PHASE 14 SOLID WASTE PERMIT APPLICATION

Supplemental Geologic and Hydrogeologic Report

Crossroads Landfill
Norridgewock, Maine

Prepared for

Waste Management Disposal Services of Maine, Inc.

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Norridgewock, Maine

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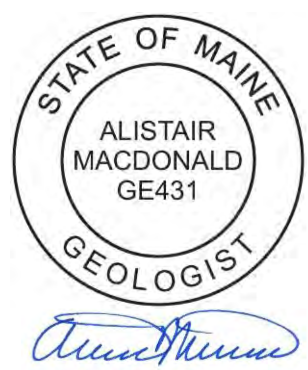

Project 19119078

July 31, 2020

REPORT

Supplemental Geologic and Hydrogeologic Report

Landfill Siting Application - Phase 14

Submitted to:

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1.0 INTRODUCTION

On behalf of Waste Management Disposal Services of Maine, Inc. – Crossroads Landfill (WMDSM, also referred to as the Crossroads Landfill), Golder Associates Inc. (Golder) prepared this Supplemental Geologic and Hydrogeologic Report in support of the proposed Phase 14 landfill at the WMDSM facility in Norridgewock, Maine (the Site).

1.1 Background

WMDSM submitted a solid waste permit application for Phase 14 (WMDSM, 2019, Permit Application) on October 25, 2019 to the Maine Department of Environmental Protection (MEDEP). Golder prepared Volume III of the Permit Application (Geologic and Hydrogeologic Assessment Report) to satisfy the requirements established by the MEDEP related to the geologic and hydrogeologic conditions, specifically, Chapter 401 Section 2.B, 2.C, 2.G, and 2.K of the Maine Solid Waste Management Rules (Maine SWMR), effective 2 November 1998 (revisions effective 12 April 2015).

MEDEP provided comments on Volume III of the Permit Application in a memorandum dated April 15, 2020. Golder responded to the MEDEP's April 15, 2020 comments in a memorandum dated June 1, 2020. MEDEP provided "follow-on" comments to Golder's response in a memorandum dated June 22, 2020. Appendix A provides a table summarizing MEDEP's comments and WMDSM's/Golder's responses.

In its responses, WMDSM/Golder committed to completing additional field investigations and to providing additional information to support the hydrogeologic evaluation and report. Specifically, WMDSM/Golder agreed to:

- Conduct a groundwater pumping test to further evaluate the hydraulic properties on the Presumpscot Clay and evaluate the bulk vertical hydraulic conductivity of the clay (see Section 3.0)
- Provide revised time-of-travel calculations including a sensitivity analysis (see Section 4.0)
- Present a discussion of the role of diffusion and its relevance to the time-of-travel calculations (see Section 4.5)
- Provide a comparison of the conceptual site model and model input parameters to confirm the validity of the previous modeling efforts relative to Phase 14 (see Sections 3.0 and 4.0)
- Provide a summary of the conceptual site model (see Section 5.0)
- Provide an isopach map of the of the complete overburden sequence (see Section 5.1)
- Revise the proposed groundwater quality monitoring program to include an additional upgradient monitoring well and two downgradient monitoring wells (see Section 6.0)
- Address other miscellaneous items as indicated in the response to comments (various sections)

1.2 Report Organization

This report supplements Volume III of the Permit Application (Geologic and Hydrogeologic Assessment) and is organized as follows:

- Section 2.0 – Presents a review and discussion of comments raised by MEDEP regarding the Presumpscot Clay and its physical and hydrogeologic properties.

- Section 3.0 – Describes the pumping test set-up, procedures, data analysis and results
- Section 4.0 – Describes the revised time-of-travel calculations
- Section 5.0 – Presents a summary of the conceptual site model
- Section 6.0 – Presents the revised Proposed Water Quality Monitoring Program

2.0 PRESUMPSCOT CLAY

As described in Section 4.2 of the Geologic and Hydrogeologic Assessment Report (Golder, 2019), silty-clay and clayey-silt deposits of the Presumpscot Formation were encountered in all borings within the footprint of the Phase 14 area. The stratigraphic unit consists of a stiff upper clay facies transitioning to a soft lower clay facies.

The stiff upper clay facies is described in Phase 14 borehole logs as a gray-brown, medium stiff to very stiff clay that is typically moist and exhibits orange and red mottling and occasional silt partings. Features that are clearly attributable to post-depositional conditions such as desiccation fissures, disruption by roots, frost fracturing, or expansion fracturing (rather than as an artifact of the field sampling procedure) were not observed in stiff upper clay samples from borings within and adjacent to the Phase 14 footprint.

The soft lower clay facies of the Presumpscot Formation was encountered underlying the stiff upper clay facies in most borings at the Phase 14 area and is described as a gray, soft to very soft clay that is typically moist or wet, and relatively homogenous. Post-depositional features were not observed in samples of the soft lower clay from borings within and adjacent to the Phase 14 footprint.

MEDEP suggests that previous investigations in other areas of the Crossroads Landfill exhibited features in the stiff upper and soft lower clay units that were not documented in the Phase 14 investigation, such as desiccation fissures, disruption by roots, frost fracturing, and expansion fracturing (see Comment 17a in Appendix Table A-1). Accordingly, Golder has re-examined the results from prior investigations to evaluate the extent to which such features may have been present and, if so, factors that might explain differences between observations made during those prior investigations and the Phase 14 investigation.

Although fissures, roots, and mottling were observed in the prior investigation, they were relatively limited in extent. Appendix B-1 provides a tabulation of clay descriptions from borings (B-305, B-1001 to B-1044, B-103, B-310, B-614, B-615, B-617, B-618, B-620), referenced by MEDEP in its comments, and other borings in the Phase 11 and 12 area from previous investigations (Gerber, 1996). References to mottling, fissuring, roots, and sand seams are highlighted. Golder notes the following:

- There is only one observation of fissuring (B-305, sample for 5 to 6 ft bgs) in the boring log set. The notable absence of fissure observations is consistent with borehole observations in the Phase 14 area.
- None of the borings listed by MEDEP or others in the Phase 11 and 12 area reviewed by Golder contain observations of roots.
- The observations of mottling and fine sand seams in the “olive brown clayey silt” (i.e., the stiff upper clay) are consistent with the description of the stiff upper clay in the Phase 14 area (see above, i.e., “exhibits orange and red mottling and occasional silt partings”).
- The 2015 paper by Luettich et al. referenced by the MEDEP was based on information from the Phase 8 landfill, which is nearly a mile away from Phase 14. The statement about features in the stiff upper clay was provided as introductory background context to a discussion on slope stability. There was no analysis of the

extent to which such features may have been present in the upper clay in other areas of the Crossroads facility.

MEDEP also indicates that previous test pit logs describe the stiff clay as mottled, fractured, containing roots, and sand seams. Golder reviewed the logs for test pits excavated at and near Phase 12, the closest existing landfill phase to Phase 14. A summary of the clay descriptions from these logs is presented in in Appendix B-2. References to “prismatic fracturing”, “root hairs” and “vertical fracturing” are primarily limited to the “olive brown clay” encountered at depths of less than five feet below ground surface[1]. None of these observations pertain to the “gray clay-silt”.

In its review of soil sample photographs, MEDEP stated that they “noticed that there were features, such as gray clay mottled with green or brown areas, sandy lenses, and apparent fractures, in the stiff upper clay, but these features were not described in the boring logs. Some examples of images that show features that are not described are GB7-13’-15’, GB13-11’-13’(2), GB15-3’-7’, GB17-7’-9’, PZ-5M-9’-11’, etc.” (see Comment 17a in Appendix Table A-1). Golder and WMDSM requested that the Geosyntec personnel who performed the Phase 14 geotechnical field investigation work review the subject logs and sample photographs and annotate them to address features MEDEP may be alluding to. Their summary is presented in a technical memorandum included as Appendix B-3. As described in the memorandum, the features alluded to by MEDEP are not readily apparent[2] or it is not possible to determine definitively whether the features are representative of actual soil conditions or are the result of unavoidable disturbance to the samples resulting from split-spoon sampling, cutting, and logging procedures. Regardless, the photographs presented in Appendix B-3 demonstrate that the features observed by MEDEP are vertically isolated.

In summary:

- The number of previous observations of “fissures” and “roots” in borehole samples from other areas of the Crossroads site by other-investigator is limited. When observed these features were typically limited to the uppermost portion of the stiff upper clay at shallow depths, where the clay would be more susceptible to frost action, desiccation, and penetration by plant roots. In contrast, most areas of Phase 14 the Presumpscot clay are overlain by silty fine sand, which may have limited these actions in the Phase 14 area. Thus, it is not surprising that such features were not generally observed in the Phase 14 investigation.
- Observations of mottling by other investigators in other areas of the Crossroads site, particularly in the stiff upper clay, is consistent with observations in borings advanced in the Phase 14 area. However, while mottling suggest that the soil may have historically been subject to fluctuating groundwater levels, mottling alone (i.e., absent other secondary features) does not necessarily impart any specific hydrogeologic property on the clay, and therefore is of little relevance to the current hydrogeologic Conceptual Site Model (CSM).

[1] In some cases (i.e., test pits TP 2003, TP 2004, and TP 2005) the descriptions of fracturing are vague. It is not clear whether the observation of “blocky to prismatic fractures” represents the entire zone of 3.5 to 11 ft bgs because the description also describes the unit as grading to grey. The descriptions of TP 2004 and TP 2005 simply say “less apparent fracturing”, but no other fracturing is referenced.

[2] As noted in WMDSM’s June 2020 Response to Comment document, no photographs of intact/undisturbed soil samples were taken during the site investigations. The sample classification process involved breaking the split spoon sampler apart, cutting the soil sample in half, removing sections of soil from the split spoon for inspection and pocket penetrometer and/or torvane testing to assess properties. The photographs provided to MEDEP reflect the condition of the samples after the field testing/classification process and are not representative of in-situ or undisturbed conditions.

- Observations of silt and sand seams in both the upper and lower clay facies by previous investigators in other areas of the Crossroads facility is consistent with observations in borings advanced in the Phase 14 area. However, it is difficult to determine whether silt and sand seams were observed more frequently in other areas of the Crossroads facility because many of the descriptions on the borehole logs by other investigators were generalized unit descriptors, rather than detailed, sample-specific descriptions (i.e., the exact same description is provided for many tens of feet). This similarly relates to the description of mottling. Regardless, Golder does not dispute that silt and sand seams may be present in both the stiff upper clay and the soft lower clay, and that they are not always readily identifiable using standard borehole sample collection methods (e.g., split-spoon samples). The presence of the silt and sand seams is one of the reasons why Golder concludes that the horizontal hydraulic conductivity of the clays is generally higher than the vertical hydraulic conductivity (see Section 3.1).

Lastly, Golder notes that Gerber's (1996) regional description of the Presumpscot Formation states that "The upper few feet of the fine-grained Presumpscot (Pp) are generally weathered to an olive brown, except in wetlands and along stream valleys where the water table is high and the material is largely saturated to the ground surface. At many locations in the Phase 14 area the water table is at or above the top the clay and thus the clay may have been less subject to the type of weathering that resulted in the post-depositional features described elsewhere at the Crossroads site. This suggest that the exposure to weathering in the Phase 14 area may be more limited than was observed in other areas.

3.0 GROUNDWATER PUMPING TEST

Golder conducted a groundwater pumping test to further evaluate hydraulic properties of the Presumpscot Clay, as requested by MEDEP. The following sections describe the background, scoping, implementation, and analysis of the groundwater pumping test.

3.1 Background

MEDEP has identified concerns related to methodologies (i.e., single-well slug tests and laboratory permeameter tests) used by Golder to evaluate the horizontal and vertical hydraulic conductivity of the upper and lower Presumpscot clay units (see Comment 17b in Appendix Table A-1). Single-well slug tests are routinely used for estimating horizontal hydraulic conductivity in all types of geologic media and were conducted in piezometers screened in the Presumpscot clay at the specific request of MEDEP. Likewise, vertical hydraulic conductivity of low permeability soils is routinely measured by laboratory permeameter testing. Golder maintains the position that the results of both testing methods are appropriately representative of the materials tested.

MEDEP cites the work of previous investigators as the basis for their disagreement. Previous investigators may have questioned the representativeness of both testing methods for evaluation of the overall vertical hydraulic conductivity of fissured clays and silts, but they did not question that slug tests are representative of horizontal hydraulic conductivity, and not vertical hydraulic conductivity. MEDEP's own comment states that "…at field scale where the presence of sand laminae appears to exert a greater influence than at laboratory scale, expect the clay to behave anisotropically with vertical permeability 10 times less than horizontal permeability on average", which would explain the approximately one order of magnitude difference between the permeameter testing results (vertical hydraulic conductivity) and the slug testing results (horizontal hydraulic conductivity). Gerber (1996) specifically states "that falling head tests primarily measure the horizontal hydraulic conductivity in the immediate vicinity of the monitoring well" and presents slug testing results as horizontal hydraulic conductivity.

MEDEP's primary concern seems to be whether either of the testing methods are representative of the vertical hydraulic conductivity of the clay if the clay is fractured and requested that a pumping test be conducted. Golder recognizes the challenges associated with investigating clay aquitards but believes that the data collected demonstrates that the Presumpscot clay in the Phase 14 area serves as an effective aquitard. However, WMDSM agreed to conduct a pumping test to further characterize the hydraulic properties of the Presumpscot, specifically the "bulk" vertical hydraulic conductivity.

The following sections describe the pumping testing activities, analyses, and results.

3.2 Initial Testing and Work Plan Development

Golder conducted limited testing of several Phase 14 wells to support development of a Pumping Test Work Plan (PTWP). The initial testing comprised the following:

<u>Pumping from till monitoring well MW14-04D:</u>

- The well rapidly pumped dry at a pumping flow rate of 0.2 gpm. Golder concluded that the yield from this well is insufficient to serve as a pumping well.

<u>Pumping from till monitoring well MW14-03D:</u>

- Stable drawdown was achieved at pumping rates of 0.2 gpm and 0.5 gpm
- The well pumped dry at 1 gpm
- No response (drawdown) was observed in an adjacent clay well (MW14-03M); however, a response was observed in the adjacent bedrock well (MW14-03B).

<u>Pumping from bedrock well MW14-03B:</u>

- Stable drawdown was achieved at pumping rates of 0.5 and 1 gpm
- The well pumped dry at 2.5 gpm
- Rapid response was observed in the adjacent till well (MW14-03D) at all three pumping rates (0.5, 1.0, and 2.5 gpm)
- No response was observed in the adjacent clay well (MW14-03M) over the duration of pumping (~3 hours total).

Based on the results of this initial testing, and as discussed with Gail Lipfert, PhD, C.G., of MEDEP on May 26, 2020, Golder recommended that bedrock well MW14-03B be used as the pumping well for a long duration, constant-rate pumping test. Golder submitted the PTWP to MEDEP on May 29, 2020 outlining the proposed pumping test approach and procedures.

In response to comments received from MEDEP on May 29, 2020, WMDSM proposed to install two observation wells screened in the clay to monitor potential responses in the clay near the pumping well, increase the period of antecedent water level monitoring, and increase the length of the pumping test. Golder incorporated these changes into a revised PTWP submitted to MEDEP on June 4. MEDEP approved the revised PTWP via email on June 5, 2020.

3.3 Piezometer Installation

Golder subcontracted S.W. Cole Explorations (S.W. COLE) of Bangor, Maine to install the two additional clay piezometers (PZ-22M and PZ-23M). As specified in the PTWP, PZ-22M was installed approximately 15 feet southwest of the pumping well, and PZ-23M approximately 30 feet northwest of the pumping well. Both piezometers were completed with a 2-foot well screen placed at the approximate mid-point of the Presumpscot Clay unit. Prior to installing the two new clay piezometers, a borehole was advanced through the clay and into the till near the proposed location of PZ-23M to confirm the clay thickness. Golder installed a third piezometer (PZ-23D) in this borehole to provide an additional location for monitoring head values in the till during the pumping test.

Golder collected continuous split-spoon samples during advancement of the boring into the till (PZ-23D). Blow counts and N- values (blows per foot) were recorded during split-spoon sampling. Golder personnel logged split spoon samples and lithologically classified soil using a method based on the Unified Soil Classification System (USCS). The top of till was encountered at a depth of 20 feet below ground surface (ft bgs) with a total clay thickness of 14 ft, both of which are consistent with previous observations of till depth (19 ft bgs) and clay thickness (12.5 ft) at the pumping well location (MW14-03B).

Based on these observations, piezometers PZ-22M and PZ-23M were screened at depths of 11.06 to 13.06 ft bgs and 11.35 to 13.85 ft bgs, respectively. Boring and piezometer installation and construction logs are provided in Appendix C[3]. Figure 3-1 illustrates the location of the new piezometers.

3.4 Step-testing

Golder mobilized to the site on July 1, 2020 to conduct step testing of pumping well MW14-03B. Golder had intended to conduct the step testing as a single test over one day. However, step testing was conducted over a two-day period due to difficulties with the well pump and generator. Plots of data collected during the step testing is presented in Appendix D-1.

Golder began the first pumping step on July 1 at a pumping rate 0.5 gpm. The pumping level stabilized at approximately 15 feet below top of casing (btoc) after approximately 82 minutes of pumping (see Figure D-1a in Appendix D). Golder then made several attempts to increase the pumping rate to 1 gpm but in so doing, encountered some difficulties with the generator/pump system. After trouble shooting and switching generators, Golder was able to complete a second pumping step at 1.0 gpm. The pumping level stabilized at approximately 32.6 feet btoc after approximately 108 minutes of pumping.

On July 2, Golder attempted a third step at 1.5 gpm, but the water level in the pumping well dropped to near the top of the pump after only about 16 minutes of pumping and did not stabilize (see Figure D-1b in Appendix D-1b). Golder decreased the pumping rate to 1.25 gpm, but the water level continued to drop. Golder then decreased the pumping rate back to 1 gpm and allowed the water level to stabilize. After stabilization, Golder attempted another step at 1.15 gpm, but the water level again dropped to near the top of the pump and did not stabilize. Lastly, Golder decreased the pumping rate to 1.1 gpm, but the water level continued to drop and did not stabilize. As a result, Golder terminated the step testing based on the observation that the pumping level in MW14-03B stabilizes at 1 gpm, but not at 1.1 gpm.

[3] A revised boring/well installation log for monitoring well MW14-05D is also provided in Appendix C. See Response to Comment 10 in Appendix A.

Golder selected a pumping rate of 1.0 gpm for the constant rate test as the highest sustainable pumping rate for a longer duration test. Golder shared the results of the step testing and the recommendation to conduct the pumping test at a rate of 1.0 gpm with Gail Lipfert of MEDEP on July 6, 2020. Ms. Lipfert indicated her concurrence with Golder's recommendation on July 6, 2020.

3.5 Antecedent Water Level Monitoring

Golder installed pressure transducers in most of the wells and piezometers listed in Table 3-1 and identified on Figure 3-1 as observation wells prior to demobilizing from the site on July 2, 2020[4]. The wells equipped with pressure transducers included PZ-10S (sand), PZ-10M (clay) and PZ-10D (till), which are located approximately 1,650 feet to the northeast (approximately upgradient) of the pumping well and are considered to be beyond the influence of the pumping well. Therefore, in addition to providing antecedent data, these wells were used to provide background data during the pumping and recovery periods of the test. A pressure transducer was also set above the groundwater in the casing of PZ-13S to collect barometric pressure data and allow for correction of data collected by transducers without vented cables.

All pressure transducers were set to record water levels at a maximum interval of 5 minutes. The approximately 110-hour antecedent water level monitoring period began on the morning of July 2, 2020 and ended on the morning of July 7, 2020.

Hydrographs of antecedent data are presented in Appendix D-2 as follows:

- Figure D-2a – Background piezometers, PZ-10S (sand), PZ-10M (clay) and PZ-10D (till)
- Figure D-2b – Bedrock wells/piezometers
- Figure D-2c, D-2d, and D-2e - Till wells/piezometers
- Figure D-2f, D-2gf, and D-2h – Presumpscot clay wells/piezometers
- Figures D-2i, D-2j, and D-2k – Silty fine sand wells/piezometers

Overall changes in water level elevation from the beginning of the antecedent period to the end of the antecedent period are summarized in Table 3-1. Several factors influenced the transducer readings that do not represent actual water level changes as follows:

- At some locations, the very earliest data reflects one or more of the following:
  - A short period of transducer adjustment to being placed in the well or adjustments to the level of the transducer in the well (e.g., see MW14-04D, Figure D-2c)
  - A period of water level recovery in response to displacement from installation of the transducer. This is most notable in clay piezometers (e.g., see PZ-16M, Figure D-2h)
  - A period of continued water level recovery from the step testing (e.g., see MW14-03B, Figure D-2b)
- The transducers had to be removed from the well/piezometer to download data. In some cases, when the transducer was placed back into the well it was inadvertently set either slightly higher or lower than before it

[4] Pressure transducers were installed in PZ-19M, MW14-05M, MW14-05D, PZ-3S, PZ-18M, PZ-20S on July 6, 2020.

was removed, resulting in an apparent rapid change in water level. Transducer readings have been adjusted to correct the data.

