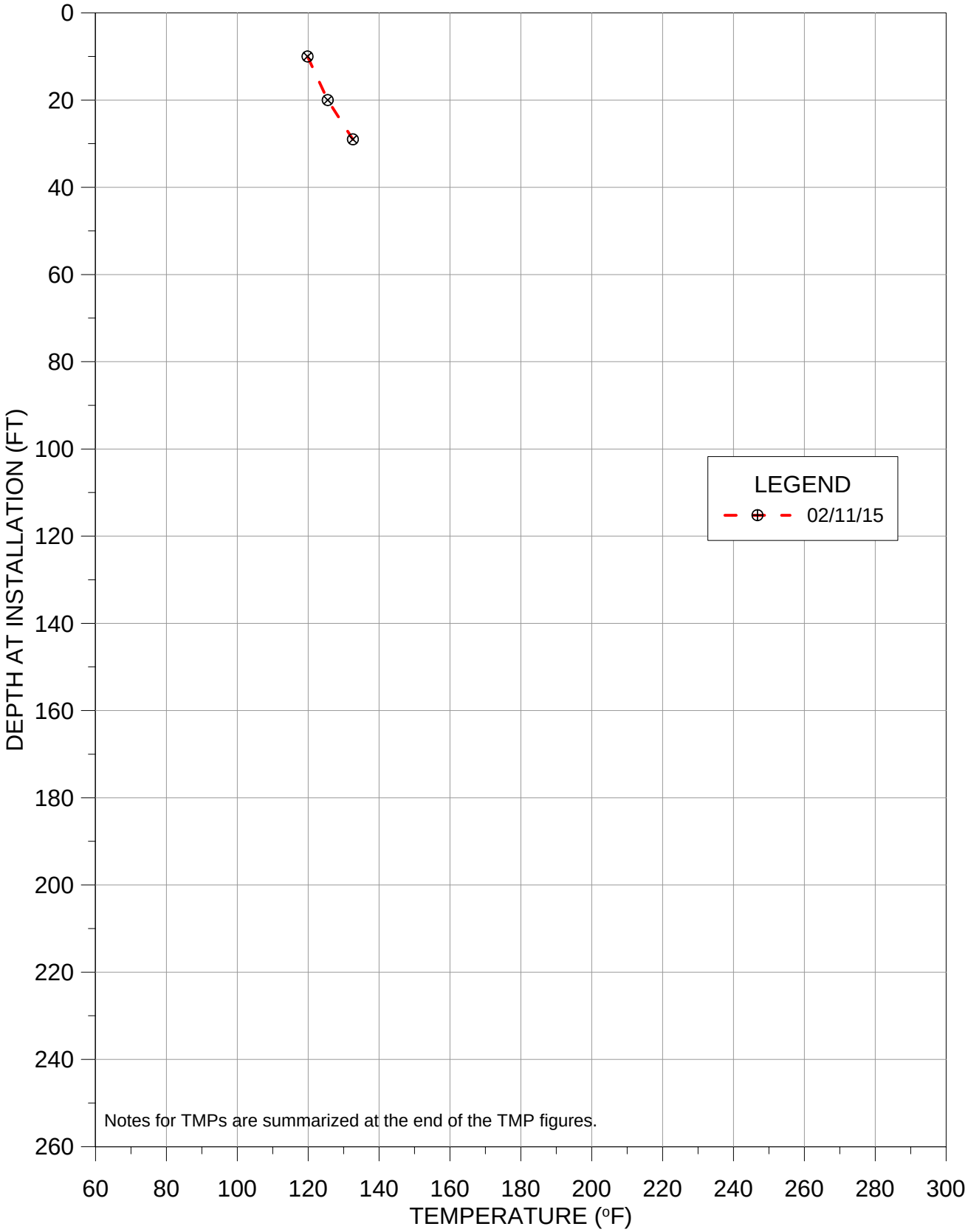
TEMPERATURE VS DEPTH
BRIDGETON LANDFILL

TMP-4



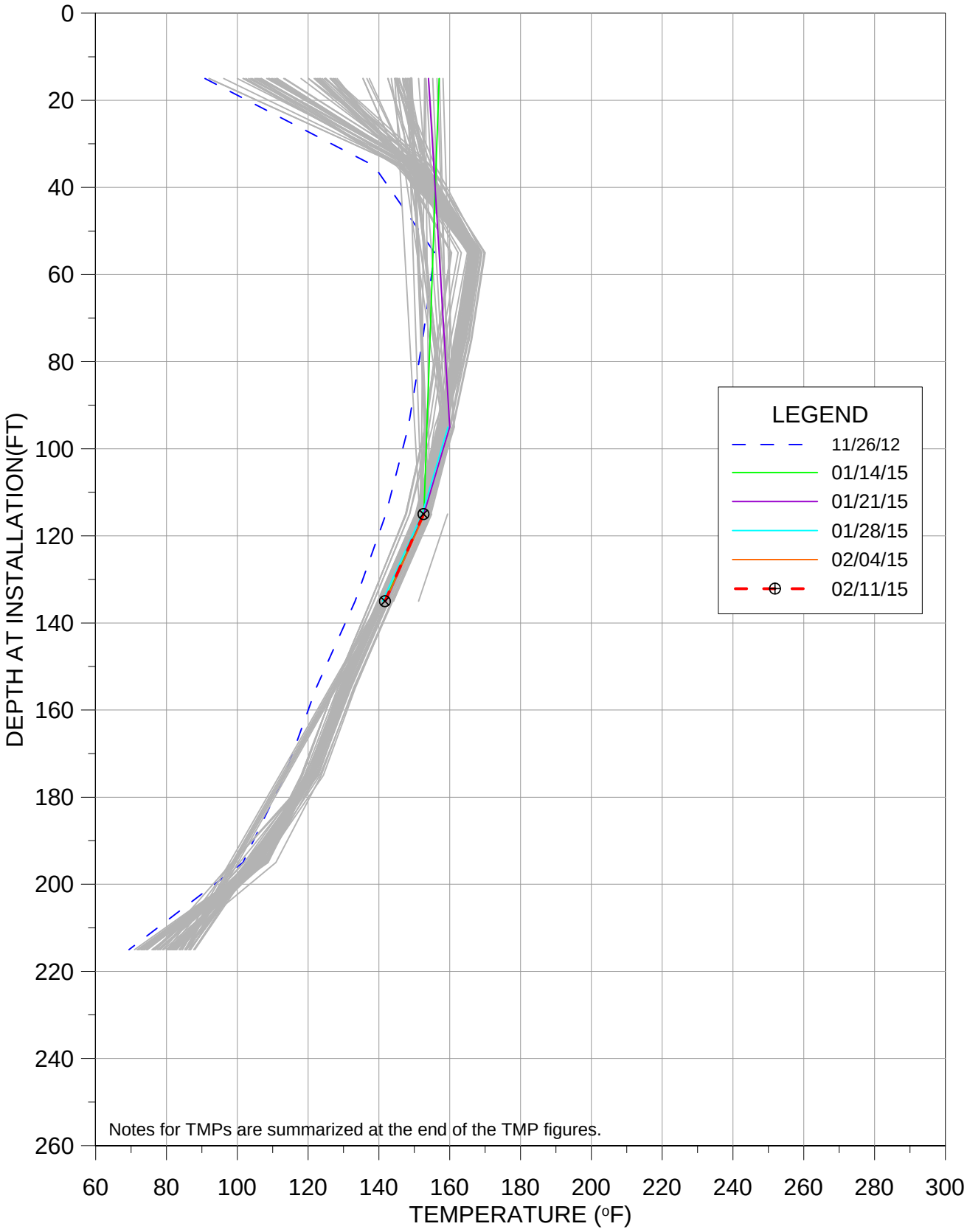
TEMPERATURE VS DEPTH
BRIDGETON LANDFILL

TMP-4R



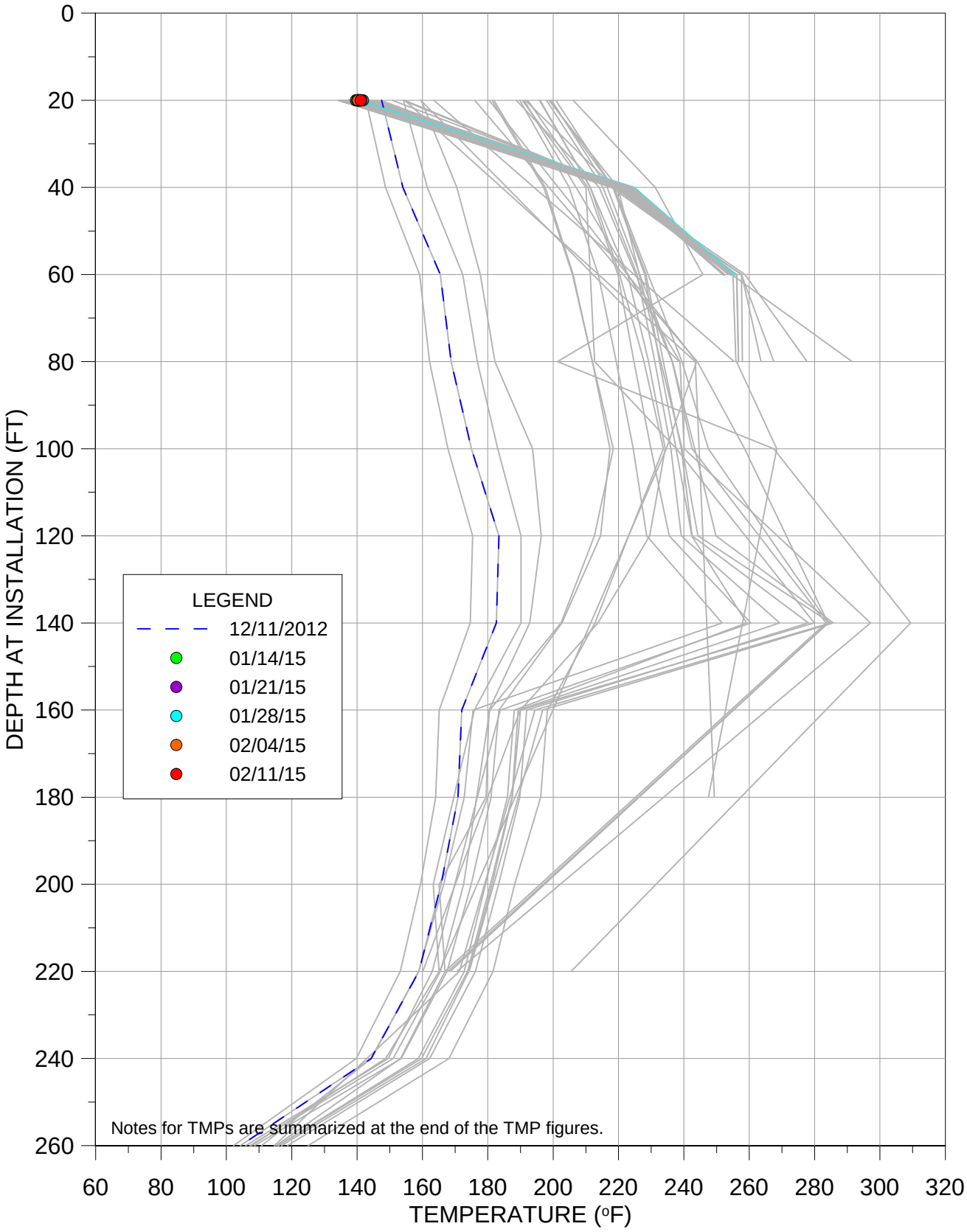
TEMPERATURE VS DEPTH
BRIDGETON LANDFILL

TMP-6



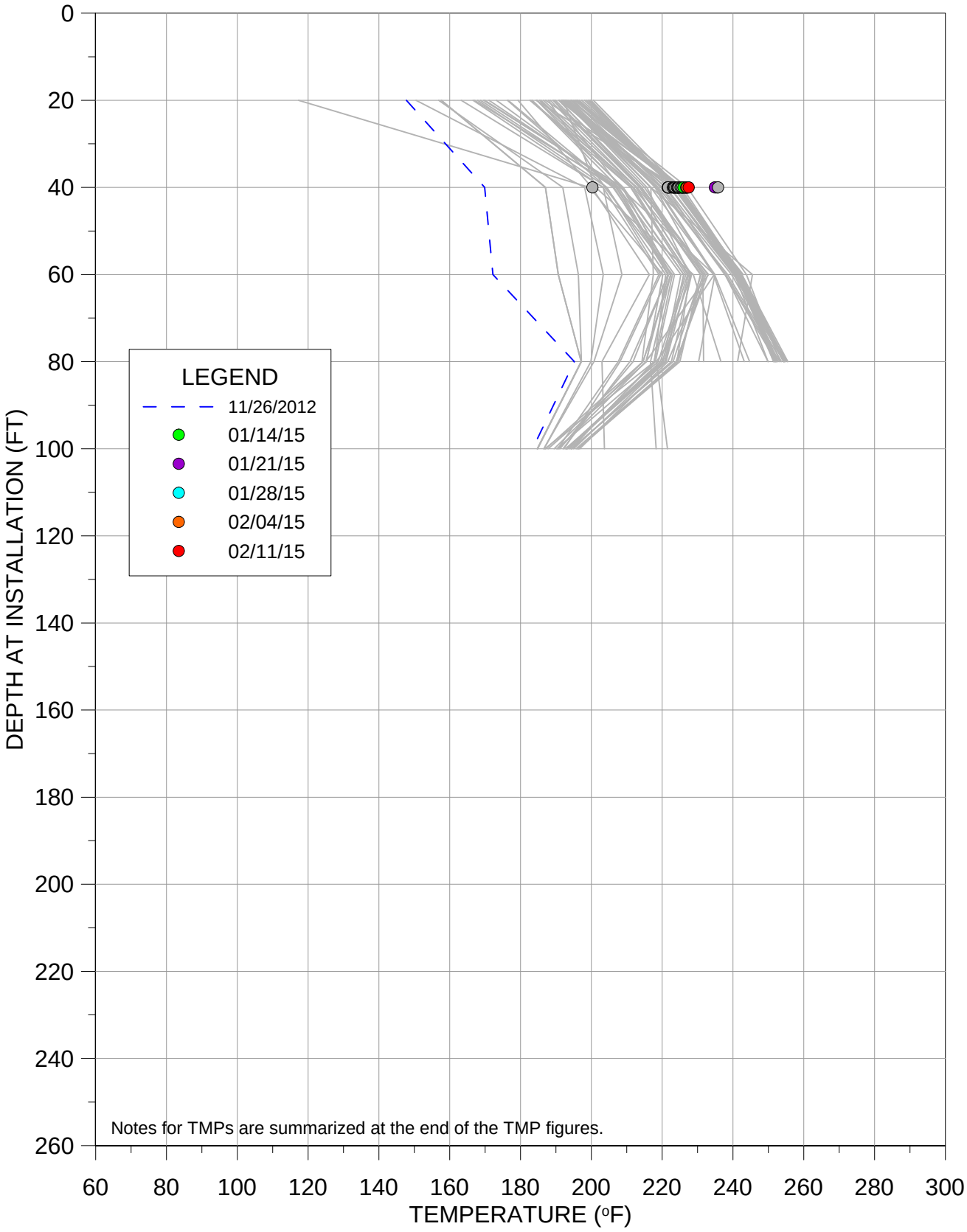
TEMPERATURE VS DEPTH
BRIDGETON LANDFILL

TMP-8



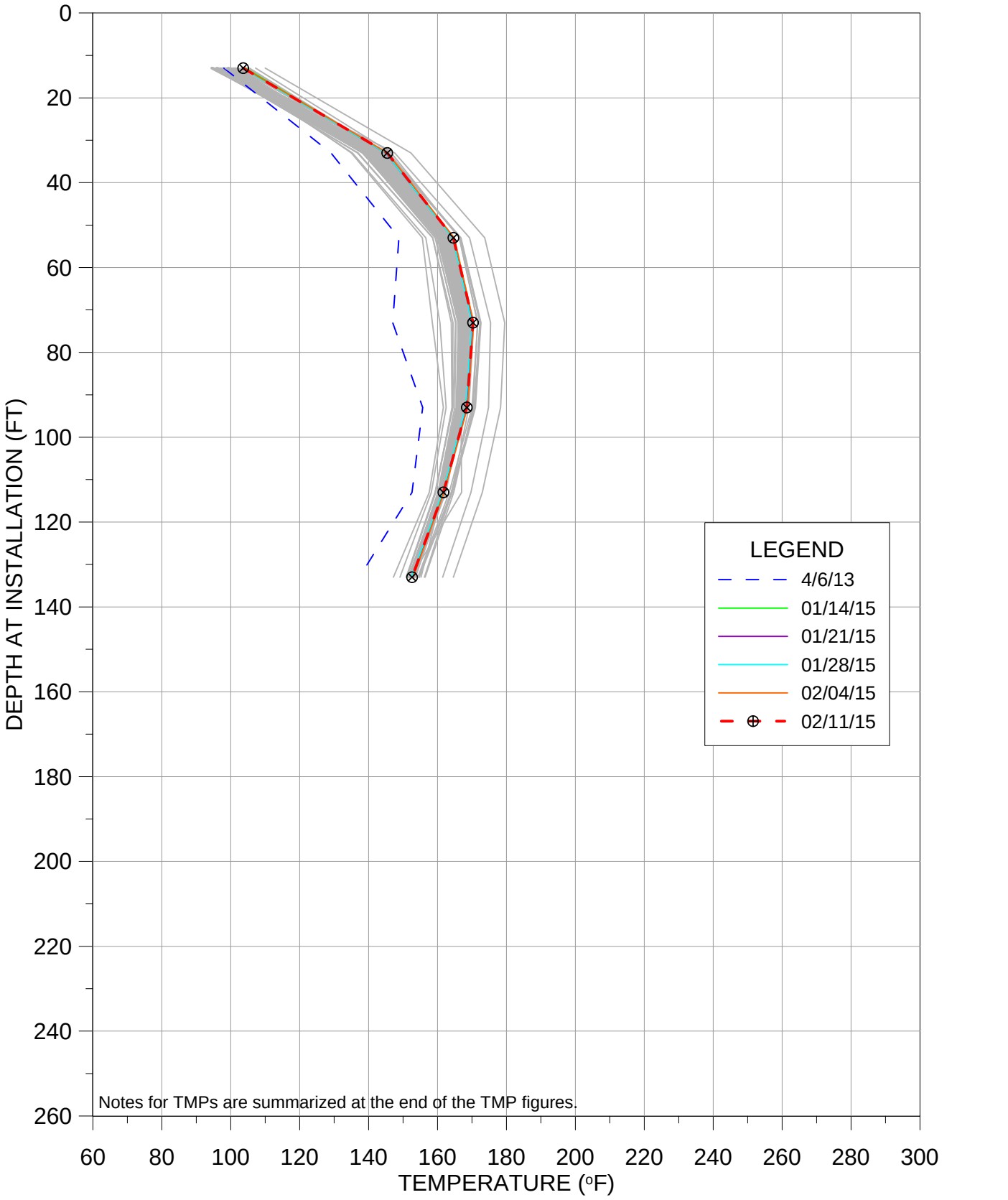
TEMPERATURE VS DEPTH
BRIDGETON LANDFILL

TMP-9



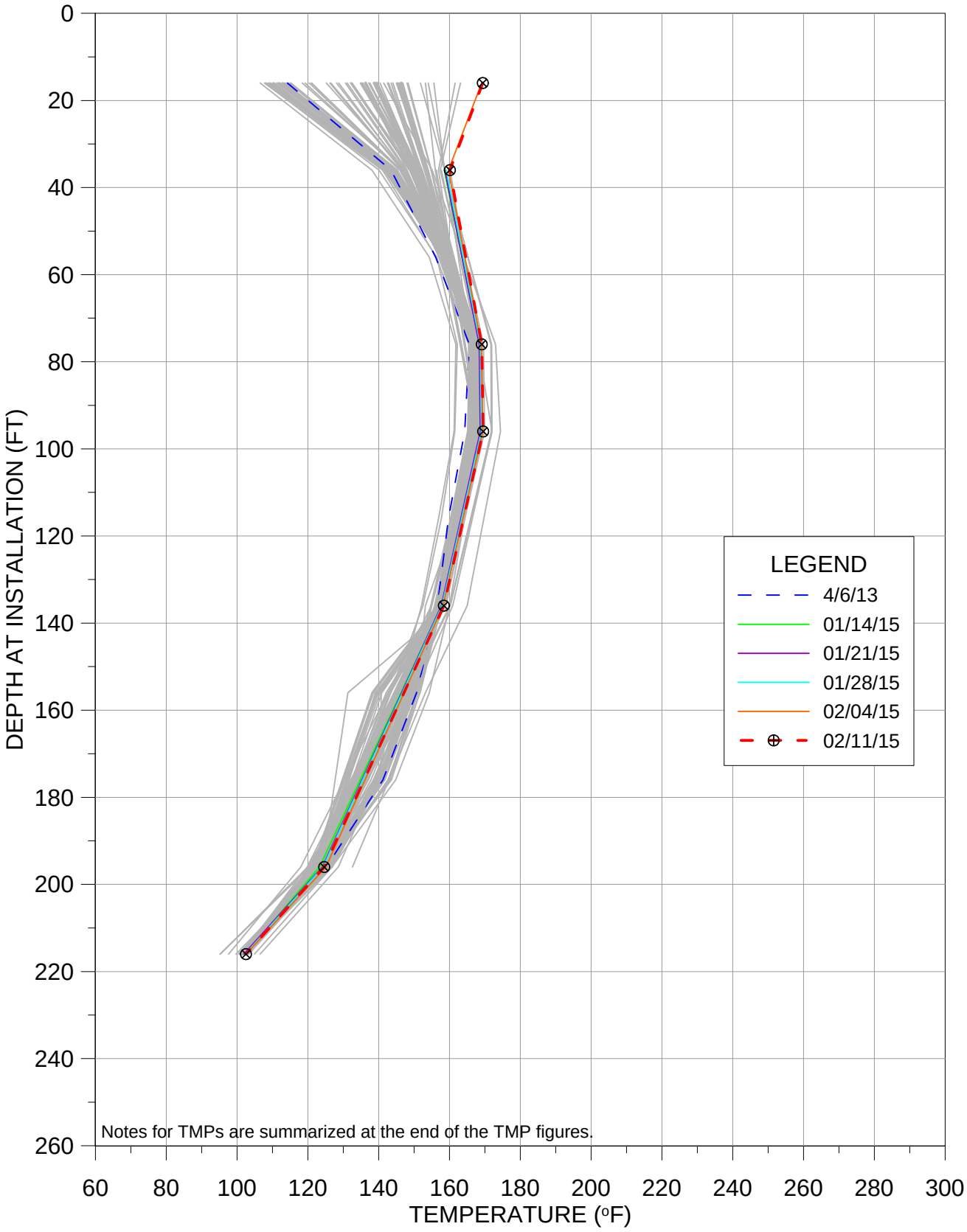
TEMPERATURE VS DEPTH
BRIDGETON LANDFILL

TMP-10



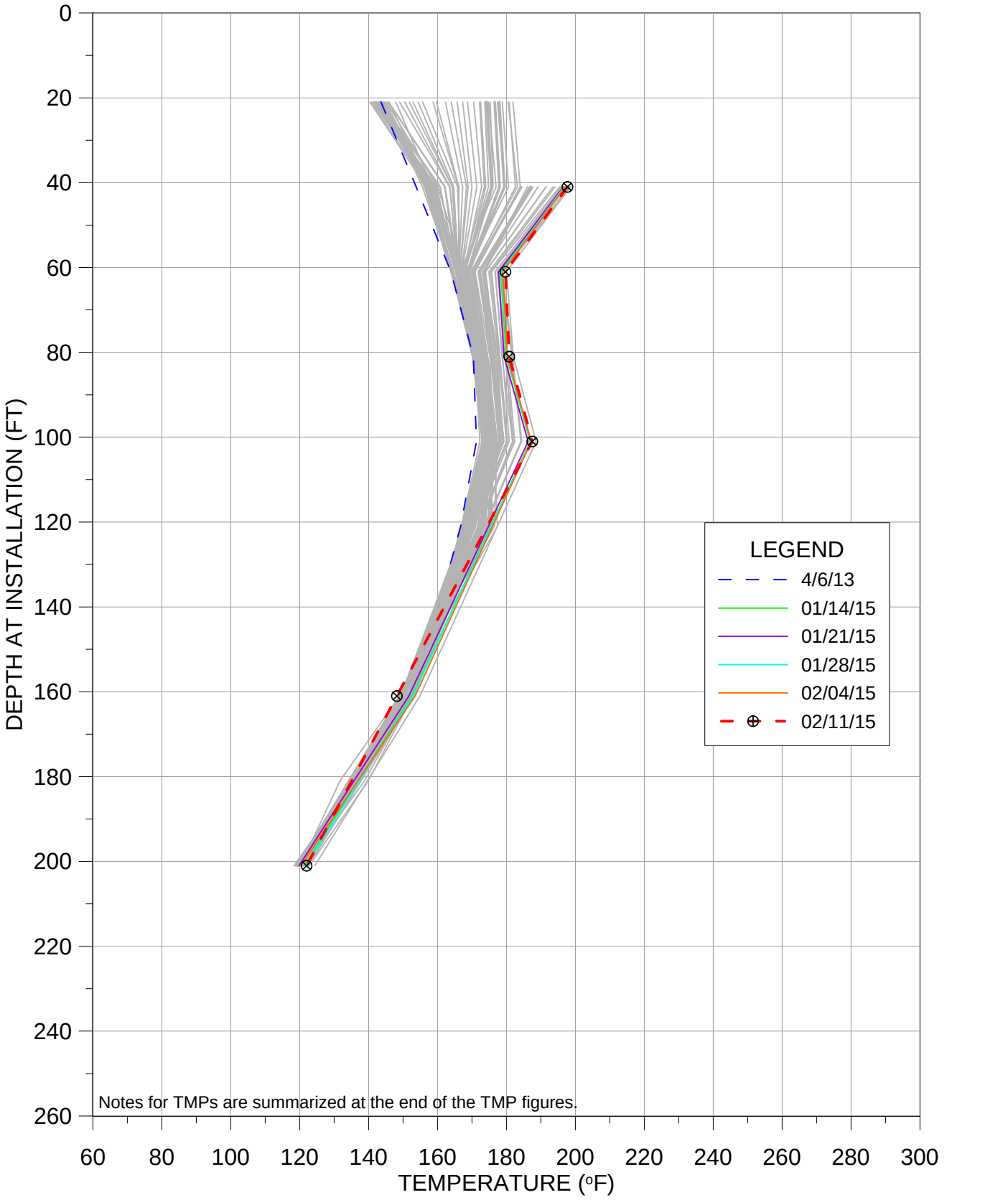
TEMPERATURE VS DEPTH
BRIDGETON LANDFILL

TMP-11



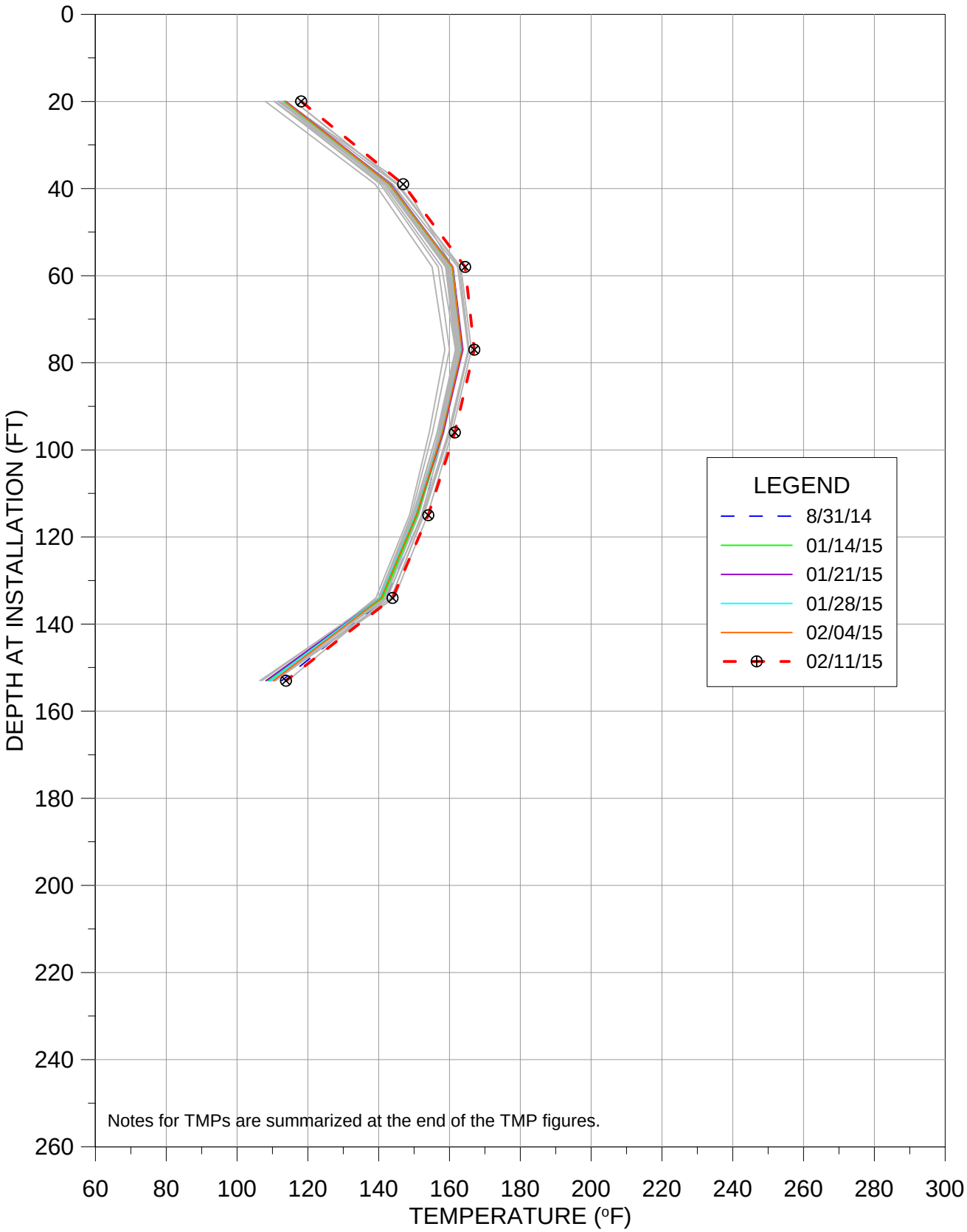
TEMPERATURE VS DEPTH
