

October 27, 2017

Project No. 1786033_LT0001_Rev0

Mr. Doug Ramsey
Carmacks Mining Corp.
1120 - 1095 W. Pender St.
Vancouver, BC V6E 2M6

2017 ANNUAL INSPECTION OF THE CARMACKS COPPER PROJECT, CARMACKS, YUKON

Dear Doug,

1.0 INTRODUCTION

This letter summarises the outcomes of the 2017 annual inspection of the Carmacks Copper Project site. The inspection was carried out by Golder Associates Ltd. (Golder) for Carmacks Mining Corp. (Carmacks Mining) to fulfil the requirements of Section 16.1 of the Quartz Mining License (QML-0007) for the site. The work was carried out in accordance with Golder's proposal P1786033-002-Rev1, dated August 24, 2017, and approved by Carmacks Mining in an email dated August 25, 2017.

The purpose of the inspection was to evaluate the condition and stability of the existing facilities in the area of the proposed mine. At the time of inspection, a geotechnical test pit program, hydrogeological drilling, resource drilling, and access road grading were being actively undertaken at the project site. The existing facilities at the site comprise a mine exploration camp, which was near capacity at the time of the inspection, access roads, and minor drainage structures. Golder also inspected the area of proposed mine development. The proposed mine infrastructure, as described in the approved QML, dated April 15, 2009, includes a heap leach facility, water management ponds, an open pit, a waste rock storage area, a processing plant and related facilities, ore preparation facilities, ore stockpiles, and water diversion structures. A revised proposal for developing the site was presented by Carmacks Mining in a Preliminary Economic Assessment (PEA) Technical Report, dated October 12, 2016. The revised proposal would see removal of the heap leach facility and the development of a filtered tailings management area.

2.0 OBSERVATIONS

2.1 Overview

The inspection was carried out by Mr. Benjamin Cox of Golder, in the company of Mr. Doug Ramsey of Carmacks Mining on September 28, 2017. The inspection focused on the existing site infrastructure and a review of the general site conditions. Photographs of the site at the time of the inspection are presented in Attachment 1. Data collected from thermistors during the site visit are presented, with data from previous years, in Attachment 2.

At the time of the site visit, two drilling programs were in operation. A hydrogeological/geotechnical investigation was being carried out in the area of the proposed tailings management area and exploration drilling was occurring in the area of North Williams Creek.



The project is in the advanced exploration stage. The only infrastructure on site at the time of inspection was the exploration camp and access roads to the proposed open pit mine area and other areas of the property. The access roads were developed to provide access for exploration and investigation activities.

The site development required to support operations has not started yet. Therefore, there is no stability concern associated with the undeveloped facilities and no maintenance is required. No permanent water diversion structures are in place. There are, however, temporary water management structures (i.e., ditches and sediment catch basins) in place that are appropriate for the exploration stage of the property. We recommend that these diversion structures continue to be inspected annually and that ongoing maintenance be conducted, as deemed necessary.

2.2 Exploration Camp Area

In previous years, inspections of the camp area have noted the presence of cracking, most likely resulting from thaw induced settlement beneath and adjacent to core storage racks. During the current inspection, only one crack was observed in the vicinity of the core storage racks (Photograph 1). In general, the appearance of cracks in the core storage rack area was consistent with the 2016 inspection. There appears to have been some infilling of cracks observed during previous inspections. The area is also characterised by the regrowth of vegetation around the core racks and a general decrease in the magnitude of settlements occurring with time. As in previous years, settlement in this area does not represent a safety concern and the inspection did not indicate erosion of sediments from the pad area into the surrounding natural area. Two new core racks have been constructed in 2017 and one was under construction at the time of the inspection (Photograph 2).

The slope behind the camp (Photograph 3) is stable and does not pose a safety concern for the camp structures or current operations. There is minor ravelling of small sections of the slope, but these are not impacting camp safety nor would they represent a risk for workers on the project. Some regrowth of vegetation was observed in the camp area.

There are two heated buildings, the core shack (foreground) and geology office (background), located adjacent to the core storage racks (Photograph 4). The tanks, valves and hosing were in a satisfactory condition at the time of inspection. Liners have been placed beneath each tank to act as secondary containment for potential leaks and were in a satisfactory condition.

2.3 Proposed Heap Leach Facility Area

The inspection included the area of the previously proposed heap leach facility and associated water management pond. Site preparation in these areas has been limited to clearing of trees and topsoil. This portion of the site also includes several access roads and drilling platforms previously used for exploration and investigation activities.

Since the initial clearing in 1997 and 1998, regrowth of vegetation has been occurring in the area. Small coniferous trees, approximately 1 m in height, are established throughout this area (Photograph 5). Erosion and sediment control measures in this area were initially installed in September 2008 and further maintained in September 2009 and August 2010. The sediment control measures include ditches and berms to divert water into sediment catch basins, silt fences, and vegetated areas to break up flow and reduce the potential for erosion. There continues to be some minor erosion of sediments along the access roads, however, this appears to be attenuating as vegetation growth on the access roads increases (Photographs 6 and 7). Sediment basins and controls are functioning adequately in areas that have seen no new activity.

Clearing and drilling activities were carried out in 2015 and 2016 at a location down slope of the proposed heap leach facility, near the proposed water management pond (Photograph 8). Regrowth of vegetation, primarily volunteer species of grass, has mitigated loss of sediment from the former drill pads and is suitably rehabilitating.

Further downstream, within the floodplain of Williams Creek, silt fences have been installed and the area seeded where sediment from previous site erosion accumulated (Photographs 9 and 10). Grass seed was applied in 2009 to promote the re-establishment of vegetation and to further stabilize sediment. The approach was noted to be generally effective in 2011 and 2012, but with limited regrowth attributed to periodic pooling of water. The area was also re-vegetated with woody plants (willow cuttings), and these plants are now well established. Volunteer species of grass and woody plants are performing very well. There was no evidence of sediment movement, indicating that re-vegetation has been effective in minimizing erosion. Silt fencing surrounding these areas is now overgrown and there is no evidence of sediment movement through the area. Silt fences are typically a temporary measure and could be removed if no further disturbance is expected upstream.

2.4 Proposed Open Pit Mine Area

The area proposed for the open pit mine was inspected. The slopes of the trenches excavated as part of the effort to obtain bulk samples during exploration activities were observed to be in satisfactory condition. There was no observed slumping or failures of the trenches and the slopes facilitate egress for wildlife. Several of the closed drill pads were inspected and there did not appear to be any erosion noted from these areas that would require attention.

2.5 Proposed Waste Rock Storage Area

The proposed waste rock storage area was inspected. The waste rock storage area is tree covered and the drill pads and access roads in the area are re-vegetating by volunteer species to the extent that access on foot is now difficult (Photograph 11).

2.6 Fuel Storage Area

The fuel storage area was inspected. The fuel storage area comprises a bunded and lined basin constructed to contain any spilled fuel and currently a few dozen drums of diesel fuel. After several days of rain prior to the inspection, approximately 0.3 m of water had accumulated in the basin (Photograph 12). The bund is less than 3 m in height and the basin capacity is less than 10,000 m³; therefore, the fuel storage area is appropriately permitted under the QML without need for a water license (Yukon Environment Dam Guide).