- Some of the transducers did not have vented cables and measurements are influenced by changes in barometric pressure changes. Transducer readings are corrected by monitoring barometric pressure and applying a correction factor. The correction works well except during periods of very rapid barometric pressure change. In these instances, the correction process appears to over-correct the transducer readings and are not supported by manual measurements. In some cases, Golder corrected antecedent period, pumping period, and recovery period data when this occurred, as described below.
- There were two short-duration precipitation events during the antecedent monitoring period as indicated on Figure D-2a. The first precipitation event may have influenced some of the very early-time groundwater elevations at some observation locations. The second precipitation event was very low magnitude and does appear to effect groundwater elevations.

Key observations relative to antecedent water level monitoring include the following (see Table 3-1 and associated figures as noted):

- Low amplitude (typically less than 0.1-foot) semi-diurnal fluctuations are evident when the data are viewed at an expanded scale (e.g., PZ-23D, Figure D-2C). These fluctuations are attributed to semi-diurnal earth-tides and given their low amplitude are not considered significant to the data interpretations or analysis.
- Background Piezometers (Figure D-2a) – fluctuations in pressure transducer readings attributed to barometric pressure corrections and not actual groundwater level fluctuations are observed at all three piezometers. Other than these fluctuations, overall, groundwater elevations generally decreased during the antecedent monitoring period but were relatively stable during the 24-hour period prior to the constant rate pumping period.
- Bedrock Wells/Piezometers (Figure D-2b) – overall groundwater elevations were steady during the antecedent monitoring period. Final recovery from the step testing is evident in the hydrograph for MW14-03B (the pumping well) at the beginning of the monitoring period.
- Till Wells/Piezometers (Figures D-2c, D-2d, D-2e) – overall groundwater elevations were steady during the antecedent monitoring period. Final recovery from the step testing is evident in the hydrograph for PZ-23D at the beginning of the monitoring period. A slight downward trend in groundwater elevations is evident at some locations 24 to 48 hours prior to the constant rate pumping period. However, the magnitude of these data trends is not considered significant in the context of data evaluation and analysis of the till wells.
- Presumpscot Clay Wells/Piezometers (Figures D-2f, D-2g, D-2h) – a trend in groundwater elevation is evident at some locations 24 to 48 hours prior to the constant rate pumping period. The magnitude of antecedent data trends at MW14-03M (downward), PZ-22M (upward) and PZ-23 (upward) were assessed in the context of data evaluation and interpretation. As described below, data for the constant rate pumping period data analysis were adjusted to account for these antecedent data trends. Otherwise, overall groundwater elevations were steady during the antecedent monitoring period.
- Silty Fine Sand Wells/Piezometers (Figures D-2i, D-2j, D-2k) – groundwater elevations in most of the silty fine sand wells/piezometers were a bit more variable than other units, not uncommon for a shallow unconfined aquifer. Groundwater elevations at MW14-03S and MW14-04S trended downward during the antecedent monitoring period by approximately 0.35 feet. This trend was considered in evaluating water

level elevations in the sand wells during the constant rate pumping period. No other significant trends were observed.

3.6 Constant Rate Pumping Period Monitoring

Golder initiated constant rate pumping from MW14-03B (the pumping well) at 2:00 p.m. on July 7, 2020 at a flow rate of 1.0 gpm. Transducers for the pumping well and nearby wells/piezometers MW14-03S, PZ-22M, PZ-23M, and PZ-23D were set to record water levels at a 2-minute interval. All other transducers were set to record water levels at a 5-minute interval. Golder field staff periodically collected manual water level measurements from all wells/piezometers, but most frequently from the pumping well and nearby wells/ piezometers.

Pumping flow rate was measured using a King Instrument Co. (Model: 7205-0061-W) flow meter. Flow rate was monitored frequently and periodically confirmed by manual measurements. Pumped water was discharged to a 100-gallon holding tank and periodically transferred to a water tanker truck for discharge at the Phase 8 landfill located over 4,000 feet from the pumping test area.

Two generators were used during the pumping test. The power for the pump was switched from one generator to the other approximately every 6 hours, which resulted in a brief shutdown of the pump. Use of two generators allowed for safe refueling during the 72-hour pumping period.

Hydrographs of data collected during the pumping period are presented as follows:

- Figure D-3a – Background piezometers
- Figure D-3b – Pumping well (MW14-03B)
- Figure D-3c – Bedrock observation wells/piezometers
- Figure D-3d, D-3e, and D-3f - Till observation wells/piezometers
- Figure D-3g, D-3h, and D-3i – Presumpscot clay observation wells/piezometers
- Figure D-3j, D-3k, and D-3l – Silty fine sand observation wells/piezometers

Key events during the constant rate pumping period include the following:

- July 7, 2:00 p.m. – pumping initiated
- July 8, 4:00 p.m. to 8:00 p.m. – rain event
- July 10, 2:00 p.m. (elapsed time of 72 hours) – ceased pumping, began recovery

Golder reviewed each hydrograph to identify wells with measurable drawdown during the pumping period. At some monitoring locations groundwater elevations at the end of the pumping period were lower than at the beginning of the pumping period but the magnitude of change was within the range of fluctuations observed during the antecedent monitoring period. In these cases, Golder reviewed the recovery data (see below) to evaluate whether decreases in water levels were in response to pumping. Golder considered the decrease in groundwater elevation during the pumping period to be the result of pumping if subsequent groundwater elevation recovery was observed after shutdown of the pump. If recovery was not observed, any decrease in groundwater elevation during the pumping period was attributed to normal water level fluctuation.

General observations during the pumping period include the following (see Table 3-1 and associated figures as noted):

- Background Piezometers (Figure D-3a):
  - Silty find sand piezometer (PZ-10S) – the groundwater elevation fluctuated during the pumping period and was approximately 0.07 feet lower at the end of the pumping period than at the beginning.
  - Clay piezometer (PZ-10M) - the groundwater elevation fluctuated during the pumping period and was approximately 0.11 feet lower at the end of the pumping period than at the beginning.
  - Till piezometer (PZ-10D) - the groundwater elevation fluctuated during the pumping period and was approximately 0.04 feet lower at the end of the pumping period than at the beginning.

  In general, groundwater elevations decreased slightly over the 72-hour pimping period in all three units. The magnitude of the groundwater elevation changes was considered when evaluating the potential for drawdown during the pumping period at other wells/piezometers.

- Bedrock Pumping Well (MW14-04B, Figure D-3b) - rapid drawdown in response to pumping was observed in the pumping well with a total drawdown of approximately 33.44 feet at the end of the pumping period. Short, intermittent periods of brief water level recovery were observed every few hours when the power to the pump was switched between generators. The magnitude of recovery (typically less than 2 feet) during these shutdown periods is limited relative to the overall drawdown and decreases with time during the pumping period.
- Bedrock Wells (Figure D-3c) - drawdown of approximately 0.38 feet was observed in bedrock wells MW14-02B and MW14-04B. Some fluctuation, possible diurnal earth-tides, is observed at both locations.
- Till Wells/Piezometers (Figures D-3d, D-3e, D-3f) – measurable drawdown was observed in the following till observation wells/piezometers:
  - MW14-03D (approximately 3.43 feet)
  - MW14-04D (approximately 0.51 feet)
  - MW14-05D (approximately 0.52 feet)
  - PZ-23D (approximately 3.46 feet)
  - PZ-13D (approximately feet 0.35 feet).

  Drawdown was very limited or could not be positively confirmed through evaluation of recovery data at any other till wells.

  Short, intermittent periods of brief water level recovery were observed every few hours at MW14-03D (Figure D-3d) during the first 24 hours when the power to the pump was switched between generators. The magnitude of recovery (a few inches) is limited relative to the overall drawdown and decreases with time during the pumping period.

- Presumpscot Clay Wells/Piezometers (Figures D-3g, D-3h, D-3i) - measurable drawdown was observed in the following clay observation wells/piezometers:

- MW14-03M (approximately 0.75 feet) – The magnitude of the antecedent data trend at MW14-03M (downward) was considered significant relative to the observed total drawdown observed during the pumping period as described in Section 3.5. Therefore, pumping period groundwater elevations were adjusted to account for the antecedent data trend, reducing the overall observed drawdown by approximately 0.07 feet, resulting in a corrected drawdown of approximately 0.68 feet.
- MW14-05M (approximately 0.27 feet)
- PZ-1M (approximately 0.31 feet)
- PZ-16M (approximately 0.16 feet)
- PZ-18M (approximately 0.29) feet
- PZ-23M (approximately 0.26 feet). The pumping period groundwater elevations were adjusted to account for the antecedent data trend, increasing the overall observed drawdown by 0.01 feet.

Possible limited drawdown was observed in the following clay observation wells/piezometers

- MW14-04M (approximately 0.09 feet)
- PZ-22M (approximately 0.07 feet). The magnitude of the antecedent data trend at PZ-22M (upward) was considered significant relative to the observed total drawdown observed during the pumping period as described in Section 3.5. Therefore, pumping period groundwater elevations were adjusted to account for the antecedent data trend, increasing the overall observed drawdown by 0.13 feet, resulting in a corrected drawdown of approximately 0.20 feet.

Drawdown was not observed or could not be confirmed in any other clay wells/piezometers.

- Silty Fine Sand Wells/Piezometers (Figures D-3j, D-3k, D-3l) – no response to pumping could be confirmed at any of the silty fine sand observations wells and piezometers. At some locations, the groundwater elevation at the end of the pumping period was higher than at the beginning of the pumping period, including MW14-03S (0.05 feet), the closest sand well to the pumping well.

3.7 Recovery Period

Golder monitored water levels in all wells/piezometers equipped with pressure transducers for approximately 72 hours from pumping shutdown on July 10, 2020 through the afternoon of July 13, 2020. Data collected during the recovery period is presented in the following hydrographs:

- Figure D-4a – Background piezometers
- Figure D-4b – Pumping well (MW14-03B):
- Figure D-4c – Bedrock observation wells/piezometers
- Figure D-4d, D-4e, and D-4f - Till observation wells/piezometers
- Figure D-4g, D-4h, and D-4i – Presumpscot clay observation wells/piezometers
- Figure D-4j, D-4k, and D-4l – Silty fine sand observation wells/piezometers

The following summarizes key events:

- July 13, 2:00 p.m. – pumping from MW-03B ceased
- July 11, 4:00 p.m. to 9:00 p.m. – rain event

General observations during the recovery period include the following (see Table 1 and associated figures as listed above):

- Background Piezometers (Figure D-4A) – the following summarizes the changes in groundwater elevations observed during the recovery period at the background piezometers
  - Silty fine sand piezometer (PZ-10S) – the groundwater elevation rose after the rain event and was approximately 0.14 feet higher at the end of the recovery period than at the beginning.
  - Clay piezometer (PZ-10M) - the groundwater elevation remained virtually unchanged during the recovery period.
  - Till piezometer (PZ-10D) - the groundwater elevation rose after the rain event and was approximately 0.16 feet higher at the end of the recovery period than at the beginning.
- Bedrock Pumping Well (MW14-03B, Figure D-4b) - rapid recovery was observed in the pumping well with a total recovery approximately 33.68 feet at the end of the recovery period. The final groundwater elevation at the end of the recovery period was slightly higher than the pre-pumping elevation (i.e., recovery greater than 100%).
- Bedrock Wells (Figure D-4c) – MW14-02B recovered to within approximately 0.1-foot of the pre-pumping water level elevations. MW14-02B recovered to an elevation slightly higher than the pre-pumping level.
- Till Wells/Piezometers (Figures D-4d, D-4e, D-4f) – recovery was observed in all till observations wells/piezometers with noted drawdown, all within approximately ± 0.25 feet of their pre-pumping elevations.
- Presumpscot Clay Wells/Piezometers (Figures D-4g, D-4h, D-4i) – recovery was observed in all clay observations wells/piezometers with noted drawdown. However, recovery was significantly less than 100% in some wells/piezometers (e.g., MW14-03M - approximately 70%, MW14-05M – approximately 57%, PZ-1M - approximately 40%, PZ-22M - approximately 33%).

  Groundwater elevations in Presumpscot clay piezometer PZ-16M responded very rapidly to the precipitation event on July 11 (see Figure D-4i). The magnitude of this response (approximately 1.5 feet) is greater than the response of any other observation well/piezometer during this precipitation event. No other clay well responded in this manner, and the subsequent decline in water level elevation following the precipitation event looks like the response to the introduction of a “slug”. The magnitude and rate of water level rise followed by an almost equally rapid decline in water level in this piezometer in response to this precipitation event strongly suggests that the well seal is compromised, allowing surface water to run down the side of the well casing into the well screen. Golder has previously questioned the integrity of this well based on the results of slug testing that resulted in an uncharacteristically high hydraulic conductivity for an installation screened in the Presumpscot of the Phase 14 area and considers these observations to be confirmation of that concern.
- Silty Fine Sand Wells/Piezometers (Figures D-4j, D-4k, D-4l) – no recovery to pumping was observed in the sand wells/piezometers, confirming the lack of drawdown during the pumping period. However, most wells responded to the precipitation event during the recovery period.

3.8 Evaluation of Total Drawdown

Table 3-1 summarizes the maximum drawdown observed in each observation well/piezometer monitored during the pumping test. The following summarizes Golder's general evaluation of the total drawdown by hydrostratigraphic unit.

- Bedrock - drawdown attributed to pumping was identified in the three bedrock wells (including the pumping well) during the pumping period. Bedrock observation wells MW14-02B and MW14-04B are located 853 and 625 feet from the pumping well MW14-03B, respectively, indicating that the radius of measurable pumping influence in the bedrock is likely 1,000 feet or more.
- Till - drawdown attributed to pumping was identified in five till wells/piezometers during the pumping period (MW14-03D, MW14-04D, MW14-05D, PZ-13D, and PZ-23D). MW14-05D located 1,346 feet from the pumping well, indicating that the radius of measurable pumping influence in the till is likely 1,500 feet or more.
- Presumpscot Clay - drawdown attributed to pumping was identified in seven clay piezometers, including MW14-05M, located 1,342 feet from the pumping indicating that the radius of measurable pumping influence in the clay is likely 1,500 feet or more.
- Silty fine sand - drawdown attributed to pumping was not identified in any of the eight wells/piezometers monitored during the pumping test, indicating that water levels in silty fine sand were unaffected by groundwater pumping from MW14-03B.

In summary, pumping from bedrock well MW14-03B resulted in measurable drawdown in the bedrock, till and clay at radial distances of greater than 1,000 feet, confirming that a sufficient stress (i.e., drawdown) was imparted on the till and bedrock to estimate hydraulic parameters (e.g., horizontal conductivity, storativity) in the bedrock and till, and to estimate vertical hydraulic conductivity in the Presumpscot clay aquitard. No drawdown or recovery was observed in the silty fine sand, confirming a lack of hydraulic connection across the aquitard.

3.9 Analysis of Pumping Period Data

Golder analyzed pumping period data using several different methods. The following describes the selected analytical methods and results.

3.9.1 Method Selection

Available methods for analyzing pumping test data are based on a wide range of theoretical models, each based on a certain set of underlying, simplifying assumptions about the aquifer system tested. In practice, field conditions rarely, if ever, meet all the simplifying assumptions.

Golder's conceptual model for the Phase 14 pumping test assumes that the bedrock and till represent a single, leaky confined (pumped) aquifer because analysis models are not available for multilayer aquifer systems in direct hydraulic communication that also allow for analysis of overlying aquitards. This assumption is considered appropriate given that the till and bedrock are in direct hydraulic communication and have average hydraulic conductivity values are within about an order of magnitude. The conceptual model further assumes that the Presumpscot clay represents a leaky aquitard and that the silty fine sand represents and overlying unconfined (unpumped) aquifer.

The bedrock pumping well (MW14-03B) is screened to a depth of approximately 71 ft bgs. Because there is not an aquitard or aquiclude that defines the bottom of the aquifer, Golder selected a depth of 90 ft bgs (approximately 20 feet below the pumping well screened interval) as the base of the “confined pumped” aquifer. The bottom of clay in the pumping test area is at approximately 20 ft bgs. Therefore, the “confined pumped” aquifer was assigned a total thickness of 70 feet (90 feet minus 20 feet). Because the bedrock and till were considered one aquifer unit, the bedrock pumping well, and the bedrock and till observation wells/piezometers were analyzed as partially penetrating wells because none of the bedrock and till wells/piezometers are screened across the entire thickness of till and the bedrock.

The two primary methods available for analysis pumping test data conducted in “leaky confined aquifer” systems are:

- Hantush and Jacob (1960) – this curve-matching method provides transmissivity and storativity values for the pumped aquifer and vertical hydraulic conductivity for the aquitard based on the response of the pumping well and wells/piezometers screened in the pumped aquifer (i.e., till and bedrock).
- Neuman-Witherspoon (1969) - this curve-matching method provides transmissivity and storativity values for the pumped aquifer and vertical hydraulic conductivity for the aquitard based on the response of the pumping well and wells/piezometers screened in the pumped aquifer and wells screened in the aquitard.

Golder used AQTESOLV Pro® software (HydroSOLVE, Inc.) to complete the analyses. AQTESOLV is recognized as one of the leading software packages for the analysis of aquifer test data.

3.9.2 Data Adjustments

As described in Section 3.5, antecedent groundwater elevation monitoring indicated either increasing or decreasing trends in groundwater elevation at several monitoring locations prior to initiating the constant rate pumping test. In most cases, Golder deemed the magnitude of the trends to be insignificant to the data analysis. The following observed trends during the antecedent monitoring period were addressed for data analysis:

- MW14-03M – decreasing trend: the total decrease in groundwater elevation over the antecedent monitoring period was approximately 0.11 feet. Total drawdown observed at MW14-03M prior to data adjustment was 0.75 feet. After data adjustment to account for the decreasing trend observed during the antecedent period the total drawdown was 0.67 feet.
- PZ-22M - increasing trend: the total increase in groundwater elevation over the antecedent monitoring period was approximately 0.24 feet. Total drawdown observed at PZ-22M well during the pumping period was 0.07 feet. After data adjustment to account for the increasing trend observed during the antecedent period the total drawdown was 0.20 feet.
- PZ-23M - increasing trend: The total increase in groundwater elevation during the antecedent monitoring period was approximately 0.06 feet. Total drawdown observed at MW14-03M well during the pumping period was approximately 0.26 feet. After data adjustment to account for the increasing trend observed during the antecedent period the total drawdown was 0.27 feet.

In all three cases the antecedent data trends were consistent over the monitoring period, allowing for a straight-line data correction to the pumping period data. No other data corrections were deemed necessary.

3.9.3 Hantush Data Analysis

As introduced above, the Hantush method provides transmissivity and storativity values for the pumped aquifer and vertical hydraulic conductivity for the aquitard based on the response of the pumping well and wells/piezometers screened in the pumped aquifer. Golder completed a Hantush analysis for each of the following till wells where measurable drawdown was observed during the pumping period as follows:

- Till Wells: MW14-03D, MW14-04D, MW14-05D, PZ-23D, and PZ-13D
- Bedrock wells. MW14-02B and MW14-04B

Appendix E-1 provides the analysis reports and results are summarized in Table 3-2.

3.9.4 Neuman-Witherspoon Data Analysis

The Neuman-Witherspoon method also provides transmissivity and storativity values for the pumped aquifer and vertical hydraulic conductivity for the aquitard. This method allows for the incorporation of the response of wells/piezometers screened in the aquitard as well as the pumped aquifer. Golder completed a Neuman-Witherspoon analysis for each of the following locations where there is a paired aquitard (clay) piezometer with a till piezometer/well and where measurable drawdown was observed during the pumping period:

- MW14-03D/-03M
- PZ-23D/PZ-23M
- MW14-04D/-04M
- MW14-05D/-05M

Appendix E-2 provides the analysis reports and results are summarized in Table 3-2

3.10 Discussion of Pumping Test Results

Drawdown was observed in the bedrock, till and Presumpscot clay wells in response to pumping from the bedrock. No drawdown was observed in the silty fine sand above the Presumpscot clay. Results of the pumping test analysis are presented in Table 3-2. Estimated horizontal hydraulic conductivity values for the pumped aquifer (till and bedrock) are as follows:

- Till – estimated horizontal hydraulic conductivity values range from 2.16E-06 centimeters per second (cm/sec) to 4.43-E04 cm/sec with a geometric mean of 4.30E-05 cm/sec. The geometric mean value is somewhat lower than the values estimated from slug tests conducted in wells screened in the till (geometric mean of 7.60E-04 cm/sec, see Section 5.2.3). This likely because the pumping test analysis evaluated the till and bedrock as a single aquifer unit.
- Bedrock – estimated horizontal hydraulic conductivity values range from 5.36E-05 cm/sec to 1.84E-04 cm/sec with a geometric mean of 9.92E-05 cm/sec. These values are comparable with those obtained from slug tests conducted in wells screened in the bedrock (geometric mean of 3.18E-05 cm/sec, see Section 5.2.4).

Estimated vertical hydraulic conductivity values for the Presumpscot clay aquitard are as follows:

- Hantush Pumping Period Analysis – estimated vertical hydraulic conductivity values range from 1.61E-08 cm/sec to 6.45E-07 cm/sec with an overall geometric mean of 9.91E-08 cm/sec.
- Neuman-Witherspoon Pumping Period Analysis – estimated vertical hydraulic conductivity values range from 3.02E-07 cm/sec to 4.08E-06 cm/sec with a geometric mean of 8.54E-07 cm/sec.

The overall geometric mean vertical hydraulic conductivity for the Presumpscot clay based on all pumping test analyses is 2.17E-07 cm/sec. This value is very consistent with the Phase 14 estimates of vertical hydraulic conductivity for the Presumpscot clay based on flexible wall permeameter testing, which yielded the following results: geometric mean stiff upper clay facies: 1.31E-07 cm/sec, geometric mean soft lower clay facies: 1.79E-07 cm/sec.