BRIDGETON LANDFILL

TMP-14



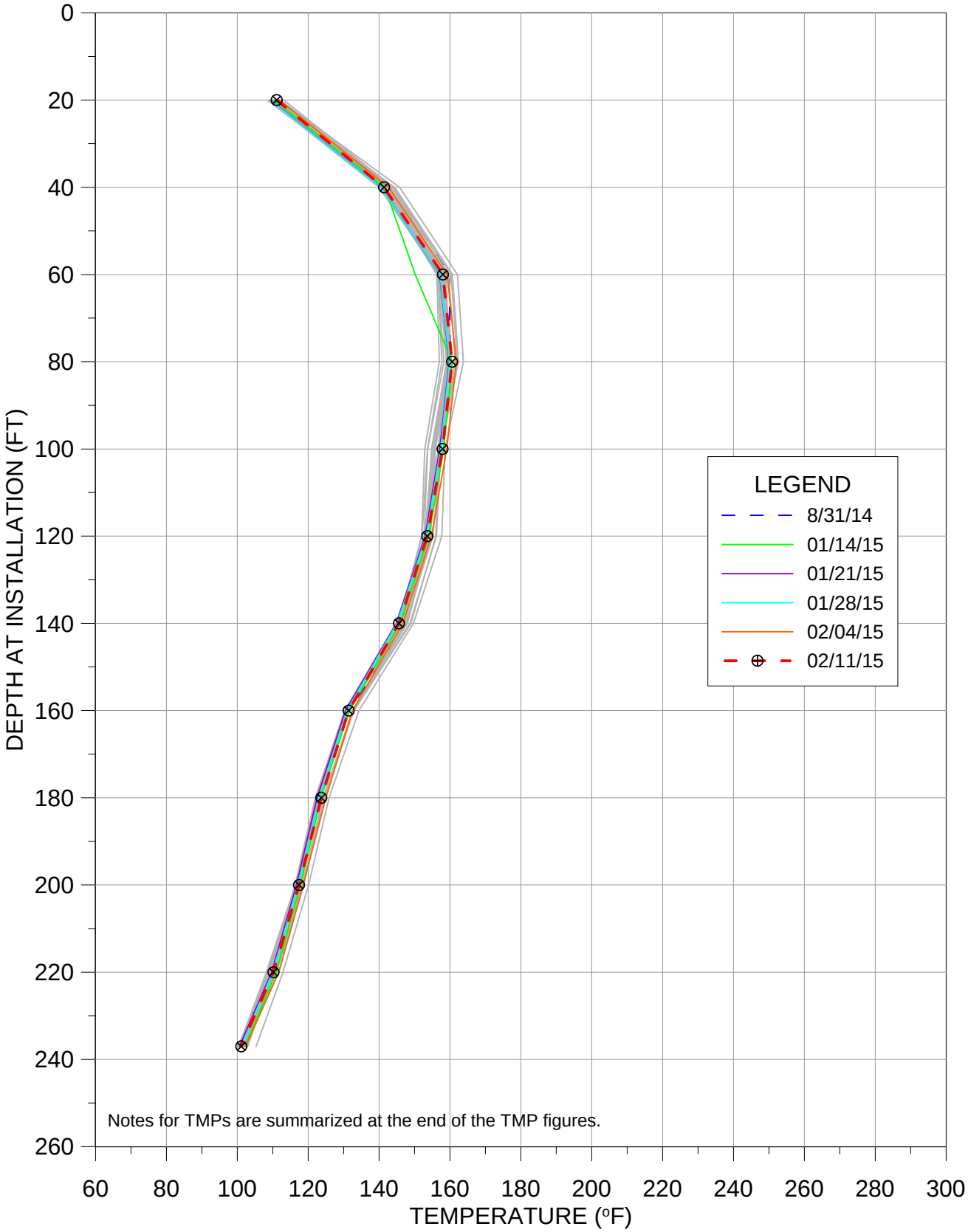
TEMPERATURE VS DEPTH
BRIDGETON LANDFILL

TMP-16



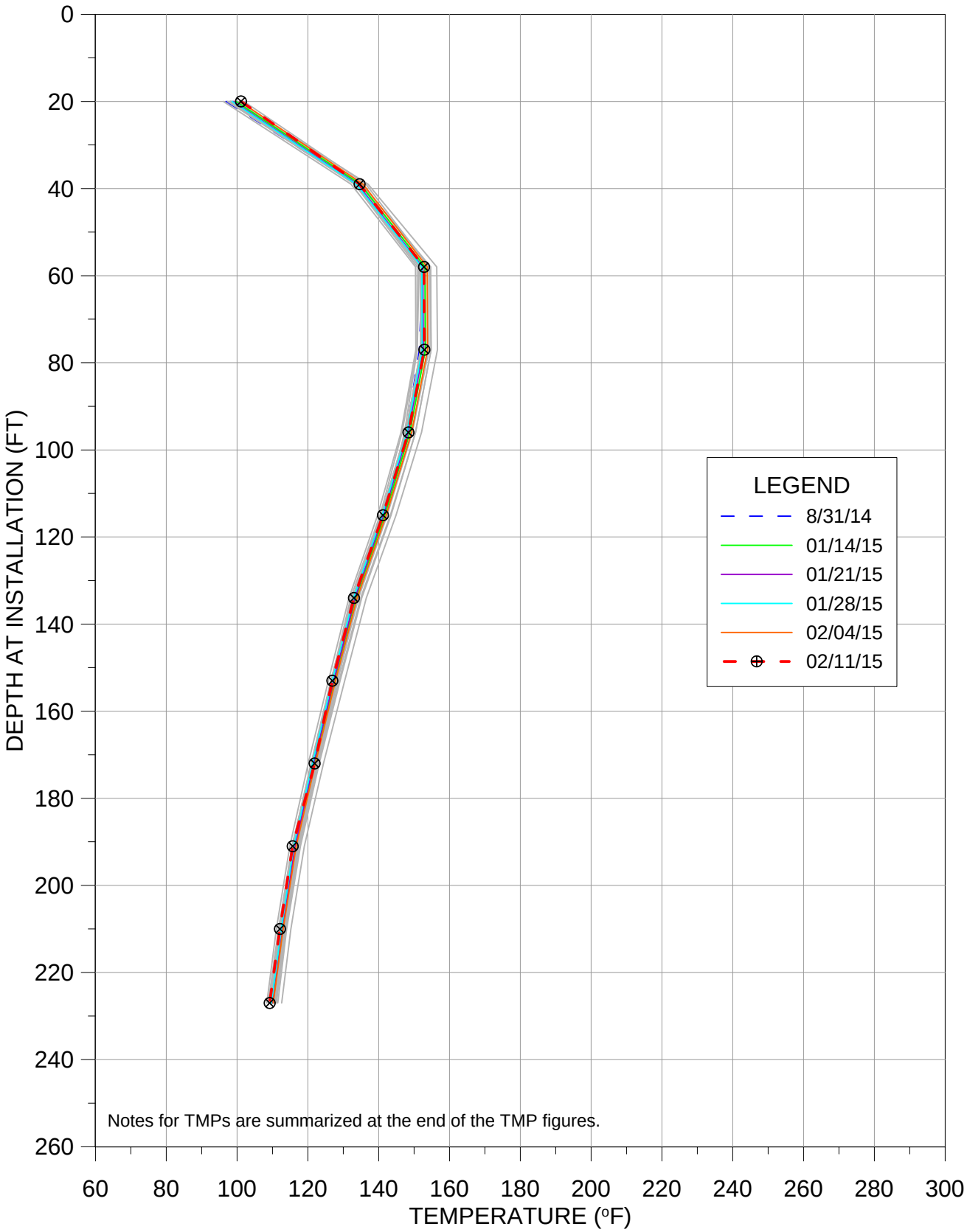
TEMPERATURE VS DEPTH
BRIDGETON LANDFILL

TMP-17



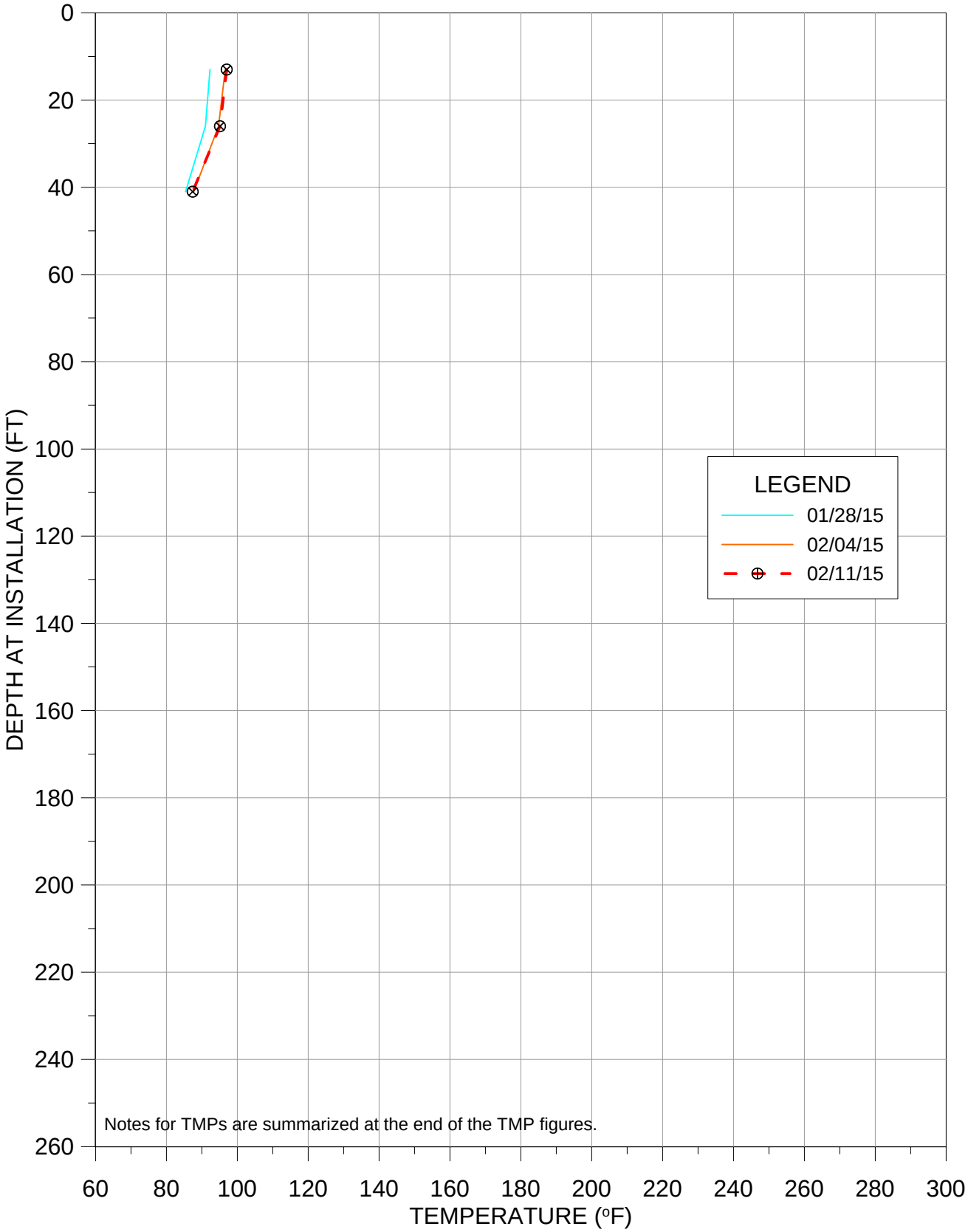
TEMPERATURE VS DEPTH
BRIDGETON LANDFILL

TMP-18



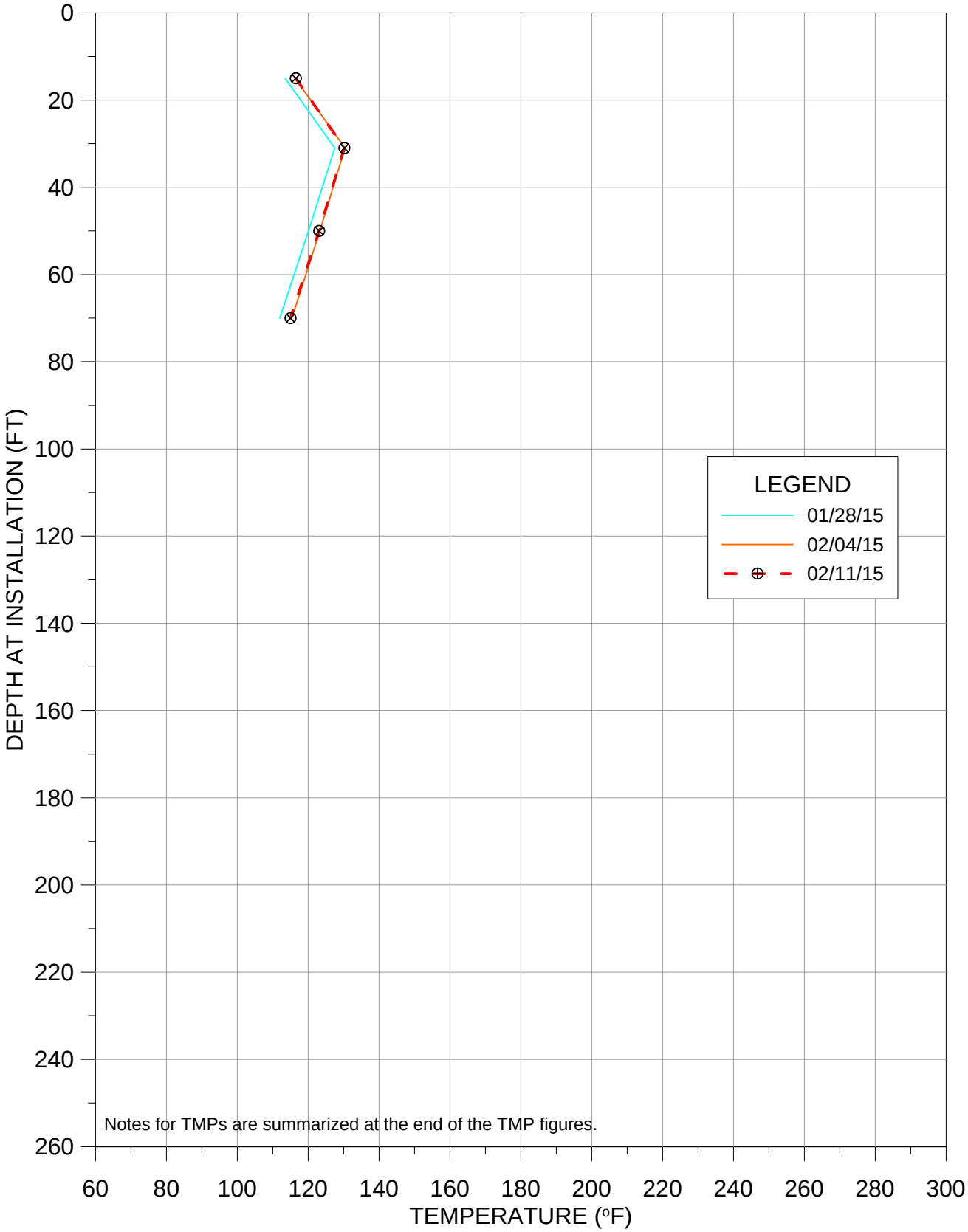
TEMPERATURE VS DEPTH
BRIDGETON LANDFILL

TMP-21



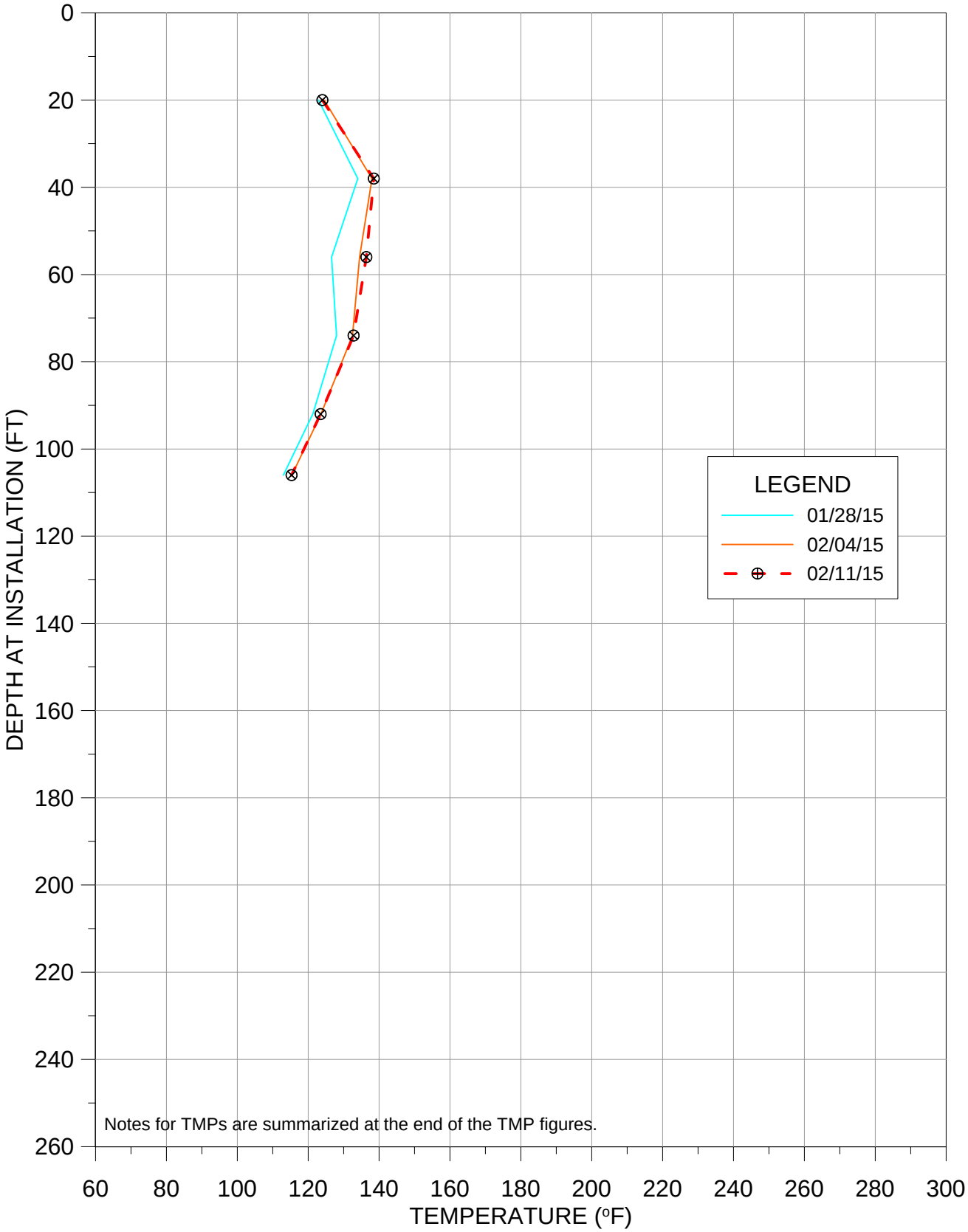
TEMPERATURE VS DEPTH
BRIDGETON LANDFILL

TMP-22



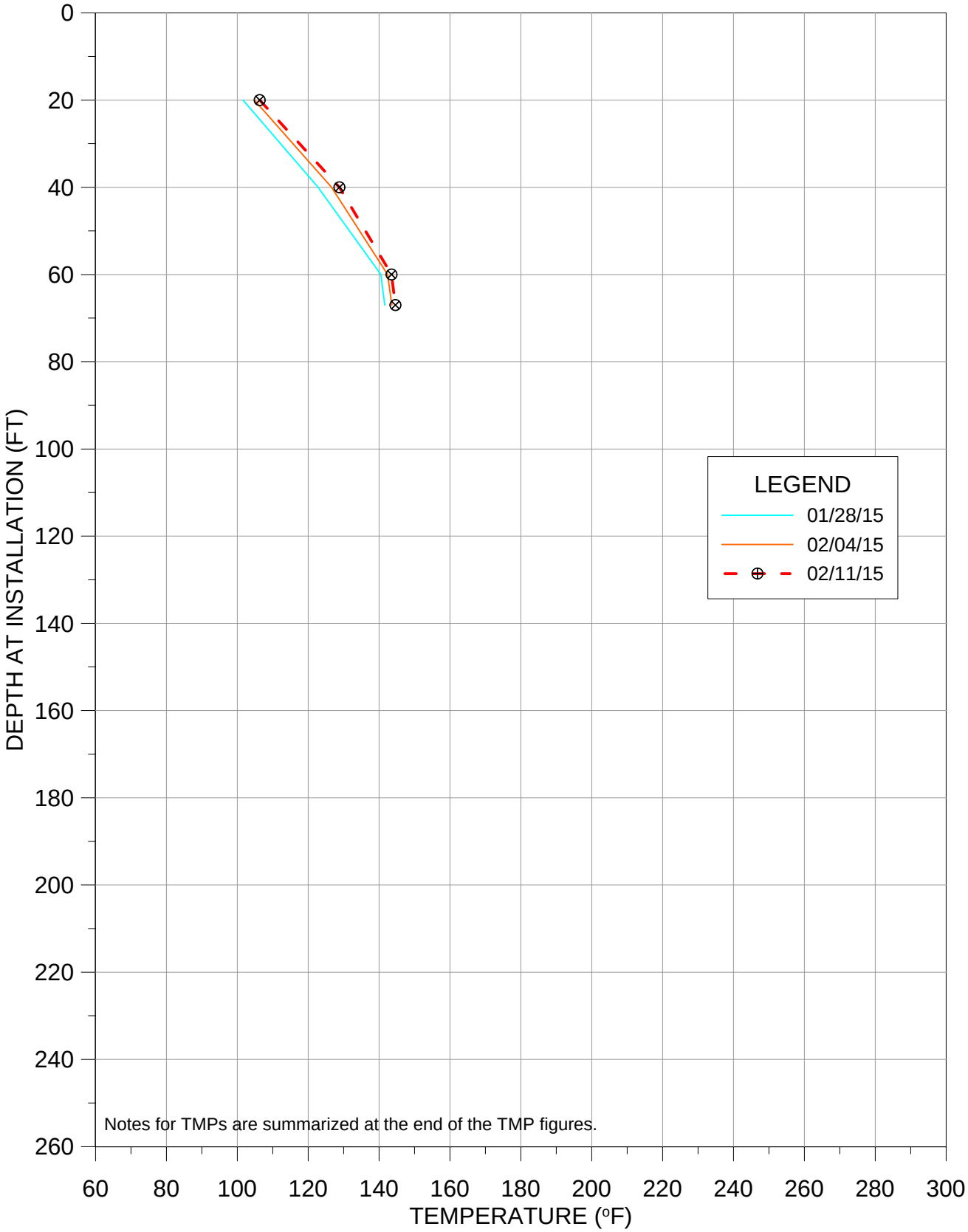
TEMPERATURE VS DEPTH
BRIDGETON LANDFILL

TMP-23



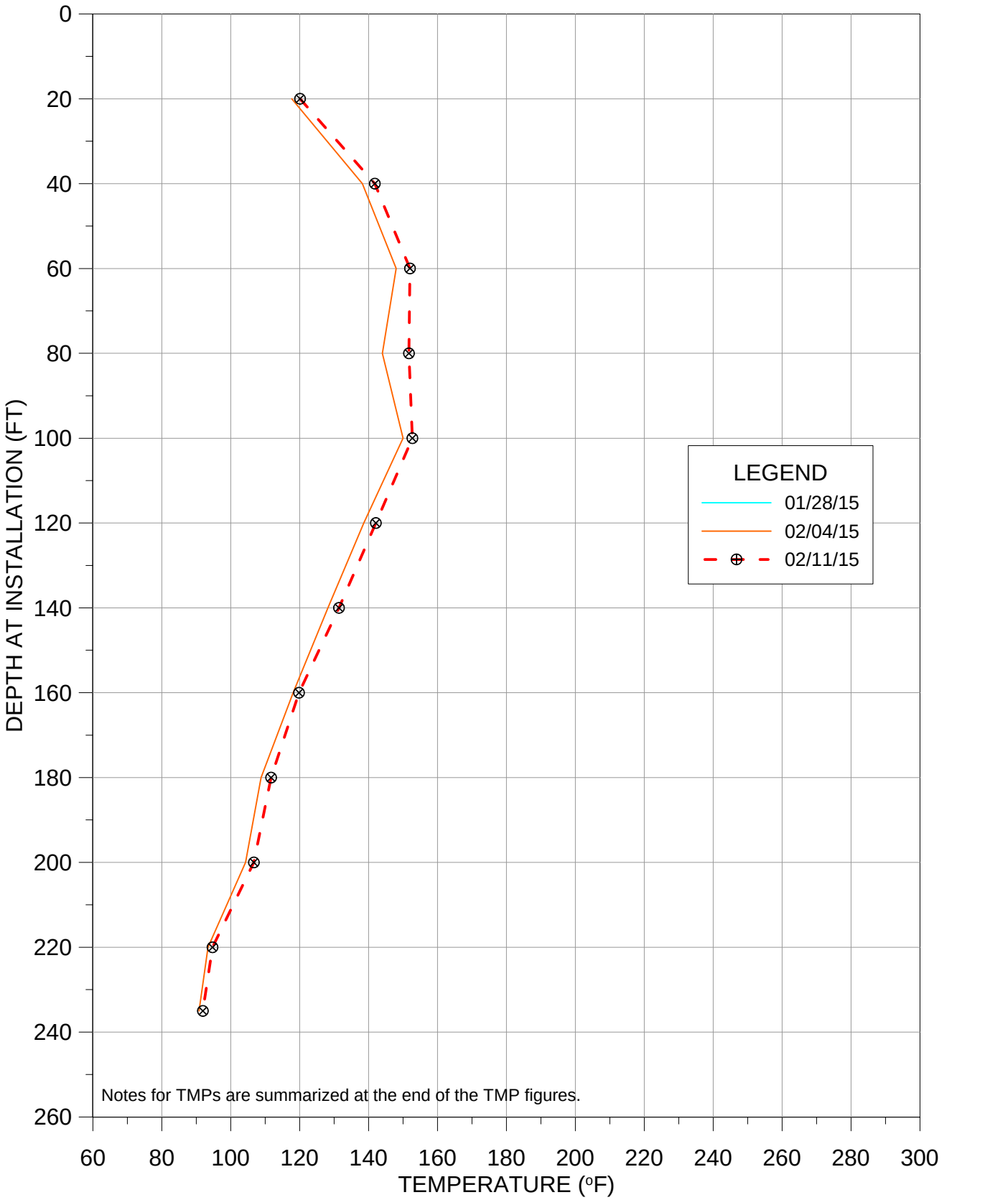
TEMPERATURE VS DEPTH
BRIDGETON LANDFILL

TMP-24