There was evidence that an animal had entered and exited the basin. The animal damaged the liner in a few locations (Photograph 13). The damage to the liner should be repaired. The fuel drums should be organized in a manner to allow wildlife egress from the basin.

2.7 Site Access Roads

The main access road to the north of the waste rock storage area was observed to be in good condition with only minor erosion observed. Minor erosion of the road shoulders was observed near at the culvert on North Williams Creek. The culvert has undergone some crushing and has accumulated some sediment (Photograph 14). However, the culvert remains more than adequate to accommodate the relatively minor flows at this location. The access road should be inspected annually and ongoing maintenance of drainage features and erosion should be anticipated. The combination of recent rain and high traffic due to current drilling activities have resulted in a rutted, muddy area at the low point in the road near North Williams Creek (Photographs 15 and 16). The road in this area should be regraded and gravel placed, as required to improve trafficability at this location.

The ford road crossing installed at Williams Creek in 2013 continues to function as intended (Photograph 17). The rockfill in the ford is well-graded and there is no indication of movement of finer materials. Ponded water was observed on the upstream side of the road, with flow across the road. It is possible that a large rainfall event could result in erosion. We therefore recommended that the ford continue to be inspected annually and maintenance be carried out, if required. The ford is appropriate for the current status of the project. However, prior to site development, it is recommended that the culvert at the Williams Creek crossing is replaced and the access road armored against erosion at this location.

The access road crossing at Merrice Creek includes a single-span bridge set on grade (Photograph 18). Following recommendations in the July 2014 inspection memorandum, the bridge was extended by approximately 3 m and seated 1 to 2 m on the abutments. Approximately 3 m of steel was welded to the existing span, bridge decking was replaced and extended, and the approaches were re-graded to the bridge deck elevation.

The bridge was observed to be in a satisfactory condition and is securely anchored at each of the abutments. The right (or southern) abutment is steep sided and there is evidence that erosion may be continuing to occur at this location under high-flow conditions. The bridge should be monitored annually and following large rainfall events. In the event that erosion begins to compromise the stability of the abutment, consideration should be given to the installation of erosion protection at this location.

3.0 THERMISTOR DATA

Ground temperatures derived from thermistor data collected during the site visit are presented in Attachment 2. Data from thermistors installed in 1995 and 1996 were not collected as these thermistors require equipment to take readings that was not available.

In general, thermistors BH-01-07, BH-03-07 and BH-06-07, located at the heap leach site, have continued to demonstrate a gradual year-on-year decrease in temperatures at depths greater than 5 to 7 m, depending on location. The same is also true of BH-12-07, BH-18-07 and BH-29-07, located within the proposed waste rock storage area. The remaining thermistors indicate little or no year-on-year trend in temperature at depth, however, the temperatures are higher than the average of previous years.

The project is located in an area of variable permafrost. This is evident from the thermistor plots, which can be interpreted to estimate the active thaw layer and permafrost, where present. The thermistor plots indicate the presence of permafrost at the following locations:

- BH-01-07, BH-03-07 and BH-06-07 to the south and west of the proposed heap leach facility area, where the active thaw layer is approximately 5 to 7 m thick with permafrost below.
- BH-12-07, BH-18-07 and BH-29-07 within the proposed waste rock storage area, where the active thaw layer varies from approximately 5 to 8 m thick with permafrost below.

No permafrost has been observed at thermistors BH-13-07, BH-23-07, and BH-26-07 over the depth monitored within the proposed heap leach facility area. Permafrost may exist below the depth monitored.

4.0 RECOMMENDATIONS

The inspection of the Carmacks Copper Project site was completed on September 28, 2017. Based on the inspection we make the recommendations summarised below.

- Water crossings, including the bridge abutments at Merrice Creek, should continue to be inspected annually and following major rainfall events. Minor maintenance should be carried out, as required to maintain the functionality and safety of these crossings.
- Controls should be implemented to manage runoff and sediment from the area of heavy traffic located in the area of North Williams Creek. The high traffic area should be regraded and repaired.
- The damage to the liner at the fuel storage area should be repaired. The fuel drums should be organized in a manner to allow access and egress for wildlife.

Golder understands that the recommendations will be completed by Carmacks Mining prior to next annual inspection.

5.0 CLOSURE

We draw your attention to the "Limitations and Uses of this Report" included as Attachment 3, which form an integral part of this document. We trust that this letter satisfies your requirements. However, please do not hesitate to contact us should you have any queries or require any further information.

Yours truly,

GOLDER ASSOCIATES LTD.



Benjamin Cox, P.Eng.
Geotechnical Engineer



David Anstey, P.Eng.
Associate, Senior Tailings Engineer

BDC/DRA/crm

Attachments: Attachment 1 – Photographs
Attachment 2 – Thermistor Plots
Attachment 3 – Limitations

ATTACHMENT 1

Photographs



ATTACHMENT 1

Carmacks Copper Project - 2017 Annual Inspection



Photograph 1: Crack beneath core storage rack



Photograph 2: Core storage racks



ATTACHMENT 1

Carmacks Copper Project - 2017 Annual Inspection



Photograph 3: Cut-slope behind camp



Photograph 4: Core logging shacks



ATTACHMENT 1

Carmacks Copper Project - 2017 Annual Inspection



Photograph 5: Vegetation regrowth in area of proposed heap leach pad facility



Photograph 6: Vegetation regrowth on access roads



ATTACHMENT 1

Carmacks Copper Project - 2017 Annual Inspection



Photograph 7: Vegetation regrowth on access roads



Photograph 8: Vegetation regrowth on former drill pad



ATTACHMENT 1

Carmacks Copper Project - 2017 Annual Inspection



Photograph 9: Vegetation regrowth in Williams Creek floodplain



Photograph 10: Vegetation growth around sediment fencing



ATTACHMENT 1

Carmacks Copper Project - 2017 Annual Inspection



Photograph 11: Vegetation regrowth on access road in proposed waste rock storage area