The low estimated vertical hydraulic conductivity of the Presumpscot clay and the lack of drawdown in the overlying silty fine sand unit during the pumping test supports the conclusion that fractures that could result in rapid transport across the Presumpscot clay are not present.

4.0 SUPPLEMENTAL TIME-OF-TRAVEL ANALYSIS

Maine SWMR, Chapter 401.2.G, requires a "thorough analysis of the proposed site and the adjacent area that could be affected during operation and after closure of the landfill in the event of releases of contaminants to groundwater beyond engineered systems". It is required that this analysis identifies the potential for an "unreasonable threat to all identified sensitive receptors." The rules define an "unreasonable threat" as an "arrival time of less than 6 years from the landfill or less than 3 years from a leachate storage structure and pump stations of a concentration of a pollutant which would result in contamination of that sensitive receptor". To address this requirement Golder conducted a “time-of-travel” analysis as part of the original permit applications (WMDSM, 2019).

Golder used average values for input parameters to the time-of-travel analysis to reflect the range of values that exist over an extended flow pathway. MEDEP commented that the highest K values observed should be used in the analysis. MEDEP also provided comments on the pathways used by Golder in its analysis (MEDEP, 2020a).

In response to MEDEP comments, WMDSM/Golder agreed to provide supplemental time-of-travel calculations. The supplemental analysis incorporates results from the pumping test (see Section 3.0), evaluation of additional potential pathways as requested by MEDEP, and evaluation of travel times using a range of input values to assess the sensitivity of the calculations to more conservative (high-end) input parameters. The following sections describe the analysis.

4.1 Identification of Potential Sensitive Receptors

The first step in the time-of-travel analysis was to identify potential sensitive receptors. The Maine SWMR, Chapter 400.1.Aaa, defines a sensitive receptor as "public and private water supply aquifers and wellhead protection zone; public and private drinking water supplies; significant groundwater aquifers and primary sand and gravel recharge areas; sand and gravel deposits; and Class AA, A and B surface water bodies and great ponds." Golder reviewed published data for the Site and surrounding area to evaluate each of the above to identify potential sensitive receptors as described in Section 6.1 of Volume III of the Permit Application (Golder, 2019). Golder identified the following potential sensitive receptors for Phase 14:

- Two classified (Class B) streams located downgradient of Phase 14 (see Figure 4-1)
- WMDSM’s “New Office Well” (see Figure 4-2)

The New Office Well is a bedrock water supply well and the closest potentially downgradient water supply well from Phase 14. Golder considers this well to be representative of the “fractured bedrock aquifer” sensitive receptor. Use of the New Office Well for this purpose was discussed with MEDEP and in a May 26, 2020 letter to WMDSM, MEDEP stated:

"Regarding the question of whether bedrock aquifers in general are considered sensitive receptors, the answer is yes, but site-specific considerations can be accounted for. The bedrock aquifer underlain by Phase 14 is not used directly for water consumption. The nearest downgradient bedrock well is WMDSM's own water supply well, the New Office Well, which is approximately 1500 feet away. Although there are other drinking water wells downgradient of Phase 14, they are more than 2000 feet away, so the Department concurs that using the New Office Well as a sensitive receptor would account for assessing their vulnerability."

4.2 Potential Pathways

The second step in the time-of-travel analysis is to identify potential pathways from theoretical release points to the identified potential sensitive receptors. Golder identified three potential pathways as described in Section 6.2 of Volume III of the October 2019 Permit Application (Golder, 2019). Each of the pathways originate from proposed sumps located in the western/southwestern part of the landfill cells (see Figure 4-1). The sumps are identified as theoretical release points because they represent locations where leachate could conceivably accumulate and create enough hydraulic head on the liner for a leachate release[5]. The sumps are located on the downgradient side of the landfill cells, and therefore represent the shortest (most conservative) length of the potential pathway to the potential sensitive receptors.

The following summarizes the pathways identified in the October 2019 Permit Application (Golder, 2019):

- Pathway 1 (Figure 4-1) - Cell 14E sump to the stream to the west of Phase 14 (near stream gauge/piezometer S-5). The sump in Cell 14E will be directly underlain by the stiff upper clay facies of the Presumpscot Formation. Therefore, a theoretical release from the Cell 14E sump would enter the groundwater flow pathway and migrate horizontally through the stiff upper clay to the stream west of Phase 14. For the purpose of this evaluation, it was conservatively assumed that the pathway is a straight line from the Phase 14E sump to the S-5 stream gauge/piezometer, and that groundwater discharges to the stream at this location as shown on Figure 4-1.
- Pathway 2 (Figure 4-1) - Cell 14A sump to the stream to the south-southeast of Phase 14 (near stream gauge/piezometer S-4). The sump in Cell 14A will be directly underlain by the stiff upper clay facies of the Presumpscot Formation. Therefore, a theoretical release from the Cell 14A sump would enter the groundwater flow pathway and migrate horizontally through the stiff upper clay to the stream south-southeast of Phase 14. For the purpose of this evaluation, it is conservatively assumed that the pathway is a straight line from the Phase 14A sump to the S-4 stream gauge/piezometer, and that groundwater discharges to the stream at this location as shown on Figure 12b in the Volume III of the October 2019 Permit Application.
- Pathway 3 (Figure 4-2) - Cell 14A sump to WMDSM's "New Office" well. This pathway originates from a theoretical release from the Cell 14A sump, which is directly underlain by the stiff upper clay facies of the Presumpscot Formation. It is assumed that the theoretical release migrates vertically downward through the stiff upper clay and soft lower clay to the underlying glacial till. While the New Office well is a bedrock well, the groundwater flow pathway through the glacial till, which is in direct hydraulic communication with the

[5] The accumulation of leachate at a sump, which is the lowest elevation in landfill cell, in and of itself does not imply that a release would occur. In fact, leakage from the sump areas is very unlikely because the Phase 14 sumps will be constructed with two layers of very low hydraulic conductivity Geosynthetic Clay Liner (GCL) overlain by a 60-mil geomembrane.

bedrock, is assumed to be the fastest flow path to the potential well because the average hydraulic conductivity of the glacial till is higher than the hydraulic conductivity of the bedrock.

MEDEP hypothesized an alternative pathway for Pathway 1, assuming a 10-foot vertical path through the clay and then an 800-foot horizontal path through the till (assuming it had to travel further to discharge, then back up through 10 feet of clay (see Comment 22. Appendix A). Golder disagrees with the conceptual model for this pathway because upward gradients from the till through the clay have not been observed down gradient of Phase 14, indicating that groundwater in the till does not discharge to nearby streams in the vicinity of Phase 14. Nevertheless, Golder completed additional time-of-travel calculations using the general assumptions developed by MEDEP as part of the updated time-of-travel-analysis and identifies this pathway as “MEDEP Pathway 1”.

MEDEP similarly hypothesized an alternative pathway for Pathway 2, assuming “a downward vertical path through the clay of 14 feet, a horizontal path through the till of 1000 feet (assuming it would take longer to reach a discharge point in the stream), an upward vertical path through clay of 14 feet (rough estimate)” (see Comment 23, Appendix A). Golder again disagrees with the conceptual model for this pathway due to the lack of upward hydraulic gradients from the till to the clay observed on the southern and eastern sides of Phase 14. Nevertheless, Golder also completed time-of-travel calculations using these general assumptions as part of the updated time-of-travel-analysis and identifies this pathway as “MEDEP Pathway 2”.

4.3 Time of Travel Calculations

Time of travel calculations for each of the flow paths described above were made by calculating a seepage velocity for each component of the flow pathway and multiplying the seepage velocity by the length of the pathway. Golder calculated a time of travel for each pathway based on average input values and then calculated a time of travel using a high-end input values that allow for an evaluation of the sensitivity of the calculations to the potential range of high input parameters.

Golder calculated 95% upper confidence levels (UCL) for hydraulic conductivity to establish high-end input values for hydraulic conductivity. Use of confidence limits allows for a quantification of the uncertainty of the data set. The 95% UCL, calculated by adding one standard deviation to the mean, represents the value that includes 95% of all results. Golder considers this to be an appropriate value for use as the high-end input value because it better represents the upper range of a series of hydraulic conductivity values that might be encountered along an entire flow path.

The following sections describe the basis for the selected range of input parameters.

4.3.1 Effective Porosity

Maine SWMR, Chapter 401.2.C(2).) indicates that “Unless site-specific information or other pertinent data exists to establish a greater porosity, calculations must assume an effective porosity for flow of not greater than 0.1”. The time-of-travel pathways include pathways through the Presumpscot clay and the till. Golder evaluated site-specific data and other information to establish reasonable ranges of porosity for these stratigraphic units.

Presumpscot Clay

The effective porosity of the Presumpscot clays has been evaluated by other investigators at the Crossroads facility and by investigators working elsewhere in the State of Maine. The following summarizes the findings of these investigators:

- Gerber (1996) calculated porosities of the Presumpscot clay based on volume and weight measurements. Gerber’s work found that porosity values ranged from 0.34 to 0.66 with an average value of 0.45.

- In calibrating a one-dimensional advective-dispersion model to simulate measured tritium concentrations with depth in the clay, Gerber (1996) used an effective porosity of 0.40. Gerber (1996) also used a porosity of 0.4 in the groundwater flow model for the Phases 9, 10, and 11.
- Sevee (Sevee, 2010) completed a study comparing a glacial marine clay deposit's effective and total porosities. This study found that the effective porosity was approximately equal to the total porosity within an error of less than 10%. In contrast to other studies that indicate that the effective porosity of clays are often a fraction of the total porosity, Sevee (2010) suggests that glacial marine clays composed of rock flour (e.g., the Presumpscot clays) have limited mineral clay content, resulting in a different relationship between total and effective porosities. The rock flour is suspected to behave more like a granular soil where the effective and total porosities are similar.
- Sevee & Maher Engineers, Inc. (SME, 2015) evaluated the effective porosity of marine clays from several Maine sites in support of a landfill expansion permit application. This evaluation found that total porosity of undisturbed marine clay samples ranged from 0.41 to 0.56. SME used an average effective porosity for the marine clay of 0.39 for time of travel calculations based on dry density measurements of the site marine clays.

Golder estimated total porosity values for Presumpscot marine clay based on water content and specific gravity of 8 samples collected during the Phase 14 investigations. Calculations are presented in Appendix F-1. Estimated total porosity values for the Phase 14 Presumpscot clay samples range from 0.39 to 0.51 with an arithmetic mean of 0.43. This compares favorably with the mean porosity value (0.45) calculated by Gerber (1996).

Based on the work by Gerber (1996) and Sevee (2010), and Golder's site-specific estimates of porosity, Golder used the following effective porosity values in the time of travel calculations:

- Horizontal flow (Pathways 1 and 2) and vertical flow (Pathway 3 and MEDEP Pathways 1 and 2) through the stiff upper clay:
  - 0.15 for average conditions in recognition of MEDEP's concerns regarding secondary features in the stiff upper clay,
  - 0.1 for high-end conditions based on Maine SWMR, Chapter 401.2.C(2) default value and the value used by Gerber (1996) in the groundwater flow model.
- Vertical flow through the soft lower clay (Pathway 3 and MEDEP Pathways 1 and 2):
  - 0.40 for average conditions
  - 0.30 for "high-end" conditions

Glacial Till

To estimate the range of effective porosity for the till, Golder used a method presented by Urumovic and Urumovic Sr. (Urumovic, 2016). This method provides a distribution of effective porosities as a function of a referential grain size and is presented graphically for a range of granular materials. Work by Urumovic and Urumovic Sr. (Urumovic, 2016) indicates that *D*40 grain size can be used for the referential grain size. Using the grain size testing results for the six till samples collected during the Phase 14 investigations Golder used the Urumovic (2016) method to develop an estimated range of effective porosities as presented in Appendix F-1. *D*40 values for the six samples ranged from 0.05 millimeters (mm) to 1.7 mm, which corresponds to a range of effective porosities from approximately 0.15 to 0.32. The low end of this range is based on one till sample (PZ-9D) with a much higher silt and clay content than the other samples. The effective porosity values for the remaining samples were all within the range of 0.28 to 0.32.

This evaluation compares favorably with Gerber (1996) who estimated the range of till porosity from 0.19 to 0.33 and used an average of 0.28 for time of travel calculations and a value of 0.2 in the groundwater flow model (Gerber 1996). Golder used a till effective porosity of 0.28 for the average conditions evaluations and 0.15 for high-end conditions evaluations.

4.3.2 Hydraulic Conductivity

The calculations for the evaluated time of travel pathways require the following hydraulic conductivity input parameters:

Presumpscot clay horizontal hydraulic conductivity (Kh) – Pathways 1 and 2

Golder used the geometric mean Kh value for the slug tests completed in the stiff upper clay (1.19E-06 cm/sec) for the average conditions evaluations and the 95% upper confidence limit (UCL) Kh value (1.77E-05 cm/sec) for the same slug tests for high-end conditions evaluations.

The slug test data set used to calculate the 95% UCL includes the results of the slug test completed at the PZ-16M, which yielded a Kh value 1.70E-05 cm/sec, much higher than the results obtained from all other slug tests completed in the stiff upper clay. As discussed in Section 3.7, Golder suspects that the well seal at this location is compromised and that the slug testing results are not representative of the hydraulic conductivity of the Presumpscot clay. This one result increases the calculated 95% UCL by approximately an order of magnitude (i.e., the 95% UCL without PZ-16M is 1.11E-06 cm/sec). Nevertheless, Golder used the 95% UCL calculated using the results from PZ-16M.

Presumpscot clay vertical hydraulic conductivity (Kv) – Pathway 3, MEDEP Pathways 1 and 2

Estimates of Kv for the Presumpscot clay are available from permeameter testing and the pumping test. The vertical hydraulic conductivity of the Presumpscot clay based on flexible wall permeameter testing in accordance with ASTM D5084 yielded the following results:

- Geometric mean stiff upper clay - 1.31E-07 cm/sec
- Geometric mean soft lower clay: 1.79E-07 cm/sec

The pumping test analysis yielded the following “bulk” Kv values for the Presumpscot clay:

- Geometric mean Hantush analysis: 9.91E-08 cm/sec cm/sec
- Geometric mean Neuman-Witherspoon analysis: 8.54E-07 cm/sec
- Overall pumping test geometric mean: 2.17E-07 cm/sec

For the average conditions time of travel calculations Golder calculated a geometric mean vertical hydraulic conductivity value of 1.87E-07 cm/sec based on the individual permeameter test results and individual pumping test results. Golder used the 95% UCL (8.99E-07 cm/sec) for the same data set for the high-end conditions evaluation.

Till horizontal hydraulic conductivity (Kh) - Pathway 3, MEDEP Pathways 1 and 2

Estimates of Kh for the till are available from slug testing and the pumping test. Estimates of the Kh values from the slug testing yielded the following results:

- Geometric mean = 7.60E-04 cm/sec
- 95% UCL = 4.68E-03 cm/sec

Estimates of the Kh values from the pumping test yielded the following results:

- Geometric mean Hantush analysis: 3.40E-05 cm/sec
- Geometric mean Neuman-Witherspoon analysis: 9.87E-05 cm/sec

For the average conditions time of travel calculations, Golder calculated a geometric mean horizontal hydraulic conductivity value of 2.06E-04 cm/sec based on the individual slug test results and individual pumping test results. Golder used the 95% UCL (2.98E-03 cm/sec) for the same data set for the high-end conditions evaluation.

4.4 Time of Travel Results

Time of travel calculations are presented in Appendix F-2. Input parameters and their source are summarized on the calculation sheets. The following summarizes the time of travel analysis results based on average conditions input parameters:

Time of Travel Results Average Conditions Input Values	
Pathway	**Time of Travel**
Pathway 1	955 years
Pathway 2	2,050 years
Pathway 3	111 years
MEDEP Pathway 1[6]	115 years
MEDEP Pathway 2	190 years

The following summarizes the time of travel analysis results based on the high-end input values.

Time of Travel Results High-end Conditions	
Pathway	**Time of Travel**
Pathway 1	44 years
Pathway 2	95 years

[6] Golder was unable to duplicate the travel times calculated by MEDEP for MEDEP Pathways 1 and 2. The time of travel calculated by Golder, 115 years and 190 years, respectively are higher than those calculated by MEDEP, 55 years and 79 years, respectively (MEDEP, 2020b). Golder used the actual (thinner) clay thickness at the sump locations (pathway starting locations). Differences in other input parameters, not provided by MEDEP, likely accounts for the difference in calculated travel times.

Time of Travel Results High-end Conditions	
Pathway	**Time of Travel**
Pathway 3	6.8 years
MEDEP Pathway 1	16 years
MEDEP Pathway 2	27.4 years

Golder considers the average time of travel results to best represent the expected travel times. As discussed below, the high-end travel time analysis unrealistically combines certain input parameters, resulting in unrealistically short travel times. Regardless, all calculated travel times exceed, and most of them significantly exceed, the 6-year minimum travel time required to prevent an unreasonable threat to the sensitive receptors. These values likely underpredict the true time of travel between the theoretical release areas and the potential sensitive receptors for the following reasons:

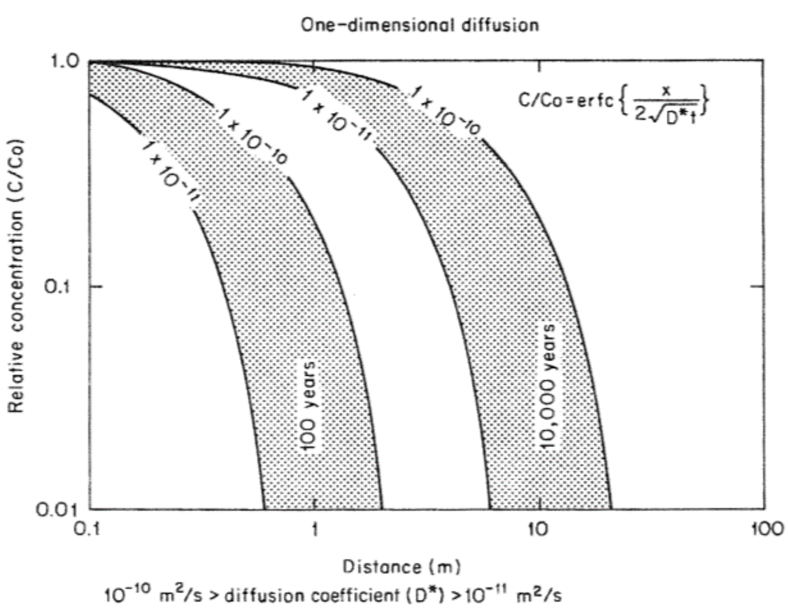
- The flow paths are assumed to be a straight line between the theoretical release areas (i.e. sumps) to the potential sensitive receptors and are not constructed perpendicular to the potentiometric contours. Groundwater flows perpendicular to potentiometric lines, and thus the actual flow paths would be longer than the assumed straight lines. A longer groundwater flow path would increase the length of the time of travel.
- Stream gauges/piezometers indicate downward gradients (i.e., surface water elevations are higher than groundwater elevations) at the potential receptor locations (stream gauge/piezometer S-5 for Phreatic Pathway 1 and stream gauge/piezometer S-4 for Phreatic Pathway 2), which indicates that the streams are losing streams and that phreatic groundwater does not discharge in the area of the potential sensitive receptors. Phreatic groundwater in these areas likely discharges to surface water further downstream, which would increase the length of the flow path and increase the time of travel.
- Flow through the upper and lower clay facies was assumed to be entirely vertical with no horizontal component for Pathway 3 and MEDEP Pathways 1 and 2. If the horizontal component of flow was considered, the flow path through the two clay units would be longer, resulting in a greater time of travel.
- The time for downward vertical flow from the till into the bedrock was not accounted for (added to) the travel time for Pathway 3 (where the potential sensitive receptor is a bedrock well).
- MEDEP Pathways 1 and 2 assume upward flow from the till through the clay to a stream. Upward gradients have not been observed down gradient of Phase 14, indicating that groundwater in the till does not discharge to nearby streams in the vicinity of Phase 14.
- The high-end conditions evaluation unrealistically combines low porosity values for the till with high hydraulic conductivity values. In most granular materials like the till, as porosity decreases, so does hydraulic conductivity. The low porosity value (0.15) used for the high-end calculation is based on a sample (PZ-9D, see Section 4.3.1), which has a high silt content. The higher silt content decreases the hydraulic conductivity, and as expected, slug testing results from PZ-9D yielded one of the lowest hydraulic conductivity values calculated for the till, confirming that pairing of low porosities with high hydraulic conductivities is an unrealistic assumption. A more realistic approach would pair higher porosities with

higher hydraulic conductivity values. Pairing an average porosity (0.28) with the high-end hydraulic conductivity value would increase the overall high-end travel times calculated for Pathway 3, MEDEP Pathway 1 and MEDEP Pathway 2 to 10.9 years, 21.0 years, and 35.9 years respectively (an increase of 4.1 years, 5.7 years, and 8.9 years, respectively). This highlights the importance of combining realistic pairings of parameters to determine conservative, but still plausible, travel times.