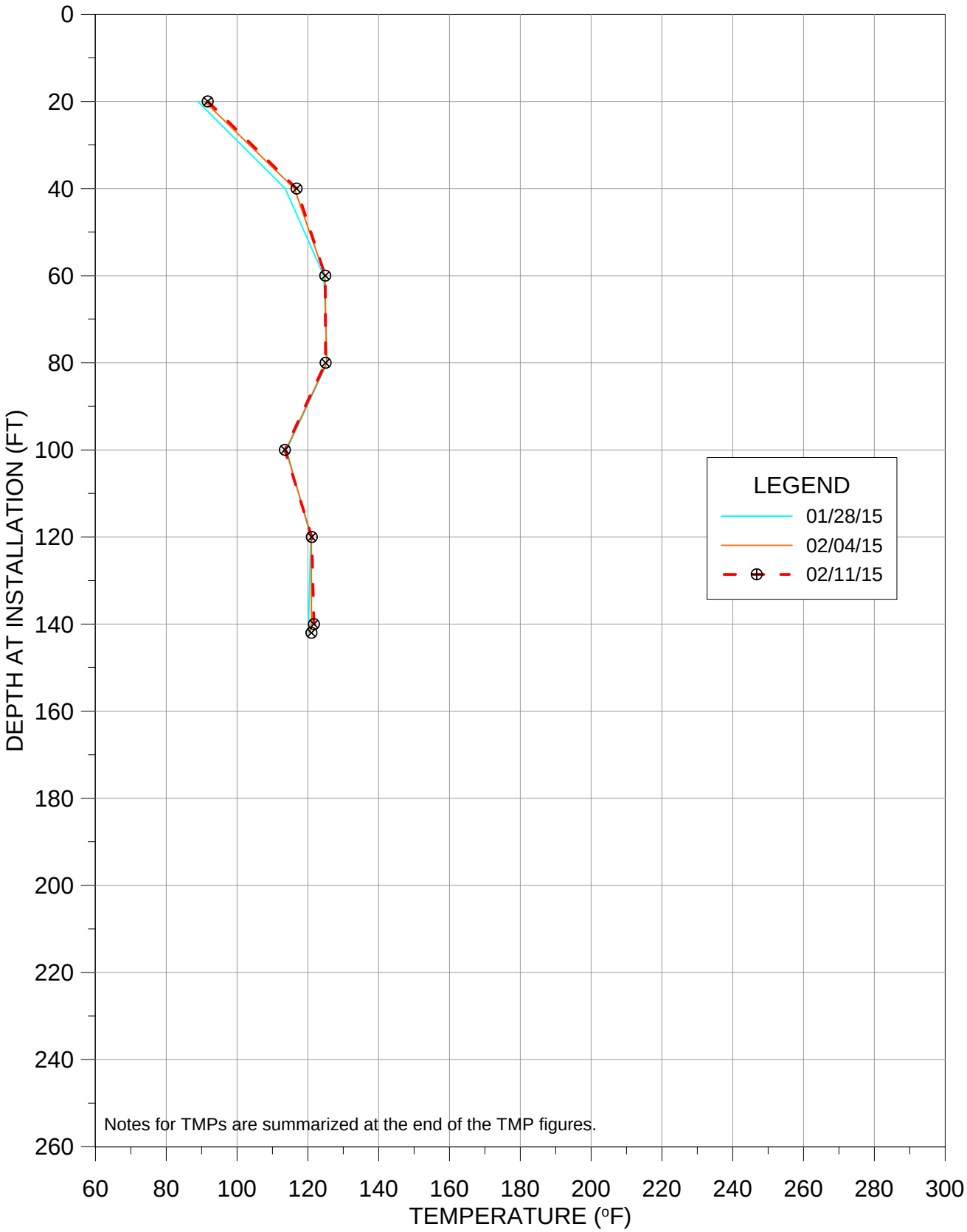
TEMPERATURE VS DEPTH
BRIDGETON LANDFILL

TMP-25



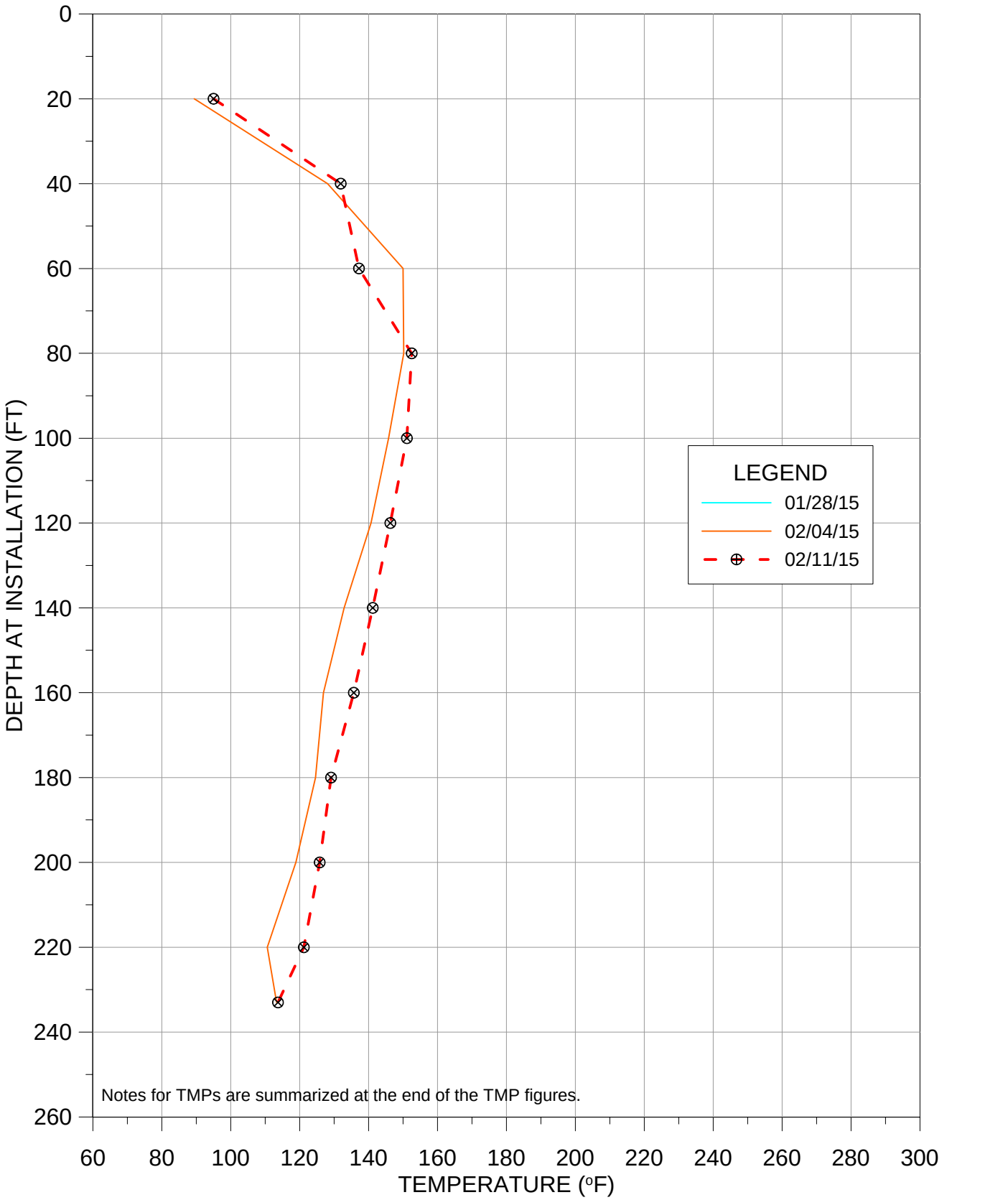
TEMPERATURE VS DEPTH
BRIDGETON LANDFILL

TMP-26



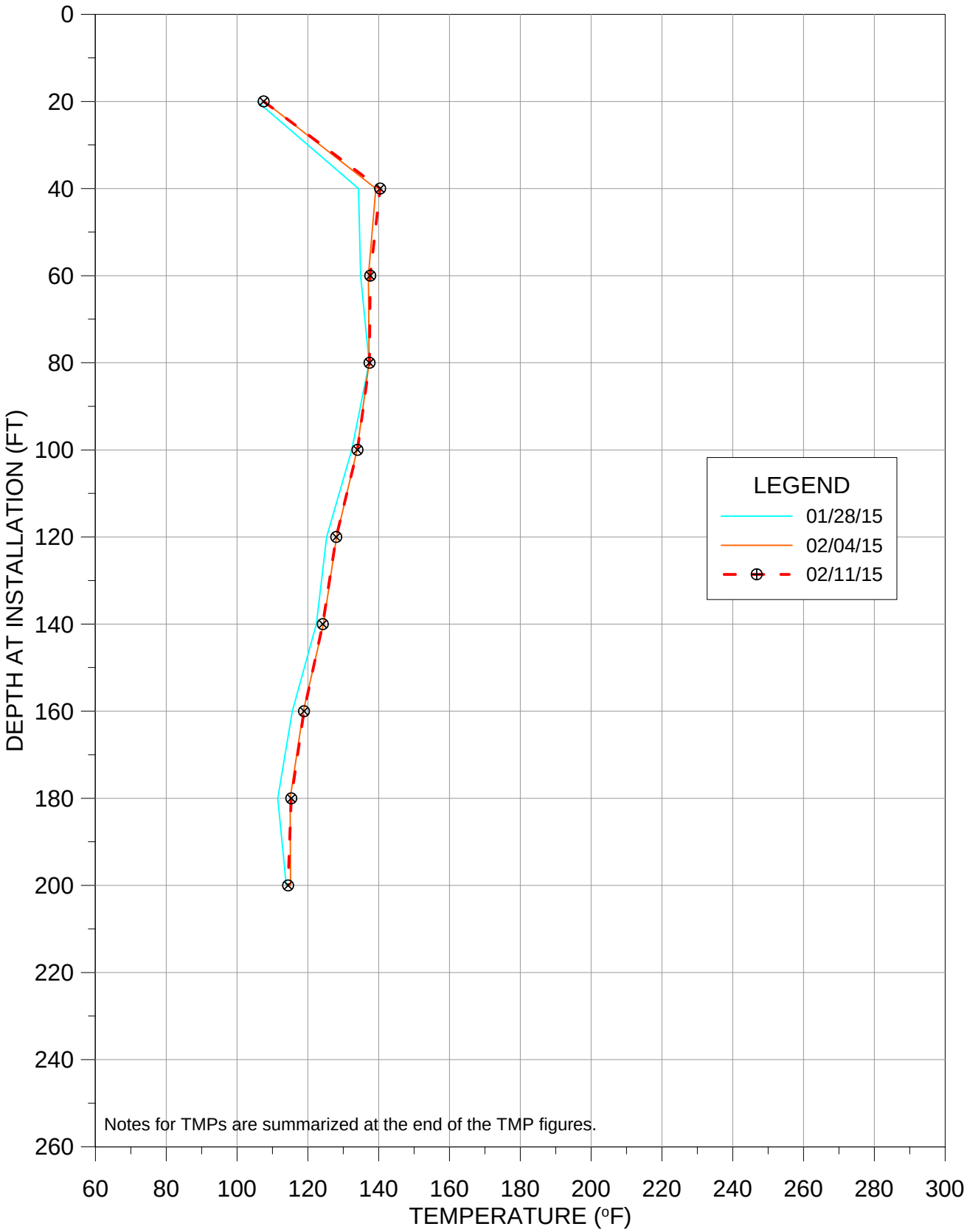
TEMPERATURE VS DEPTH
BRIDGETON LANDFILL

TMP-27



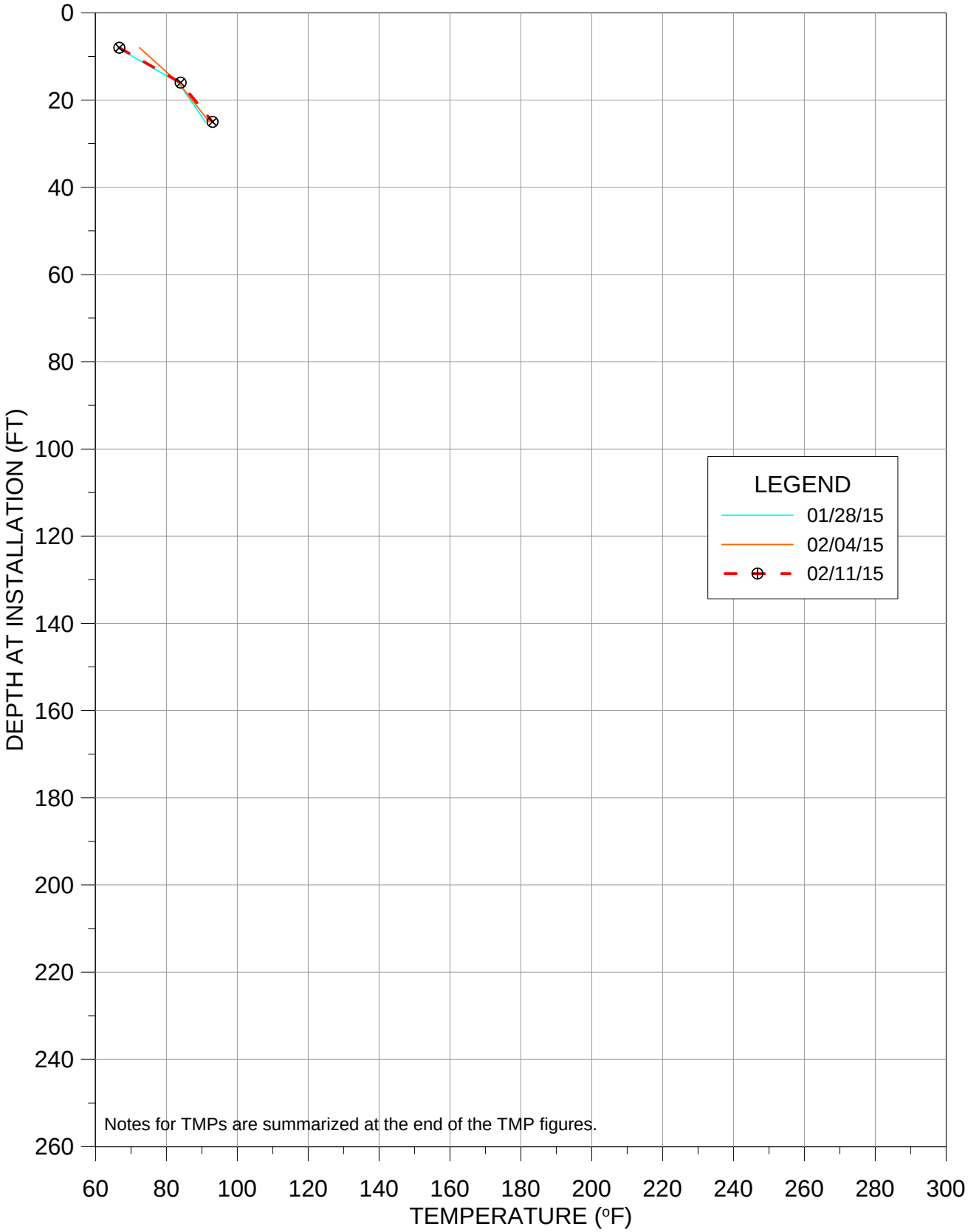
TEMPERATURE VS DEPTH
BRIDGETON LANDFILL

TMP-28



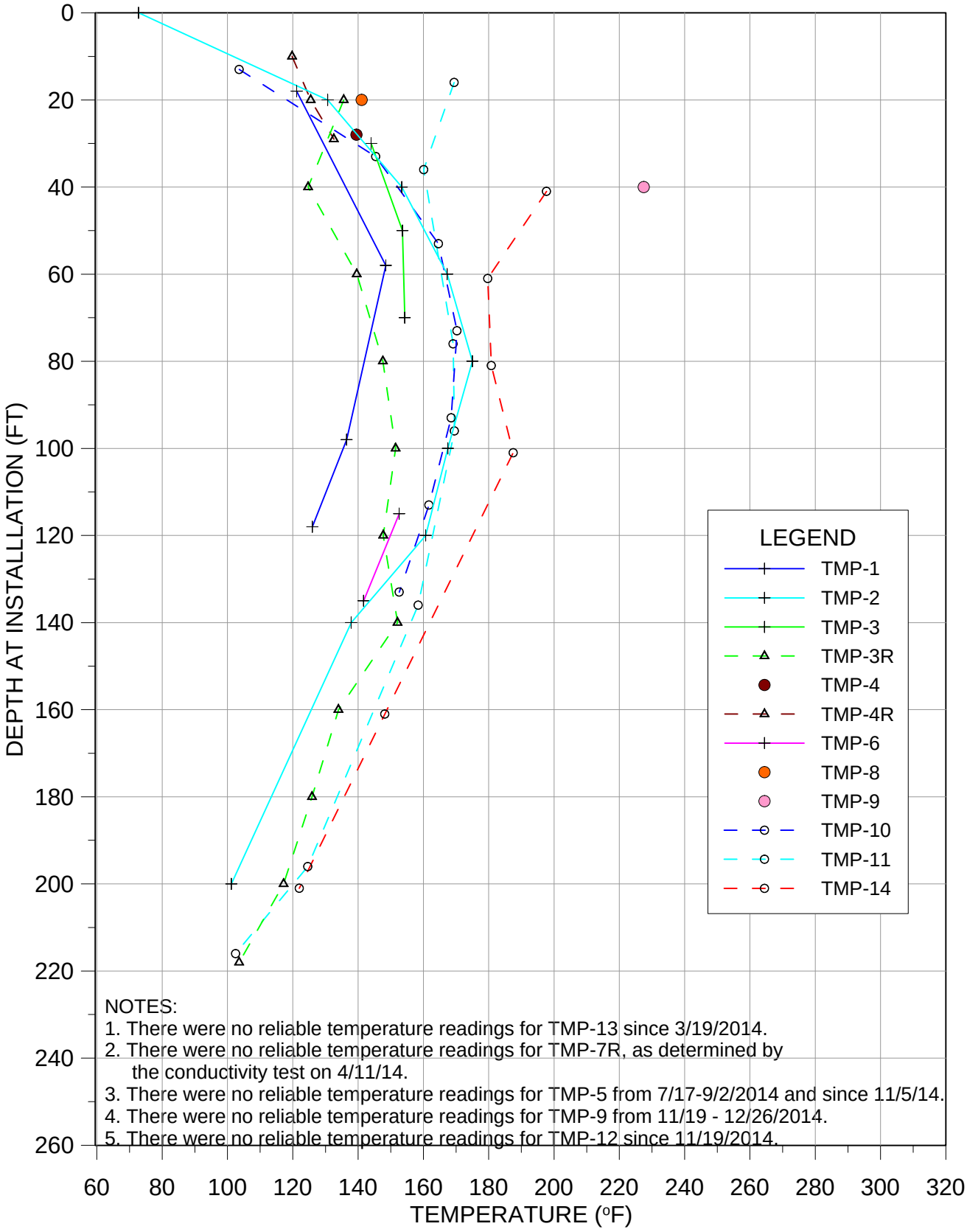
TEMPERATURE VS DEPTH
BRIDGETON LANDFILL

TMP-29



TEMPERATURE VS DEPTH
BRIDGETON LANDFILL

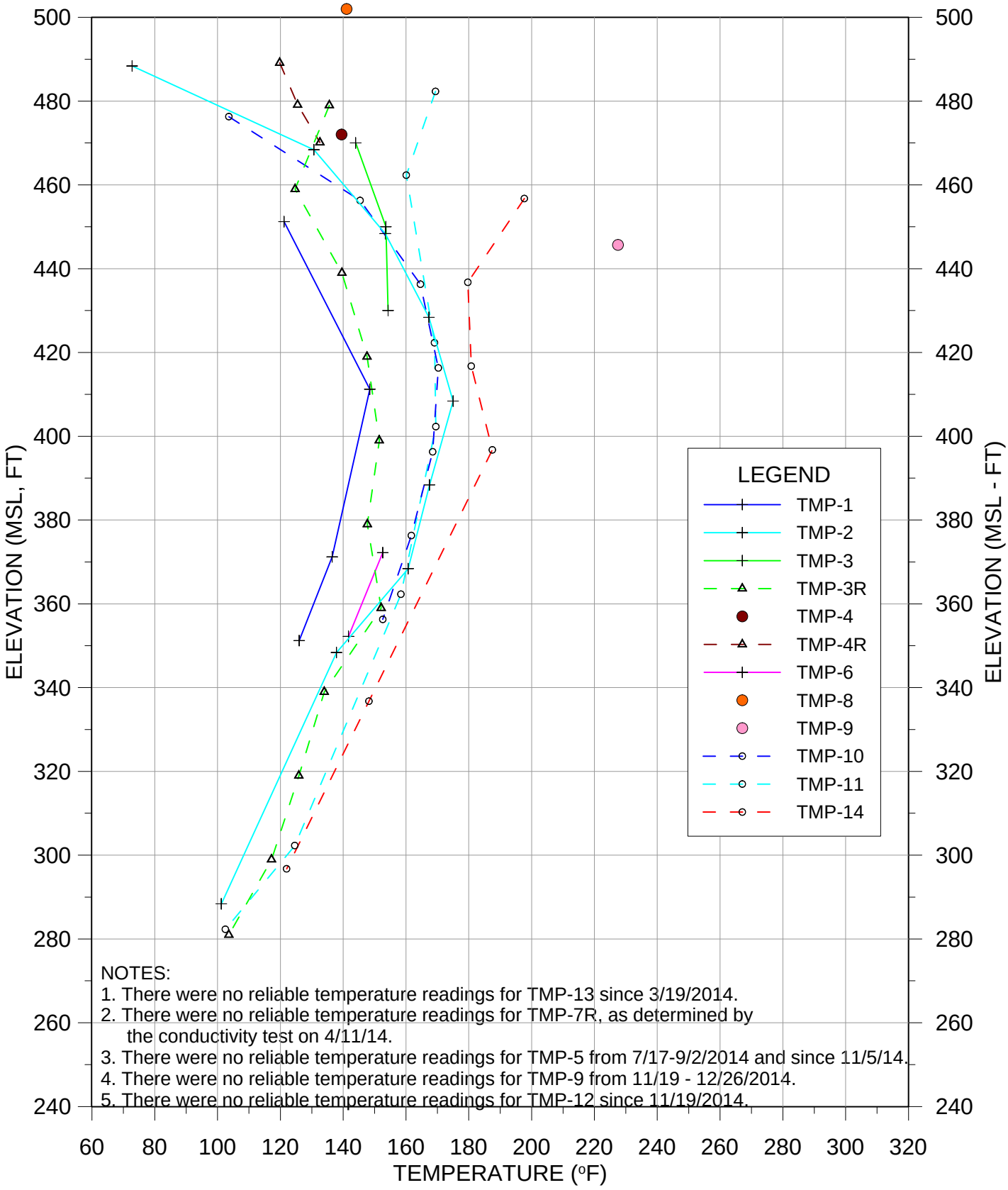
2/11/2015



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 from 11/19 - 12/26/2014.
5. There were no reliable temperature readings for TMP-12 since 11/19/2014.