Photograph 12: Lined basin at fuel storage area



ATTACHMENT 1

Carmacks Copper Project - 2017 Annual Inspection



Photograph 13: Liner damage at fuel storage area



Photograph 14: Culvert beneath road at North Williams Creek



ATTACHMENT 1

Carmacks Copper Project - 2017 Annual Inspection



Photograph 15: High traffic area at North Williams Creek



Photograph 16: High traffic area at North Williams Creek



ATTACHMENT 1

Carmacks Copper Project - 2017 Annual Inspection



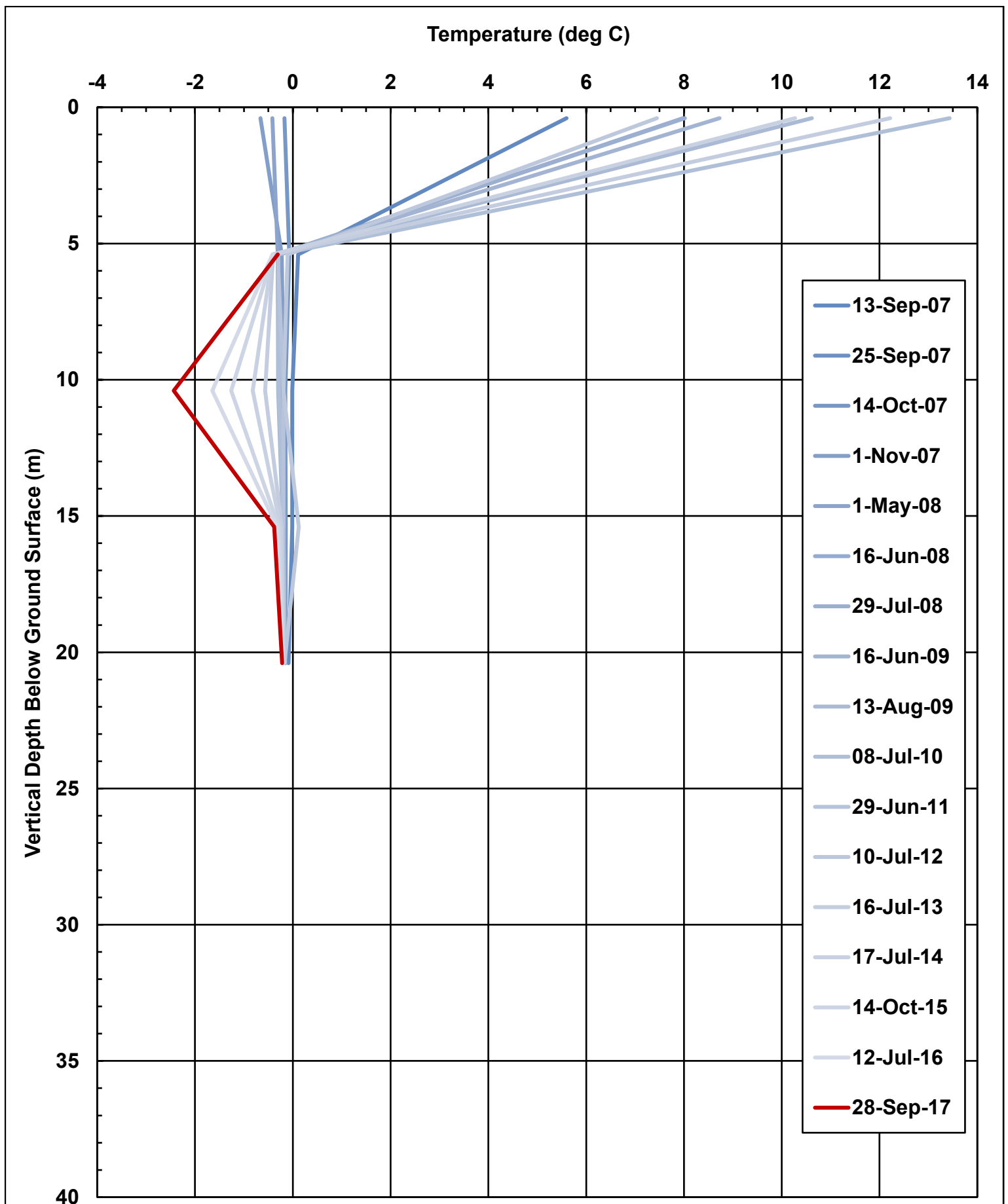
Photograph 17: Williams Creek crossing

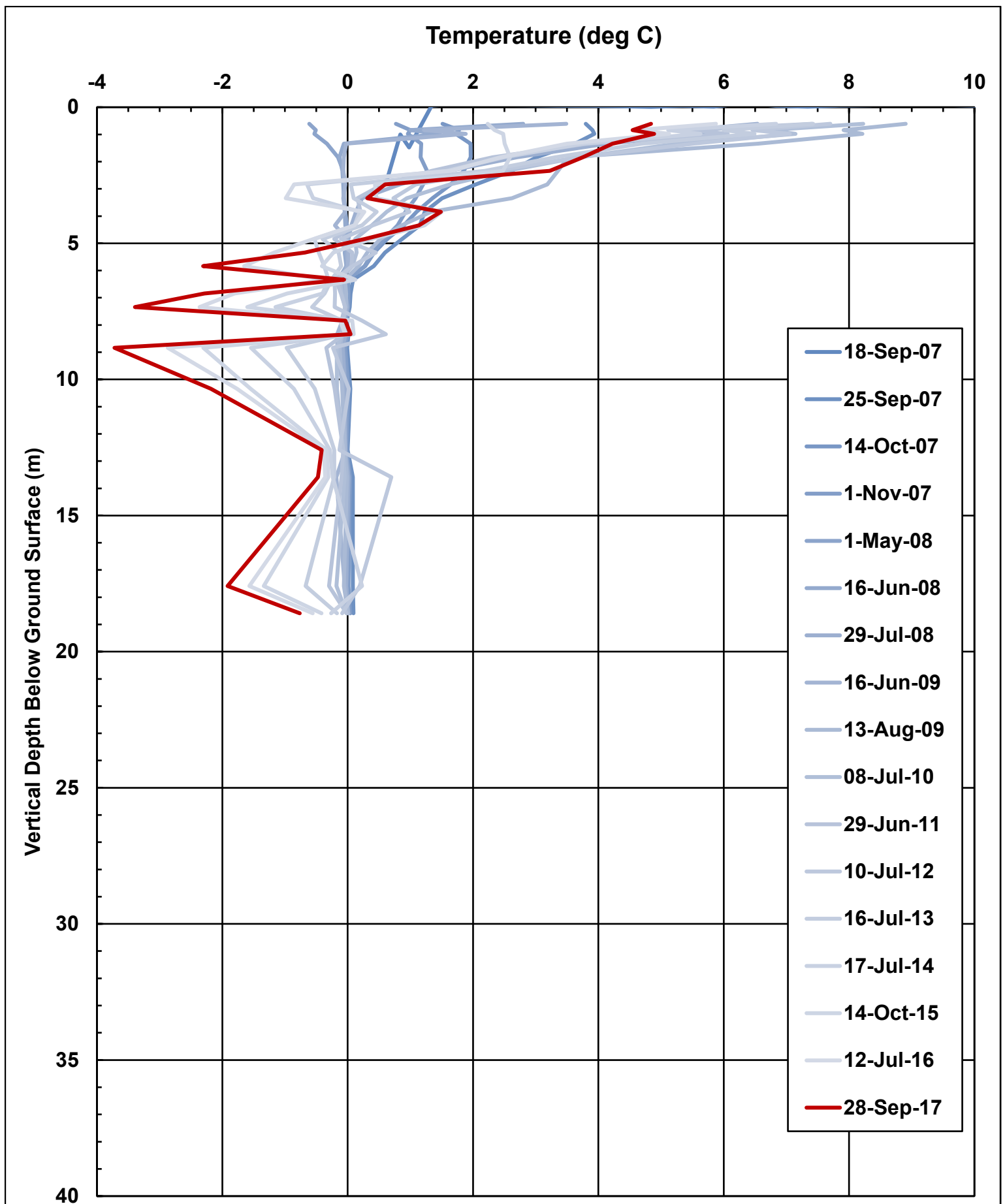


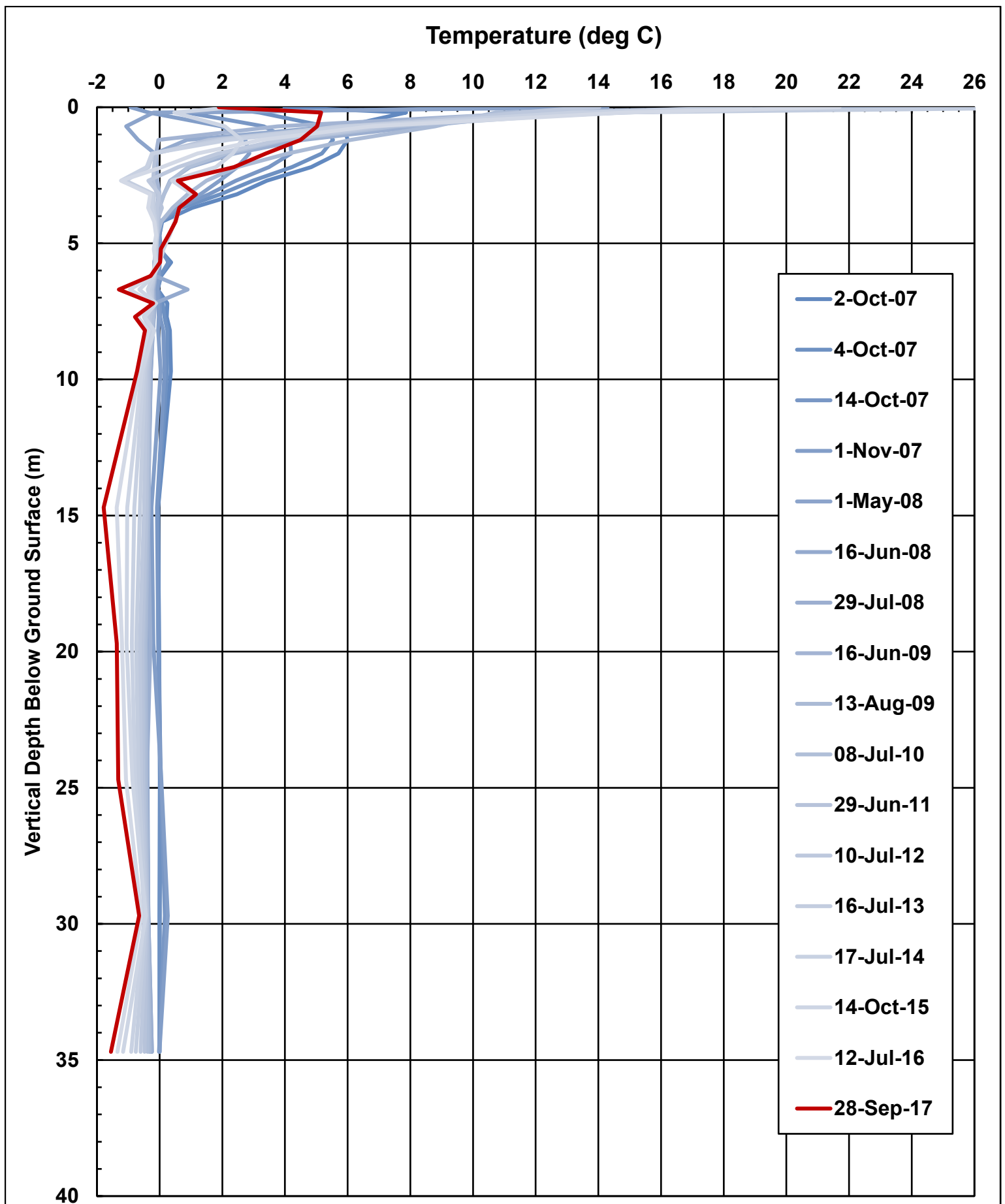
Photograph 18: Bridge crossing at Merrice Creek