4.5 Evaluation of Diffusion

MEDEP requested that assessment of transport through the clay by diffusion be considered in the time of travel analysis (see Comment 17a in Appendix Table A-1). The time of travel analysis presented above is based on advective transport (i.e., the velocity of groundwater flow). As described by Bradbury (2006) aquitards that have more than 10 to 15 percent by weight clay-sized particles (as is the case with the Presumpscot Clays in the area of Phase 14) behave hydrogeologically as clayey units (e.g., extremely low matrix hydraulic conductivity that does not increase appreciably with larger percentage of clay-size particles). Assuming a lack of preferred pathways (i.e., secondary features that would increase hydraulic conductivity), groundwater movement in units of this type is very limited (i.e., slow) because of the small intergranular permeability even when hydraulic gradients are large. Therefore, the time of transport of dissolved-phase chemicals can be governed by molecular diffusion (diffusion) driven by chemical concentration gradients and can occur over time scales of hundreds or thousands of years (Bradbury, 2006).

In situations where the groundwater velocity is so small that mechanical dispersion is negligible relative to molecular diffusion, diffusion rates can be estimated using the one-dimensional solution to Fick's second law (Freeze and Cherry, 1979). The rate at which one-dimensional diffusion occurs is expressed in the graphic below, which shows diffusion distances for periods of 100 and 10,000 years as a function of relative concentration (concentration C/initial concentration (Co)) using diffusion coefficient values of 1.0E-10 m^2/s and 1.0E-11 m^2/s.



(Freeze and Cherry, 1979)

To evaluate whether the rate of diffusion governs (i.e., is faster than) the rate of advection through the Presumpscot Clay as evaluated in the time of travel analysis, Golder conducted one-dimensional modeling of potential diffusion rates based on site-specific parameters. The analytical model used for this evaluation is presented in “Quantitative Hydrogeology” prepared by de Marsily (1986).

Input parameters to the model are hydraulic conductivity, porosity, diffusion coefficient, retardation factor (R), porosity (n), bulk density, dispersivity and half-life time. Input parameters were selected to conservatively represent of site conditions. The following assumptions/input parameters were used for this evaluation:

- Fixed parameters and assumptions:
  - Sorption/adsorption is assumed to be zero, hence the retardation factor for all simulations was set to 1.00 (i.e. zero retention of tracer compounds due to sorption)
  - Chemical decay is assumed to be zero, hence a decay half-life of 1,000 years was used
  - The hydraulic gradient was set to 0.54 consistent with the highest gradient used in the time of travel calculations
  - The average conditions vertical hydraulic conductivity value of 1.87E-07 cm/sec (see Section 4.3) as derived from the geometric mean of the individual permeameter test results and individual pumping test results. This value is considered representative of the average vertical hydraulic conductivity of the Presumpscot Clay assuming a lack of any preferred pathways (i.e., secondary features, if they were to exist).
  - The source concentration was assumed to be constant for the entire simulation period (i.e., a release from a sump would go unrecognized for a period of six years)
- Variable parameters were:
  - Diffusion coefficient: simulations were run using diffusion coefficients of 1.0E-9 meters squared per second (m^2/sec) and 1.0E-10 m^2/sec, which are considered representative of non-reactive chemicals
  - Porosity: a range of porosities values from 0.20 to 0.40 were used for each simulation

Using these input parameters and assumptions, Golder evaluated the potential for diffusion through the Presumpscot Clay for time of travel Pathway 3 (i.e., Cell 14A sump to WMDSM’s “New Office” well), and specifically the portion of this pathway where a theoretical release from the Cell 14A sump migrates vertically downward through the stiff upper clay and soft lower clay to the underlying glacial till before migrating through the till to the New Office well. Using high-end input parameters, the advective travel time through the combined 11-foot thickness of the stiff upper clay and soft lower clay at the Phase 14A sump (stiff upper clay – 6.5 feet, soft lower clay – 4.5 feet) is approximately 3.9 years (see Appendix F-2)[7].

Therefore, to evaluate the relative rate of advective transport (3.9 years) to that of diffusive transport under the same conditions, Golder simulated 6 years of diffusion through the clay. Given the similarity in hydraulic conductivities for the upper and lower clays, Golder used the simulations to evaluate a ‘single’ clay unit of 11 foot thickness (6.5 ft + 4.5 ft) instead of two independent units that would require a dynamic source term at the interface between the two units.

The results of the 1-dimensional diffusion simulations are presented below.

[7] The 3.9-year travel time through the clay is just a portion of the total travel time (6.8 years) for Pathway 3 using high-end input parameters.

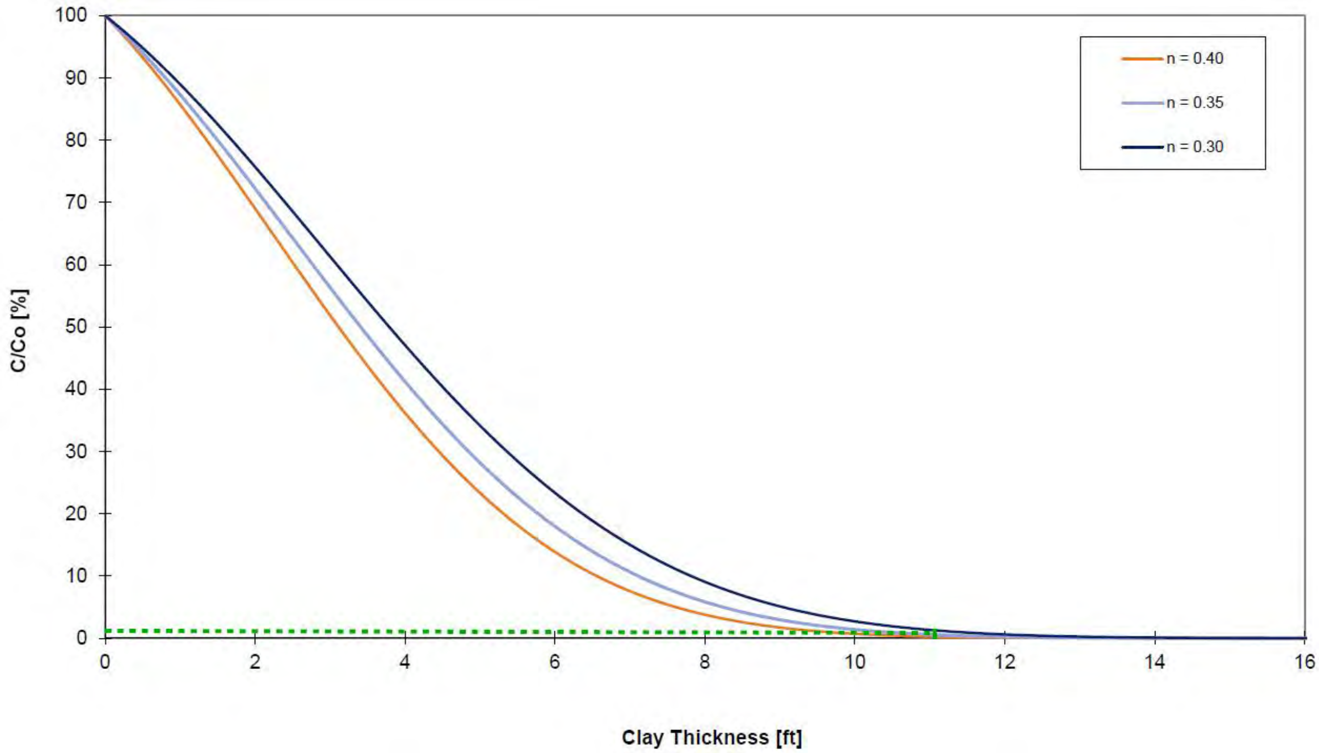


Figure 4-3: Predicted Tracer Concentrations with Diffusion Coefficient of 1.0E-09 m^2/sec

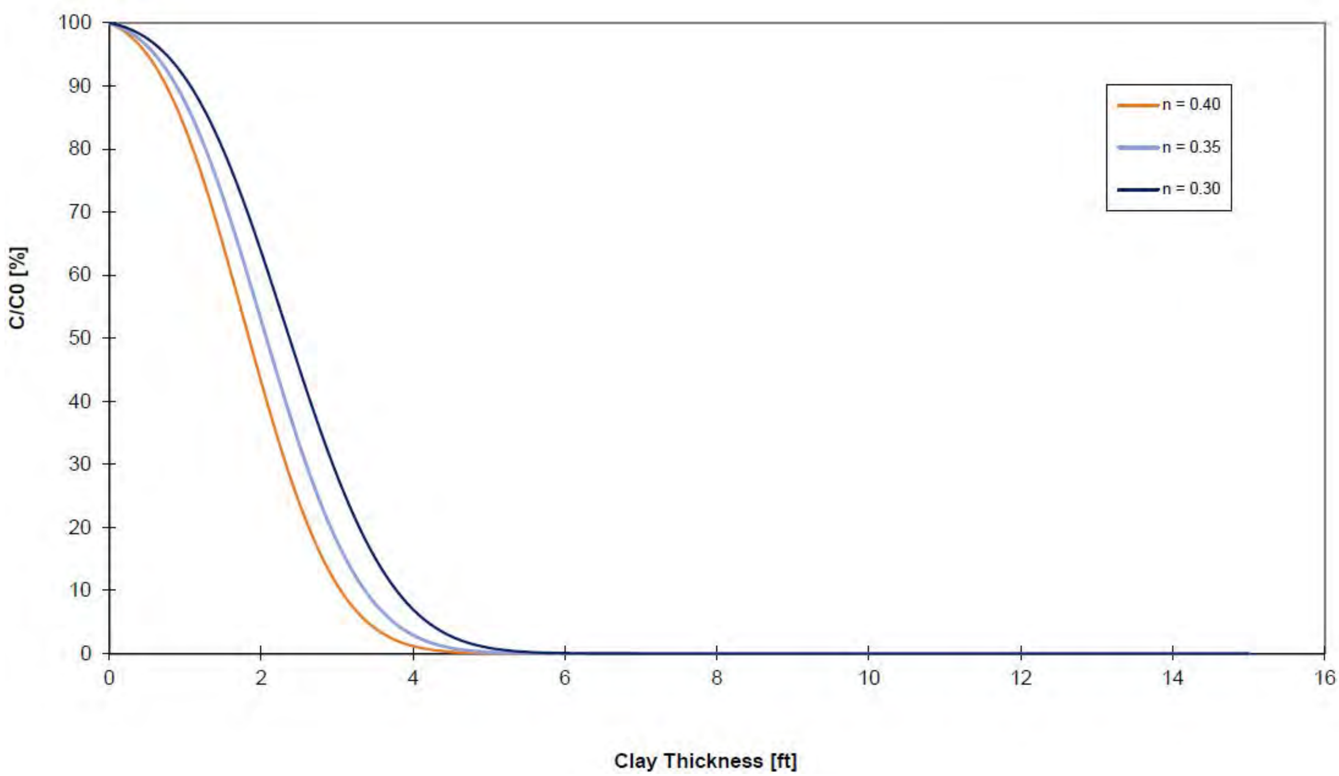


Figure 4-4: Predicted Tracer Concentrations with Diffusion Coefficient of 1.0E-10 m^2/sec

These figures illustrate the results of the simulations based on the diffusion coefficients of 1.0E-9 m^2/sec and 1.0E-10 m^2/sec, respectively and for a range of porosity values. The graphs illustrate C/Co (i.e., the concentration at a given depth divided by the source concentration) with depth after 6 years. Key findings from these plots include the following:

- As indicated in Figure 4-3, under the conservative conditions (i.e., diffusion coefficient of 1.0E-9 m^2/sec and porosity of 0.30) the C/Co after six years at the bottom of the clay unit (11 feet) is less than 0.02 (< 2%). A C/Co of 0.5 (or 50%) is often used as the "front of advance" (e.g., see Bradbury, 2006 and Devlin and Parker 1996). This indicates that under these conditions, the diffusive front would not reach the bottom of the clay (11 feet) for several more years (i.e., several years after the advective flow). Simulations based on porosity values more typical for the Presumpscot clay (e.g., 0.40, see Section 4.3.1) indicate that the diffusive front would take much longer to reach the bottom of the clay than advective flow.
- Using a diffusion coefficient of 1.0E-9 m^2/sec and a porosity of 0.35 (as used by Bradbury, 2006) the C/Co after six years at the bottom of the clay unit (11 feet) is less than 1% of the source concentration.
- As indicated in Figure 4-4, using a diffusion coefficient of 1.0E-10 m^2/sec the diffusive front (C/Co of 0.5) penetrates less than four feet into the clay for all porosity values. The front of advance would take considerably longer than 6 years to reach the bottom of the clay.

In summary, time of travel for calculations for advective flow through 11 feet of clay using high-end input values is approximately 3.9 years. The diffusive front (C/Co) would not penetrate this same thickness of clay for many more years, even when considering conservative diffusive transport input parameters.

If it is assumed that the under the advective transport scenario that the C/Co on breakthrough is equal to 1.0 and is < 0.02 under diffusive transport, then the advective transport clearly the most conservative time of travel through the clay. Using average input parameters for diffusive transport (i.e., lower diffusion coefficient, higher porosities) yields even longer diffusive transport times.

As introduced above, key assumptions used in the analysis include the following:

- No sorption/adsorption occurs along the pathway, so the rate of modeled diffusion is only relevant to the non-reactive chemicals.
- The source concentration is constant throughout the entire simulation period (i.e., six years). This assumes that a release would go unrecognized for six years.
- The effects of dilution at the bottom of the clay are not considered. Initial very low concentrations that breakthrough the clay would be rapidly diluted in the much more permeable till.

Based on this evaluation, it is concluded that under high-end advective conditions, diffusion would result in a time of travel that is slower than advective flow (i.e., if high-end hydraulic conductivity values are assumed for the clay, advective transport would dominate). At lower hydraulic conductivity values, diffusion may eventually dominate (i.e., be faster) but overall travel times for both diffusion and advection would increase substantially.

5.0 CONCEPTUAL SITE MODEL

MEDEP requested a summary of the hydrogeologic conceptual site model (CSM). This section provides the requested summary and incorporates the following additional items requested by MEDEP

- Isopach (thickness) map of the overburden

- Revised statements regarding unit thicknesses, groundwater flow directions, etc.

Reference is made herein to information presented in Volume III of the Permit Application (WMDSM, 2019) when such information has not been modified.

5.1 SITE GEOLOGY

5.1.1 Overburden

Overburden at the Site is subdivided into three primary units as follows:

- Surficial Deposits (including stockpiled materials)
- Presumpscot Formation Clays
- Glacial Till

An isopach (thickness) map of the overburden deposits in the Phase 14 area is presented as Figure 5-1[8]. As illustrated, the total thickness of the surficial deposits within the Phase 14 footprint ranges from approximately 14 feet to 55 feet. The areas of greatest overburden thickness represent areas of stockpiled fill material.

Surficial Deposits

Silty fine sand, interpreted to be of eolian origin, was encountered at or within approximately six inches of the ground surface in most borings in the Phase 14 area. In some areas the silty fine sand is overlain by a thin layer of organic material and silty clay and/or by fill material stockpiled during development of previous landfill or infrastructure construction at the Crossroads facility. These materials are unsaturated and discontinuous in the Phase 14 area. The silty fine sand is absent in some areas of the Phase 14 area, but where present ranges in thickness from approximately one to six feet. Thicker areas of silty fine sand were encountered in some areas, particularly in the southeast corner of Phase 14 where one boring encountered 21 feet of silty fine sand.

Presumpscot Formation Clays

The Presumpscot Formation silt and clay is separated into two facies based on observations of the lithology: a stiff upper clay facies and a soft lower clay facies. The contact between the stiff upper clay facies and the soft lower clay facies is transitional over a range of approximately one to five feet.

The stiff upper clay facies was encountered underlying the surficial deposits in all borings. The material is a gray-brown, medium stiff to very stiff clay that is typically moist and exhibits orange and red mottling and occasional silt partings. In boreholes advanced in other areas of Crossroads Landfill facility, the upper gray-brown facies exhibits post-depositional features such as desiccation fissures, disruption by roots, frost fracturing, and expansion fracturing. These features were infrequently observed in the samples from borings within and adjacent to the Phase 14 footprint.

The stiff upper clay facies ranges in thickness from approximately 2 to 3 feet on the north side of Phase 14 to more than 10 feet in the central portion and south side of Phase 14. Because the contact between the stiff upper

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[8] Figure 5-1 was prepared by electronically subtracting interpreted top of bedrock surface (Golder 2019, Figure 9) from the ground surface. Therefore, the illustrated overburden thickness may differ from the combined thickness of interpreted individual unit thicknesses because it surficial materials and stockpiled soils that are not included in the individual unit isopach maps.

clay facies and the soft lower clay facies is transitional, the identified thickness of each individual facies is considered approximate.

The soft lower clay facies of the Presumpscot Formation was encountered underlying the stiff upper clay facies in most borings at the Phase 14 area. The material is a gray, soft to very soft clay that is typically moist or wet, and relatively homogenous. The soft lower clay facies was not encountered in the northern corner of Phase 14 or in a few other isolated areas.

The soft lower clay facies ranges in thickness from zero feet where it is absent to greater than 17 feet on southwestern side of Phase 14. Because the contact between the stiff upper clay facies and the soft lower clay facies is transitional, the identified thickness of each individual facies is considered approximate.

Glacial Till

A gray-brown, clayey fine to coarse sand and fine to coarse, angular gravel interpreted to be a glacial till was encountered beneath the Presumpscot silt and clay in all borings that penetrated through the clay. The till is typically moist to wet with a medium density. The till thickness is variable and ranges from less than 0.4 feet in the area of GB-2 to over 20 feet in the area of MW14-05D and appears to become thicker to the south, southwest and east.

5.1.2 Bedrock

Bedrock encountered in the Phase 14 area is primarily a medium dark to dark gray, moderately foliated, very fine, sandy meta-limestone with calcite veins up to 0.75 inches thick. The rock observed in Site cores was fresh (W1) and medium strong (R3). Little weathering was observed except for the top 5 feet at MW14-02 which was slightly weathered. The mean rock quality designation (RQD) in the upper 20 feet of core was 73%. The mean RQD for rock core collected from 20 to 40 feet was slightly higher (83%) indicating that the rock becomes slightly more competent at depth. Overall RQD values at MW14-01 (92%), MW14-03 (85%), and MW14-04 (82%) indicate good to very good rock quality at these locations. MW14-02 had an RQD of 52% which indicates fair rock quality. Observed discontinuities were planar, smooth to very rough to stepped, with dip angles from near vertical to near horizontal. Spacing of discontinuities in the rock cores ranged from extremely closely spaced (<1”) to widely spaced (48”). Many discontinuities were coated with calcite up to 0.25 inches thick and iron hydroxide staining. The top of bedrock slopes from an elevation of approximately 280 ft msl on the north side of Phase 14 to slightly lower than 250 ft msl on the south side of Phase 14.

5.1.3 Geologic Cross-Sections

Figure 10 of Volume III of the Permit Application (WMDSM, 2019) illustrates the location of two geologic cross sections presented as Figures 11a and11b of Volume III of the Permit Application (WMDSM, 2019).

The cross-sections highlight the following key items:

- The top of bedrock surface dips from north-northeast to south-southwest
- The overburden sequence (i.e., the combined silty-sand, clay, and till profile) dips and becomes thicker from north-northeast to south-southwest
- The thickness of the glacial till is variable, but appears to thicken to the south, southwest and east
- The soft lower facies of the Presumpscot Clay was not encountered in the northern portion of the Phase 14 area, but becomes thicker to the south

- The stiff upper facies of the Presumpscot Clay is continuous across the Phase 14 area
- The undifferentiated fill materials and silty fine sands are discontinuous across the Phase 14 area

5.2 SITE HYDROGEOLOGY

There are four distinct hydrostratigraphic units in the Phase 14 area:

- Silty Fine Sand – contains disconnected areas of saturated, seasonally saturated groundwater.
- Presumpscot Clays – including the stiff upper clay facies within which a continuous phreatic surface is present, and the soft lower clay facies. These units represent an aquitard, which impedes meteoric recharge, and in some areas creates artesian heads in the underlying glacial till.
- Glacial Till – a relatively permeable zone of fine to coarse sand and gravel. Groundwater in this unit is confined beneath the Presumpscot clays.
- Bedrock – the bedrock is less permeable than the glacial till, but the two units are in direct hydraulic communication.

The following sections summarize the hydrogeologic conditions and properties of each of these unit.

5.2.1 Silty Fine Sand

The fine silty sandy is generally only saturated year-round in areas of thicker undifferentiated soil/fill and silty fine sand. In areas of thinner undifferentiated soil/fill and silty fine sand, the silty find sand is only seasonally saturated or dry year-round.

The number of slug tests that could be completed in the silty fine sand to estimate hydraulic conductivity was limited due to the limited water column in many of the wells/piezometers. At locations where slug tests could be completed the estimated horizontal hydraulic conductivity ranged from 1.31E-04 cm/sec to 8.06E-02 cm/sec with a geometric mean of 7.06E-03 cm/sec.

The Phase 14 design incorporates removal of undifferentiated soil/fill and the silty fine sand within the footprint of Phase 14 and routing of stormwater to drainage basins. Areas of saturated and seasonally saturated silty fine sand beneath Phase 14 will be removed as part of construction. Therefore, Golder considers the hydraulic significance of the silty fine sand to be minimal, consistent with previous interpretations (Gerber, 1996).

5.2.2 Presumpscot Clays

A continuous phreatic surface is present in the Presumpscot clays in the vicinity of Phase 14. The interpreted seasonal high and seasonal low phreatic surfaces are presented in Figures 12a and 12c, respectively of Volume III of the October 2019 Permit Application (Golder, 2019). Consistent with the topography and geologic structure, groundwater from the Phase 14 area phreatic groundwater flows towards the southwest, south, and southeast across the downgradient side of the Phase 14 boundary.