TEMPERATURE VS DEPTH
BRIDGETON LANDFILL

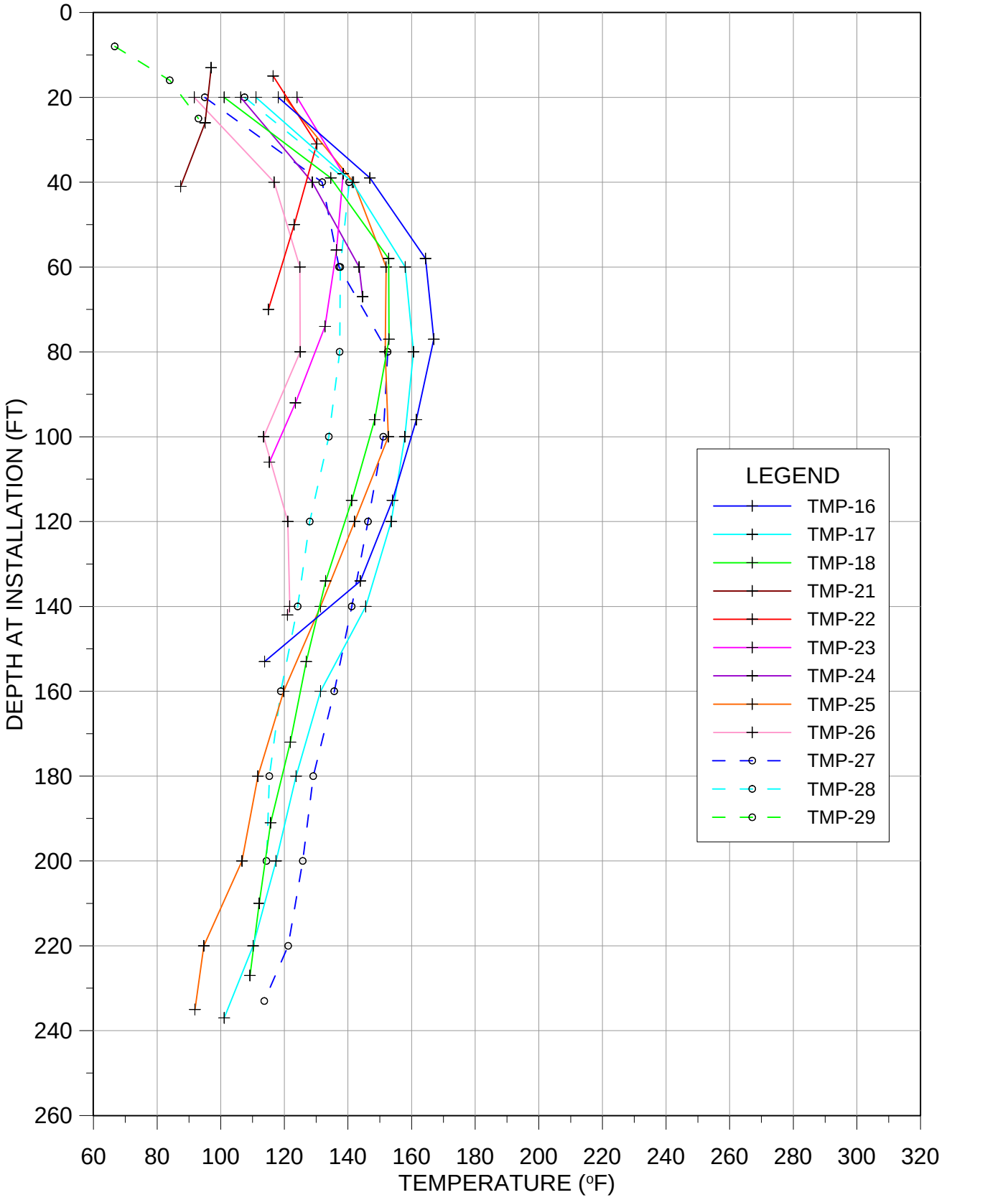
2/11/2015



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 from 11/19 - 12/26/2014.
5. There were no reliable temperature readings for TMP-12 since 11/19/2014.

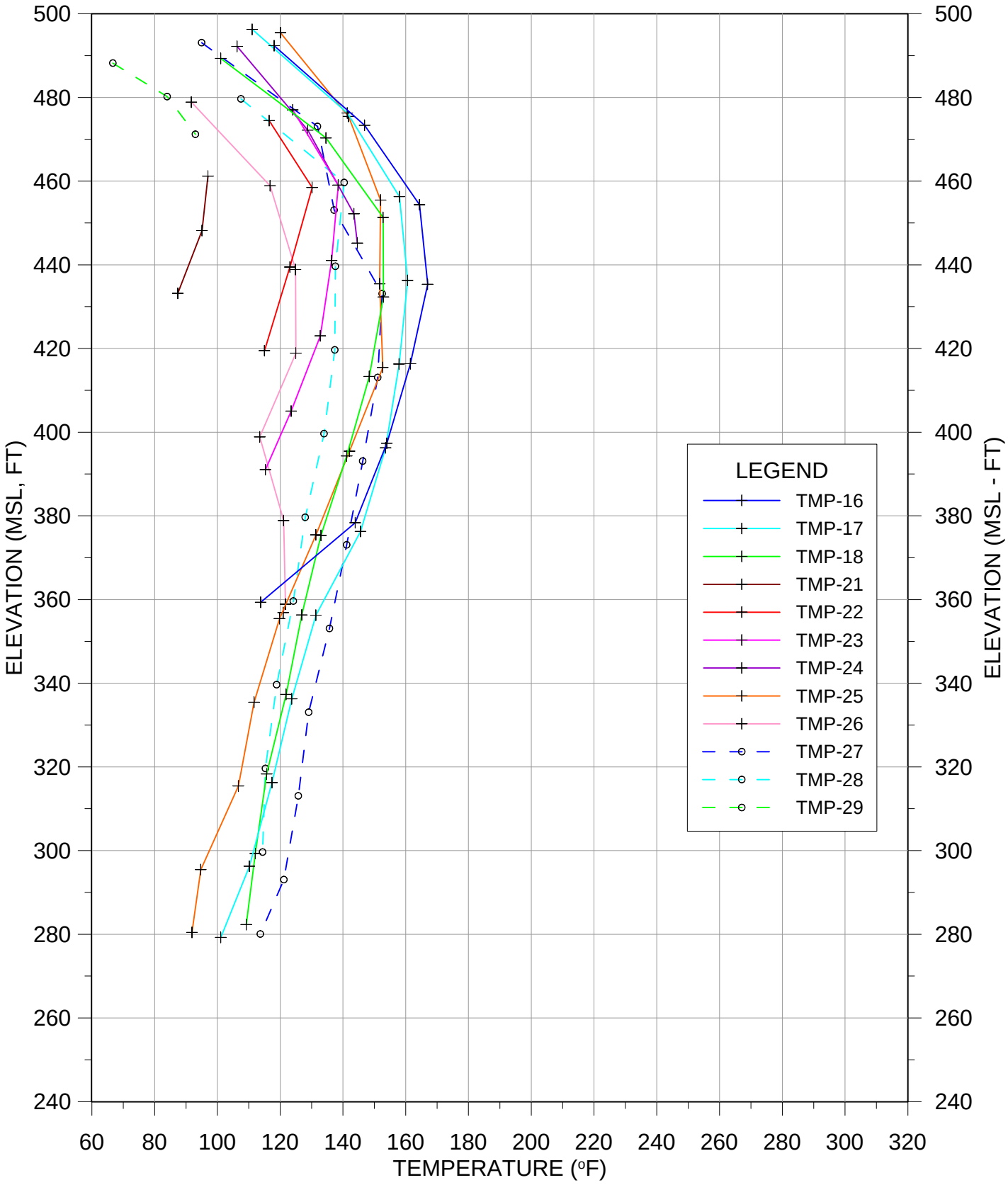
TEMPERATURE VS ELEVATION
BRIDGETON LANDFILL

2/11/2015 - NORTH QUARRY



TEMPERATURE VS DEPTH
BRIDGETON LANDFILL

2/11/2015 - NORTH QUARRY



TEMPERATURE VS ELEVATION
BRIDGETON LANDFILL

TEMPERATURE VS DEPTH
BRIDGETON LANDFILL NOTES

TMP-1:

1. The resistance reading was fluctuating and the temperature reading was unstable at 138 ft depth since 8/1/2014.
2. The resistance reading was high and no temperature reading was obtained at 78 ft depth since 8/13/2014.
3. The resistance reading was high and no temperature reading was obtained at 38 ft depth since 9/2/2014.

TMP-2:

1. Unit at 180 ft depth had resistance reading above allowable.
2. The resistance reading was high and no temperature readings were obtained at 160 ft depth since 6/19/2014.
3. Unit at 120 ft depth had high resistance readings that were fluctuating on 10/22/14 & from 11/5-12/6/2014 and on 12/16/2014.
4. Unit at 60 ft depth had fluctuating resistance readings from 11/12 – 1/28/15 and no resistance reading on 2/11/2015.

TMP-3:

1. No temperature reading has been obtained and there have been high resistance readings at 170' depth since 1/29/2014, except on 3/13/2014.
2. The conductivity tests on 4/11/14 conducted by CEC showed that units at 10', 90', 130', 210' and 250' are no longer reliable.
3. No temperature reading was obtained at 230' depth since 8/01/2014
4. No temperature reading was obtained at 190' depth from 9/12 to 10/17/14, from 11/5 to 11/26/14 and on 12/16/14.
5. The conductivity tests on 10/28/14 conducted by Feezor Engineering showed that units at 10', 90', 110', 130', 210' and 250' are not reliable.
6. The unit at 150' no temperature or unreliable readings since 9/12/14.
7. The unit at 230' had unreliable readings from 10/22/-12/6/2014 and on 2/11/2015.
8. The unit at 190' had unreliable readings since 12/16/14.

TMP-3R: NONE

TMP-4:

1. The conductivity tests on 4/11/14 conducted by CEC showed that the unit at 48' depth is no longer reliable.

TMP-4R: NONE

TMP-5: TMP NO LONGER IN SERVICE

TMP-6:

1. Unit at 195 ft depth had a resistance reading above acceptable on 11/20/2013.
2. Unit at 155 and depth had resistance readings above acceptable since 3/19/2014. No temperature readings were obtained.
3. Units at 195 ft depths had resistance readings above acceptable and no temperature readings obtained from 3/19/2014 to 4/11/2014.
4. The conductivity tests on 4/11/14 conducted by CEC showed that units at 35', 55', 75', 155', 175', and 195' depths are no longer reliable.
5. No reliable temperature readings were obtained at the unit at 95' on 5/13/14, 5/28-7/2/14, 10/1-10/8/14, 10/22/14, 11/12-12/6/14, 1/14/15 & since 2/4/15. The temperatures between 12/16/14-1/8/15 are questionable due to high/fluctuating resistivity.
6. No reliable temperature readings were obtained at the 15' unit on 5/28-6/13/14, 6/25/14, 8/1-9/2/14, 10/1-10/8/14, 11/19-12/6/14, 1/2/15, & since 1/28/15. The temperature obtained on 12/16/14 is questionable due to high resistivity.
7. No reliable temperature readings were obtained at the unit at 215' since 6/13/14.

TMP-7R: TMP NO LONGER IN SERVICE

TMP-8:

1. Lines connecting data over distance of > 40' are to identify the data set and should not be used for temperature estimation.
2. The presented TMP readings represent the thermocouples that were operational on those dates.
3. No acceptable readings were obtained since after 7/25/13 to 10/10/13.
4. Acceptable readings were obtained resuming on 10/16/13 from 20' to 80' depths.
5. Resistance of the unit at 80' indicates the reading is not reliable since 12/04/13.
6. The conductivity tests on 10/28/14 conducted by Feezor Engineering showed that units at 40' and 60' are not reliable.

TMP-9:

1. All units had resistivity readings higher than acceptable levels on 7/3, 7/18, 7/25, 8/14, 8/20, 8/27, and 9/3/2013. Values shown on and between those dates are for informational purposes and should not be considered reliable. Resistivity readings since 9/11/2013 were acceptable for all units except 100'.
2. Unit at 100' depth had an inaccurate temperature reading on 8/1/2013 and no reading since 8/6/2013.
3. Unit at 80' depth had a high resistivity and no temperature readings on 4/1/2014.
4. The conductivity tests on 4/11/14 conducted by CEC showed that units at 20', 60', 80', and 100' depths are no longer reliable.

5. Unit at 40' depth had a resistance lower than credible on 11/12/14. The unit requires assessment.
6. Unit at 40' depth had a resistance which is fluctuating from week to week between 11/19 & 11/26/14. The readings are no longer reliable during that time.

TMP-10:

1. Resistance readings for 7/18 and 7/25/2013 were acceptable; however the temperature readings appear inaccurate. This issue appears to be resolved as of the 8/1/2013 readings.

TMP-11:

1. None of the units had acceptable resistivity readings on 7/3/2013. The units at TMP-11 were subsequently re-read on 7/8/2013. Resistance readings for 7/8/2013 were acceptable.
2. All units had resistivity readings higher than acceptable levels on 7/18/2013. Values shown for that date are for informational purposes and should not be considered reliable.
3. All units had acceptable resistance readings starting on 7/25/13, except a high resistance reading at 116' depth since 10/30/13.
4. No temperature reading was obtained at 176' since 1/17/2014.
5. The unit at 156' depth had a high resistance between 1/17/14 & 5/13/14, on 6/19/14, & since 8/13/14 where no temperatures were obtained.
6. The unit at 56' depth had a high resistance reading since 3/19/14 & no temperatures were obtained.
7. The conductivity tests on 4/11/14 conducted by CEC showed that units at 56', 116', and 176' depths are no longer reliable.
8. No temperature was obtained on 6/25/14 at 216' depth.
9. The conductivity tests on 10/28/14 conducted by Feezor Engineering showed that units at 56', 116' and 176' are not reliable.
10. Resistance for unit at 156' was unreasonable between 10/29 & 12/6/2014 and since 12/16/14, therefore no reliable temperature readings were obtained.
11. The Unit at 76' depth had either no readings or unreasonable readings between 11/12 & 12/6/14, 12/24/14 and on 1/14/15.
12. The Unit at 16' depth had either no readings or unreasonable readings between 11/19 & 12/6/14 and 12/16/14 – 1/28/15.

TMP-12: TMP NO LONGER IN SERVICE

TMP-13: TMP NO LONGER IN SERVICE

TMP-14:

1. The unit at 181 ft depth had resistance readings that were out of readable limit and no temperature readings obtained since 7/9/2014.

2. The unit at 101 ft depth had resistance readings that were out of readable limit and no temperature readings from 7/9/2014 to 7/17/2014.
3. The unit at 121 ft depth had resistance readings out of readable limit and no temperature readings since 7/25/2014.
4. The unit at 141 ft depth had a high resistance reading and no temperature reading obtained since 8/01/2014.
5. The unit at 21 ft depth had low resistance readings and unreliable temperature readings since 7/25/2014.
6. The unit at 201 ft depth had no temperature or resistance reading obtained on 12/24/2014.

TMP-14R: NOT PART OF THIS SUBMITTAL (HEAT EXTRACTION TMP)

TMP-15: TMP WAS NEVER IN SERVICE

TMP-16: NONE

TMP-17: NONE

TMP-18: NONE

TMP-19: NOT PART OF THIS SUBMITTAL (HEAT EXTRACTION TMP)

TMP-20: NOT PART OF THIS SUBMITTAL (HEAT EXTRACTION TMP)

TMP-21: NONE

TMP-22: NONE

TMP-23: NONE

TMP-24: NONE

TMP-25: NONE

TMP-26: NONE

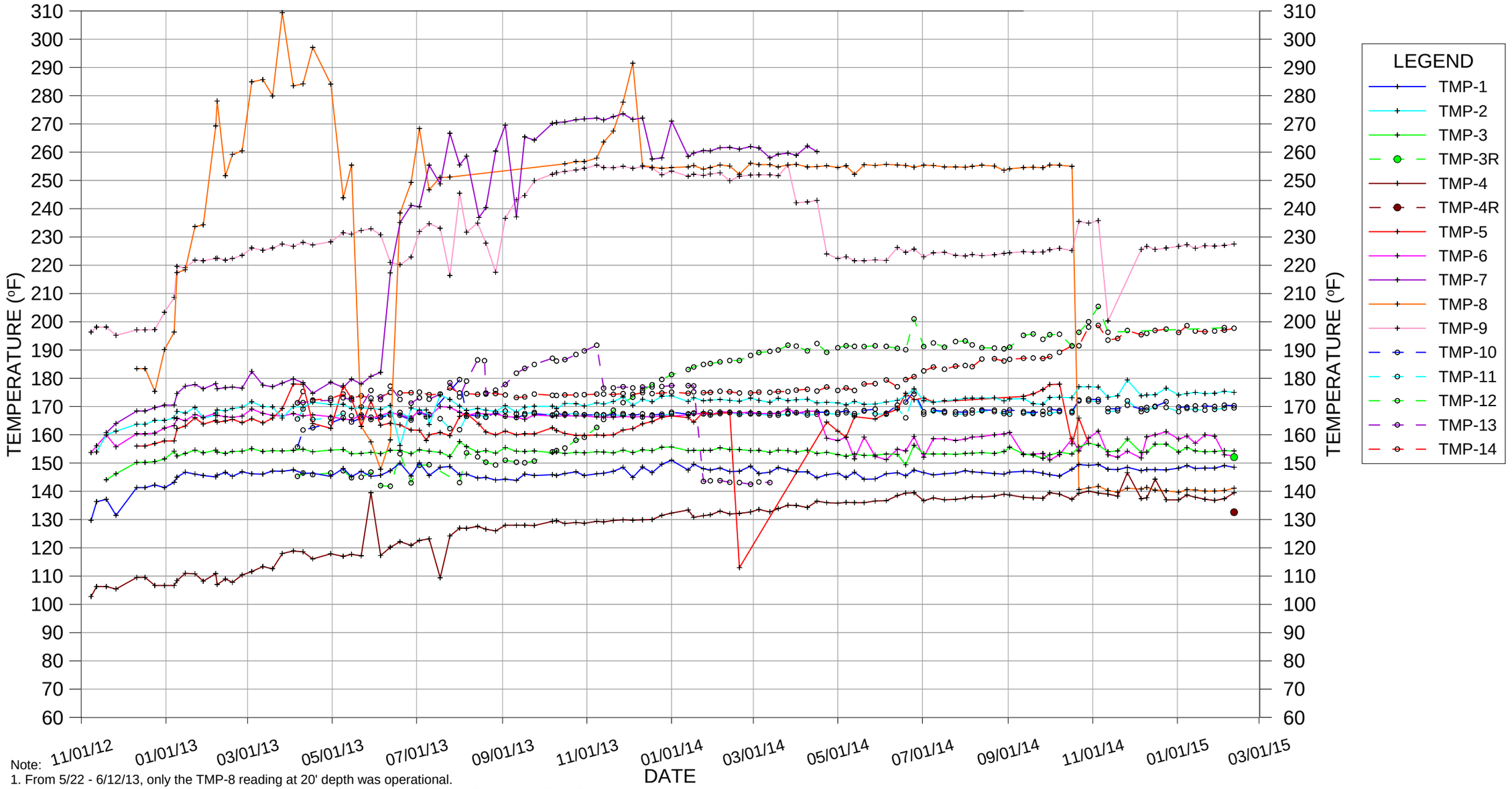
TMP-27: NONE

TMP-28:

1. The unit at 217 ft depth has not functioned since installation.

TMP-29: NONE

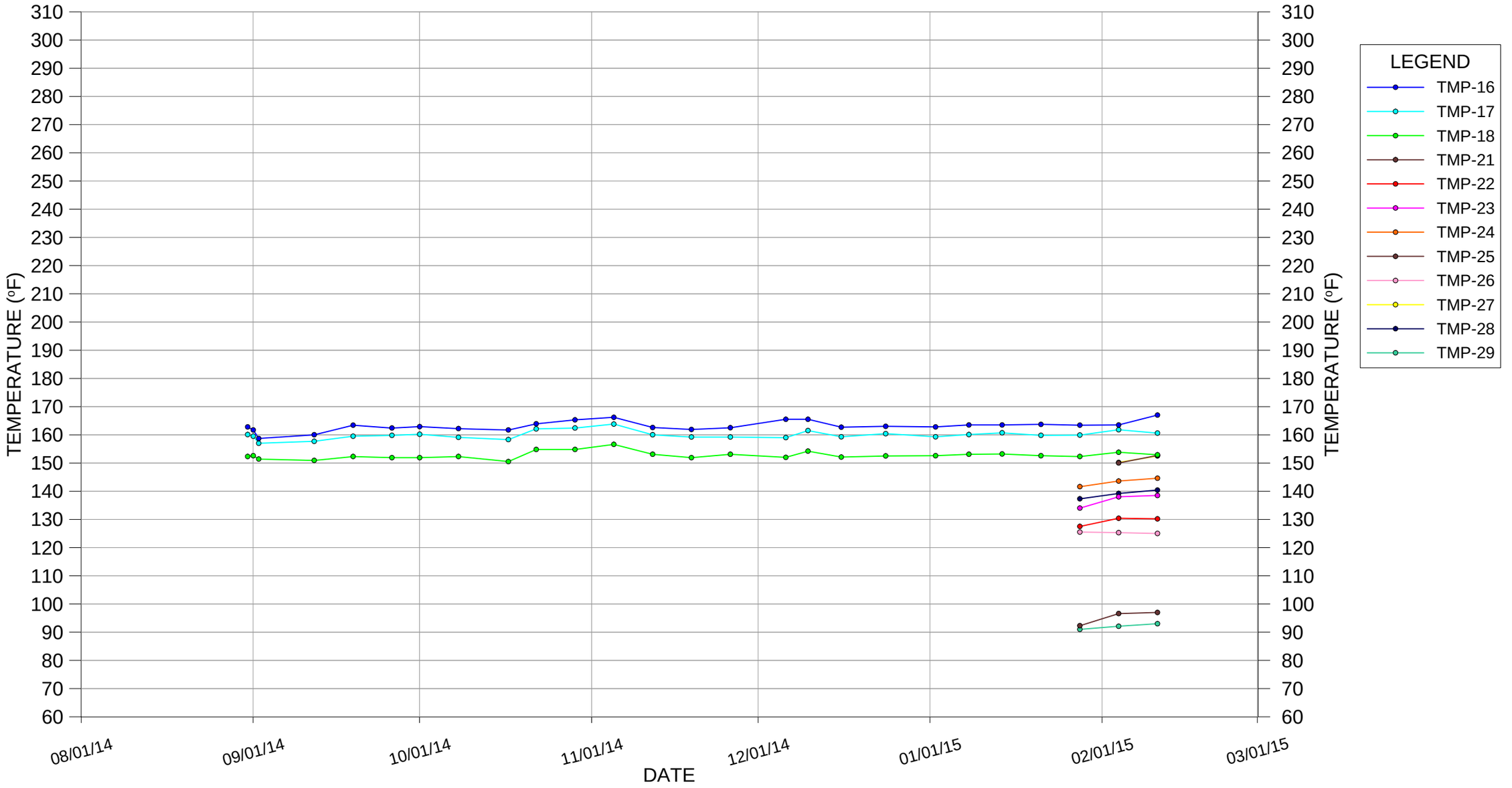
MAXIMUM TEMPERATURES



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 vaild 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.