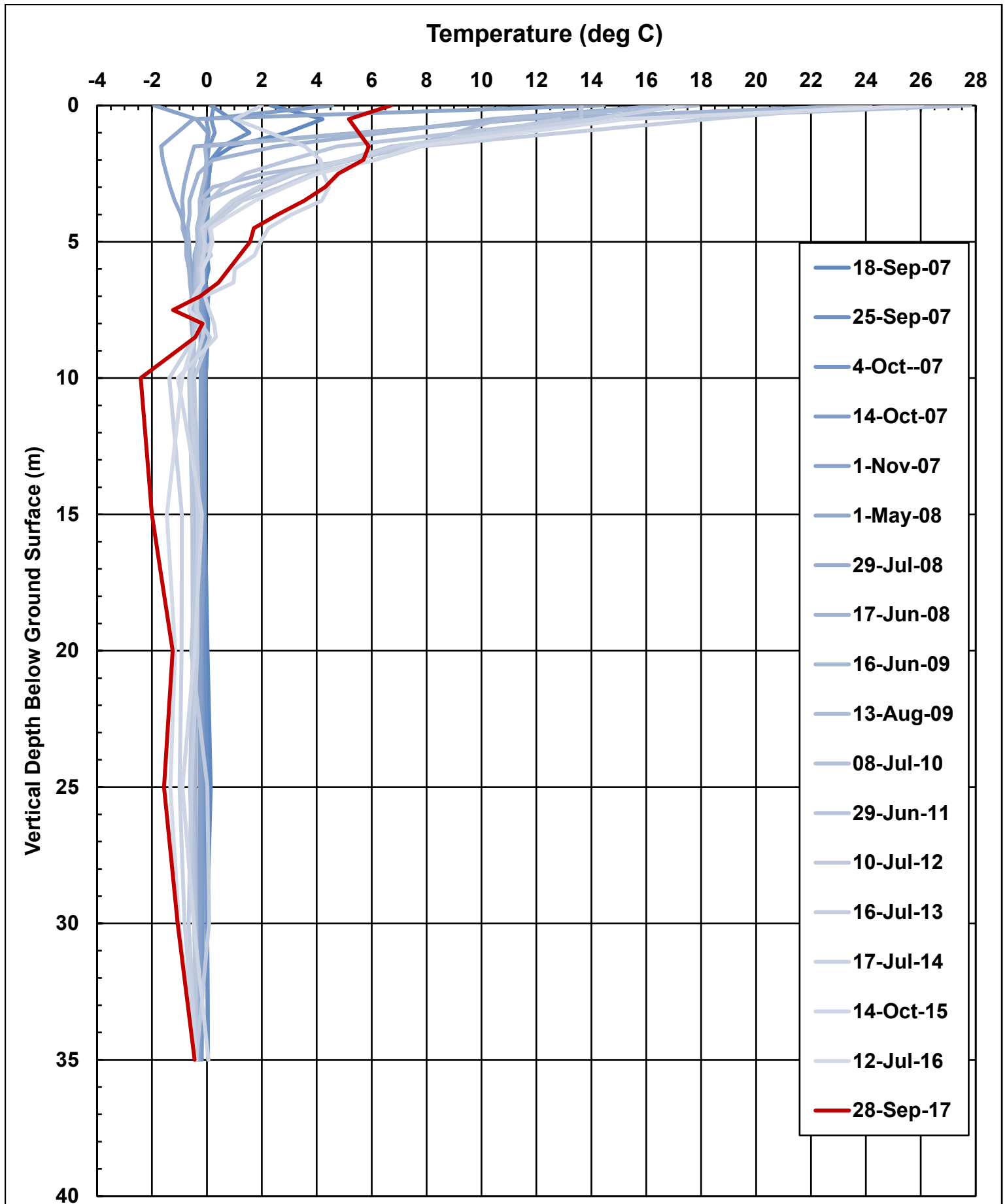
ATTACHMENT 2

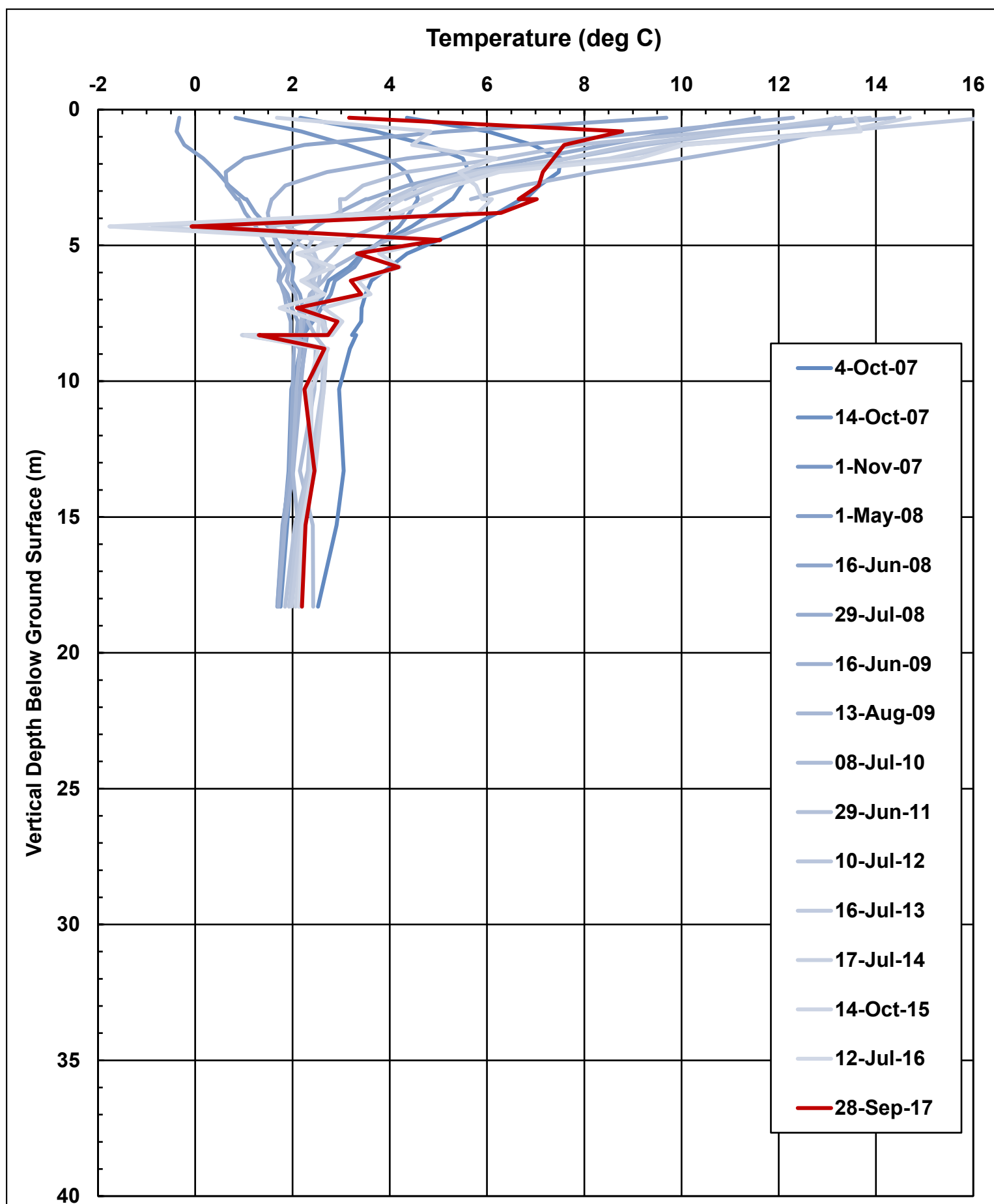
Thermistor Plots

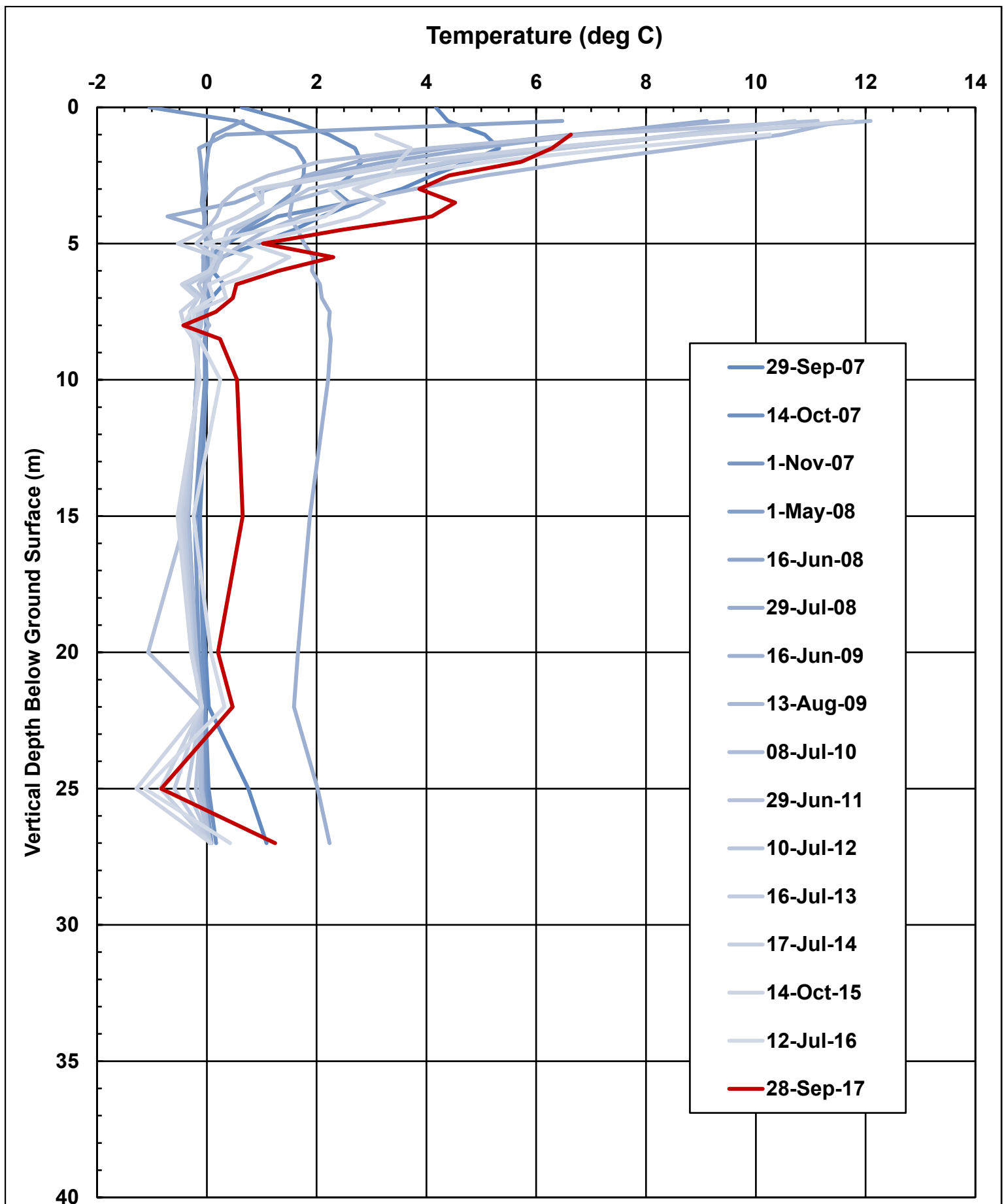


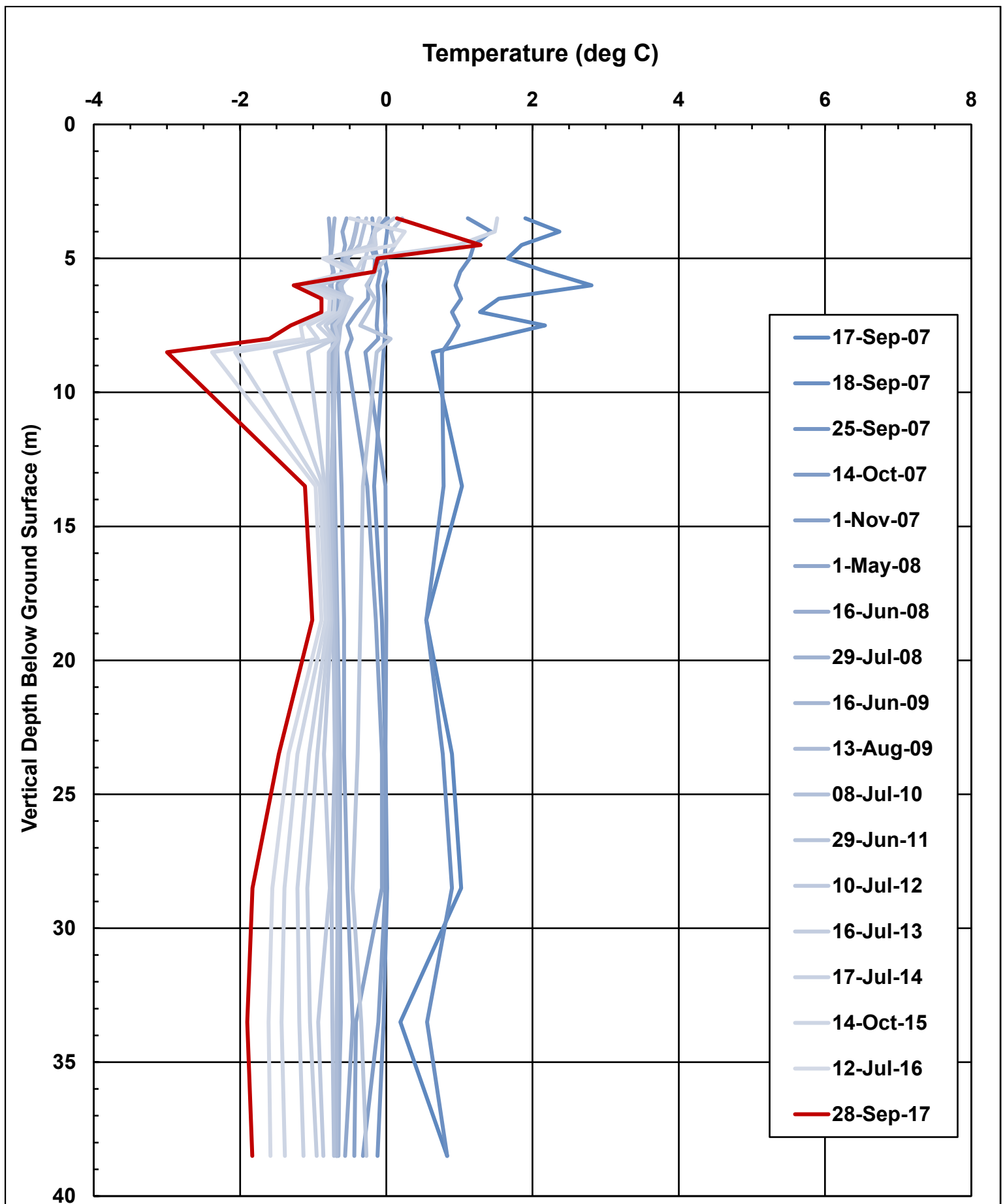


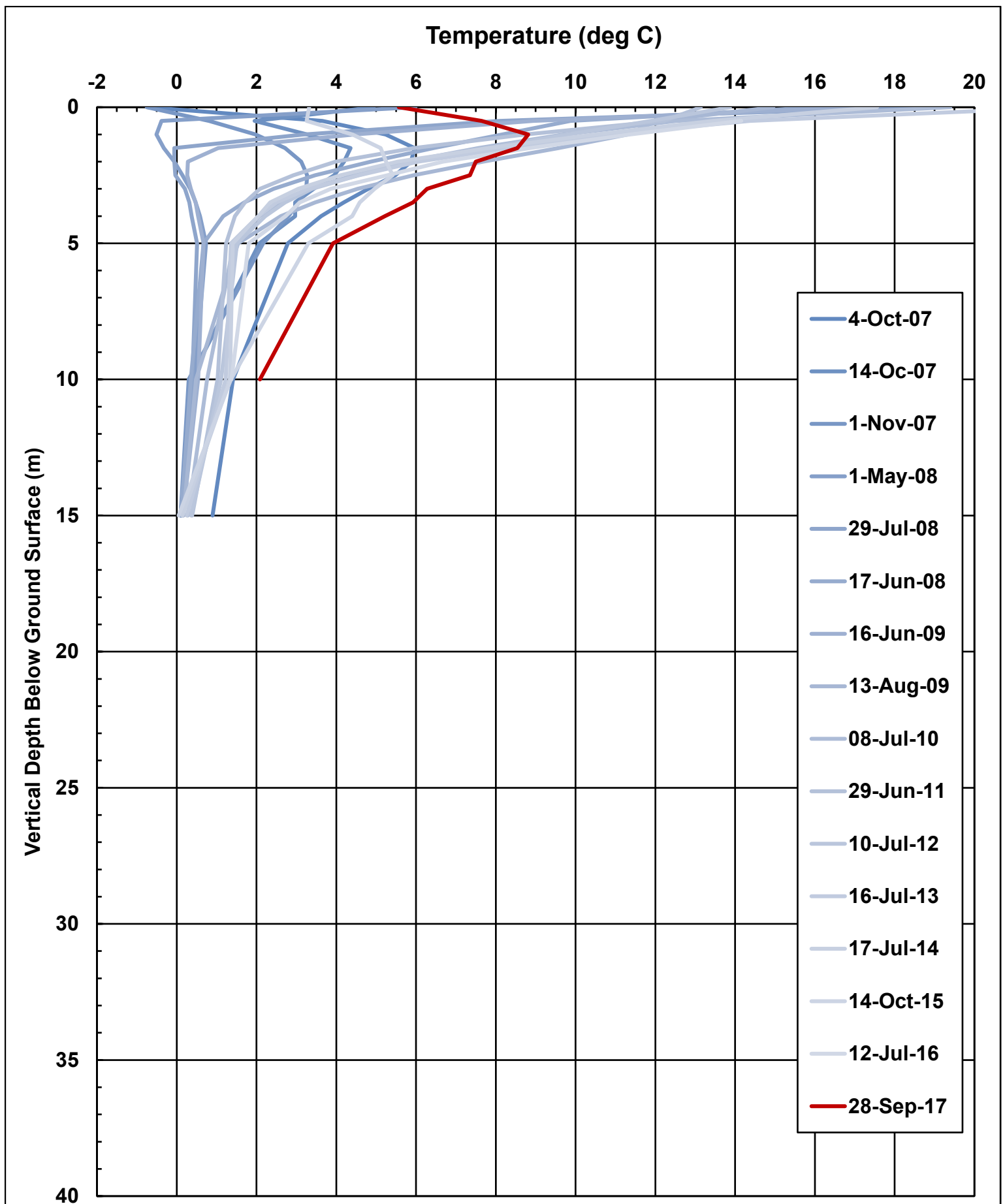


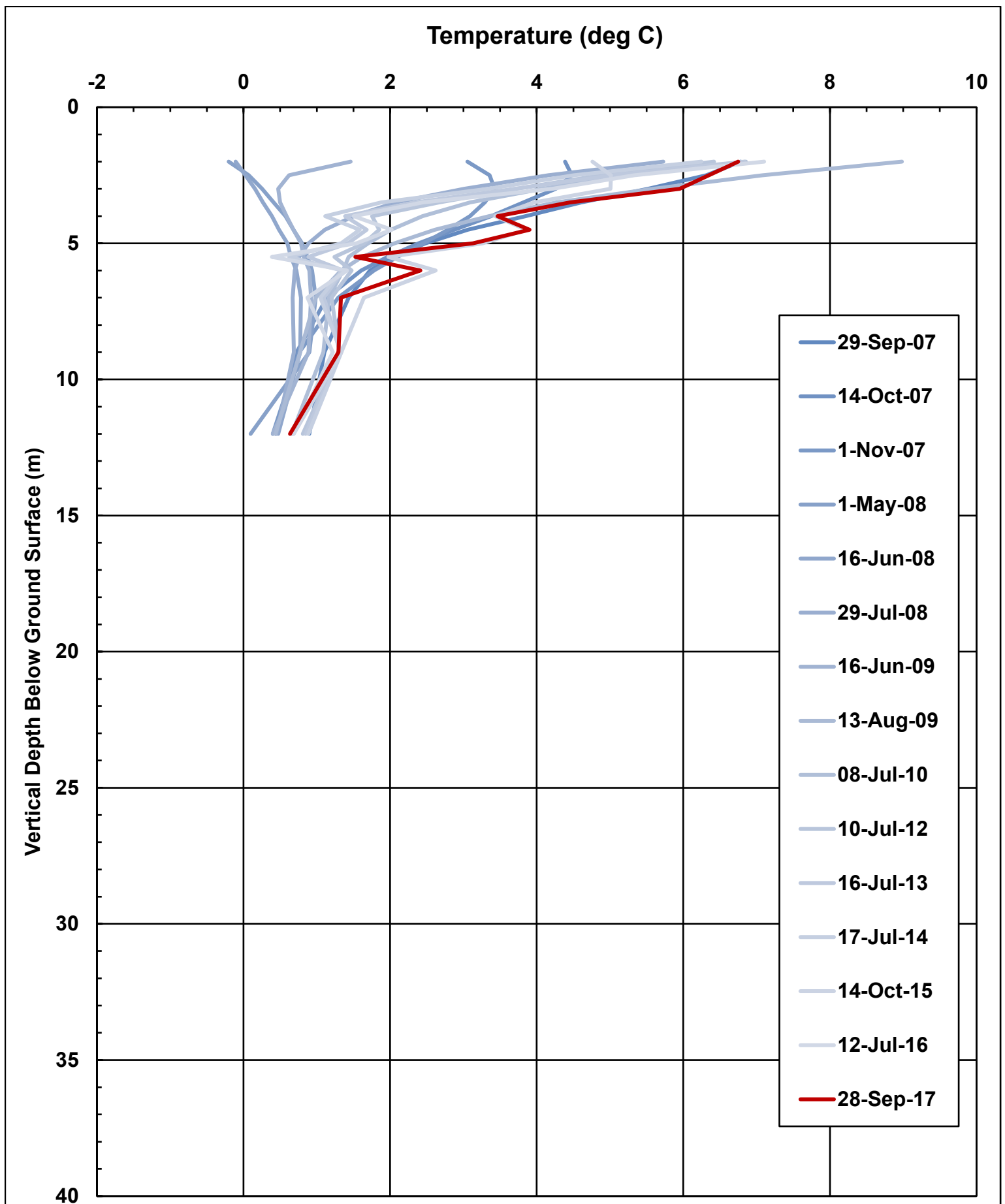


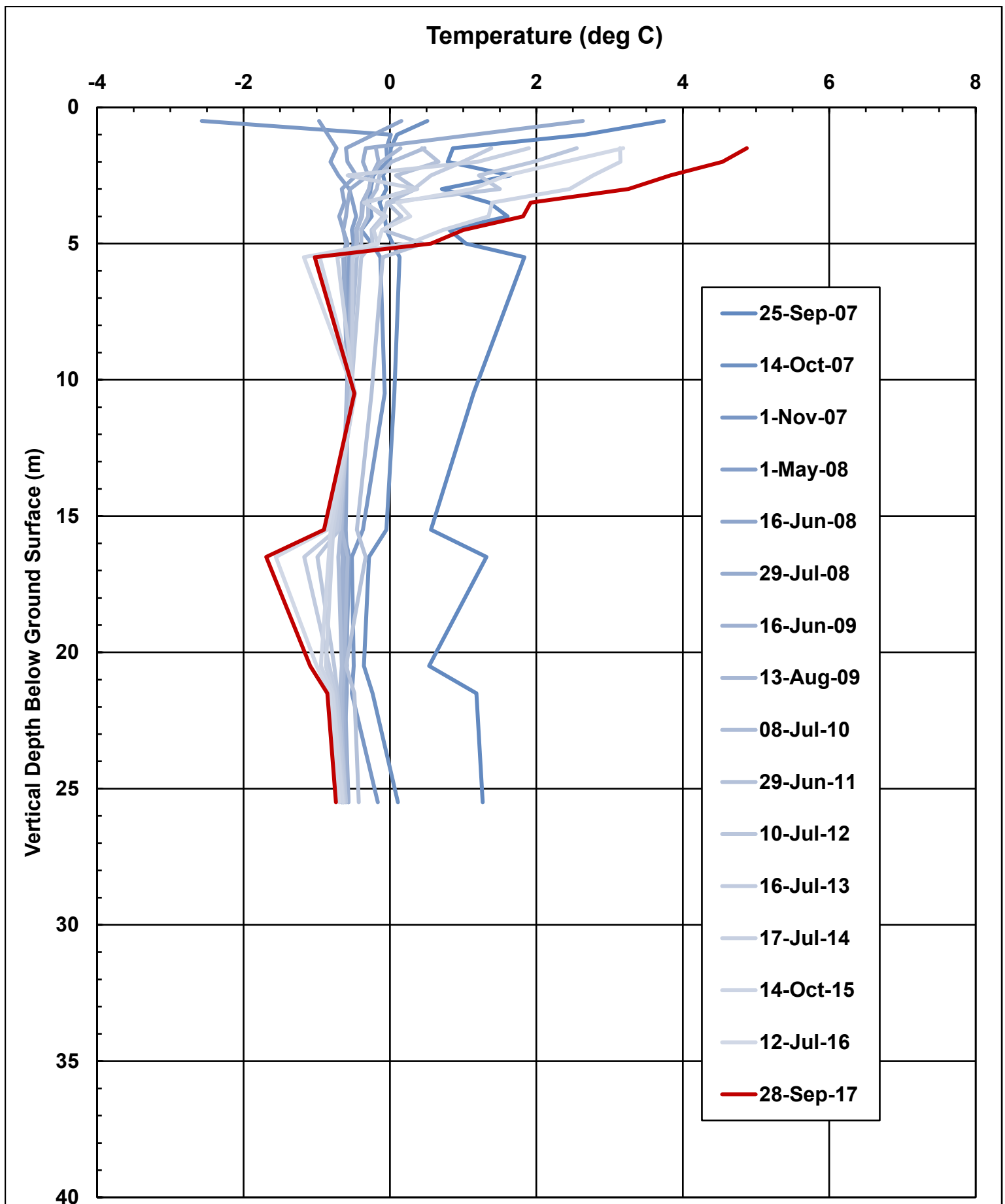












ATTACHMENT 3

Limitations

IMPORTANT INFORMATION AND LIMITATIONS OF THIS REPORT

Standard of Care: Golder Associates Ltd. (Golder) has prepared this report in a manner consistent with that level of care and skill ordinarily exercised by members of the engineering and science professions currently practising under similar conditions in the jurisdiction in which the services are provided, subject to the time limits and physical constraints applicable to this report. No other warranty, expressed or implied is made.

Basis and Use of the Report: This report has been prepared for the specific site, design objective, development and purpose described to Golder by the Client. The factual data, interpretations and recommendations pertain to a specific project as described in this report and are not applicable to any other project or site location. Any change of site conditions, purpose, development plans or if the project is not initiated within eighteen months of the date of the report may alter the validity of the report. Golder cannot be responsible for use of this report, or portions thereof, unless Golder is requested to review and, if necessary, revise the report.

The information, recommendations and opinions expressed in this report are for the sole benefit of the Client. No other party may use or rely on this report or any portion thereof without Golder's express written consent. If the report was prepared to be included for a specific permit application process, then upon the reasonable request of the client, Golder may authorize in writing the use of this report by the regulatory agency as an Approved User for the specific and identified purpose of the applicable permit review process. Any other use of this report by others is prohibited and is without responsibility to Golder. The report, all plans, data, drawings and other documents as well as all electronic media prepared by Golder are considered its professional work product and shall remain the copyright