Phreatic groundwater in the immediate Phase 14 area is recharged through a combination of local meteoric recharge (infiltration of precipitation) and groundwater inflow from the northeast. Data collected from the stream piezometers/staff gauges were used to evaluate whether phreatic groundwater discharges to the nearby streams. The majority of measurements indicate that the streams in the Phase 14 area are either losing streams (i.e., surface water recharges groundwater) and/or that the surface water is perched on top of the Presumpscot clay, as evidenced by the consistently higher surface water elevations compared to the groundwater elevations (i.e., downward gradients). Based on these observations, phreatic groundwater does not discharge to streams in the Phase 14 area and primarily flows towards landfill Phases 11 and 12 where it discharges to shallow streams and tributaries to Mill Stream in the area of Phases 11 and 12 or continues on a longer flow path toward Mill Stream.

The exception is a consistent upward gradient at stream piezometer/staff gauge S-6, and the intermittently upward gradients observed at piezometer/staff gauges S-2 and S-7. Phreatic groundwater may discharge to the streams on an intermittent basis at these locations[9]. Stream piezometer/staff gauge location S-7 is located hydraulically upgradient of Phase 14. Therefore, phreatic groundwater beneath Phase 14 would not discharge to the stream in the area of S-7. Piezometer/staff gauge location S-6 is located side-gradient of Phase 14. The upward gradients observed at S-6 are interpreted to be the result of higher phreatic surface head values to the north of S-6 where the ground surface elevation rises to an elevation of over 310 ft. msl. Therefore, any phreatic groundwater that discharges to the stream in the area of S-6 is interpreted to be groundwater flow from the north rather than from underneath the Phase 14 area.

Piezometer/staff gauge location S-2 is also located side-gradient of Phase 14. The upward gradients observed at S-2 are interpreted to be the result of the higher phreatic surface to the north of S-2 as indicated by head elevations measured in phreatic piezometer PZ-10M, indicating that, phreatic groundwater that discharges to the streams in the area of S-2 originates north of S-2. Horizontal hydraulic gradients beneath the northern portion of Phase 14A are very weak, making it difficult to define the location of the groundwater divide between where groundwater flows northeast towards the stream and southeast towards MW14-02M.

Estimated values of horizontal hydraulic conductivity based on slug tests conducted in wells/piezometers screened within the Presumpscot clay (four within the stiff upper clay, one within the soft lower clay, and three across the contact between the stiff upper and soft lower clays) yielded the following results:

- For wells/piezometers screened solely in the stiff upper clay facies the estimated horizontal hydraulic conductivity ranges from 1.84E-07 cm/sec to 1.89E-05 cm/sec with a geometric mean of 1.19E-06 cm/sec.
- The estimated horizontal hydraulic conductivity for the one well (MW14-02M) screened solely in the soft lower clay facies is 1.70E-07 cm/sec.
- The estimated horizontal hydraulic conductivity for wells/piezometers screened across the upper and lower clay facies ranges from 1.36E-07 cm/sec to 2.04E-06 cm/sec with a geometric mean of 7.21E-07 cm/sec.

The vertical hydraulic conductivity of the Presumpscot clay based on flexible wall permeameter testing in accordance with ASTM D5084 yielded the following results:

- Stiff Upper Clay Facies: geometric mean = 1.31E-07 cm/sec
- Soft Lower Clay Facies: geometric mean = 1.79E-07 cm/sec

The pumping test analysis yielded the following "bulk" Kv values for the Presumpscot clay:

- Geometric mean Hantush analysis: 9.91E-08 cm/sec cm/sec
- Geometric mean Neuman-Witherspoon analysis: 8.54E-07 cm/sec

[9] Because the stream piezometers are steel drive points the lithology of the screened interval could not be confirmed. Therefore, some of these screened intervals may extend to the glacial till, where the groundwater elevation is representative of the potentiometric surface of the confined till, and not phreatic conditions which would result in discharging conditions.

- Overall pumping test geometric mean: 2.17E-07 cm/sec

The overall geometric mean Kv based on the individual permeameter test results and individual pumping test results is 2.17E-07 cm/sec.

Gerber calculated a slightly lower geometric mean vertical hydraulic conductivity value of 6.2E-08 cm/sec (Gerber, 1993) for the soft lower clay facies (gray facies) in other areas of the Crossroads Landfill facility using data collected during groundwater pumping tests.

The Presumpscot clays are very fine-grained and have a consistently low tested horizontal and vertical hydraulic conductivity. Given these characteristics, Golder considers both the upper and lower facies of the Presumpscot clay in the Phase 14 area to be aquitards. Calculated vertical gradients from the phreatic surface to the till are all downwards, ranging from 0.18 ft/ft on the north side of Phase 14 to over 1.0 ft/ft at one downgradient location. These strong vertical gradients are consistent with the characteristics of an aquitard. As an aquitard, the Presumpscot clays impedes most meteoric recharge and creates artesian heads in the underlying glacial till.

5.2.3 Glacial Till

Groundwater in the glacial till is confined beneath the Presumpscot clays. Groundwater flow within the glacial till is predominantly horizontal. Consistent with geologic structure, the elevation of the potentiometric surface in the glacial till decreases from northeast to southwest/south/southeast. As a result, the overall direction of groundwater flow in the glacial till is towards the southwest, south, and southeast across the downgradient side of the Phase 14 boundary.

Glacial till in the Phase 14 area is primarily recharged via groundwater inflow from the north-northeast and can also receive flow from the underlying bedrock. The glacial till also likely receives some small amount of recharge from the overlying aquitard (i.e., the Presumpscot Clay). However, the relative volume of water derived from the clay is considered negligible compared to the recharge that occurs via groundwater inflow from the north-northeast and from the underlying bedrock. Glacial till groundwater does not discharge locally because it is confined beneath the Presumpscot clays that thicken to the south-southeast. Glacial till groundwater is interpreted to eventually discharge to Mill Stream approximately 1,500 feet downgradient of Phase 12, where the Presumpscot clays are thin or absent.

Estimated horizontal conductivity based on slug tests conducted in wells screened in the glacial till ranged from 3.77E-07 cm/sec (MW14-02D) to 1.94E-02 cm/sec (PZ-11D) with a geometric mean of 7.60E-04E-04 cm/sec for all tested wells/piezometers.

The pumping test analysis yielded the following estimated horizontal hydraulic conductivity values for the till:

- Geometric mean Hantush analysis: 3.40E-05 cm/sec
- Geometric mean Neuman-Witherspoon analysis: 9.87E-04 cm/sec

The overall geometric mean horizontal hydraulic conductivity for the till is 2.06E-4 cm/sec based on the individual slug test results and individual pumping test results.

5.2.4 Bedrock

Groundwater within the bedrock is in direct hydraulic communication with the till (i.e., there is not a zone or layer of low permeability between the till and the bedrock that restricts flow between the two units). As evidenced by the result of the groundwater pumping test, hydraulic stress in the bedrock is transmitted to the overlying till and vice-versa. Like the other hydrostratigraphic units and consistent with the geologic structure, the elevation of the potentiometric surface in the bedrock decreases from the northeast to southwest/south/southeast. As a result, the overall direction of groundwater flow in the bedrock is towards the southwest, south, and southeast across the downgradient side of the Phase 14 boundary.

The bedrock in the Phase 14 area is primarily recharged via groundwater inflow from the north-northeast and regionally appears to be recharged in the area of the bedrock ridge to the east-northeast of Phase 14. Bedrock groundwater does not discharge locally. Like the glacial till, bedrock groundwater in the Phase 14 area is confined beneath the Presumpscot clays that thicken to the south-southeast under Phase 11 and is interpreted to eventually discharge to Mill Stream approximately 1,500 feet downgradient of Phase 12, where the Presumpscot clays are thin or absent. As described above, groundwater in the bedrock also likely flows into the overlying glacial till in some area.

Phase 14 and all existing landfill phases are within a groundwater flow system with a prevailing groundwater flow direction from the upland areas to the north of Phase 14 towards Mill Stream to the south. There is a groundwater divide coincident with the upland areas to the north and east of Phase 14. The presence of this groundwater divide precludes groundwater flow from Phase 14 to the “Significant Sand and Gravel Aquifer” located along the banks of the Kennebec River, the Town of Norridgewock water supply well, and the Kennebec River. Groundwater north and east of the divide flows away from Phase 14 and towards the Kennebec River.

The measured vertical gradients between the overlying glacial till and bedrock are weak (i.e., equal to or less than 0.2) and directionally variable, ranging from a downward gradient of 0.02 ft/ft to an upward gradient of -0.09 ft/ft. The weak and variable nature of the vertical gradients between the glacial till and bedrock is consistent with hydrostratigraphic units that are in direct hydraulic communication.

Estimated values of horizontal hydraulic conductivity based on slug tests conducted in wells screened in the glacial till ranged from 2.11E-04 cm/sec to 8.73E-06 cm/sec with a geometric mean for all bedrock slug tests of 3.18E-05 cm/sec. These results compare very favorably with the geometric mean horizontal hydraulic conductivity value (1.9E-05 cm/sec) calculated from 50 slug tests conducted in wells screened in the bedrock in other areas of the Crossroads Landfill facility (Gerber, 1996).

Estimated bedrock horizontal hydraulic conductivity values derived from the Phase 14 pumping test range from 5.36E-05 cm/sec to 1.84E-04 cm/sec with a geometric mean of 9.92E-05 cm/sec.

5.3 Potential Receptors and Time of Travel

Maine SWMR Chapter 401.2.G requires the applicant to provide an analysis of the proposed site and the adjacent area that could be affected during operation and after closure of the landfill, in the event of releases of contaminants to groundwater beyond engineered systems. The purpose of this analysis is to assess the potential for an unreasonable threat to all identified sensitive receptors and to identify any operational or monitoring measures needed to ensure protection of the sensitive receptors. The potential for an unreasonable threat to a sensitive receptor is defined by Chapter 401.2.G as arrival time of less than 6 years from the landfill of a concentration of a pollutant which would result in contamination of that sensitive receptor.

Potential sensitive receptors identified for Phase 14 include:

- Two classified (Class B) streams; one located approximately 375 west of Phase 14, and one located approximately 665 feet southeast of Phase 14

- WMDSM's "New Office Well" located approximately 1,575 feet south of Phase 14. The New Office Well is a bedrock water supply well and the closest potentially downgradient water supply well from Phase 14. In the time of travel calculations this well represents the "fractured bedrock aquifer" sensitive receptor.

Time of travel calculations were completed for five potential pathways using a range of input values. Calculated times of travel from theoretical potential release areas associated with Phase 14 to potential sensitive receptors exceed the 6-year time frames that would represent "an unreasonable threat to a sensitive receptor". Therefore, potential releases from Phase 14 do not represent an unreasonable threat to sensitive receptors.

Chapter 401.2.G also indicates that "an unreasonable threat to a sensitive receptor" is a time of travel less than three years from leachate storage structures and pump stations that would result in contamination of a sensitive receptor. However, no new leachate storage structures or pump stations will be constructed for Phase 14. Leachate generated from Phase 14 will be transported to existing leachate management structures near Phase 12.

6.0 REVISED WATER QUALITY MONITORING PROGRAM

Volume III of the 2019 solid waste permit application (Golder, 2019) included a proposed surface water and groundwater quality monitoring program for Phase 14. Due to the very weak and directionally variable vertical gradients between the till and bedrock, WMDSM did not include bedrock groundwater quality as part of the water quality monitoring program because any groundwater quality changes that might result from a release from Phase 14 would be detected in the phreatic and till monitoring wells long before, if ever, being detected in bedrock. MEDEP agreed with the premise that bedrock water quality does not need to be monitored as part of the detection monitoring program (Ch. 405 (2)(C)(2)), but did request that bedrock groundwater characterization be completed in accordance with Ch. 405 (2)(C)(1) for potential future use, should a release ever be detected or suspected based on monitoring in the phreatic and till units. MEDEP also indicated that new bedrock monitoring wells should be installed for the characterization monitoring (see Comment 29 in Appendix A).

WMDSM agrees that it is prudent to characterize bedrock groundwater quality for potential future use should a release be detected or suspected based on monitoring results from the phreatic and/or the till unit wells. Therefore, WMDSM has revised the proposed groundwater monitoring program to include characterization of bedrock groundwater quality in accordance with Ch. 405 (2)(C)(1). However, Golder believes the location and depth of the existing bedrock wells are appropriate for characterization monitoring. As confirmed by the groundwater pumping test, there is strong hydraulic communication within the upper portion of the bedrock and thus significant variability in bedrock groundwater quality is not expected. Therefore, WMDSM proposes to utilize the existing bedrock monitoring wells (1 upgradient, 2 downgradient) for characterization monitoring. We also believe it is prudent to maintain the existing bedrock monitoring wells for potential future monitoring if a release is detected. In the event of a release, additional bedrock monitoring wells can be installed for assessment monitoring, as needed.

MEDEP also requested that groundwater quality be monitored at a minimum of at least two upgradient locations. WMDSM agreed to install and monitor two additional upgradient monitoring wells north of Phase 14 (see Comment 28 in Appendix A) for a total of three wells at two upgradient locations.

In accordance with Maine SWMR Chapter 401.2.C(1)(h)(viii), proposed surface and groundwater monitoring points are listed on Table 6-1 and monitoring locations are illustrated on Figure 6-1. The sequence of the proposed groundwater quality monitoring is summarized in Table 6-2. Additional discussion of the proposed water quality program is included in Appendix A as response to Comments 28, 29 and 30. The following sections describe the proposed water quality monitoring program.

6.1 Proposed Groundwater Water Quality Monitoring Program

The proposed groundwater monitoring program includes two (2) upgradient monitoring locations and five (5) downgradient monitoring locations. The three hydrostratigraphic units are included, as follows:

- Upgradient location MW14-01 - includes glacial till monitoring well (MW14-01D) and bedrock monitoring well MW14-01B
- Upgradient location MW14-09[10] - includes a phreatic unit monitoring well (MW14-09M) and a glacial till monitoring well (MW14-09)
- Downgradient location MW14-08[10] - includes a phreatic unit monitoring well (MW14-08M) and a glacial till monitoring well (MW14-08D) to assess groundwater quality downgradient of Phase 14A
- Downgradient location MW14-03 - includes a phreatic unit monitoring well (MW14-03M), glacial till monitoring well (MW14-03D), and bedrock monitoring well to assess groundwater quality downgradient of Phase 14B
- Downgradient location MW14-04 - includes a phreatic unit monitoring well (MW14-04M), glacial till monitoring well (MW14-04D), and bedrock monitoring well MW14-04B to assess groundwater quality downgradient of Phase 14C
- Downgradient location MW14-05 - includes a phreatic unit monitoring well (MW14-05M) and a glacial till monitoring well (MW14-05D) to monitor groundwater quality downgradient of Phase 14D
- Downgradient location MW14-07[10] - includes a phreatic unit monitoring well (MW14-07M) and a glacial till monitoring well (MW14-07D) to monitor groundwater quality downgradient of Phase 14E

Table 6-2 provides the sequence of the water quality program and major Phase 14 construction milestones. The site characterization monitoring is anticipated to begin in the summer of 2021 after the installation and development of all monitoring wells is complete. WMDSM anticipates initial placement of waste in Phase 14A in the Fall of 2022. In accordance with Chapter 405.2.C(1), four water quality sample rounds will be completed prior to placement of waste in Phase 14A. An additional four water quality sample rounds will be completed prior to the placement of waste in Phase 14B to further characterize groundwater conditions in the vicinity of Phase 14. The site characterization monitoring report will be submitted in the Summer of 2022 prior to the placement of waste in Phase 14A and will be supplemented with the additional water quality information collected through the Summer of 2023. In accordance with Chapter 405.2.C(1)(d), all samples will be analyzed for the Column 2 parameters during the first two sampling events. Samples collected during the subsequent sampling rounds will be analyzed for the Column 1 parameters and any Column 2 parameters detected in the first two sampling rounds.

Bedrock monitoring wells are included in the site characterization water quality program to establish baseline conditions, both upgradient and downgradient of Phase 14. A release from Phase 14 will initially be detected in the phreatic unit or till groundwater units, and is expected to travel within the till, given the generally weak and variable vertical gradients between the till and bedrock units (i.e. upward at MW14-01 and MW14-04; downward

[10] Monitoring wells to be installed.

at MW14-03). Bedrock monitoring wells will not be sampled during the on-going water quality monitoring program, however they will be maintained for future use, if needed.

6.2 Proposed Surface Water Quality Monitoring Program

Surface water samples will be collected as part of the water quality monitoring program from streams located upgradient and downgradient of Phase 14. Surface water sampling locations are illustrated on Figure 6-1 and identified on Table 6-1. Sampling locations include:

- Upgradient location SW14-07 at stream piezometer/staff gauge S-7
- Upgradient location SW14-02 at stream piezometer/staff gauge S-2
- Downgradient location SW14-05 at stream piezometer/staff gauge S-5
- Downgradient location SW14-08 at a new location downstream of existing piezometer/staff gauges S-1 and S-4

In accordance with Chapter 405.2.C(1), site characterization monitoring will be conducted prior to waste placement in Phase 14 to establish the parameters to be monitored and their concentrations in groundwater in the vicinity of the Phase 14. Similar to the groundwater quality monitoring program presented in Section 6.1 and summarized on Table 6-2, the surface water program will comprise of four sample rounds prior to placement of waste in Phase 14A, and four additional water quality sample rounds prior to the placement of waste in Phase 14B. In accordance with Chapter 405.2.C(1)(d), all samples will be analyzed for the Column 2 parameters during the first two sampling events. Samples collected during the subsequent sampling rounds will be analyzed for the Column 1 parameters and any Column 2 parameters detected in the first two sampling rounds.

6.3 Proposed Water Level Monitoring Program

Water levels will be monitored at each groundwater sampling location and surface water sampling location during each monitoring event. Water levels will also be monitored at additional monitoring wells, piezometers, and stream staff gauges identified on Figure 6-1 and listed in Table 6-1.

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https://golderassociates.sharepoint.com/sites/106133/project files/6 deliverables/2020 supplemental sar hydrogeology rpt/final/text/final supplemental phase 14 hydrogeo report.docx

TABLES

Table 3-1: Summary of Antecedent, Pumping Period and Recovery Period Water Level Data