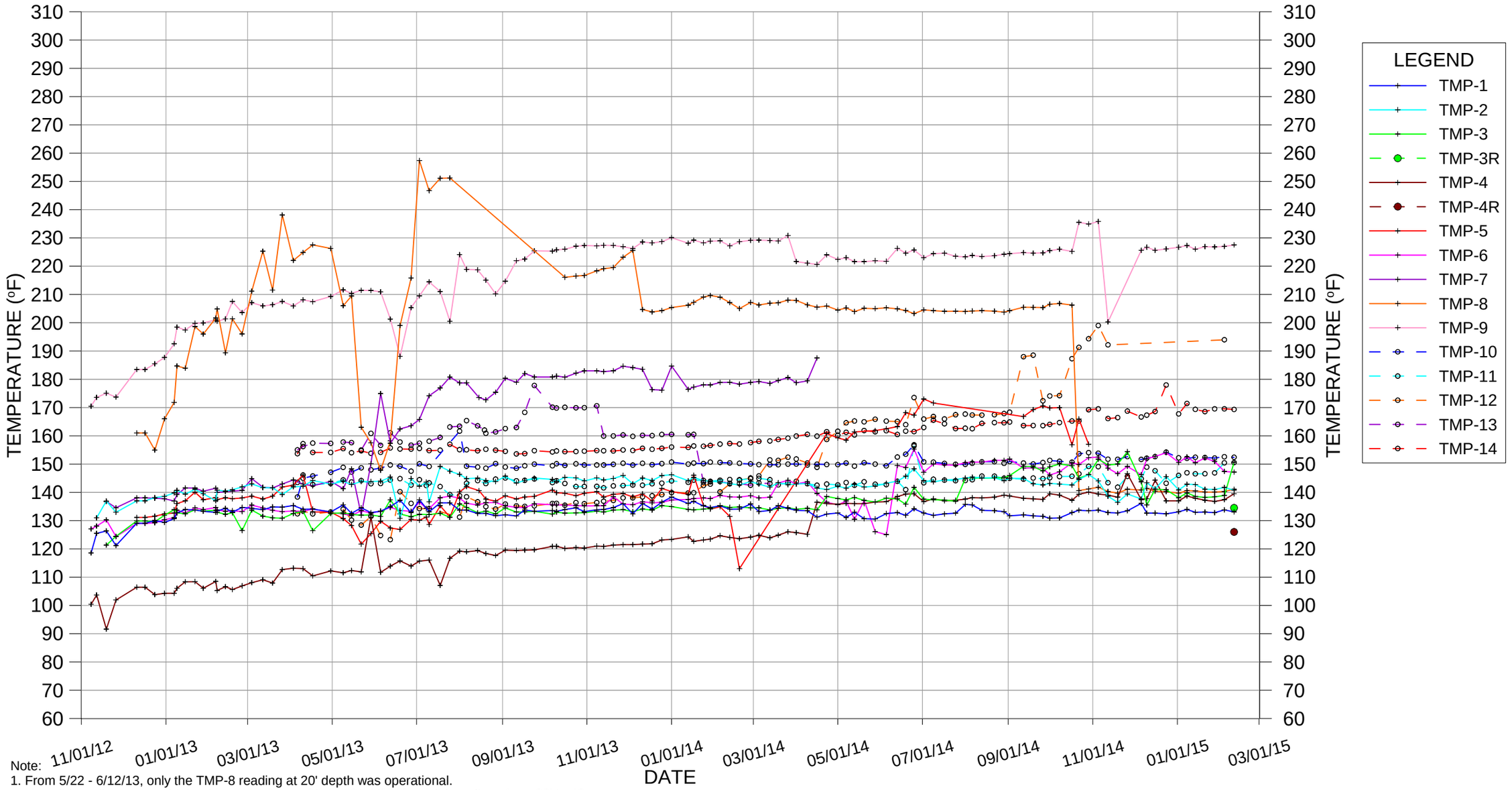
TEMPERATURE VS TIME
BRIDGETON LANDFILL

MAXIMUM TEMPERATURES - NORTH QUARRY



TEMPERATURE VS TIME
BRIDGETON LANDFILL

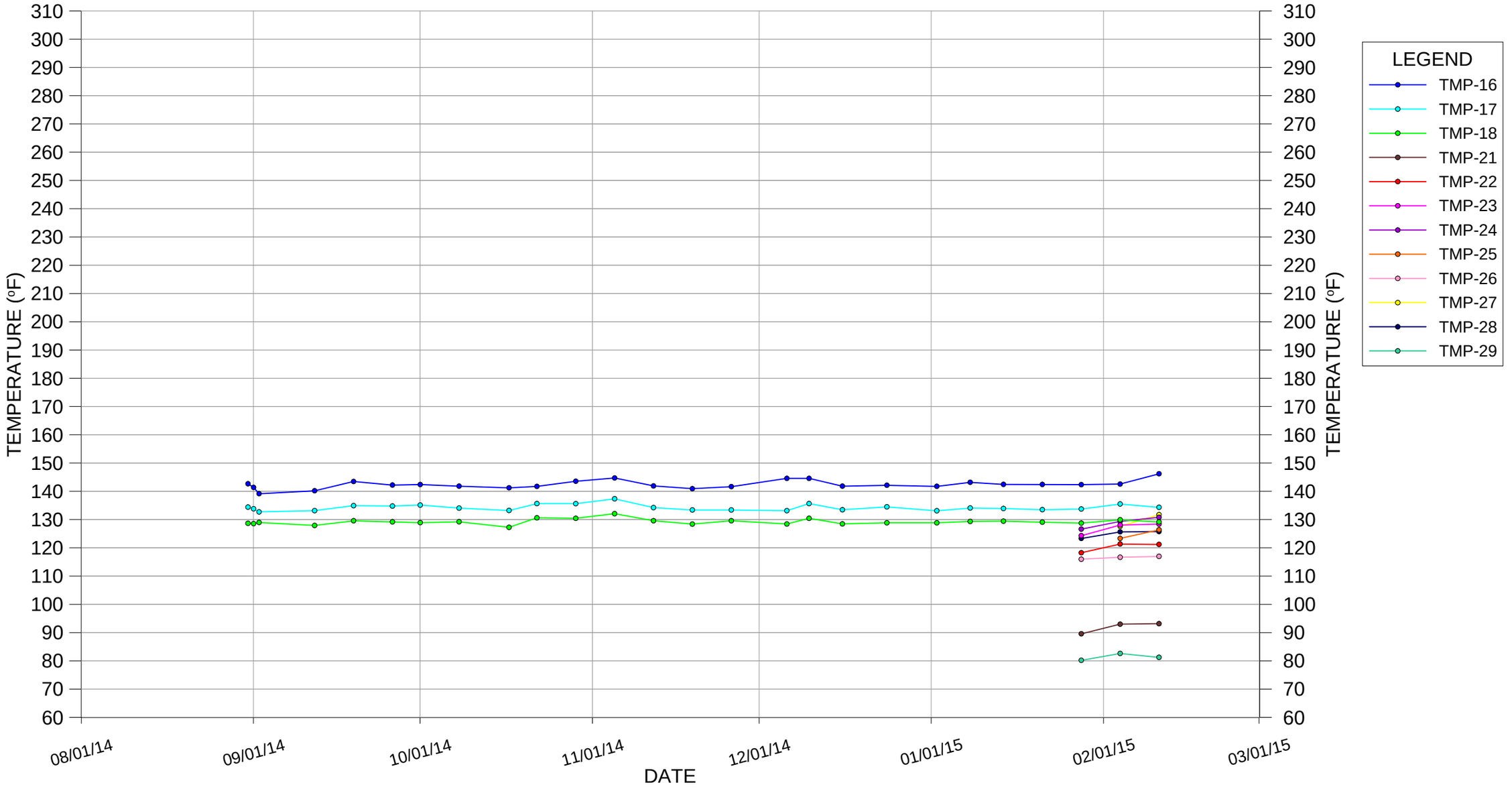
AVERAGE TEMPERATURES



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 vaild 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 - NORTH QUARRY