property of Golder, who authorizes only the Client and Approved Users to make copies of the report, but only in such quantities as are reasonably necessary for the use of the report by those parties. The Client and Approved Users may not give, lend, sell, or otherwise make available the report or any portion thereof to any other party without the express written permission of Golder. The Client acknowledges that electronic media is susceptible to unauthorized modification, deterioration and incompatibility and therefore the Client cannot rely upon the electronic media versions of Golder's report or other work products.

The report is of a summary nature and is not intended to stand alone without reference to the instructions given to Golder by the Client, communications between Golder and the Client, and to any other reports prepared by Golder for the Client relative to the specific site described in the report. In order to properly understand the suggestions, recommendations and opinions expressed in this report, reference must be made to the whole of the report. Golder cannot be responsible for use of portions of the report without reference to the entire report.

Unless otherwise stated, the suggestions, recommendations and opinions given in this report are intended only for the guidance of the Client in the design of the specific project. The extent and detail of investigations, including the number of test holes, necessary to determine all of the relevant conditions which may affect construction costs would normally be greater than has been carried out for design purposes. Contractors bidding on, or undertaking the work, should rely on their own investigations, as well as their own interpretations of the factual data presented in the report, as to how subsurface conditions may affect their work, including but not limited to proposed construction techniques, schedule, safety and equipment capabilities.

Soil, Rock and Groundwater Conditions: Classification and identification of soils, rocks, and geologic units have been based on commonly accepted methods employed in the practice of geotechnical engineering and related disciplines. Classification and identification of the type and condition of these materials or units involves judgment, and boundaries between different soil, rock or geologic types or units may be transitional rather than abrupt. Accordingly, Golder does not warrant or guarantee the exactness of the descriptions.