Location	Unit	Distance from Pumping Well (ft)	General Area Monitored	Initial Antecedent Measurement (ft msl)	Date and Time	Final Antecedent Measurement (ft msl)	Date and Time	Change During Antecedent Period (ft)	Initial Pumping Test Measurement (ft msl)	Date and Time	Final Pumping Test Measurement (ft msl)	Date and Time	Change During Pumping Test (ft) See Note 1	Final Recovery Period Measurement (ft msl)	Date and Time	Change During Recovery (ft)	Response to Pumping?	Note
MW14-02S	Sand	858	Satellite	275.60	7/3/20 4:48	275.65	7/7/20 13:58	0.05	275.65	7/7/20 13:58	275.64	7/10/20 13:58	-0.01	275.65	7/13/20 12:43	0.00	No	Natural fluctuations
MW14-03S	Sand	17	Pumping Area	275.89	7/3/20 4:46	275.57	7/7/20 13:59	-0.32	275.57	7/7/20 13:59	275.62	7/10/20 13:57	0.05	275.71	7/13/20 15:03	0.08	No	Natural fluctuations
MW14-04S	Sand	632	Satellite	273.59	7/3/20 4:47	273.30	7/7/20 13:57	-0.29	273.30	7/7/20 13:57	273.28	7/10/20 13:57	-0.03	273.73	7/13/20 14:17	0.45	No	Natural fluctuations
PZ-1S	Sand	439	Satellite	280.63	7/3/20 4:50	280.82	7/7/20 13:55	0.19	280.82	7/7/20 13:55	280.66	7/10/20 13:55	-0.16	280.57	7/13/20 13:55	-0.09	No	Natural fluctuations
PZ-3S	Sand	719	Satellite	285.74	7/6/20 19:37	285.66	7/7/20 13:57	-0.08	285.66	7/7/20 13:57	285.50	7/10/20 13:57	-0.16	285.80	7/13/20 13:12	0.30	No	Natural fluctuations (minimal antecedent data)
PZ-10S	Sand	1719	Satellite/Background	284.21	7/3/20 4:47	284.13	7/7/20 13:57	-0.09	284.13	7/7/20 13:57	284.05	7/10/20 13:57	-0.07	284.19	7/13/20 11:47	0.14	No	Natural fluctuations
PZ-13S	Sand	861	Satellite	270.14	7/3/20 4:48	270.18	7/7/20 13:58	0.04	270.18	7/7/20 13:58	270.24	7/10/20 13:58	0.05	270.48	7/13/20 16:23	0.24	No	Natural fluctuations
PZ-20S	Sand	654	Satellite	279.06	7/6/20 19:16	278.97	7/7/20 13:56	-0.10	278.97	7/7/20 13:56	278.68	7/10/20 13:56	-0.28	278.67	7/13/20 12:26	-0.01	No	Natural fluctuations (minimal antecedent data)
MW14-02M	Clay	855	Satellite	269.44	7/3/20 4:50	269.50	7/7/20 13:55	0.05	269.50	7/7/20 13:55	269.41	7/10/20 13:55	-0.08	269.42	7/13/20 12:40	0.01	No	No recovery and confirmed with manual measurements (Minimal antecedent data)
MW14-03M	Clay	11	Pumping Area	272.12	7/3/20 4:47	272.01	7/7/20 13:58	-0.11	272.01	7/7/20 13:58	271.27	7/10/20 13:32	-0.75	271.79	7/13/20 15:18	0.52	Yes	Significant response to pumping, recovery
MW14-04M	Clay	630	Satellite	270.40	7/3/20 4:49	270.53	7/7/20 13:59	0.14	270.53	7/7/20 13:59	270.45	7/10/20 13:59	-0.09	270.53	7/13/20 14:19	0.08	Possible	Reversal of antecedent trend, some recovery
MW14-05M	Clay	1342	Satellite	271.44	7/6/20 20:01	271.22	7/7/20 13:56	-0.22	271.22	7/7/20 13:56	270.95	7/10/20 13:56	-0.27	271.12	7/13/20 13:36	0.17	Yes	Some response to pumping, some recovery (Minimal antecedent data)
PZ-1M	Clay	437	Satellite	277.19	7/3/20 4:47	277.29	7/7/20 13:57	0.10	277.29	7/7/20 13:57	276.97	7/10/20 13:57	-0.32	277.07	7/13/20 13:52	0.10	Yes	Reversal of antecedent trend, some recovery
PZ-10M	Clay	1714	Satellite/Background	283.55	7/3/20 4:49	283.62	7/7/20 13:59	0.07	283.62	7/7/20 13:59	283.51	7/10/20 13:59	-0.11	283.51	7/13/20 11:54	0.00	No	Rising trend antecedent and pumping, no recovery
PZ-16M	Clay	631	Satellite	282.51	7/3/20 4:49	282.59	7/7/20 13:59	0.07	282.59	7/7/20 13:59	282.43	7/10/20 13:59	-0.16	282.55	7/13/20 12:59	0.12	Yes	Reversal of antecedent trend, recovery
PZ-18M	Clay	692	Satellite	284.84	7/6/20 19:30	284.63	7/7/20 13:55	-0.21	284.63	7/7/20 13:55	284.33	7/10/20 13:55	-0.29	284.60	7/13/20 13:10	0.27	Yes	Some response to pumping, recovery (Minimal antecedent data)
PZ-19M	Clay	887	Satellite	275.08	7/6/20 18:51	274.85	7/7/20 13:56	-0.23	274.85	7/7/20 13:56	274.66	7/10/20 13:56	-0.19	274.60	7/13/20 14:06	-0.05	No	No recovery (Minimal antecedent data)
PZ-22M	Clay	14	Pumping Area	273.05	7/3/20 4:48	273.29	7/7/20 13:58	0.24	273.29	7/7/20 13:58	273.22	7/10/20 13:58	-0.07	273.34	7/13/20 15:24	0.12	Possible	Reversal of antecedent trend, some recovery
PZ-23M	Clay	29	Pumping Area	273.68	7/3/20 4:46	273.74	7/7/20 14:00	0.06	273.74	7/7/20 14:00	273.48	7/10/20 13:35	-0.26	273.57	7/13/20 15:27	0.09	Yes	Reversal of antecedent trend, recovery
MW14-02D	Till	851	Satellite	260.70	7/3/20 4:50	260.61	7/7/20 13:55	-0.09	260.61	7/7/20 13:55	260.53	7/10/20 13:55	-0.08	260.48	7/13/20 12:40	-0.05	No	Declining trend, no recovery
MW14-03D	Till	5.8	Pumping Area	265.24	7/6/20 20:39	265.12	7/7/20 14:00	-0.12	265.12	7/7/20 14:00	261.69	7/10/20 13:59	-3.43	265.34	7/13/20 15:13	3.65	Yes	Significant response to pumping, recovery
MW14-04D	Till	627	Satellite	266.27	7/3/20 4:47	266.25	7/7/20 13:57	-0.02	266.25	7/7/20 13:57	265.74	7/10/20 13:57	-0.51	266.31	7/13/20 14:22	0.57	Yes	Response to pumping, recovery
MW14-05D	Till	1346	Satellite	255.38	7/6/20 20:03	255.12	7/7/20 13:58	-0.26	255.12	7/7/20 13:58	254.60	7/10/20 13:58	-0.52	254.97	7/13/20 13:33	0.37	Yes	Response to pumping, recovery
PZ-10D	Till	1711	Satellite/Background	281.70	7/3/20 4:46	281.55	7/7/20 13:56	-0.15	281.55	7/7/20 13:56	281.51	7/10/20 13:56	-0.04	281.67	7/13/20 11:56	0.16	No	Natural fluctuations, no recovery
PZ-13D	Till	870	Satellite	252.38	7/3/20 4:47	252.38	7/7/20 13:57	0.00	252.38	7/7/20 13:57	252.04	7/10/20 13:57	-0.35	252.53	7/13/20 16:17	0.49	Yes	Response to pumping, recovery
PZ-23D	Till	36	Pumping Area	265.59	7/3/20 4:49	265.53	7/7/20 13:58	-0.07	265.53	7/7/20 13:58	262.07	7/10/20 13:58	-3.46	265.72	7/13/20 15:22	3.65	Yes	Significant response to pumping, recovery
MW14-02B	Bedrock	853	Satellite	259.91	7/3/20 4:46	259.95	7/7/20 13:56	0.03	259.95	7/7/20 13:56	259.57	7/10/20 13:56	-0.38	260.00	7/13/20 12:41	0.35	Yes	Reversal of strong antecedent trend, recovery
MW14-03B	Bedrock	0	Pumping Well	264.73	7/3/20 4:50	264.77	7/7/20 13:58	0.04	264.68	7/7/20 13:58	231.24	7/10/20 13:59	-33.44	264.91	7/13/20 15:19	33.68	Yes	Pumping Well
MW14-04B	Bedrock	625	Satellite	268.32	7/3/20 4:49	268.46	7/7/20 13:59	0.14	268.46	7/7/20 13:59	268.07	7/10/20 13:59	-0.38	268.67	7/13/20 14:24	0.59	Yes	Reversal of antecedent trend, significant recovery

Notes:
1) Changes in water level elevations do not reflect subsequent adjustments to account for antecedent trends. See Report Section 3.6.

Prepared By: TK
Checked by: BDL
Reviewed by: APTM

Table 3-2: Pumping Test Analysis Results

Hantush Pumping Period Data Analysis											
Parameters	Units	Till Observation Wells						Bedrock Observation Wells			Overall Geometric Mean
		MW14-03D	MW14-04D	MW14-05D	PZ-23D	PZ-13D	Geometric Mean	MW14-02B	MW14-04B	Geometric Mean	
Aquifer Horizontal Hydraulic Conductivity (Kh)	cm/sec	9.36E-05	3.40E-05	2.16E-06	7.28E-05	1.07E-05	2.22E-05	1.84E-04	5.36E-05	9.92E-05	3.40E-05
Aquifer Storativity		9.76E-03	1.40E-06	2.35E-07	3.69E-04	2.46E-06	1.96E-05	1.18E-04	8.47E-05	9.98E-05	3.12E-05
Aquitard Vertical Hydraulic Conductivity (Kv)	cm/sec	2.92E-08	3.27E-07	2.08E-08	6.45E-07	1.09E-07	1.07E-07	1.61E-08	4.20E-07	8.21E-08	9.91E-08

Neuman-Witherspoon Pumping Period Data Analysis						
Parameter	Units	MW14-03D/ MW14-03M	PZ-23D/ PZ-23M	MW14-04D/ MW14-04M	MW14-05D/ MW14-05M	Geometric Mean
Aquifer Horizontal Hydraulic Conductivity (Kh)	cm/sec	1.09E-04	6.31E-05	3.12E-05	4.43E-04	9.87E-05
Aquifer Storativity		7.67E-03	3.92E-04	1.36E-05	5.82E-06	1.24E-04
Aquitard Vertical Hydraulic Conductivity (Kv)	cm/sec	8.85E-07	4.88E-07	3.02E-07	4.08E-06	8.54E-07

Summary of Results		
Geometric Mean for All Till Kh Results	cm/sec	4.30E-05
Geometric Mean for All Bedrock Kh Results	cm/sec	9.92E-05
Geometric Mean for All Clay Kv Results	cm/sec	2.17E-07

Prepared By: BPC
Checked by: BDL
Reviewed by: APTM

Table 6-1: Proposed Groundwater and Surface Water Monitoring Locations

Location ID	Water Quality Monitoring Program	Water Level Monitoring Program
MW14-01S		x
MW14-01D	x	x
MW14-02S		x
MW14-02M		x
MW14-02D		x
MW14-03S		x
MW14-03M	x	x
MW14-03D	x	x
MW14-04S		x
MW14-04M	x	x
MW14-04D	x	x
MW14-05S		x
MW14-05M	x	x
MW14-05D	x	x
MW14-06S		x
MW14-06M		x
MW14-06D		x
MW14-07M	x	x
MW14-07D	x	x
MW14-08M	x	x
MW14-08D	x	x
MW14-09M	x	x
MW14-09D	x	x
PZ-7M		x
PZ-7D		x
PZ-8S		x
PZ-8D		x
PZ-9S		x
PZ-9D		x
PZ-10S		x
PZ-10M		x
PZ-10D		x
PZ-11S		x
PZ-11D		x
PZ-12S		x
PZ-12D		x
PZ-13S		x
PZ-13D		x
PZ-14S		x
PZ-14D		x
PZ-15M		x
PZ-15D		x
PZ-20S		x
S-1		x
S-3		x
S-4		x
S-6		x
SW14-02	x	x
SW14-05	x	x
SW14-07	x	x
SW14-08	x	x
VW-1S		x
VW-1D		x
VW-2S		x
VW-2D		x

Notes:
MW = groundwater monitoring well
PZ = groundwater piezometer
S/SW = stream piezometer/staff gauge
VW = vibrating wire piezometer

Created by: BDL
Checked by: TK
Reviewed by: APTM

Table 6-2: Water Quality Program Sequence

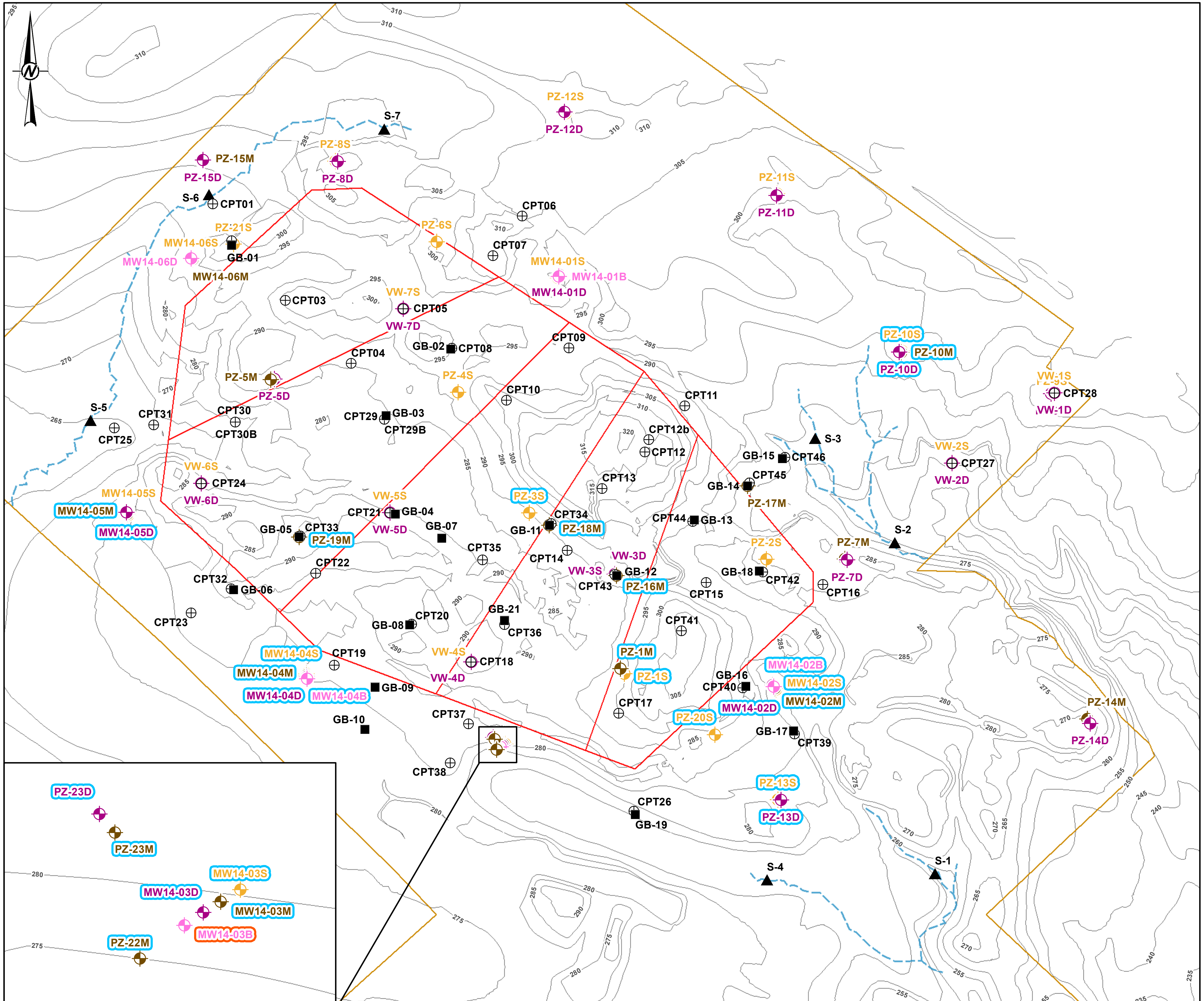
		Location	MW14-01D	MW14-01B	MW14-09D	MW14-09M	MW14-03D	MW14-03M	MW14-03B	MW14-04D	MW14-04M	MW14-04B	MW14-05D	MW14-05M	MW14-07D	MW14-07M	MW14-08D	MW14-08M
Date	Activity	Unit	Till	Bedrock	Till	Phreatic	Till	Phreatic	Bedrock	Till	Phreatic	Bedrock	Till	Phreatic	Till	Phreatic	Till	Phreatic
		Cell	Upgradient	Upgradient	Upgradient	Upgradient	B	B	B	C	C	C	D	D	E	E	A	A
Winter/Spring 2021	Install Monitoring Wells				X	X									X	X	X	X
Spring 2021	Develop Monitoring Wells		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Summer 2021	**Begin Water Quality Sample Collection**																	
Summer 2021	Water Quality Sample		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Fall 2021	Water Quality Sample		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Spring 2022	Water Quality Sample		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Summer 2022	Water Quality Sample		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Summer 2022	**Prepare Site Characterization Water Quality Report**																	
Fall 2022	Water Quality Sample		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Fall 2022	**Begin Placement of Waste in Phase 14A**																	
Spring 2023	Water Quality Sample		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Summer 2023	Water Quality Sample		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Fall 2023	Water Quality Sample		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Fall 2023	**Begin Placement of Waste in Phase 14B**																	
Fall 2023	**Prepare Supplemental Site Characterization Monitoring information**																	
2024+ (Triannial)	WQ Quality Sample		X		X	X	X	X		X	X		X	X	X	X	X	X
Annually	**Submit Crossroads Annual WQ Report**																	

Note:

Dates and timeline are approximate, but are representative of the general sequence of events

Created by: BDL
Checked by: TK
Reviewed by: APTM

FIGURES



LEGEND

- Geosyntec Cone Penetrometer (CPT) Test Location
- Geosyntec Geotechnical Boring
- Stream Piezometer/Staff Gauge
- Bedrock Piezometer/Monitoring Well Location
- Clay Piezometer/Monitoring Well
- Sand Piezometer/Monitoring Well
- Till Piezometer/Monitoring Well
- Proposed Phase 14 Waste Boundary
- Facility Site Boundary
- Ground Surface Topographic Contour
- Stream
- MW14-03D Observation Well Location
- MW14-03B Pumping Well Location

NOTE(S)

1. CONTINUOUS SOIL SAMPLES COLLECTED AT THE DEEPEST SOIL BORING OF EACH PIEZOMETER/MONITORING WELL CLUSTER.
2. ALL PIEZOMETERS/MONITORING WELLS INSTALLED BY GOLDER, WITH THE EXCEPTION OF PZ-1M, PZ-5M, PZ-16M, PZ-17M, PZ-18M, AND PZ-19M.

REFERENCE(S)

1. COORDINATE SYSTEM: NAD 1983 STATEPLANE MAINE WEST FIPS 1802 FEET
2. PROPOSED PHASE 14 WASTE BOUNDARY PROVIDED BY GEOSYNTEC CONSULTANTS ON JULY 23, 2019.
3. FACILITY SITE BOUNDARY PROVIDED BY GEOSYNTEC CONSULTANTS ON JULY 25, 2019 AND UPDATED WITH DATA PROVIDED BY BOYNTON & PICKETT LLC ON OCTOBER 18, 2019.
4. STREAMS LAYER FROM SHAPEFILE RECEIVED FROM NORMANDEAU ENVIRONMENTAL CONSULTANTS (NORMANDEAU) DATED MAY 3, 2019 AND GEOSYNTEC CONSULTANTS ON JULY 25, 2019.
5. PIEZOMETER AND SOIL BORING LOCATIONS SURVEYED BY BOYNTON & PICKETT AND PROVIDED ON 25 SEPTEMBER 2017 ("SURVEY INFROMATION"), OCTOBER 2018 ("WM MW CROSSROADS PIEZOMETER LOCATION OCT.2018), 17 APRIL 2019 ("WM MW PHASE 14 PZ GB MW LOCTIONS 04.17.2019").
6. EXISTING GROUND SURFACE WITHIN PHASE 14 AREA FROM CAD FILE "WM MAINE WEST PHASE 14 TOPO NOV 2017 (DELIVERABLE (2))".DWG CREATED BY BOYNTON AND PICKETT, AS PROVIDED BY GEOSYNTEC DATED 7 SEPTEMBER 2018. EXISTING GROUND SURFACE SURROUNDING PHASE 14 AREA FROM CAD FILE "BE0232 TOPO 09-2016 (SP)".DWG CREATED BY AERIAL SURVEY & PHOTO INC. AND BOYNTON & PICKETT, AS PROVIDED BY GEOSYNTEC DATED 7 SEPTEMBER 2018. EXISTING GROUND SURFACE CONTOUR DATA WERE MERGED.

CLIENT
WASTE MANAGEMENT DISPOSAL SERVICES OF MAINE, CROSSROADS LANDFILL, NORRIDGEWOCK, ME

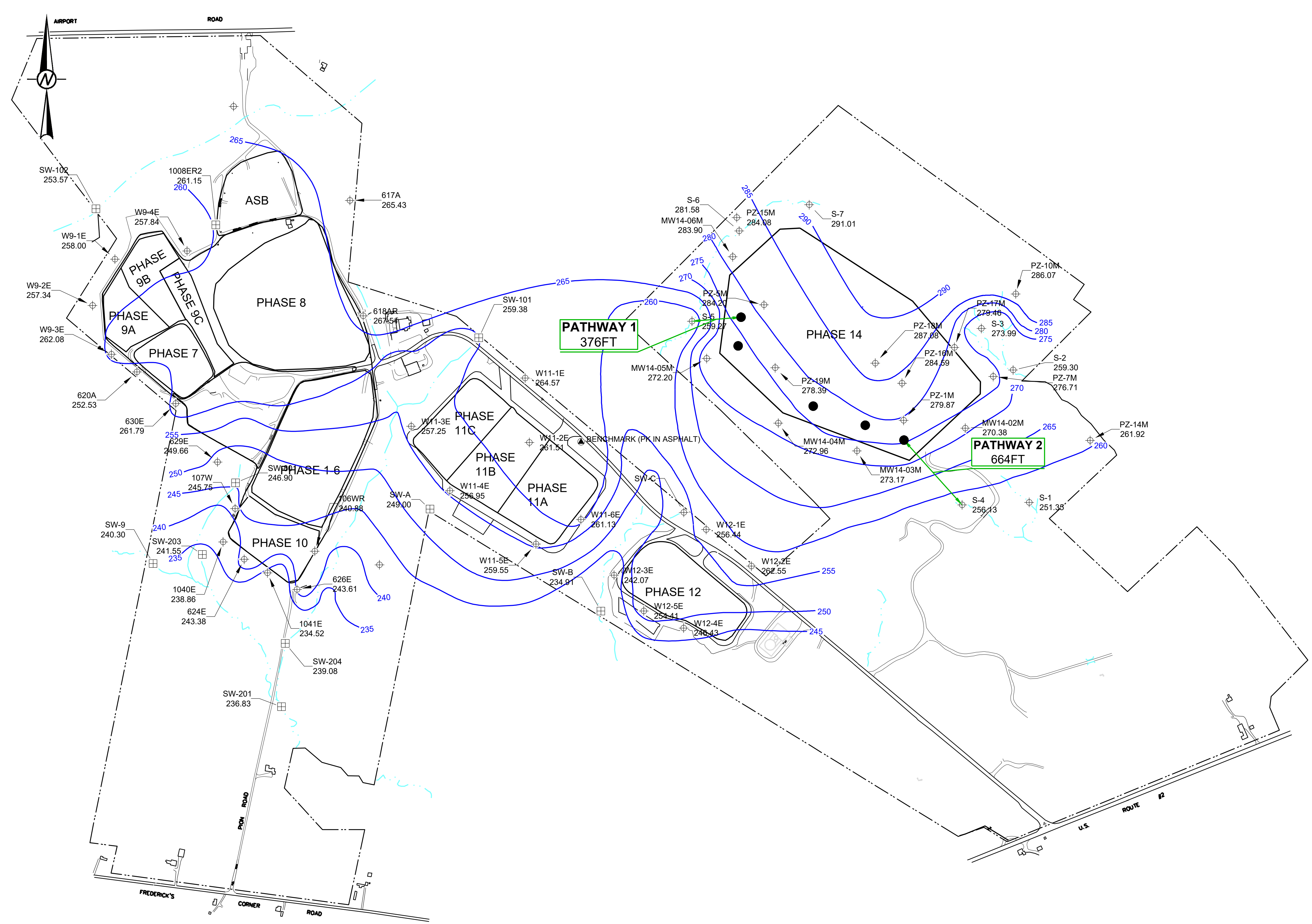
PROJECT
SUPPLEMENTAL PHASE 14 GEOLOGIC AND HYDROLOGIC REPORT
NORRIDGEWOCK, MAINE

TITLE
PUMPING WELL AND OBSERVATION WELL LOCATIONS

CONSULTANT
GOLDER

YYYY-MM-DD	7/27/2020
DESIGNED	BDL
PREPARED	TBH
REVIEWED	BDL
APPROVED	APTM

PROJECT NO.	CONTROL	REV.	FIGURE
20142671	-	-	3-1



LEGEND

	FACILITY SITE BOUNDARY
	STREAM
	ROAD
	BUILDING
	MONITORING WELL/ PIEZOMETER LOCATION
SW-9 NA	STREAM GAUGE LOCATION
	APPROXIMATE LEACHATE COLLECTION SUMP LOCATION
	PERMANENT ON-SITE BENCHMARK
	POTENTIAL PATHWAY FOR TIME-OF-TRAVEL ANALYSIS
280	PHREATIC SURFACE CONTOUR (FT-MSL)

FIGURE NARRATIVE:

THIS FIGURE DEPICTS THE GROUNDWATER ELEVATION AS MEASURED IN PIEZOMETERS, GROUNDWATER MONITORING WELLS AND SURFACE WATER, AND IS INTENDED TO REPRESENT THE APPROXIMATE ELEVATION OF THE PHREATIC SURFACE. THE POSTED DATA WERE CALCULATED FROM DEPTH TO WATER MEASUREMENTS MADE BY KAHTAHDIN ON APRIL 26, 2019 DURING THE GROUNDWATER MONTORIN PROGRAM. PHASE 14 GROUNDWATER ELEVATIONS WERE COLLECTED BY GOLDER ASSOCIATES ON MAY 2, 2019. THE DIRECTION OF HORIZONTAL GROUNDWATER FLOW CAN BE GENERALLY INTERPRETED AS BEING PERPENDICULAR TO THE GROUNDWATER ELEVATION CONTOURS.