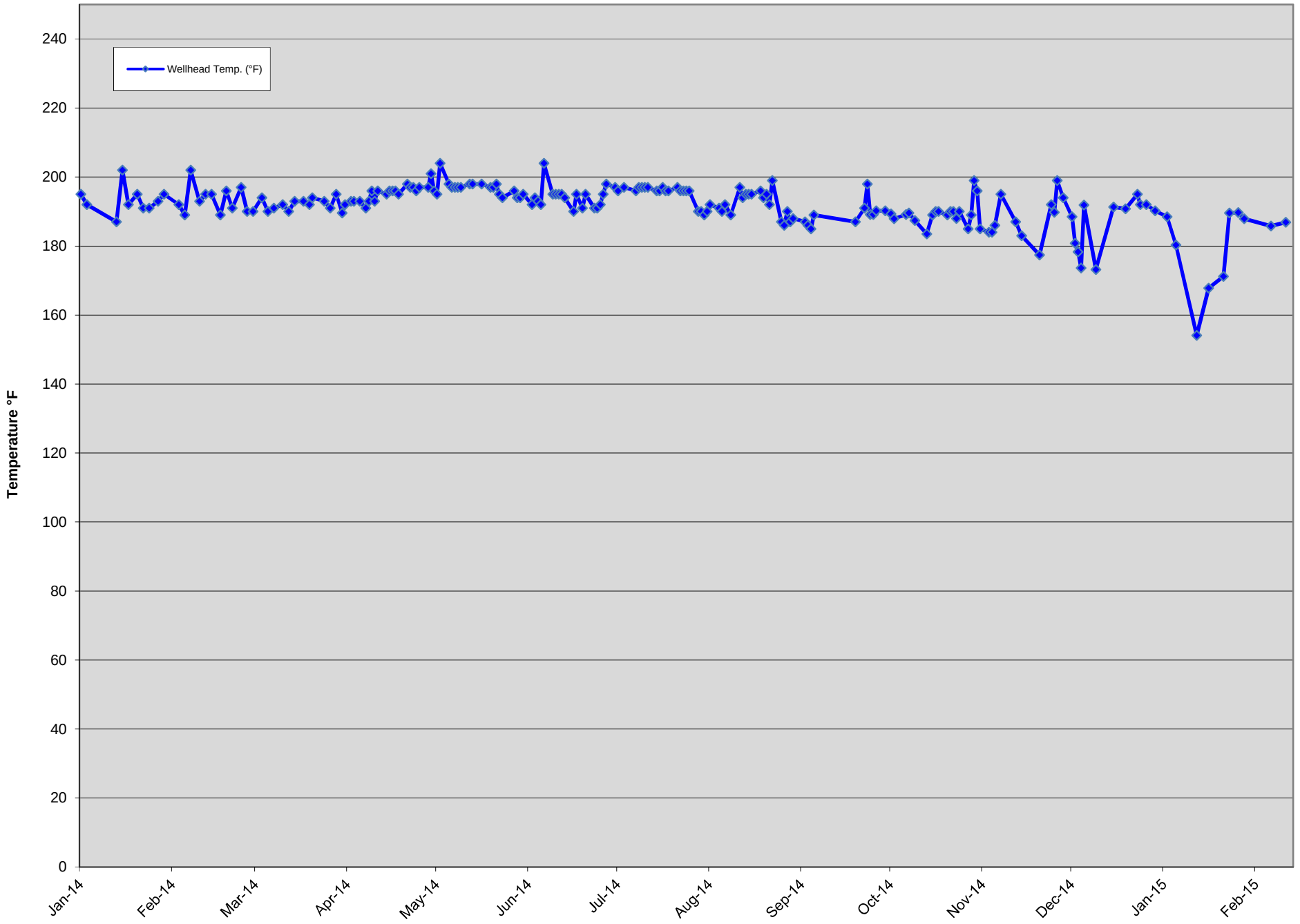


TEMPERATURE VS TIME
BRIDGETON LANDFILL

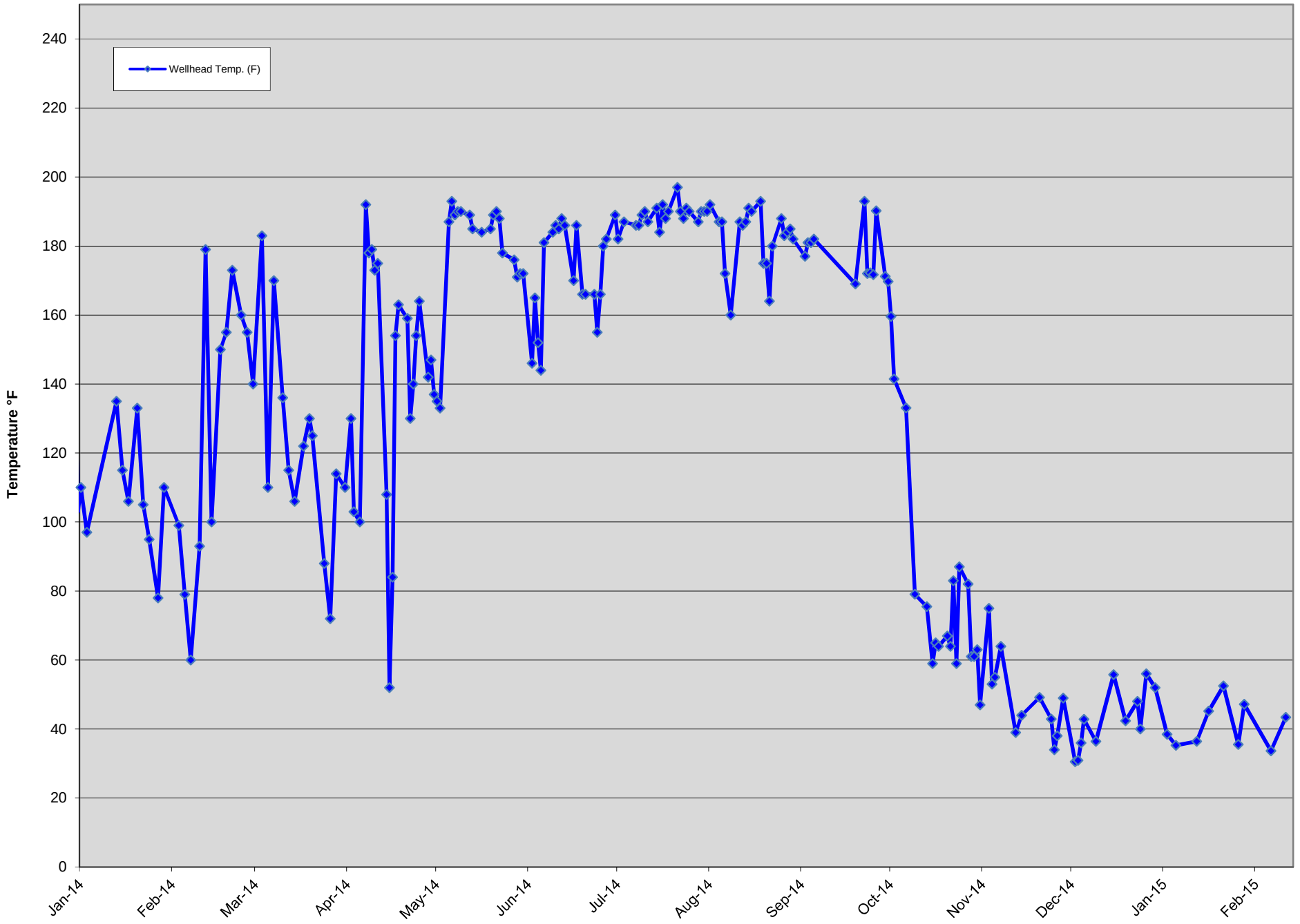
ATTACHMENT C

GAS INTERCEPTOR WELLHEAD TEMPERATURE GRAPHS

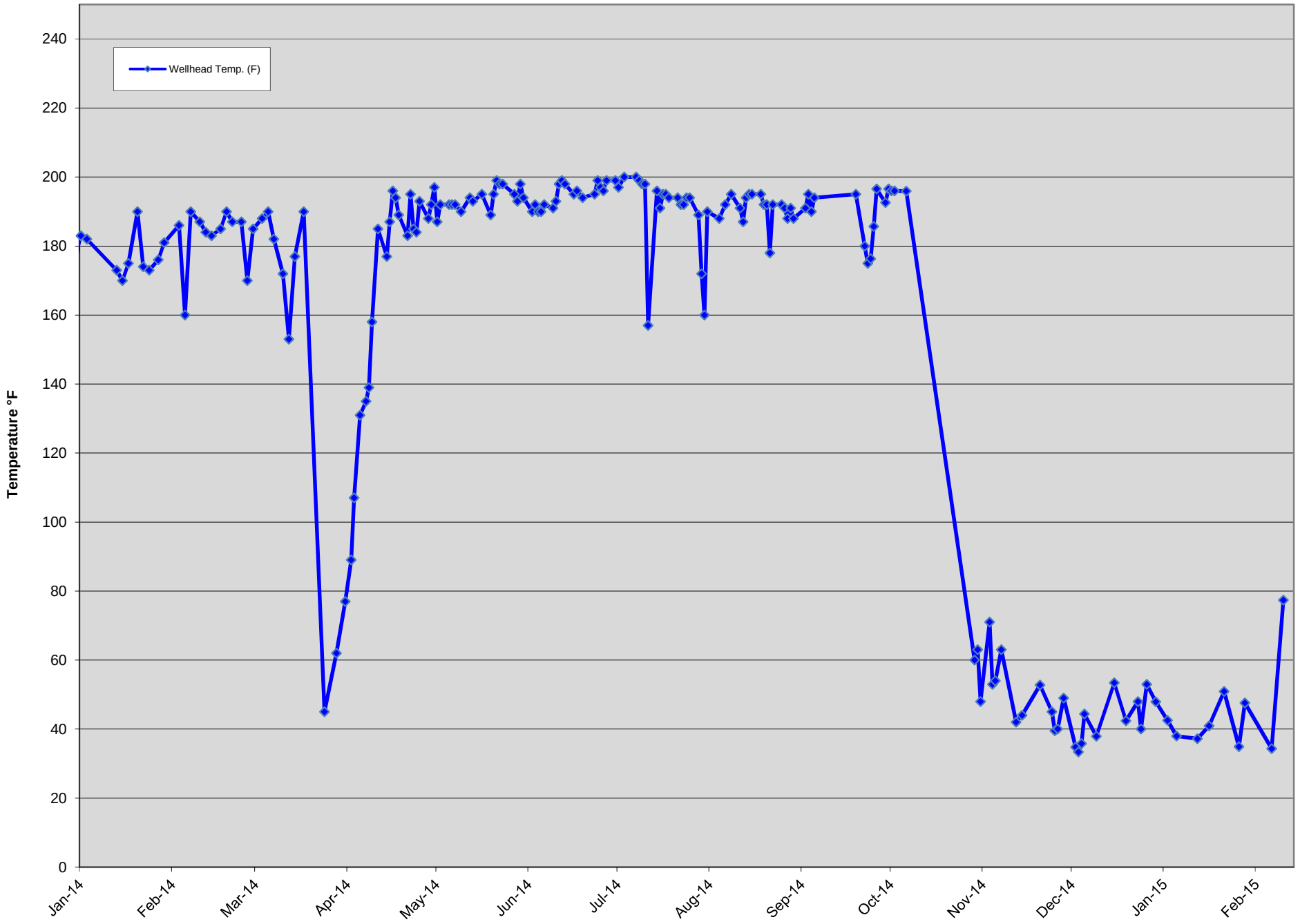
GIW-1 Wellhead Temperatures



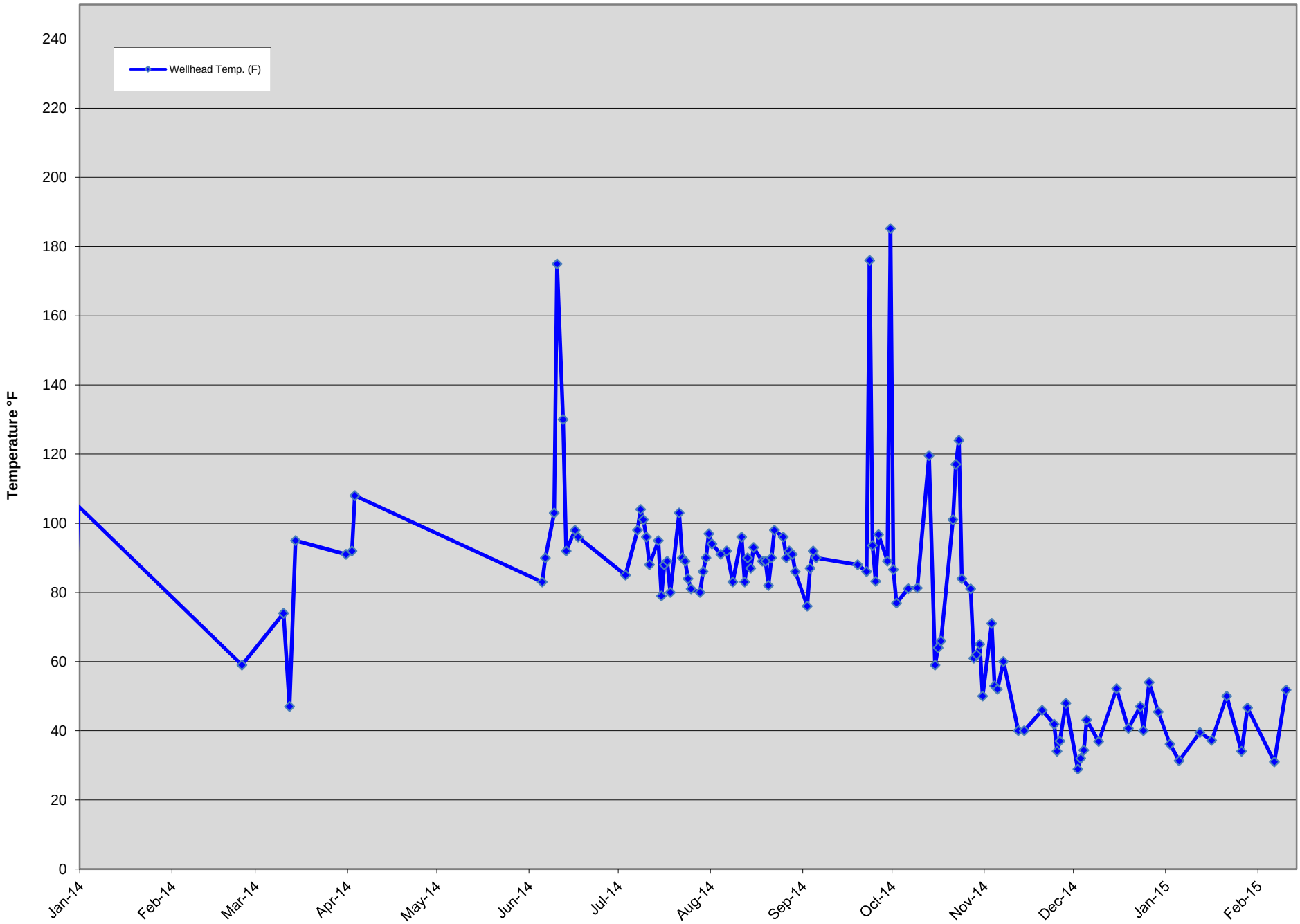
GIW-2 Wellhead Temperatures



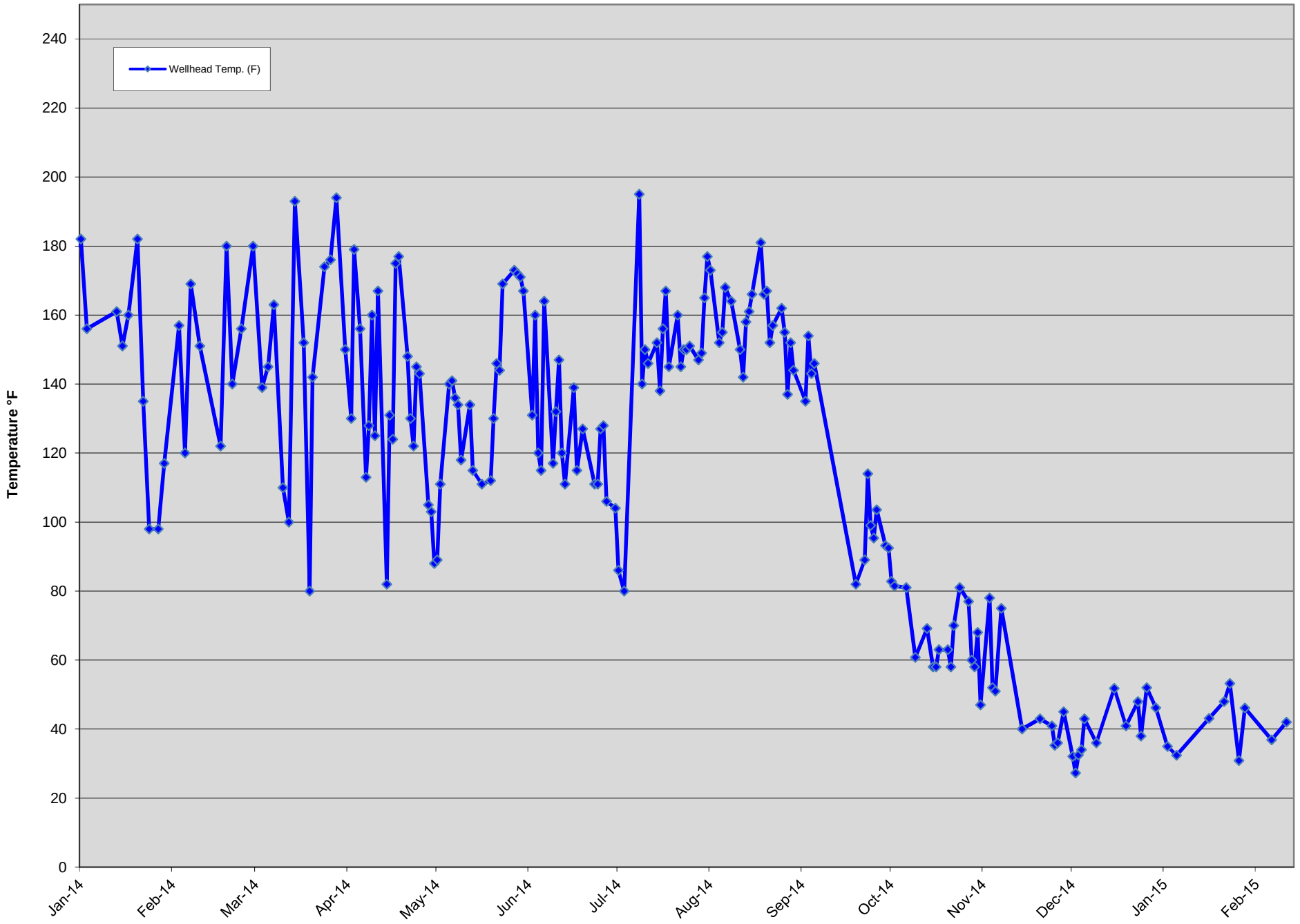
GIW-3 Wellhead Temperatures



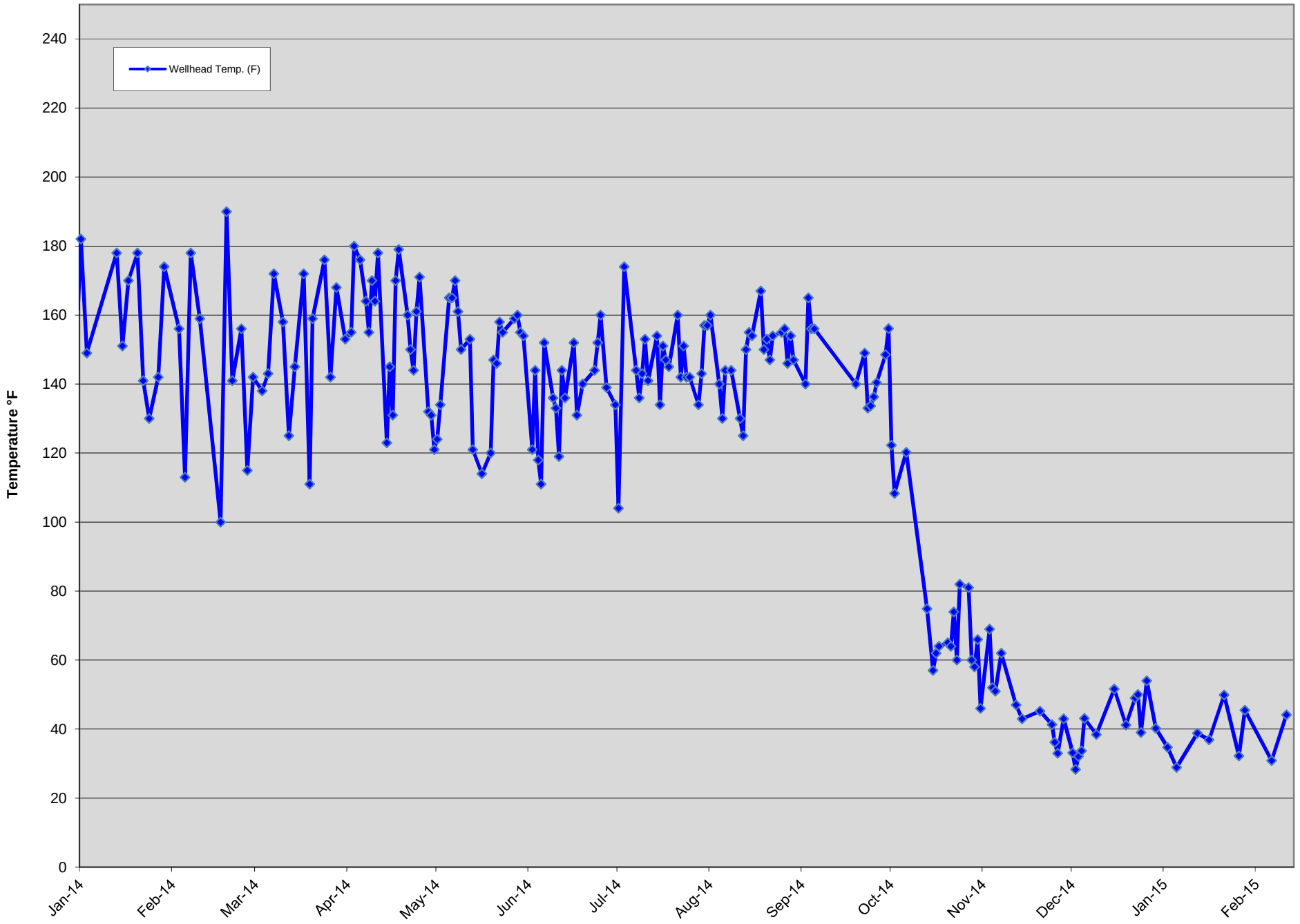
GIW-4 Wellhead Temperatures



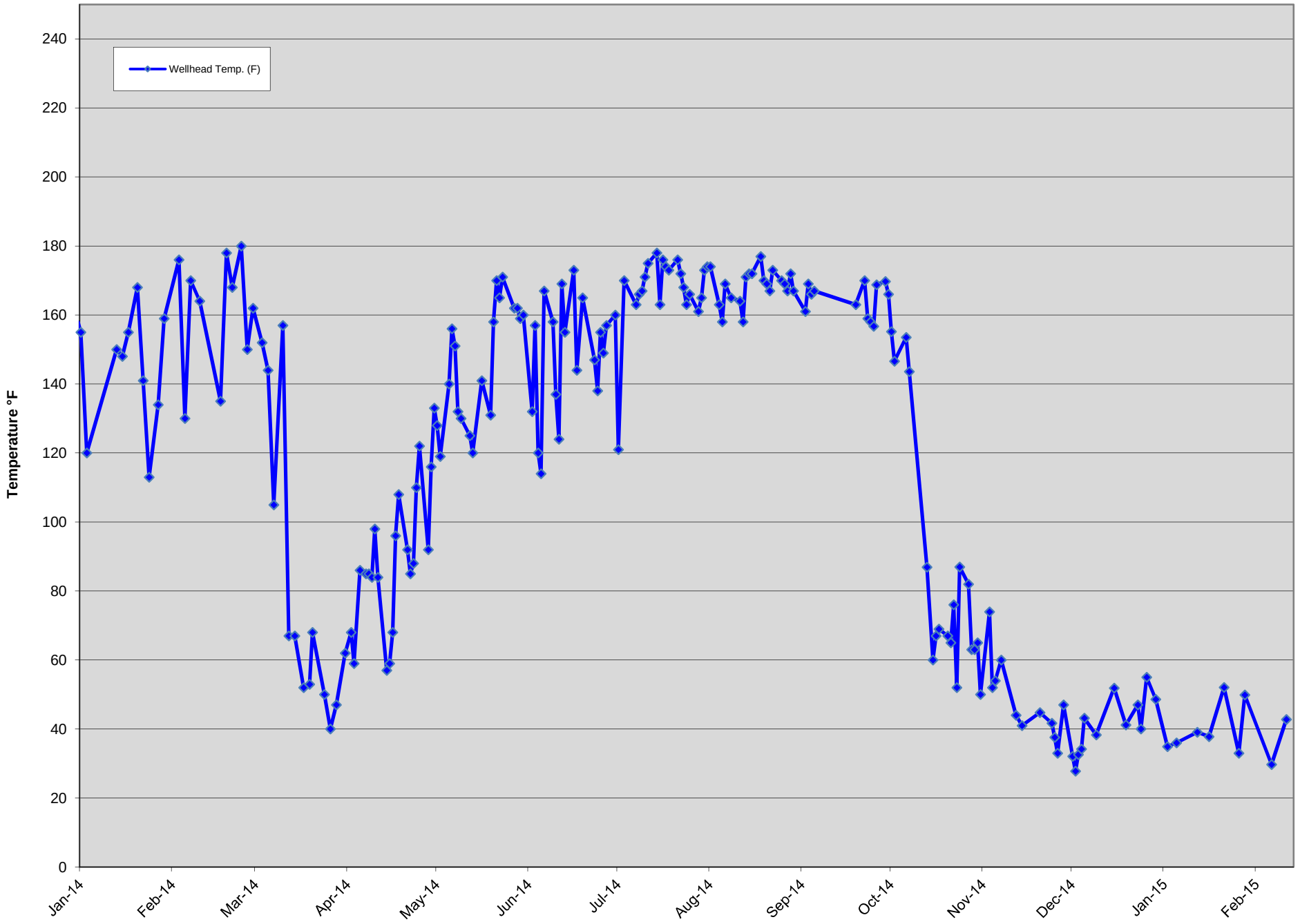
GIW-5 Wellhead Temperatures



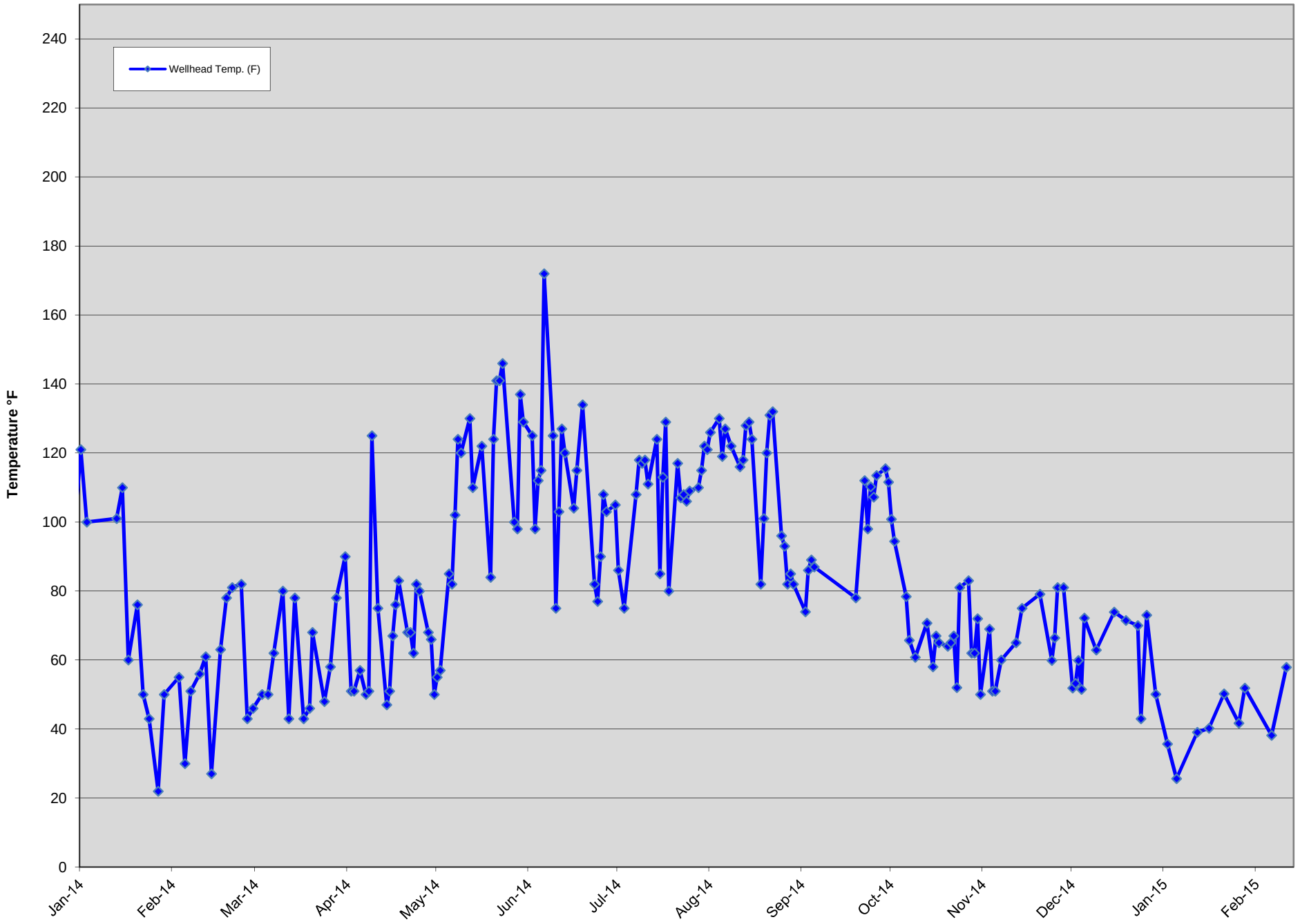
GIW-6 Wellhead Temperatures



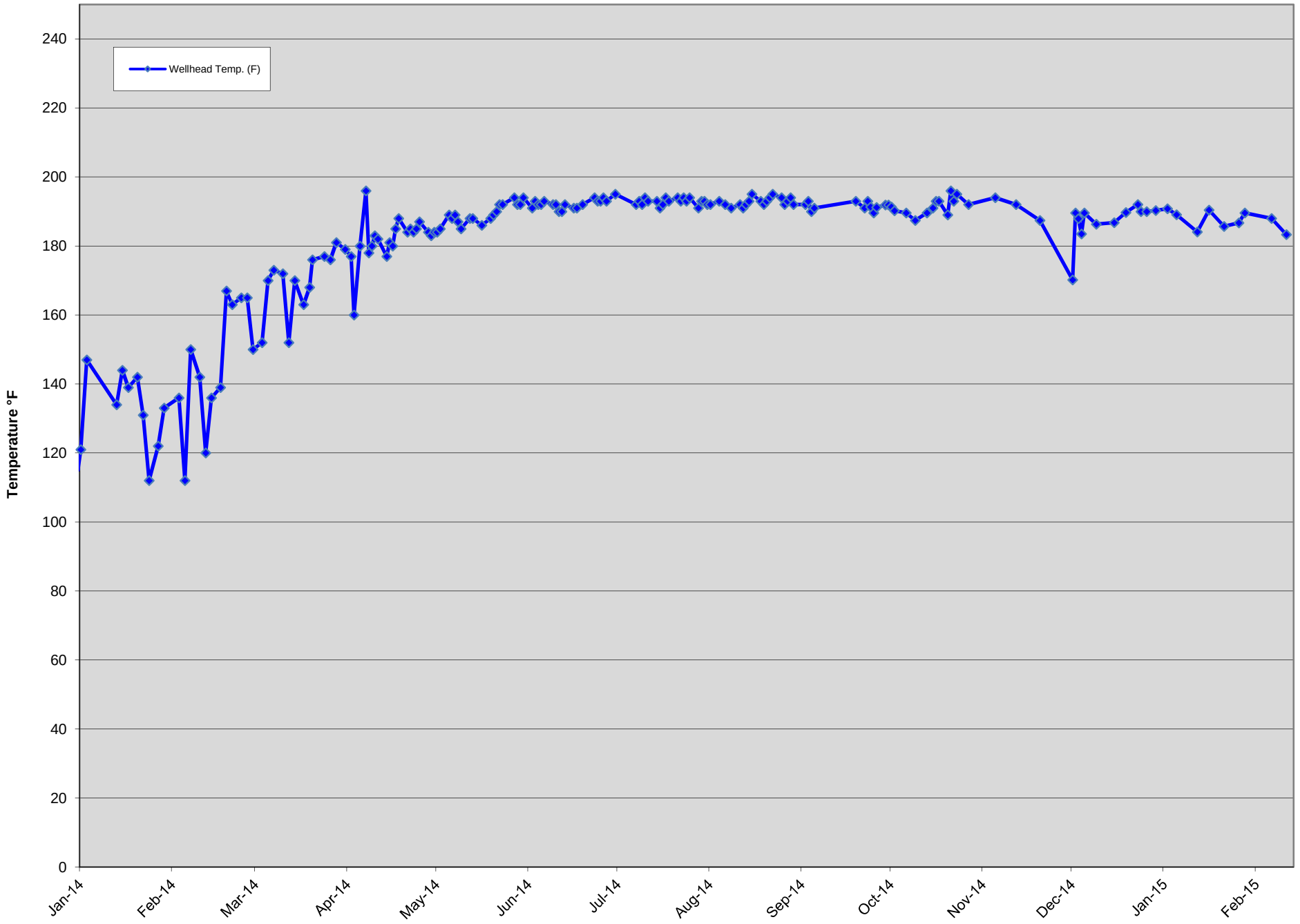
GIW-7 Wellhead Temperatures