Special risks occur whenever engineering or related disciplines are applied to identify subsurface conditions and even a comprehensive investigation, sampling and testing program may fail to detect all or certain subsurface conditions. The environmental, geologic, geotechnical, geochemical and hydrogeologic conditions that Golder interprets to exist between and beyond sampling points may differ from those that actually exist. In addition to soil variability, fill of variable physical and chemical composition can be present over portions of the site or on adjacent properties. **The professional services retained for this project include only the geotechnical aspects of the subsurface conditions at the site, unless otherwise specifically stated and identified in the report.** The presence or implication(s) of possible surface and/or subsurface contamination resulting from previous activities or uses of the site and/or resulting from the introduction onto the site of materials from off-site sources are outside the terms of reference for this project and have not been investigated or addressed.

Soil and groundwater conditions shown in the factual data and described in the report are the observed conditions at the time of their determination or measurement. Unless otherwise noted, those conditions form the basis of the recommendations in the report. Groundwater conditions may vary between and beyond reported locations and can be affected by annual, seasonal and meteorological conditions. The condition of the soil, rock and groundwater may be significantly altered by construction activities (traffic, excavation, groundwater level lowering, pile driving, blasting, etc.) on the site or on adjacent sites. Excavation may expose the soils to changes due to wetting, drying or frost. Unless otherwise indicated the soil must be protected from these changes during construction.

Sample Disposal: Golder will dispose of all uncontaminated soil and/or rock samples 90 days following issue of this report or, upon written request of the Client, will store uncontaminated samples and materials at the Client's expense. In the event that actual contaminated soils, fills or groundwater are encountered or are inferred to be present, all contaminated samples shall remain the property and responsibility of the Client for proper disposal.