GOLDER INFERRED THE ELEVATION CONTOURS BASED ON THE DATA ILLUSTRATED. THE ACTUAL ELEVATION OF THE GROUNDWATER SURFACE IS LIKELY MORE HETEROGENEOUS THAN SHOWN AND ACTUAL CONDITIONS WILL VARY. THE DEPTH TO GROUNDWATER IS KNOWN TO VARY WITH TIME.

REFERENCE(S)

1. BASE PLAN PREPARED FROM PLANS ENTITLED "TOPOGRAPHIC PLAN SHOWING WETLANDS DELINEATION, NORRIDGEWOCK FACILITY, SHEETS 1-13," PREPARED BY AERIAL SURVEY & PHOTO, INC. OF NORRIDGEWOCK, MAINE; PHOTO DATED 10/20/94 WITH GROUND CONTROL PROPERTY LINE INFORMATION, AND MAPPING UPDATE PROVIDED BY SACKETT & BRAKE SURVEY, INC. OF SKOWHEGAN, MAINE IN 1995; ORIGINAL SCALE: 1" = 100'.
2. VERTICAL DATUM IS USGS MEAN SEA LEVEL, HORIZONTAL DATUM IS NAD83 STATEPLANE MAINE WEST FIPS 1802 FEET.
3. PROPOSED PHASE 14 WASTE BOUNDARY PROVIDED BY GEOSYNTEC CONSULTANTS ON JULY 23, 2019.
4. FACILITY SITE BOUNDARY PROVIDED BY GEOSYNTEC CONSULTANTS ON JULY 25, 2019 AS UPDATED WITH DATA PROVIDED BY BOYNTON & PICKETT LLC ON OCTOBER 18, 2019.
5. STREAMS LAYER FROM SHAPE FILES RECEIVED FROM NORMANDEAU ASSOCIATES DATED MAY 3, 2019 AND GEOSYNTEC CONSULTANTS ON JULY 25, 2019.
6. PHASE 14 PIEZOMETER LOCATIONS SURVEYED BY BOYTON & PICKETT AND PROVIDED ON 25 SEPTEMBER 2017 ("SURVEY INFORMATION"), OCTOBER 2018 ("WM MW CROSSROADS PIEZOMETER LOCATION OCT. 2018), 17 APRIL 2019 ("WM MW PHASE 14 PZ GB MW LOCATIONS 04.17.2019").
7. APPROXIMATE LEACHATE COLLECTION SUMP LOCATIONS PROVIDED BY GEOSYNTEC CONSULTANTS ON JULY 25, 2019.
8. THE BENCHMARK IS LOCATED IN AN ARIEL TARGET (PK IN ASPHALT). THIS BENCHMARK WAS ESTABLISHED IN THE STATE PLANE MAINE WEST COORDINATE SYSTEM (NAD83(2011) HORIZONTAL DATUM AND NAVD88 VERTICAL DATUM (U.S. SURVEY FEET). NORTHING: 684575.399, EASTING: 3037326.000, ELEVATION: 267.630. PERMANENT BENCHMARK LOCATION AND ELEVATION PROVIDED BY BOYNTON & PICKETT ON JULY 23, 2019.

0 400 800
FEET

CLIENT
WASTE MANAGEMENT DISPOSAL SERVICES OF MAINE

PROJECT
SUPPLEMENTAL PHASE 14 GEOLOGIC AND HYDROLOGIC REPORT
NORRIDGEWOCK, MAINE

CONSULTANT

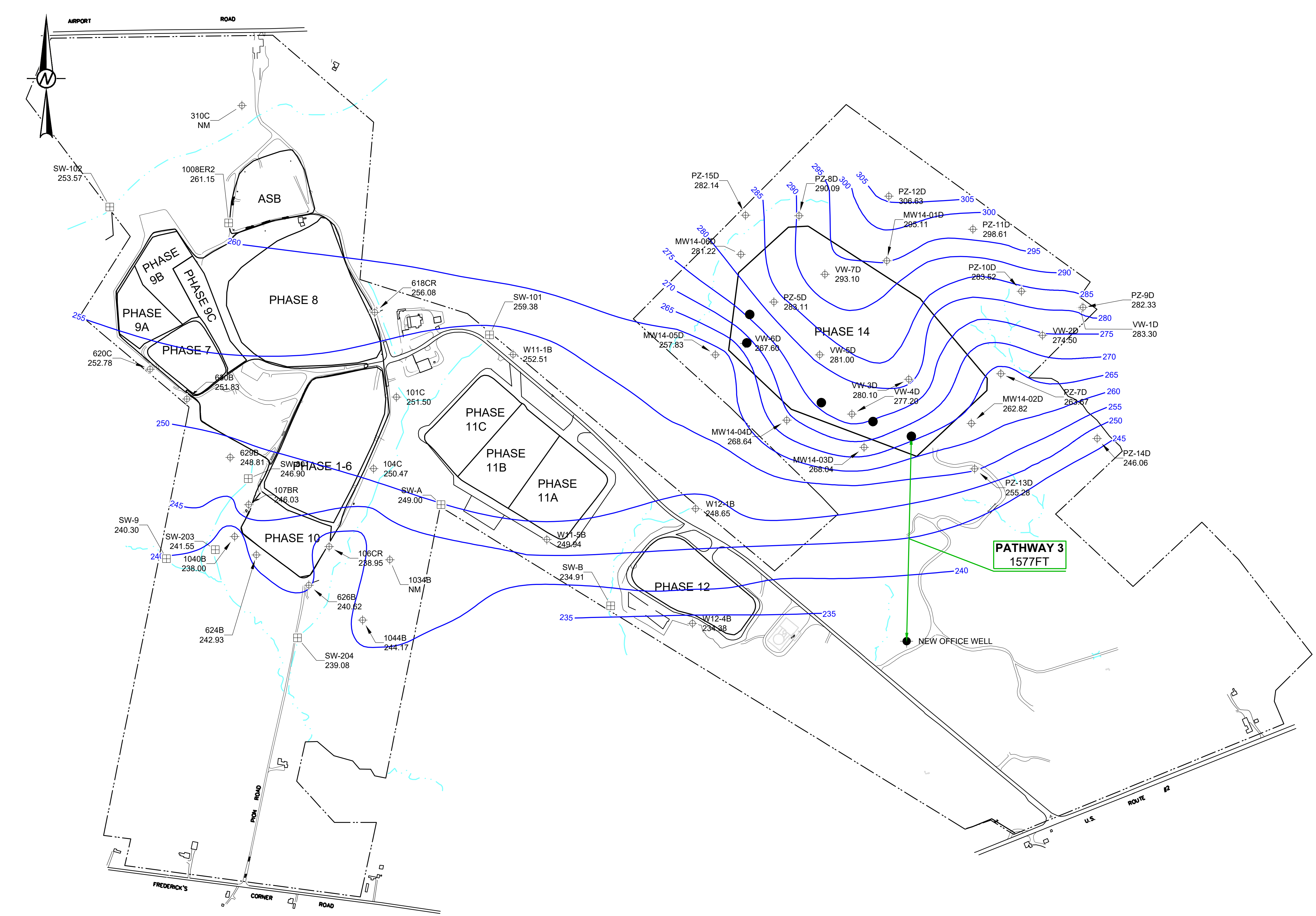
GOLDER

YYYY-MM-DD	2019-09-27
DESIGNED	RWC
PREPARED	AAZ
REVIEWED	BDL
APPROVED	APTM

TITLE
TIME OF TRAVEL PATHWAYS 1 AND 2

PROJECT NO.	CONTROL	REV.	FIGURE
19119078	500	0	4-1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- FACILITY SITE BOUNDARY
- STREAM
- ROAD
- 280 TILL POTENTIOMETRIC CONTOUR (FT-MSL)
- LEACHATE COLLECTION SUMP LOCATION
- APPROXIMATE LOCATION OF NEW OFFICE WELL
- BUILDING
- MONITORING WELL/ PIEZOMETER LOCATION
- POTENTIAL PATHWAY FOR TIME-OF-TRAVEL ANALYSIS

FIGURE NARRATIVE:

THIS FIGURE DEPICTS THE GROUNDWATER ELEVATION AS MEASURED IN PIEZOMETERS, GROUNDWATER MONITORING WELLS AND SURFACE WATER, AND IS INTENDED TO REPRESENT THE APPROXIMATE ELEVATION OF THE TILL POTENTIOMETRIC SURFACE. THE POSTED DATA WERE CALCULATED FROM DEPTH TO WATER MEASUREMENTS MADE BY KAHTAHDIN ON APRIL 26, 2019 DURING THE GROUNDWATER MONTORIN PROGRAM. PHASE 14 GROUNDWATER ELEVATIONS WERE COLLECTED BY GOLDER ASSOCIATES ON MAY 2, 2019. THE DIRECTION OF HORIZONTAL GROUNDWATER FLOW CAN BE GENERALLY INTERPRETED AS BEING PERPENDICULAR TO THE GROUNDWATER ELEVATION CONTOURS.

GOLDER INFERRED THE ELEVATION CONTOURS BASED ON THE DATA ILLUSTRATED. THE ACTUAL ELEVATION OF THE GROUNDWATER SURFACE IS LIKELY MORE HETEROGENEOUS THAN SHOWN AND ACTUAL CONDITIONS WILL VARY. THE DEPTH TO GROUNDWATER IS KNOWN TO VARY WITH TIME.

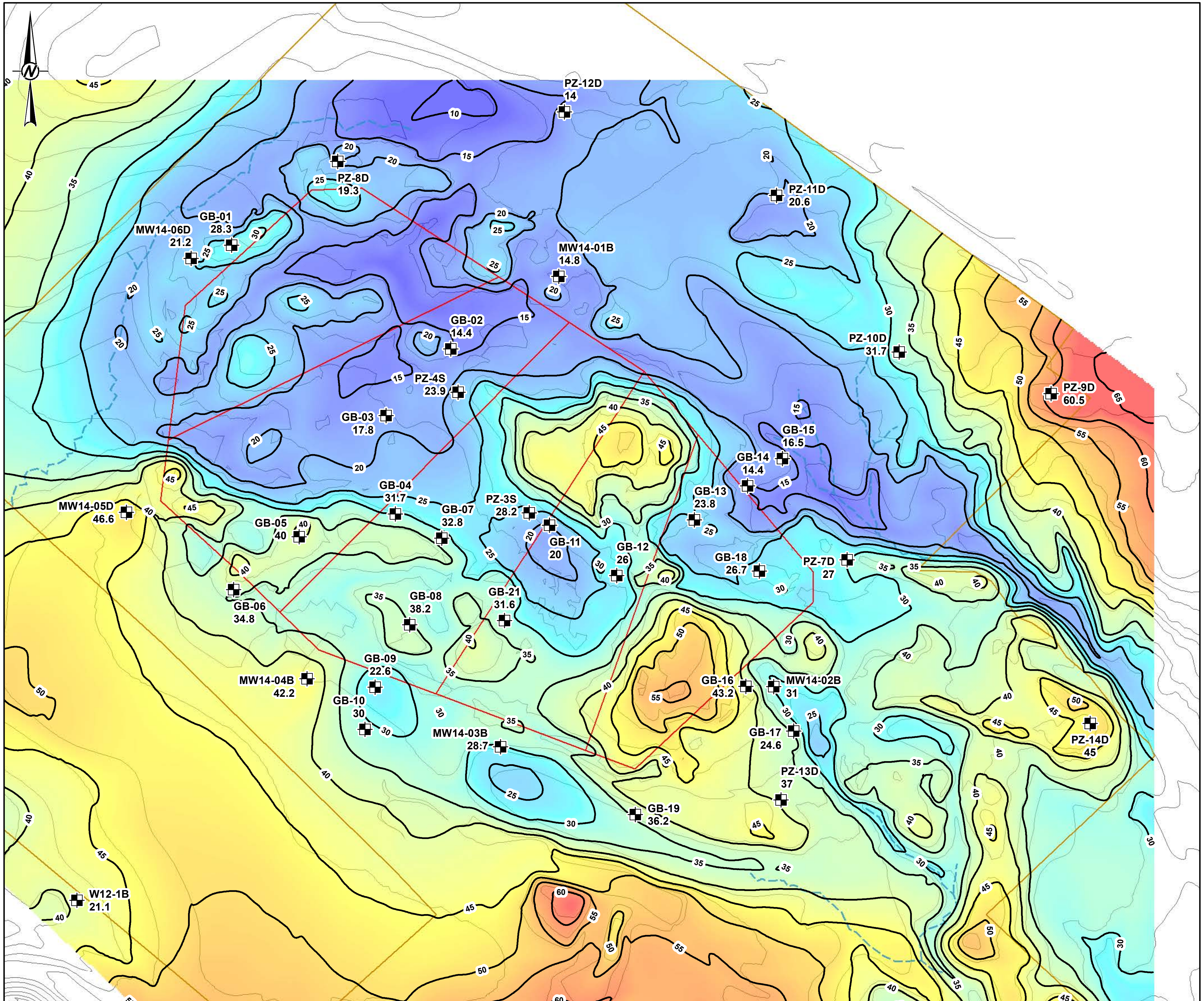
REFERENCE(S)

1. BASE PLAN PREPARED FROM PLANS ENTITLED "TOPOGRAPHIC PLAN SHOWING WETLANDS DELINEATION, NORRIDGEWOCK FACILITY, SHEETS 1-13," PREPARED BY AERIAL SURVEY & PHOTO, INC. OF NORRIDGEWOCK, MAINE; PHOTO DATED 10/20/94 WITH GROUND CONTROL PROPERTY LINE INFORMATION, AND MAPPING UPDATE PROVIDED BY SACKETT & BRAKE SURVEY, INC. OF SKOWHEGAN, MAINE IN 1995; ORIGINAL SCALE: 1" = 100'.
2. VERTICAL DATUM IS USGS MEAN SEA LEVEL, HORIZONTAL DATUM IS NAD83 STATEPLANE MAINE WEST FIPS 1802 FEET.
3. PROPOSED PHASE 14 WASTE BOUNDARY PROVIDED BY GEOSYNTEC CONSULTANTS ON JULY 23, 2019.
4. FACILITY SITE BOUNDARY PROVIDED BY GEOSYNTEC CONSULTANTS ON JULY 25, 2019 AS UPDATED WITH DATA PROVIDED BY BOYNTON & PICKETT LLC ON OCTOBER 18, 2019.
5. STREAMS LAYER FROM SHAPE FILES RECEIVED FROM NORMANDEAU ASSOCIATES DATED MAY 3, 2019 AND GEOSYNTEC CONSULTANTS ON JULY 25, 2019.
6. PHASE 14 PIEZOMETER LOCATIONS SURVEYED BY BOYTON & PICKETT AND PROVIDED ON 25 SEPTEMBER 2017 ("SURVEY INFORMATION"), OCTOBER 2018 ("WM MW CROSSROADS PIEZOMETER LOCATION OCT. 2018), 17 APRIL 2019 ("WM MW PHASE 14 PZ GB MW LOCATIONS 04.17.2019").

0 400 800
FEET

CLIENT	WASTE MANAGEMENT DISPOSAL SERVICES OF MAINE
PROJECT	SUPPLEMENTAL PHASE 14 GEOLOGIC AND HYDROLOGIC REPORT NORRIDGEWOCK, MAINE
CONSULTANT	GOLDER
YYYY-MM-DD	2019-06-18
DESIGNED	RWC
PREPARED	AAZ
REVIEWED	BDL
APPROVED	APTM
TITLE	TIME OF TRAVEL PATHWAY 3
PROJECT NO.	19119078
CONTROL	500
REV.	0
FIGURE	4-2

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- Soil Boring Location
- Interpreted Total Overburden Thickness Contour (feet)
- Proposed Phase 14 Waste Boundary
- Facility Site Boundary
- Ground Surface Topographic Contour
- Stream

0 300 600
Feet

NOTE(S)

THIS FIGURE ILLUSTRATES THE INTERPRETED TOTAL OVERBURDEN THICKNESS AND WAS PREPARED BY SUBTRACTING INTERPRETED TOP OF BEDROCK ELEVATIONS (GOLDER 2019, FIGURE 9) FROM THE GROUND SURFACE ELEVATION (SEE REF. 6). THE GROUND SURFACE ELEVATION HAS CHANGED WITH TIME DUE TO SITE ACTIVITIES. THE ACTUAL OVERBURDEN THICKNESS MAY BE MORE HETEROGENOUS THAN ILLUSTRATED AND CONTOURS BETWEEN BOREHOLES ARE INFERRED. ACTUAL CONDITIONS WILL VARY FROM THOSE ILLUSTRATED.