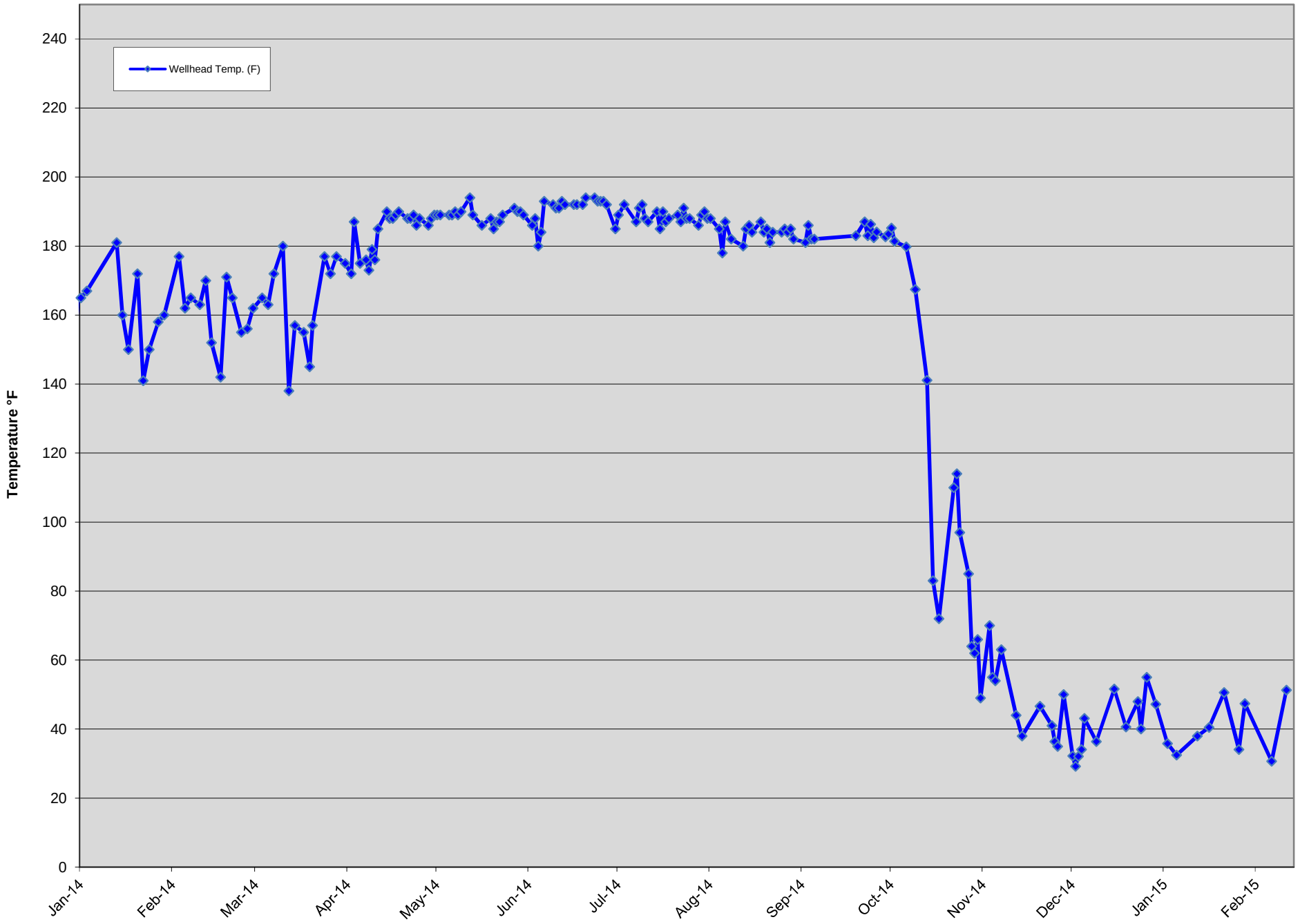
GIW-8 Wellhead Temperatures



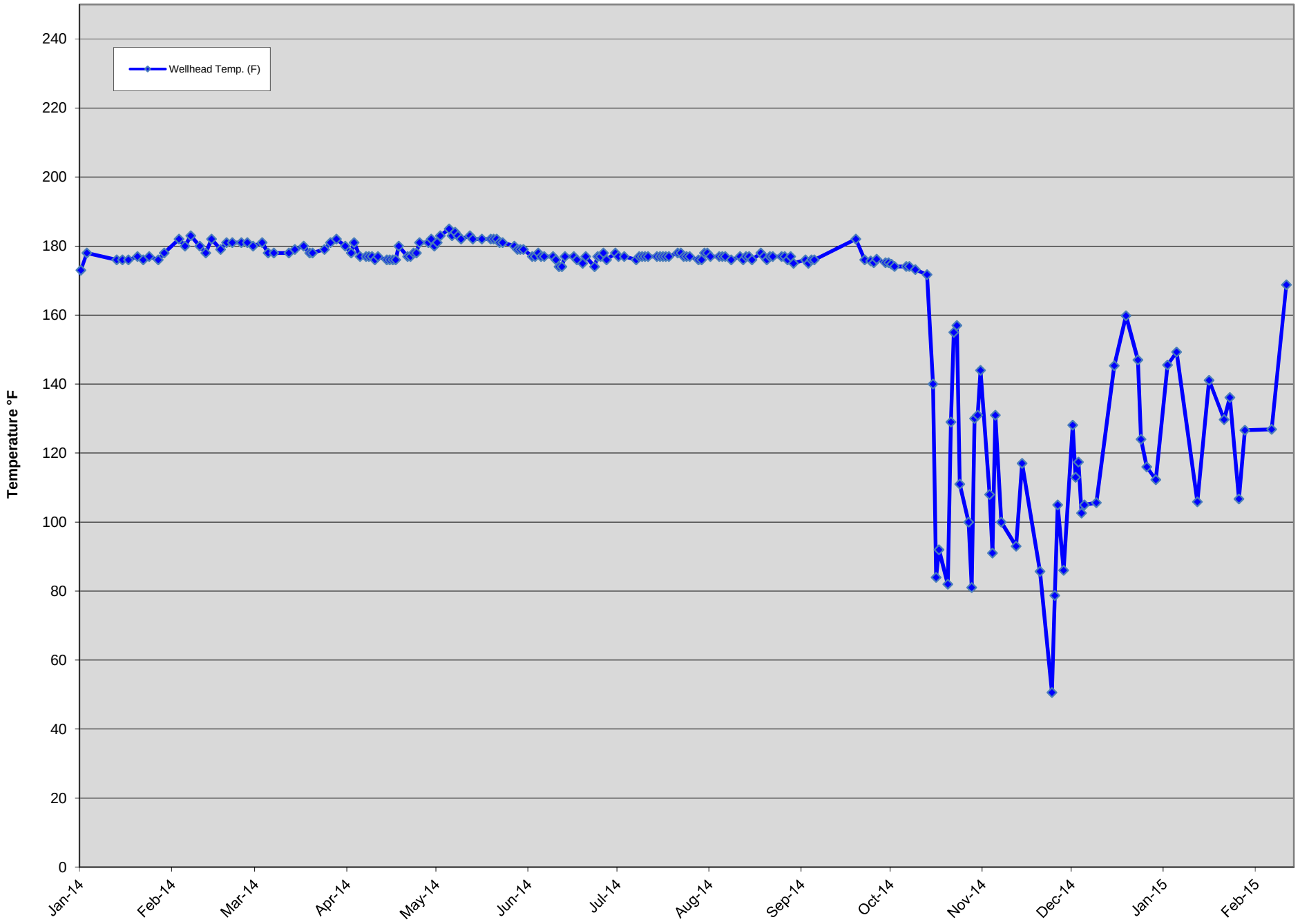
GIW-9 Wellhead Temperatures



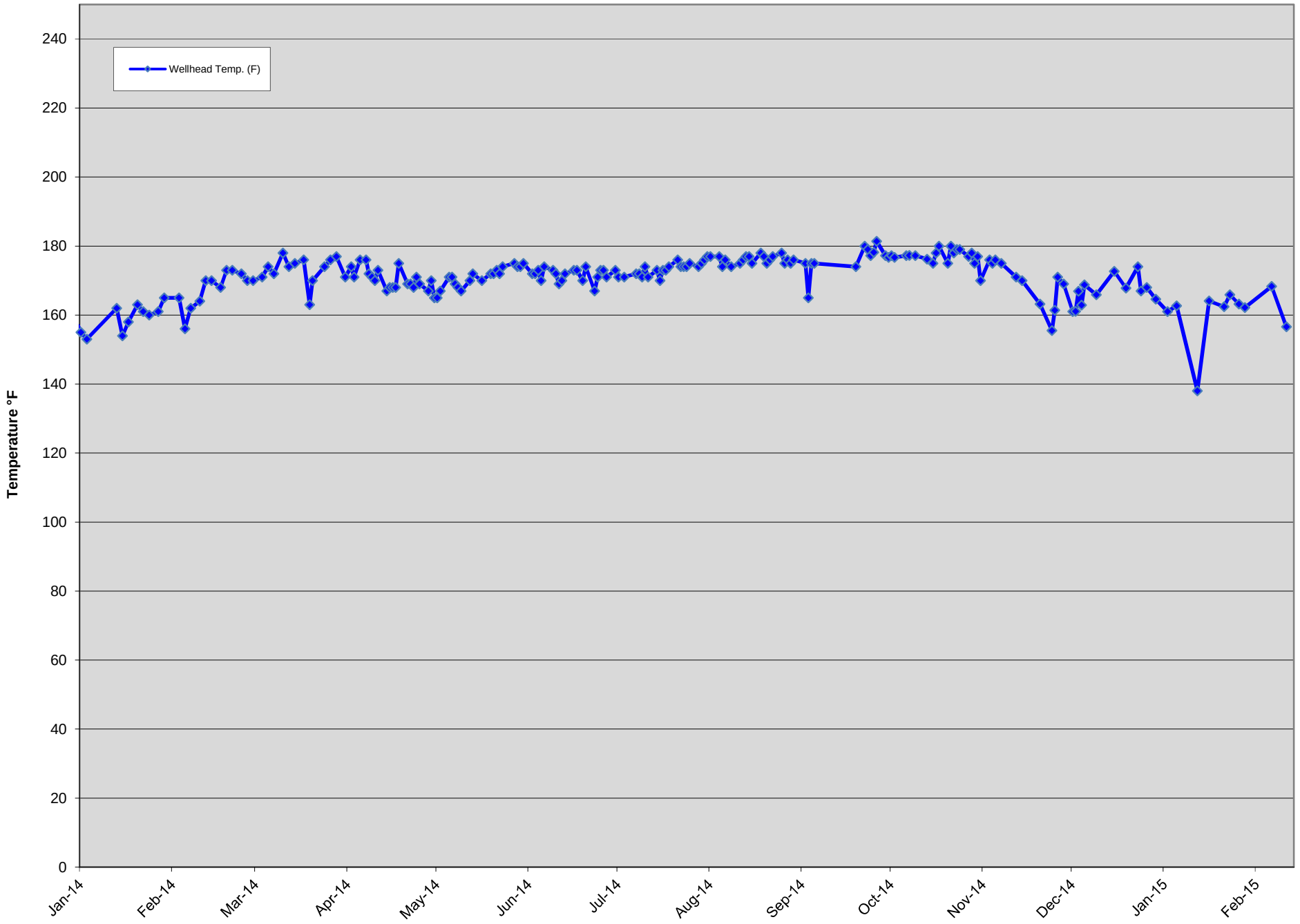
GIW-10 Wellhead Temperatures



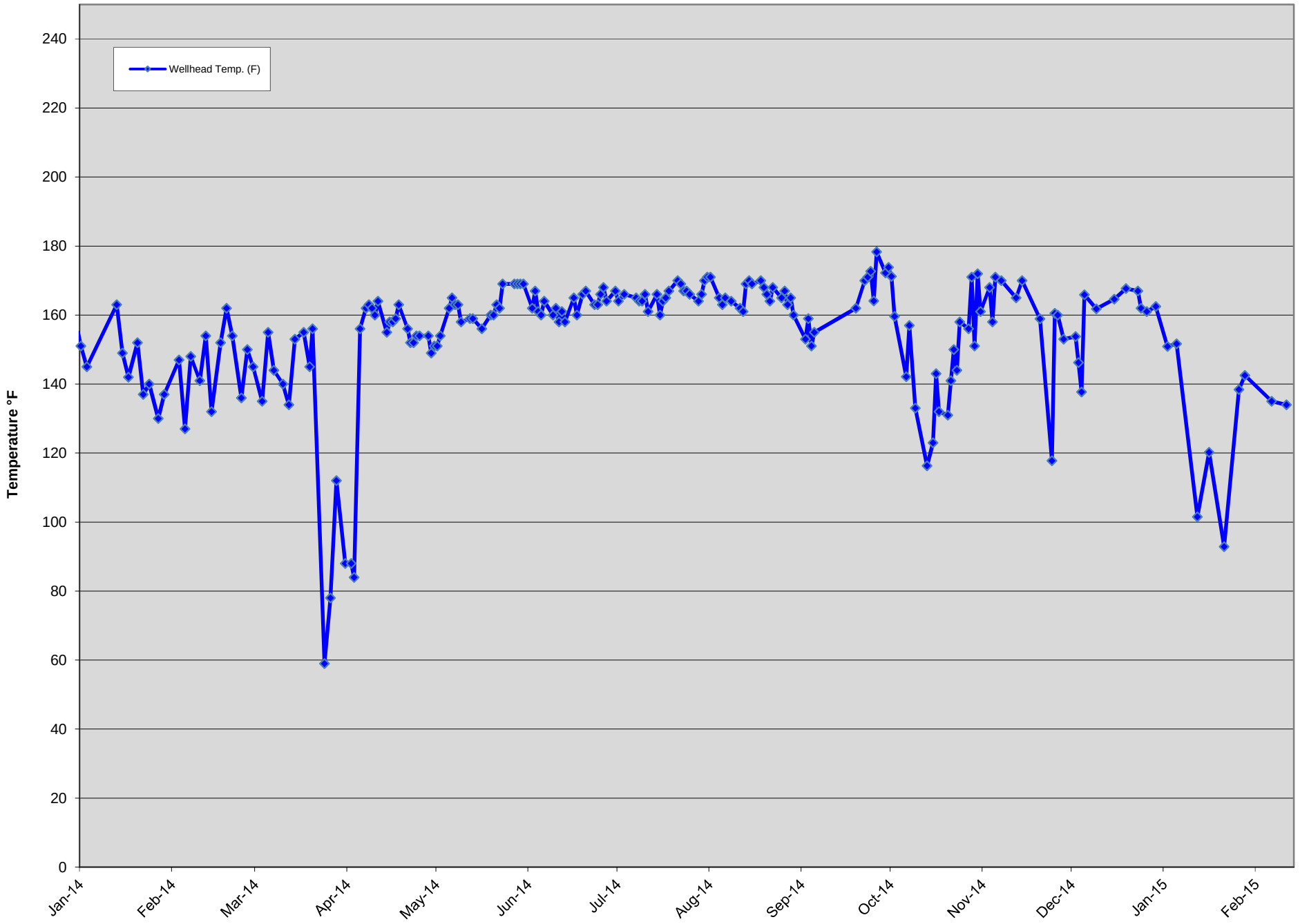
GIW-11 Wellhead Temperatures



GIW-12 Wellhead Temperatures



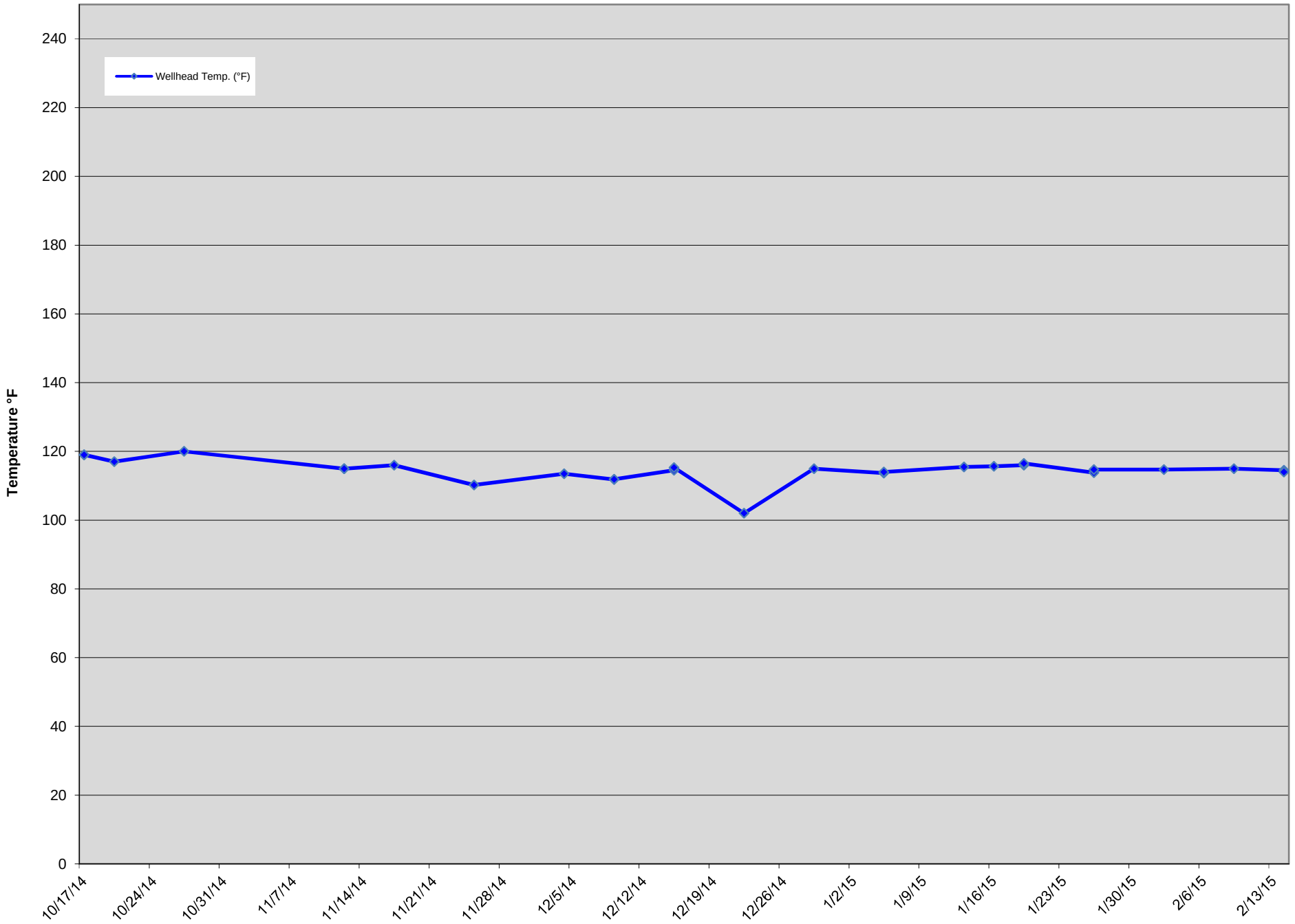
GIW-13 Wellhead Temperatures



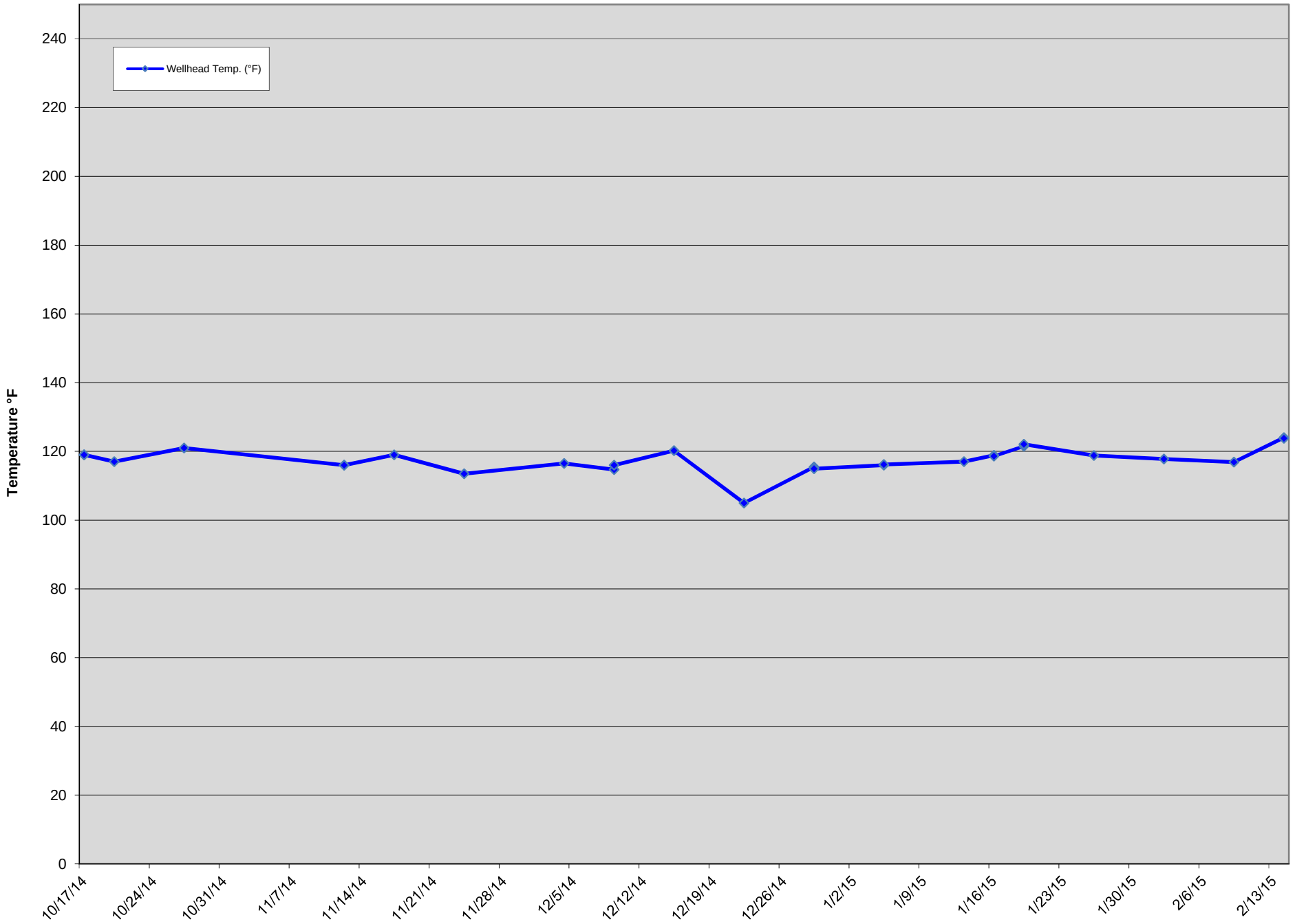
ATTACHMENT D

NECK-AREA GAS EXTRACTION WELL DATA

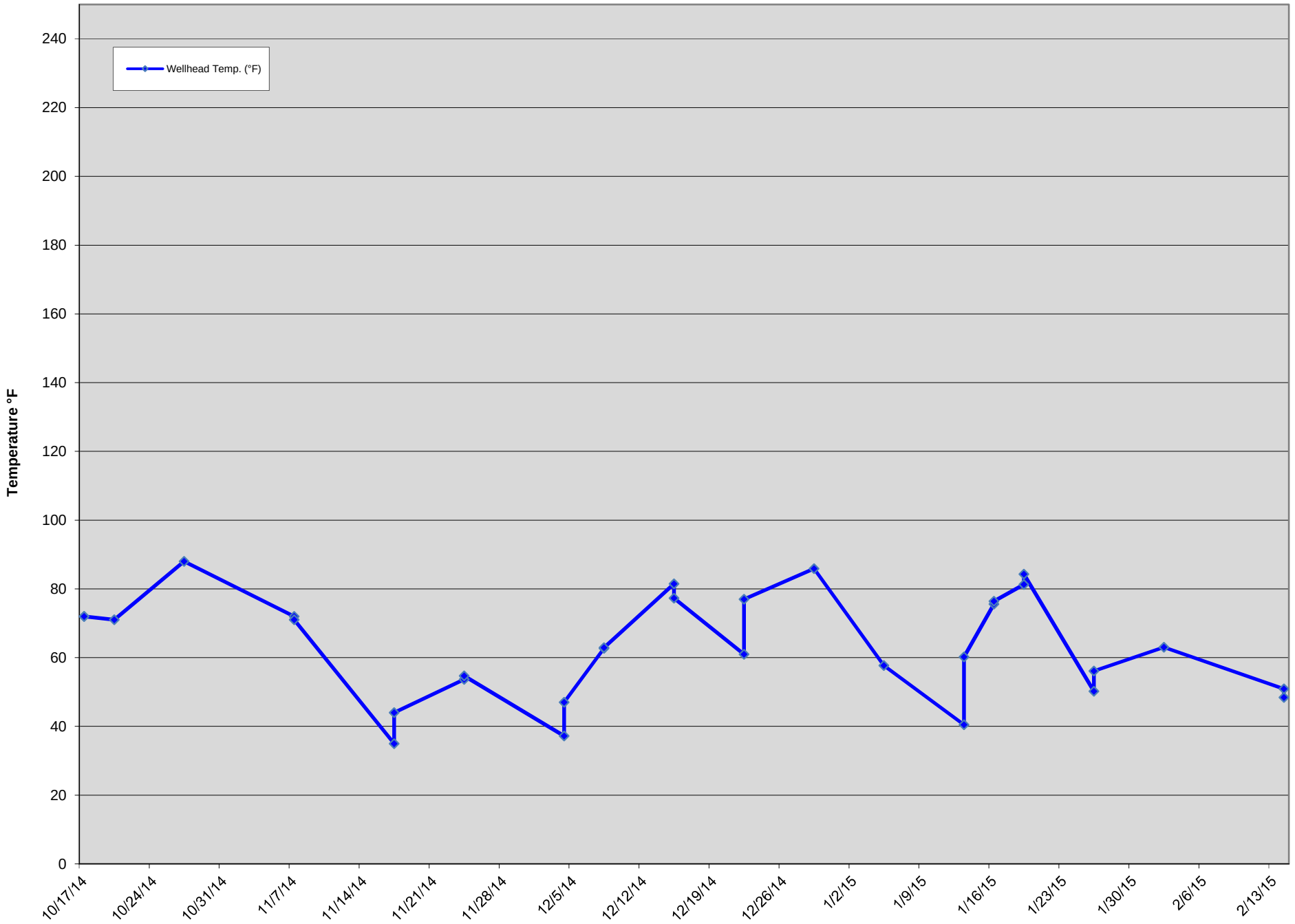
GEW-008 Wellhead Temperatures



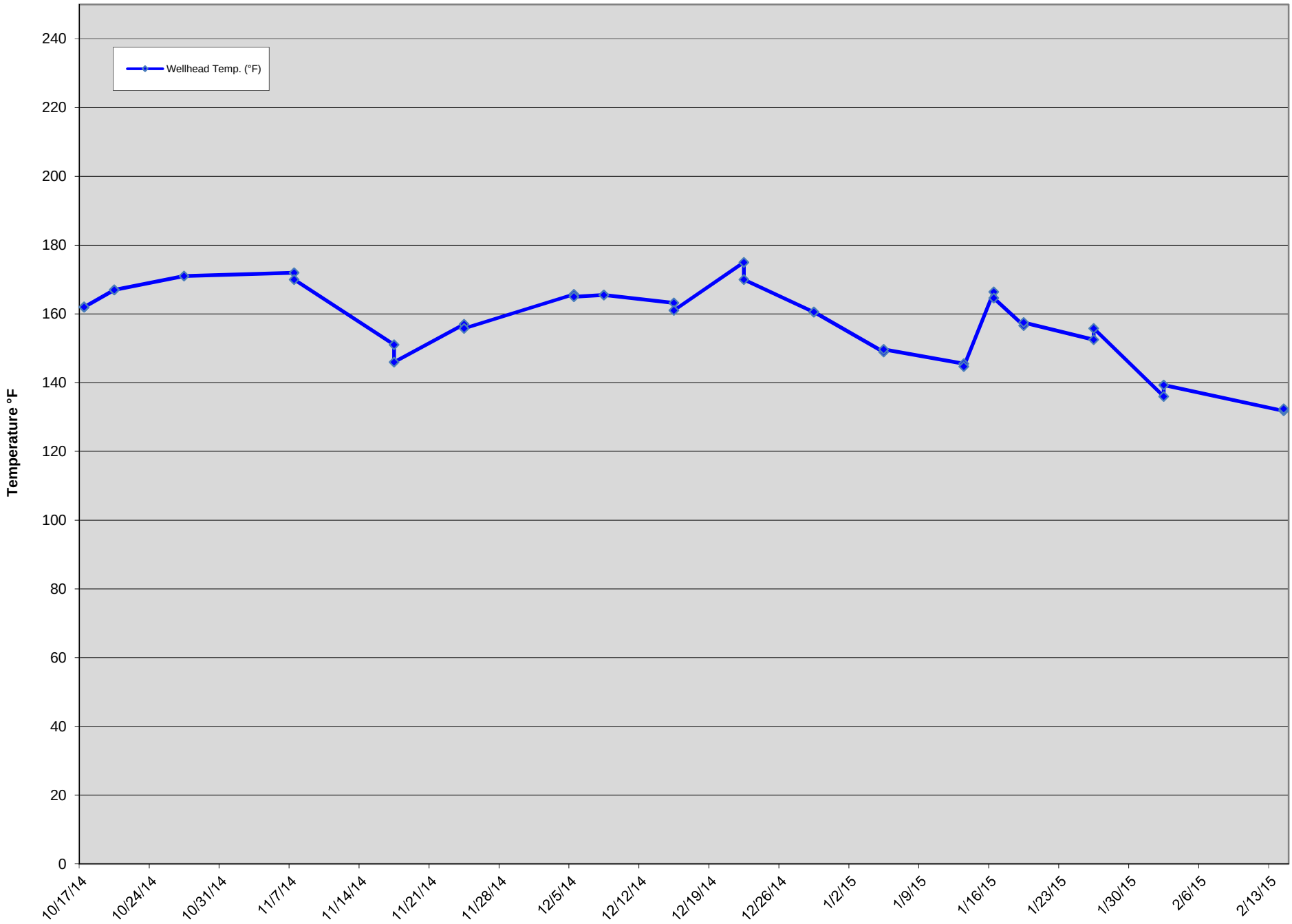
GEW-009 Wellhead Temperatures



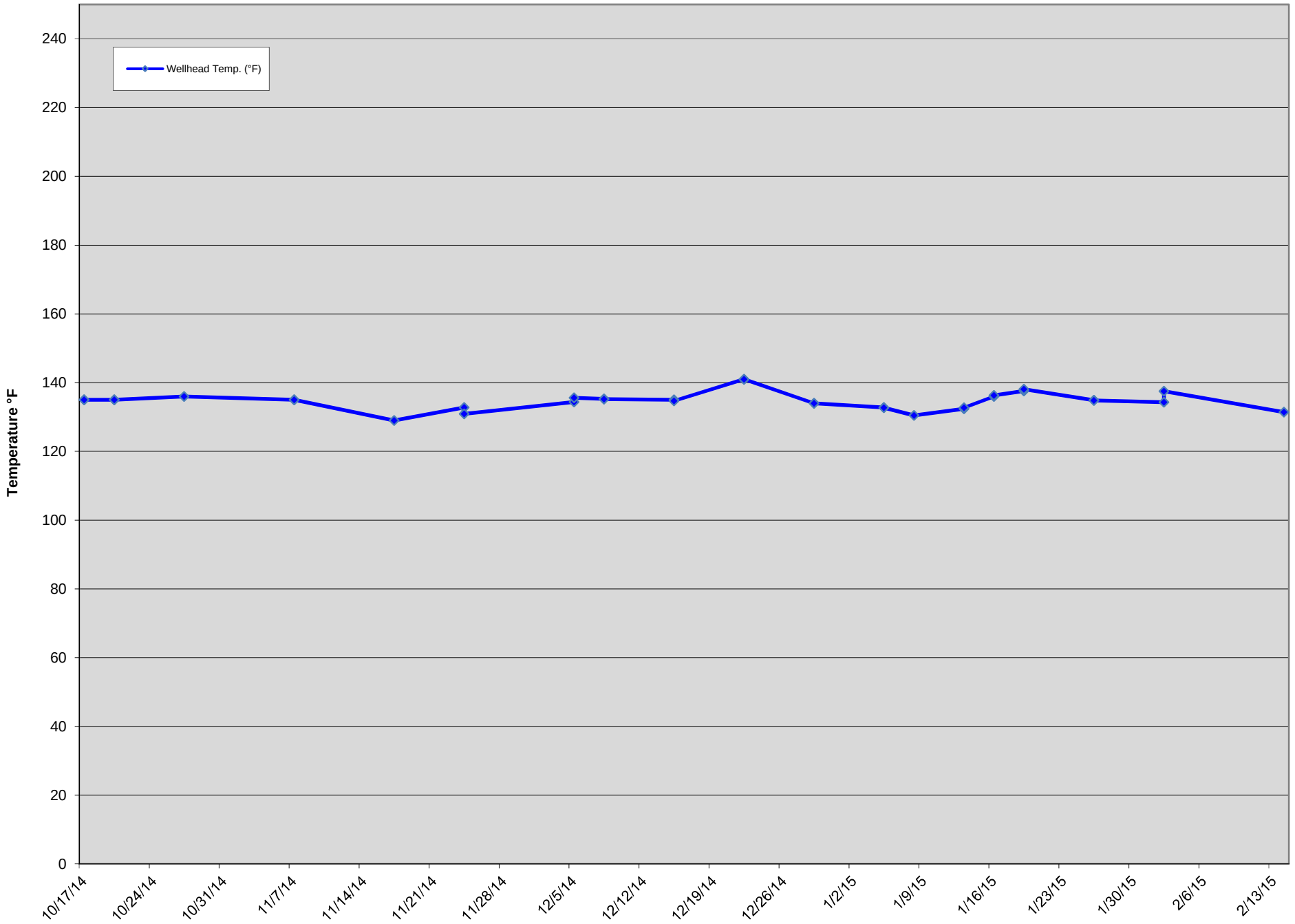
GEW-010 Wellhead Temperatures