Follow-Up and Construction Services: All details of the design were not known at the time of submission of Golder's report. Golder should be retained to review the final design, project plans and documents prior to construction, to confirm that they are consistent with the intent of Golder's report.

During construction, Golder should be retained to perform sufficient and timely observations of encountered conditions to confirm and document that the subsurface conditions do not materially differ from those interpreted conditions considered in the preparation of Golder's report and to confirm and document that construction activities do not adversely affect the suggestions, recommendations and opinions contained in Golder's report. Adequate field review, observation and testing during construction are necessary for Golder to be able to provide letters of assurance, in accordance with the requirements of many regulatory authorities. In cases where this recommendation is not followed, Golder's responsibility is limited to interpreting accurately the information encountered at the borehole locations, at the time of their initial determination or measurement during the preparation of the Report.

Changed Conditions and Drainage: Where conditions encountered at the site differ significantly from those anticipated in this report, either due to natural variability of subsurface conditions or construction activities, it is a condition of this report that Golder be notified of any changes and be provided with an opportunity to review or revise the recommendations within this report. Recognition of changed soil and rock conditions requires experience and it is recommended that Golder be employed to visit the site with sufficient frequency to detect if conditions have changed significantly.

Drainage of subsurface water is commonly required either for temporary or permanent installations for the project. Improper design or construction of drainage or dewatering can have serious consequences. Golder takes no responsibility for the effects of drainage unless specifically involved in the detailed design and construction monitoring of the system.