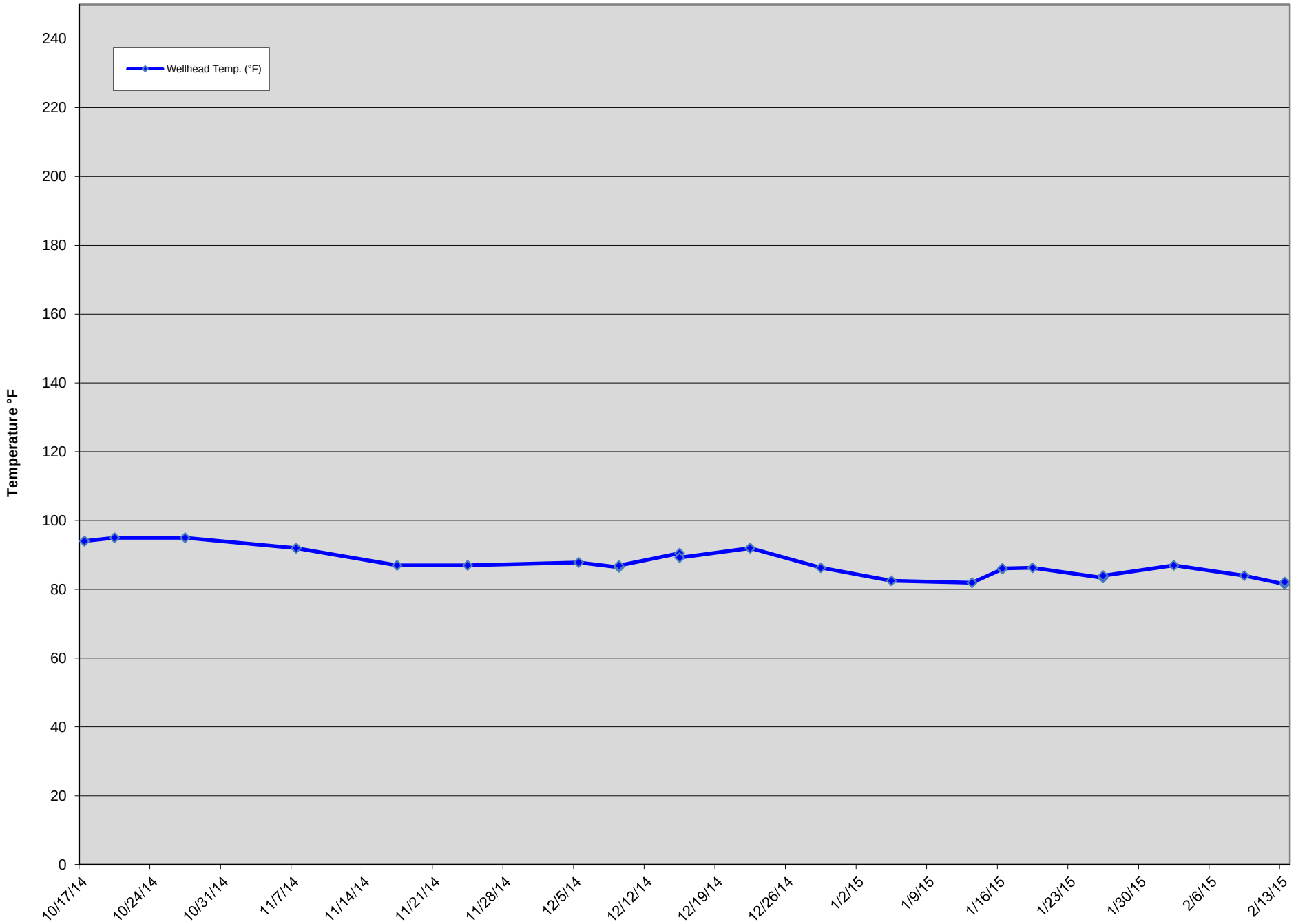
GEW-038 Wellhead Temperatures



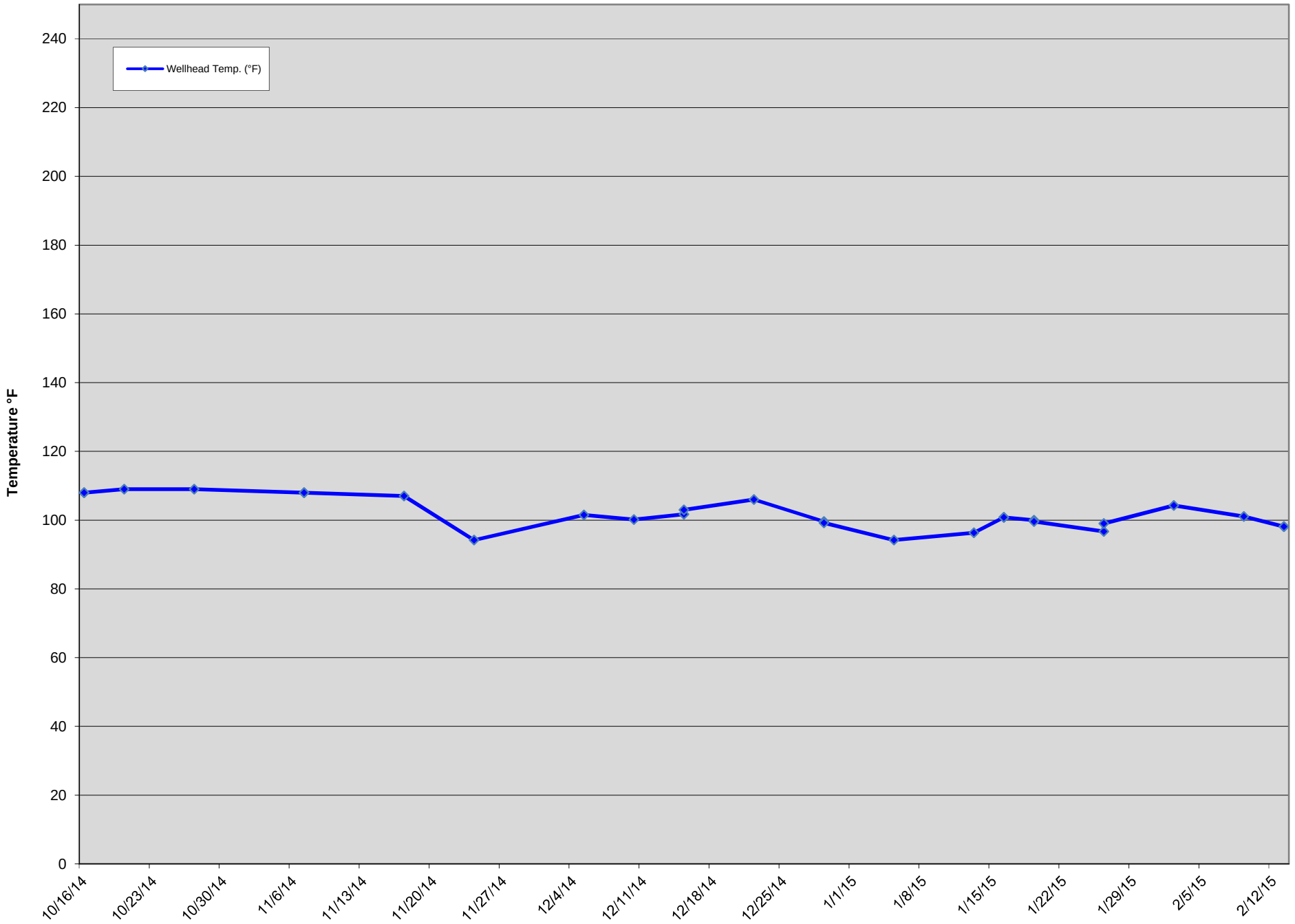
GEW-039 Wellhead Temperatures



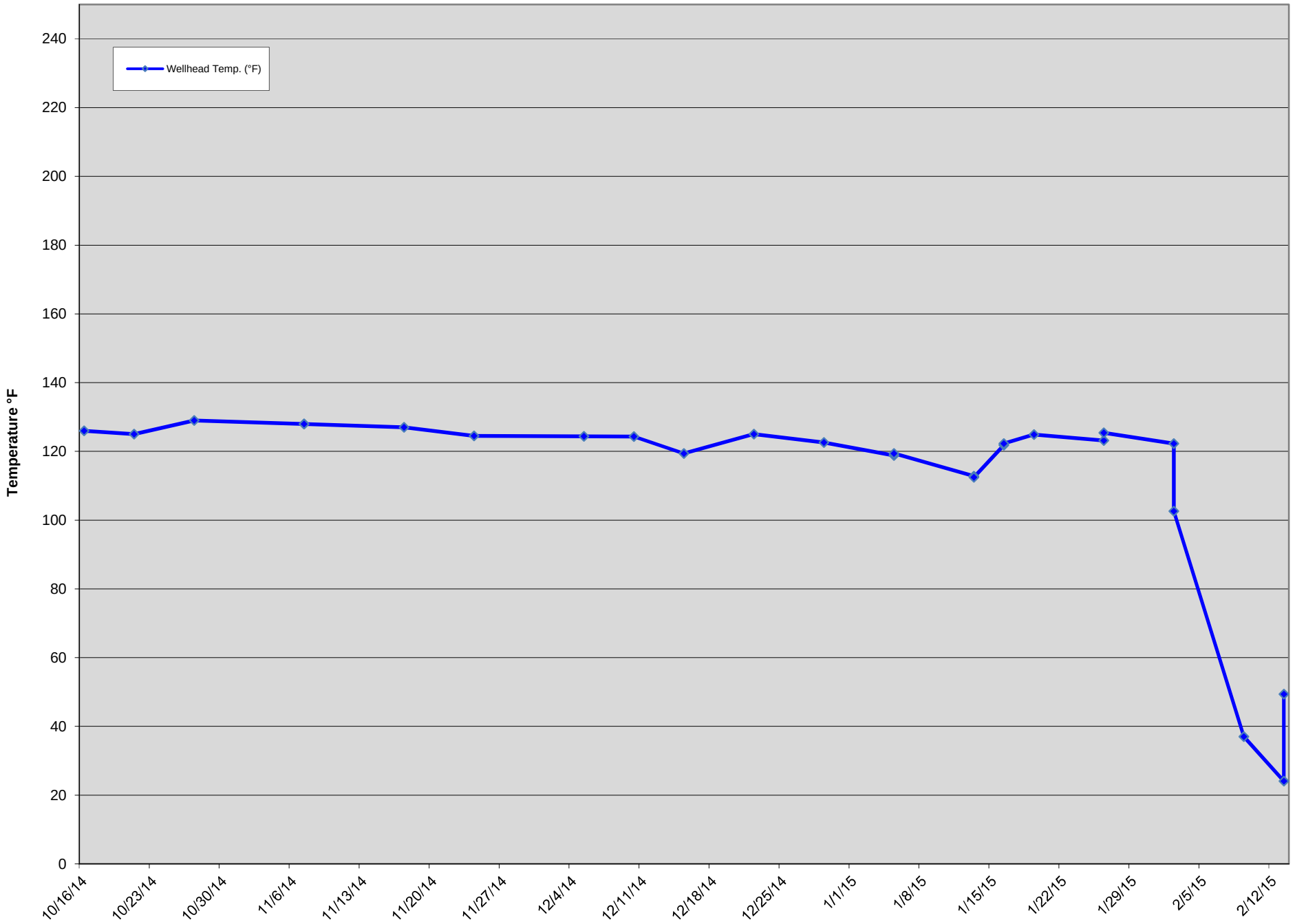
GEW-040 Wellhead Temperatures



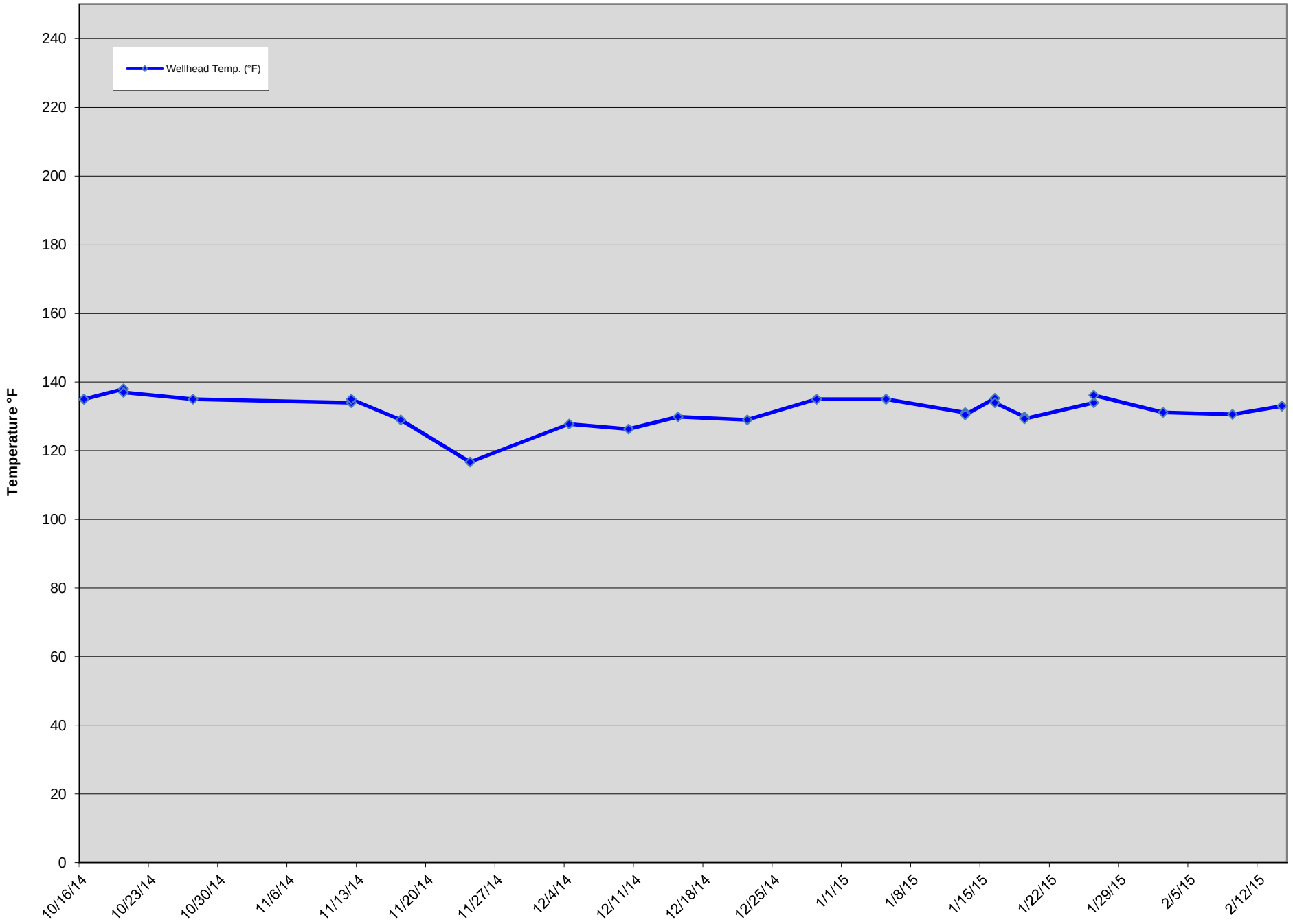
GEW-041R Wellhead Temperatures



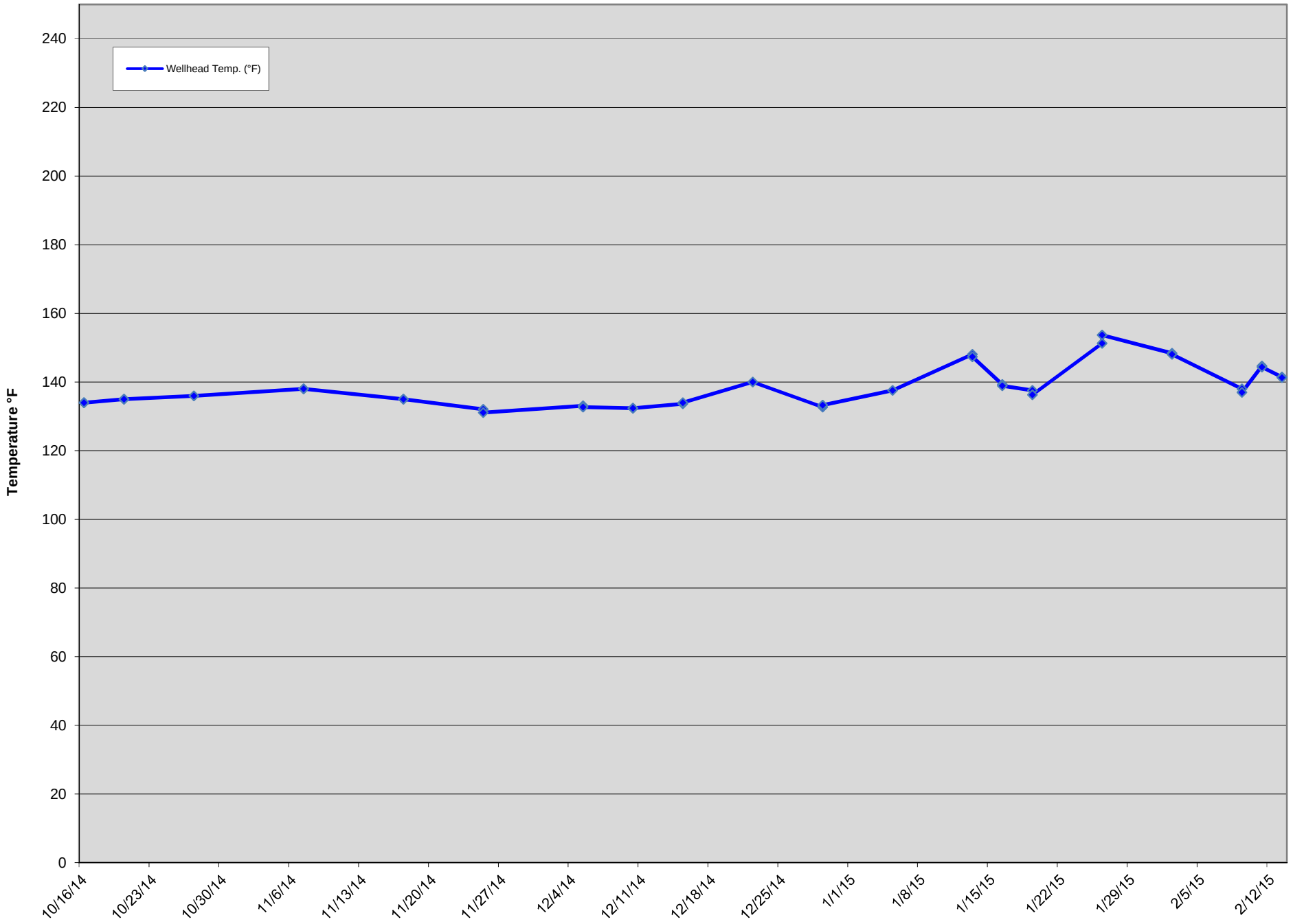
GEW-043R Wellhead Temperatures



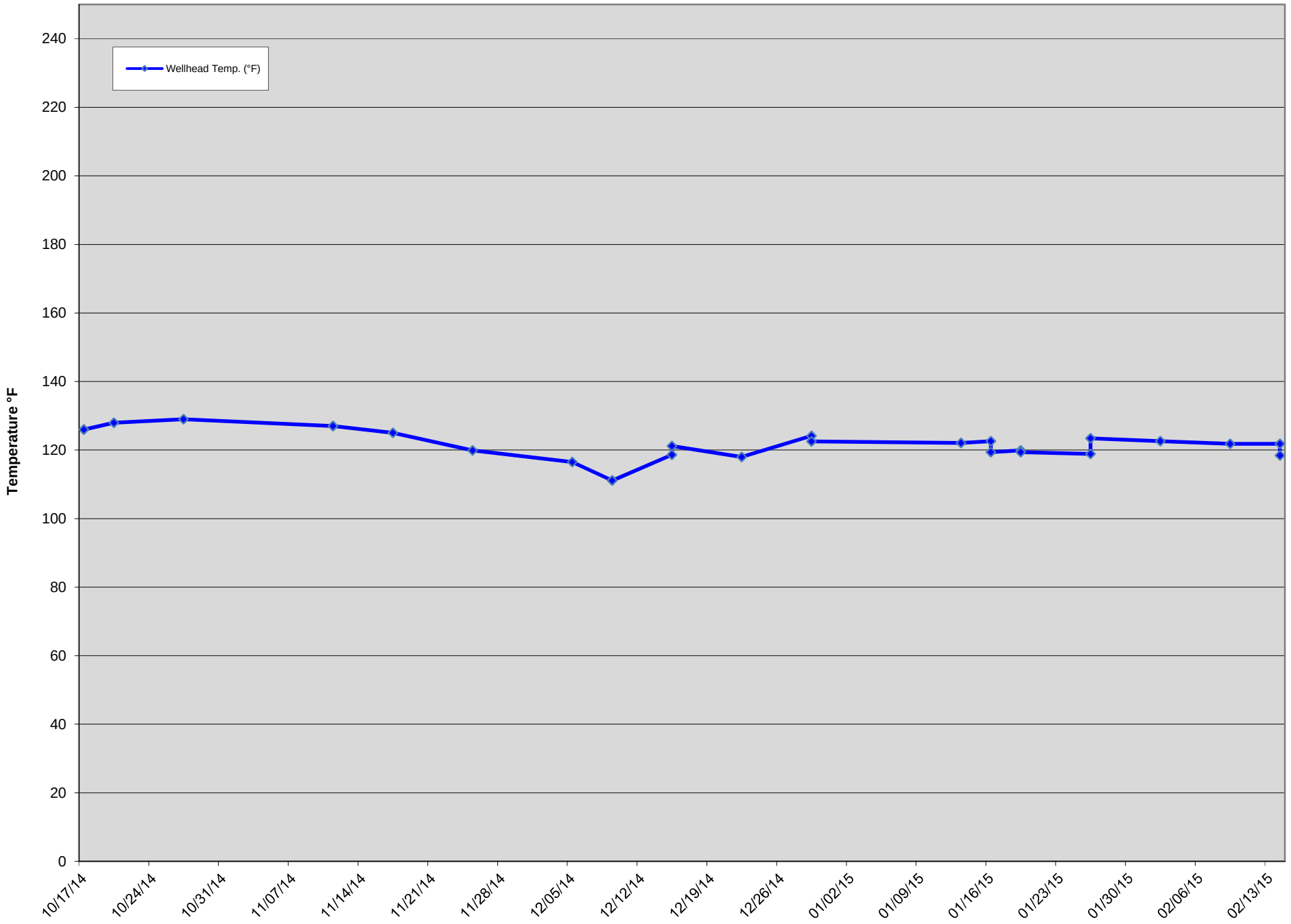
GEW-053 Wellhead Temperatures



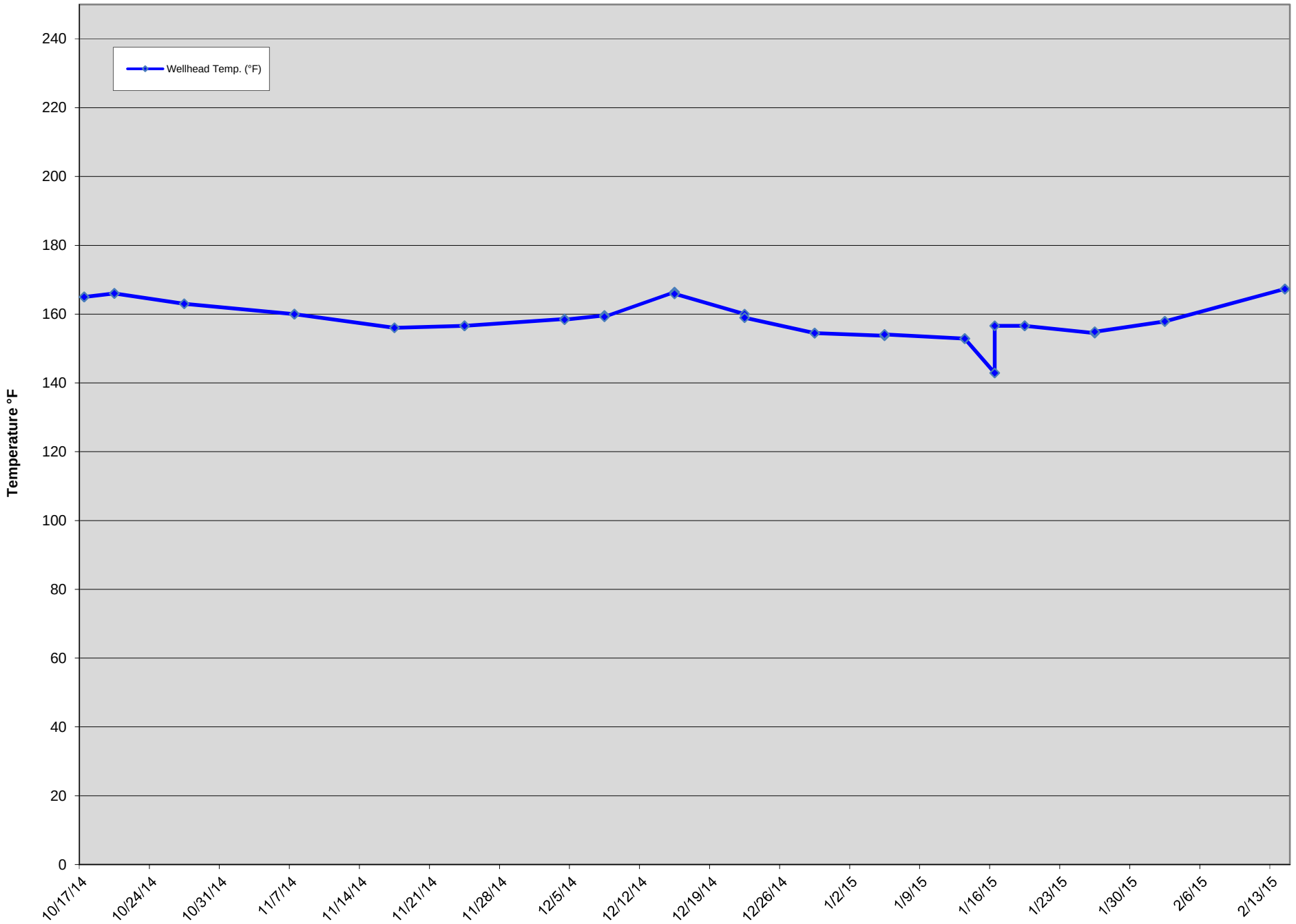
GEW-054 Wellhead Temperatures



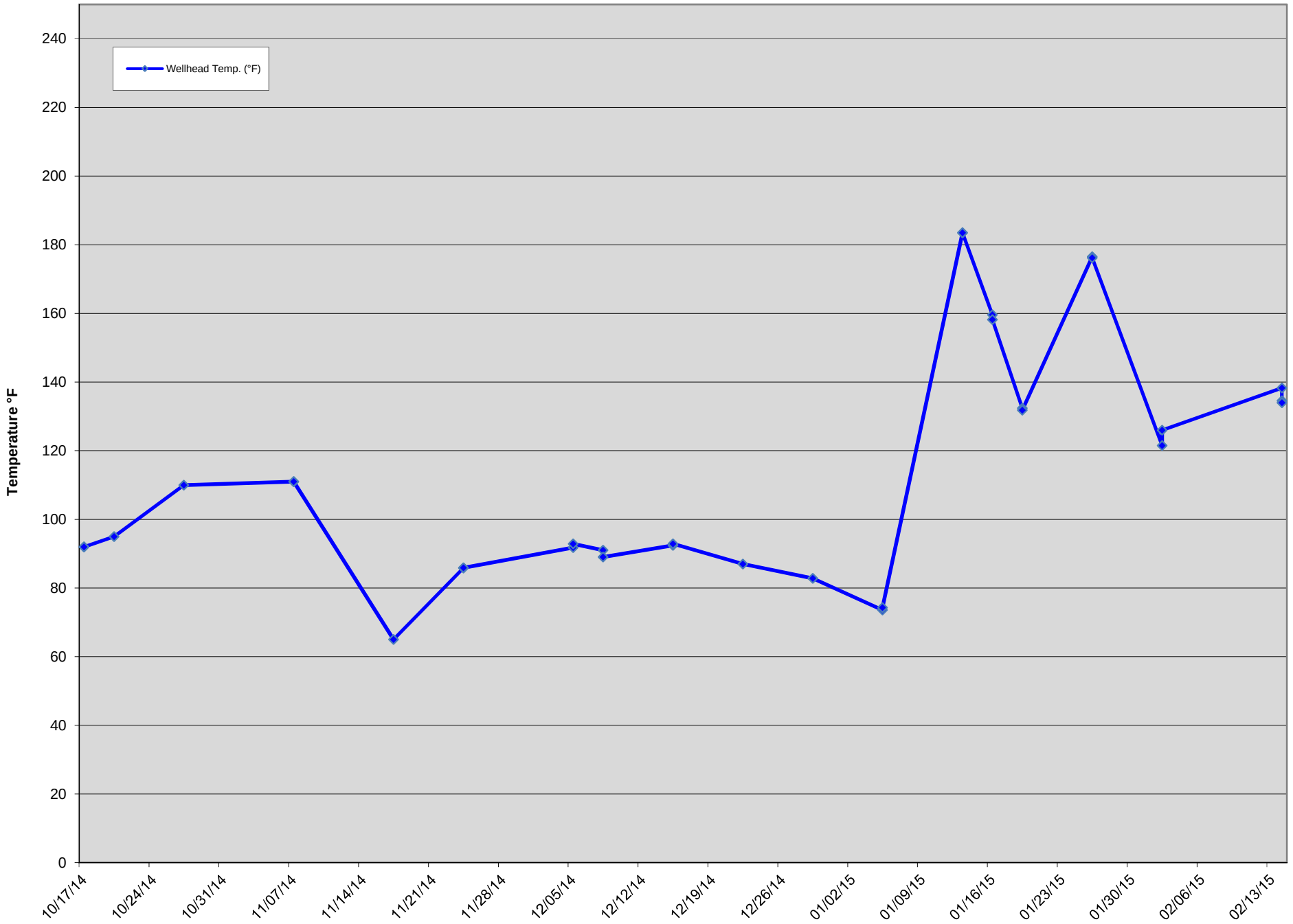
GEW-055 Wellhead Temperatures



GEW-056R Wellhead Temperatures



GEW-109 Wellhead Temperatures



GEW-110 Wellhead Temperatures