REFERENCE(S)

1. COORDINATE SYSTEM: NAD 1983 STATEPLANE MAINE WEST FIPS 1802 FEET
2. PROPOSED PHASE 14 WASTE BOUNDARY PROVIDED BY GEOSYNTEC CONSULTANTS ON JULY 23, 2019.
3. FACILITY SITE BOUNDARY PROVIDED BY GEOSYNTEC CONSULTANTS ON JULY 25, 2019 AND UPDATED WITH DATA PROVIDED BY BOYNTON & PICKETT LLC ON OCTOBER 18, 2019.
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CLIENT
WASTE MANAGEMENT DISPOSAL SERVICES OF MAINE, CROSSROADS LANDFILL, NORRIDGEWOCK, ME

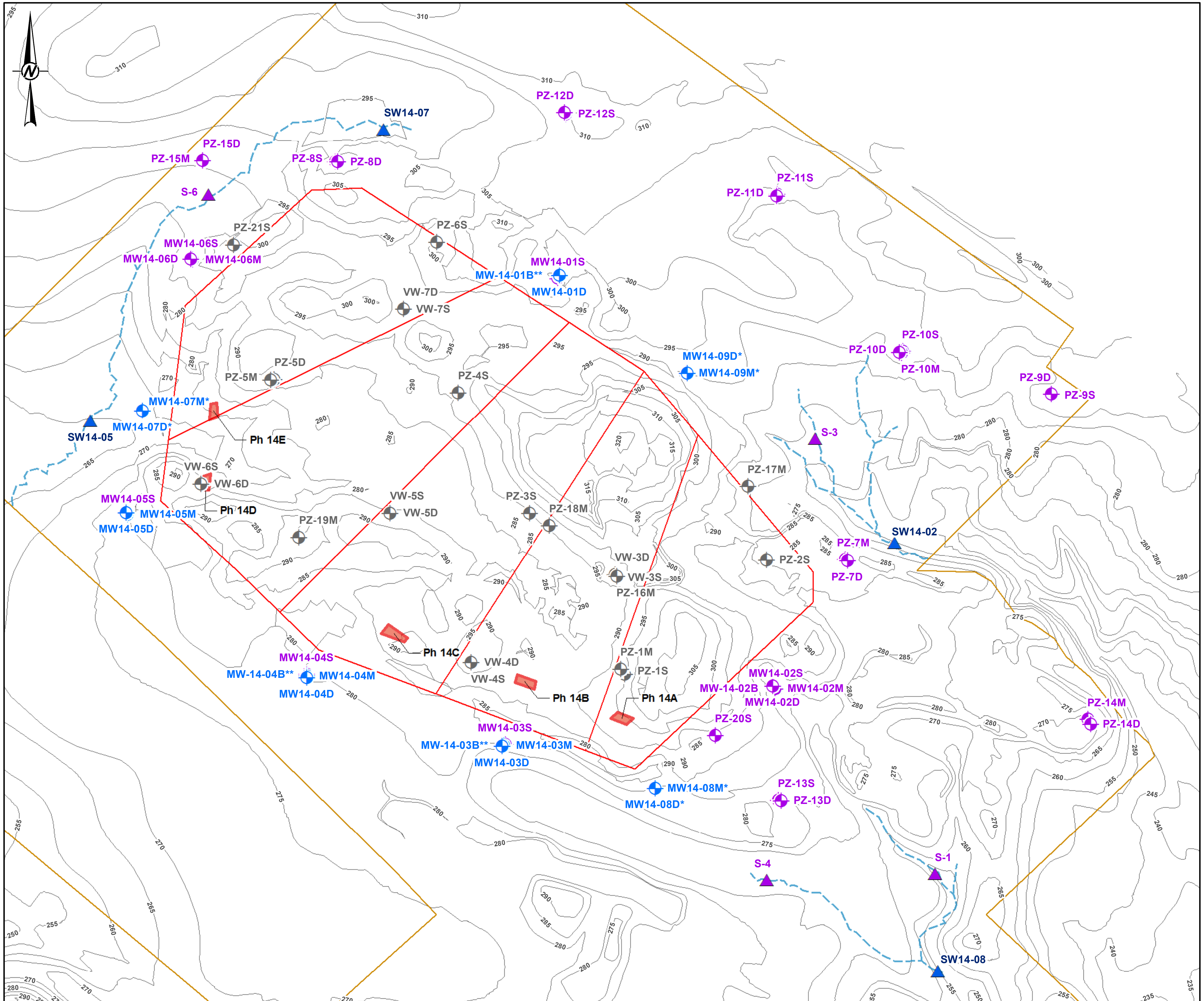
PROJECT
SUPPLEMENTAL PHASE 14 GEOLOGIC AND HYDROLOGIC REPORT
NORRIDGEWOCK, MAINE

TITLE
OVERBURDEN ISOPACH MAP

CONSULTANT
GOLDER

YYYY-MM-DD	7/27/2020
DESIGNED	JMB
PREPARED	SHL
REVIEWED	BDL
APPROVED	APTM

PROJECT NO.	CONTROL	REV.	FIGURE
20142671	-	-	5-1



LEGEND

- Proposed Groundwater Quality Monitoring Location
- Proposed Surface Water Quality Sampling Location
- Piezometer Maintained for Water Level Monitoring Location
- Proposed Stream Gauge Maintained for Water Level Monitoring
- Piezometer to be decommissioned
- Approximate Leachate Collection Sump Location
- Proposed 14 Waste Boundary
- Facility Site Boundary
- Ground Surface Topographic Contour
- Stream

0 300 600
Feet

NOTE(S)

1. CONTINUOUS SOIL SAMPLES COLLECTED AT THE DEEPEST SOIL BORING OF EACH PIEZOMETER CLUSTER.
2. * INDICATES INSTALLATION IS REQUIRED.
3. **INDICATES A BEDROCK WELL THAT WILL BE INCLUDED IN THE SITE CHARACTERIZATION WATER QUALITY PROGRAM.

REFERENCE(S)

1. COORDINATE SYSTEM: NAD 1983 STATEPLANE MAINE WEST FIPS 1802 FEET
2. PROPOSED PHASE 14 WASTE BOUNDARY PROVIDED BY GEOSYNTEC CONSULTANTS ON JULY 23, 2019.
3. FACILITY SITE BOUNDARY PROVIDED BY GEOSYNTEC CONSULTANTS ON JULY 25, 2019 AND UPDATED WITH DATA PROVIDED BY BOYNTON & PICKETT LLC ON OCTOBER 18, 2019.
4. STREAMS LAYER FROM SHAPEFILE RECEIVED FROM NORMANDEAU ENVIRONMENTAL CONSULTANTS (NORMANDEAU) DATED MAY 3, 2019 AND GEOSYNTEC CONSULTANTS ON JULY 25, 2019.
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7. APPROXIMATE LEACHATE COLLECTION SUMP LOCATIONS PROVIDED BY GEOSYNTEC CONSULTANTS ON JULY 25, 2019.

CLIENT
WASTE MANAGEMENT DISPOSAL SERVICES OF MAINE, CROSSROADS LANDFILL, NORRIDGEWOCK, ME

PROJECT
SUPPLEMENTAL PHASE 14 GEOLOGIC AND HYDROLOGIC REPORT
NORRIDGEWOCK, MAINE

TITLE
PROPOSED SITE MONITORING LOCATIONS

CONSULTANT
GOLDER

YYYY-MM-DD	7/28/2020
DESIGNED	BDL
PREPARED	SHL
REVIEWED	BDL
APPROVED	APTM

PROJECT NO.	CONTROL	REV.	FIGURE
20142671	-	-	6-1

APPENDIX A

Table Summarizing Comments and Responses

Comment #	MEDEP Comment – April 15,2020	WMDSM Response – June 1, 2020	MEDEP Follow-on Comment – June 22, 2020	WMDSM Response – July 27, 2020
General Comment	*Overall, they have done a good job investigating this site, installing a sufficient number of borings and wells and supplying the information required in the rules. I think that the points where we have disagreements can probably be resolved by a conducting a pumping test in the area of Phase 14 with an emphasis on assessing the interaction of the till groundwater and the clay groundwater.* *To make it easier for us to assess that comments have been adequately addressed, I am requesting a red-line strike-out version of Volume III when they respond to these comments.*	Please see WMDSM Response to Comment 12a specific to Volume I Round 2, filed on May 29, 2020 for proposed alternative to providing a red-line strike out of Volume III of the Application. As indicated below, WMDSM has agreed to conduct a groundwater pumping test and perform additional data evaluations. This information will be submitted to the MEDEP in a supplementary report to Volume III of the October 2019 Phase 14 solid waste permit application after completion of the field activities and additional data evaluation.	*It is my understanding that unlike DOD or Superfund sites, landfill applications and licensing do not require final versions or revised applications, so I withdraw my request for a red-line strike out version.*	None required
1	*2.0 Site Specific Investigations. Please provide installation information regarding the VW (vibrating wire) and CPT (piezocone penetrating tests). Were the VW piezometers installed using typical drilling techniques? Are there soil boring logs? Please indicate where the data from the VW and CPT are located. Please include a description of both methods in this document.*	Vibrating wire (VW) and cone penetrometer test (CPT) information are provided in the Geotechnical Site Assessment Report (Appendix IV(b) of Volume IV: Landfill Engineering Report). Details on the procedures used to complete the CPT investigations and to install the VWs are presented in Section 3.1.1 and 3.1.2 of Appendix IV(b), respectively. The subcontractor (ConeTec) report that presents the results of the CPT testing and VW piezometer installation is included as Appendix A of Appendix IV(b). A CPT boring was advanced prior to installing each VW piezometer to establish the stratigraphy at the location. The VW piezometers were then installed adjacent to the CPT borings with the CPT rig. Table 1 of Appendix A of Appendix IV(b) summarizes the stratigraphic information obtained at each CPT. The table below correlates each VW-S/D pair with the co-located CPT. At each location, the shallow “S” VW piezometer monitors the sand unit, and the “D” VW piezometer monitors the till. [Table Omitted]	*Response Acceptable*	None required
2	*2.0 last bullet. Please include “(VW)” after “vibrating wire”.*	See response to the General Comment regarding the provision of a redline/strikeout document.	*Response Acceptable*	None required
3	*2.1.1 Soil and Bedrock Borings,*			
	a. Second paragraph. “Golder advanced a soil boring at each piezometer/monitoring well location…” Please include the boring logs for the VW locations.	See response to Comment 1 above. The VWs are collocated with CPTs, which provide lithologic information.	*Response Acceptable*	None required
	b. Third paragraph. Please provide the boring logs and well construction diagrams for PZ-1M, PZ-5M, PZ-16M, PZ-17M, PZ-18M, and PZ-19M which are missing from Appendix A.	Piezometers PZ-1M, PZ-5M, PZ-16M, PZ-17M, PZ-18M, and PZ-19M were installed during the geotechnical drilling effort. Boring logs and well construction information are provided in Appendix B of the Geotechnical Site Assessment Report (Appendix IV(b) of Volume IV: Engineering Report). Well construction information is provided on each boring log. The following table identifies the boring associated with each piezometer: [Table Omitted]	*Response Acceptable*	None required
	c. We note that some of the soil borings (GB) are included in the Volume IV, the Engineering Report, but because these logs are soil descriptions which are used in the generation of the geologic maps in this volume, perhaps they should be included in this volume. Either put all the soil description logs together to make it easier	The boring logs (GB) provided in the Engineering Report are located in Appendix B of the Geotechnical Site Assessment Report (Appendix IV(b) of Volume IV: Engineering Report).	*Response Acceptable*	None required

GOLDER

Comment #	*MEDEP Comment – April 15,2020*	WMDSM Response – June 1, 2020	MEDEP Follow-on Comment – June 22, 2020	WMDSM Response – July 27, 2020
	to find them or provide a reference to where they can be found in this volume.			
	d. If photos were taken of the soil or rock cores, please provide them in an appendix.	No photographs of intact/undisturbed soil samples were taken. Photographs of some soil samples were taken during the soil field classification process of the geotechnical investigation completed in May 2019 (reference the Geotechnical Site Assessment Report (Appendix IV(b) of Volume IV: Landfill Engineering Report). The sample classification process involved breaking the split spoon sampler apart, cutting the soil sample in half, removing sections of soil from the split spoon for inspection and pocket penetrometer and/or torvane testing to assess properties. The photographs reflect the condition of the samples after the field testing/classification process, and are not representative of in-situ or undisturbed conditions. Photographs of rock cores from the four bedrock locations (MW14-01B, MW14-02B, MW14-03B, MW14-04B) were taken during the post processing activities in the office. The soil boring and rock core photographs are provided on a USB flash drive included with the hard copy transmittals of this document.	*Response Acceptable*	None Required
4	*2.1.3 Piezometer and Monitoring Well Installation.*			
	a. Does the description of piezometer installation also apply to the VW piezometers? Please describe the VW installation if it is different.	Please see response to Comment 1. The installation of VW piezometers is discussed in the Geotechnical Site Assessment Report (Appendix IV(b) of Volume IV: Engineering Report).	*Response Acceptable*	None required
	b. They need to demonstrate that, the potentiometric heads measured in the piezometers with the 5-foot or 10-foot screens (which are sometimes across an entire unit), are comparable to heads measured with no greater than 2-foot screens. Piezometers are devices that measure the pressure, or the piezometric head, at a specific point in an aquifer and typically have no screen or very short screens. Ch. 405 (5)(A)(8) states that screens for piezometers must not exceed 2 feet and technical justification for the screen length must be provided if they do. In this investigation, the screen lengths for most of the piezometers are 5 feet in length, with only one having a screen of 2 feet, so piezometers have not been constructed according to Solid Waste Rules. The piezometers were constructed with 1-inch diameter PVC, so they don't meet the 2-inch diameter requirement of monitoring wells either.	As indicated, most of the installations identified as piezometers were constructed with 5-foot long wells screens due to site-specific conditions and to meet the specific investigation objectives. Specifically, during the early stages of site investigations, the primary objective of piezometer installation was to identify the location of the water table. Longer wells screens (i.e., 5 feet) were used in an attempt to set the well screen at depth that intersected the water table, which is standard practice for identifying the water table. Use of 2-foot well screens for this purpose is impracticable given seasonal fluctuations, which is 4 or more feet at some locations. Even with 5-foot wells screens, a number of the piezometers go dry seasonally. Ch. 405 (5)(A)(8) recognizes the unique nature of water table observation wells indicating that "screens for water table observation wells and monitoring wells must not exceed 10 feet in length". Later in the investigation process, the piezometer installations served a dual purpose: water level measurements to develop potentiometric surfaces in the various hydrostratigraphic units, and slug testing to provide estimates of horizontal hydraulic conductivity. This information was used to support the time of travel calculations. The longer well screens serve to better characterize the horizontal hydraulic conductivity of the individual units. Use of very short wells screens may not intersect coarser-grained, more permeable zones,	*We will not require further response, but in the future, we will follow the rules for piezometers more closely. Piezometers should be used primarily to measure heads. If identification of the water table is desired, then water table wells should be installed*	None required

Comment #	*MEDEP Comment – April 15,2020*	WMDSM Response – June 1, 2020	MEDEP Follow-on Comment – June 22, 2020	WMDSM Response – July 27, 2020
		thereby biasing the slug testing results. At the same time, vertical gradients in more permeable units are negligible over the scale of feet, so the use of 5-foot well screens does not compromise the water level measurements. WMDSM installed the piezometers in clay units as specifically recommended by MEDEP, who also requested that slug tests be performed in the clay (MEDEP February 26, 2018 Memorandum). Anticipating the very low hydraulic conductivity of the clay, Golder installed 5-foot wells screens to again ensure that a larger, more representative thickness of the clay was tested. While vertical head changes in very low permeability units can be high, it is Golder's opinion that the heads obtained from the clay piezometers provide adequate and representative data for evaluating the changes in head across the clay to the underlying till. Please see Response to Comment 16 below regarding vertical gradients. At the request of MEDEP, WMDSM submitted a Work Plan describing the approach and methods to be used for the geologic and hydrogeologic investigations for Phase 14 (Golder, February 20, 2018). The Work Plan specified 5-foot long well screens. MEDEP approved the Work Plan in letter dated March 12, 2018. Ch. 405 (5)(A)(8) allows for screen lengths other than specified in the if "approved by the Department based on site-specific characteristics". Golder understood MEDEP's approval of the Work Plan, which specified the piezometer screen lengths, to be approval of the screen lengths. The six piezometers (PZ-1S, PZ-2S, PZ-3S, PZ-4S, PZ-5D, and PZ-6S) installed in 2017 as part of the initial PIR investigation were installed with 1-inch diameter PVC. These wells were installed within the Phase 14 boundary and were never considered to be candidates for water quality monitoring wells as part of the WQMP. The 2-inch diameter requirement therefore does not apply to these piezometers and 1-inch diameter PVC is appropriate to assess groundwater levels. The remaining 48 standpipe piezometers and monitoring wells installed to assess Phase 14 were constructed with 2-inch diameter PVC.		
	c. Please provide a justification for the monitoring well screen lengths. Ch. 405 (5)(A)(8) states that screens for monitoring wells must not exceed 10 feet in length, yet four of the bedrock wells have 20-foot screens.	The four bedrock wells are the only wells with screens greater than 10 feet. Golder constructed the bedrock wells with 20-foot long wells screens for the reasons described below. The bedrock wells were designed with 20-foot long wells screens based on site specific characteristics to ensure that: ▪ the screened intervals intersected enough fractures such that the wells produce sufficient water for slug testing and water quality monitoring	*It is unclear what site-specific conditions Golder referring to. They did not know the hydraulic conductivity until after the screens were installed and it doesn't justify the other two wells. They have not presented any site-specific characteristics such as fracture or geophysical evidence to support the need for 20- foot screens. There are no notes in the well logs that indicate a water-bearing fracture was encountered and well recovery rates are not presented. It is unclear how the locations for the screens were identified. Golder did not present sufficient site-specific characteristics to warrant the installation of 20-foot screens. We recommend abandoning these bedrock wells after the pumping test is completed.*	See Response to Comment 29

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		▪ the potentiometric surface is representative of the shallow bedrock formation and not just isolated fractures The necessity of the longer well screens is highlighted by the slug testing results for the bedrock wells. Two of the four wells have slug testing results in the low to mid-1.0E10-6 cm/sec range. If these wells were constructed with shorter wells screens, they likely would not be capable of producing sufficient water for sampling. It is Golder's opinion that the construction of the bedrock wells is appropriate for the site-specific conditions, meets the needs objectives of the installations, and is consistent with Ch. 405 (5)(A)(8), which allows for lengths other than 10 feet to meet site-specific needs.	*See Comment 29 for further discussion of bedrock wells. No response is necessary.*	
	d. Please provide a justification for screening monitoring wells across unit boundaries. Ch. 405 (5)(A)(9) states that monitoring wells must not be screened across hydrogeologic unit boundaries, yet six of the wells in the sand unit are screened 0.2 to 1.6 feet into the clay.	Of the six locations identified by MEDEP, five are piezometers that were installed as part of the very initial site investigations to support the PIR (PZ-1S, PZ-2S, PZ-3A, PZ-4S, and PZ-6S) and are not proposed to serve as monitoring wells. As discussed in Response to Comment 4b, one of the PIR objectives was to identify the location of the water table. As described in the Geologic and Hydrogeologic Assessment report (Volume III), the saturated thickness of the silty fine sand is very limited in most areas, and in some locations it is dry. The piezometers with screened intervals that straddle the sand/clay interface were installed to ensure that the water table was identified in areas where the phreatic groundwater level is only slightly above the top of the clay (i.e., where there is very little phreatic groundwater above the clay). These piezometers are all located within the footprint of proposed Phase 14 and will be decommissioned prior to landfill construction. The only monitoring well with a screen that straddles the sand/clay interface is MW14-01S, a very shallow monitoring well located on the north side of Phase 14. In the field, during boring advancement and well installation, the depth to clay was interpreted to be 4 feet below ground surface (ft bgs). The well was completed with short screened interval of 2 to 4 feet. Later, during report preparation and review of the boring log information, the interpretation of the depth to bottom of sand was adjusted to 3 ft bgs based on blow counts. MW14-01S is not proposed as a water quality monitoring well. In summary, none of the wells/piezometers with well screens that straddle sand/clay interface are proposed for water quality monitoring and only MW14-01S is proposed for long-term use as water level monitoring location. The remaining standpipe piezometers will be decommissioned.	*Response Acceptable*	None required

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5	*2.1.6 Slug Testing. Please identify the software used to assess the slug tests.*	The slug tests were assessed using Microsoft Excel-based spreadsheets.	*Response Acceptable*	None required
6	*3.3.5 Presumpscot Formation. Please provide references to the sources of the information presented in this section.*	The information in Section 3.3.5 on regional geology and specifically the Presumpscot Clay is originally sourced from hydrogeological reports supporting prior landfill expansion applications completed by Robert G. Gerber, Inc. (1987, 1992, 1996). The extent to which the regional description of the Presumpscot Clay differs from that observed by Golder during the Phase 14 field investigations and during support of WMDSM activities at the Crossroads Landfill are described in Section 4.2 of Volume III.	*Response Acceptable*	None required
7	*4.0 Site Geology. Please describe the contouring program or method used to generate the contour maps of unit thicknesses and unit top elevations.*	Contours were generated in a multistep process. The initial surfaces were generated from 3D geologic modelling of field collected data using Seequent's Leapfrog™ software. Leapfrog™ uses radial basis functions (RBFs) to approximate a specific type of kriging called global kriging. Like Kriging, RBF interpolation models the known data and can provide an estimate for any unknown point. The initial unit thicknesses and unit top elevation contours were extracted from these RBF interpolated surfaces and brought into Esri's ArcGIS Desktop 10.7.1 for further analysis and professional review. During review, Golder adjusted contours based on the data to ensure consistency with observed field conditions and site topography. For example, in some instances Golder modified the RBF interpolated contours where the RBF contours were above the ground surface elevation and/or where thickness contours were inconsistent with topography.	*Response Acceptable*	None Required
8	*4.1, Surficial Deposits, second bullet. PZ-4S is listed in Table 1 and Table 3a as being in the fine silty sand unit, but the well logs and Figure 15 indicate that it is in the stiff upper clay unit. Please correct these tables.*	As discussed in the response to Comment 4d, the PZ-4S well screen straddles the silty fine sand/clay interface. The top-of-screen elevation is 289.2 feet (in the silty fine sand) and the top of stiff clay elevation is 288.7 feet. The average groundwater elevation at PZ-4S is 290.7 feet. The water level measured in PZ-4, when above the top of clay is considered representative of water levels in the fine silty sand. Therefore, Table 1 and Table 3a are correct.	*Response Acceptable*	None required
9	*4.2.2 Soft Lower Clay Facies. Please describe the differences between the two types of clay. We note that the laboratory test results for the soft lower clay facies are essentially the same as those for the stiff upper clay facies for all the parameters. The lack of any physical difference between the two facies makes us suspect that the field-observed difference in stiffness can be attributed to greater water content in the soft lower clay. This is supported by the lack of the soft lower clay facies at the higher points. If this difference between the stiff clay and the soft clay is attributed to their moisture content, will dewatering the area around the landfill result in converting some soft clay to stiff clay? Could this information impact design?*	Golder and Geosyntec do not agree with DEP's statement that "*the laboratory test results for the soft lower clay facies are essentially the same as those for the stiff upper clay facies for all the parameters".* It is true that some of the soil-index parameters such as grain size, Liquid Limit (LL) and Plasticity Index (PI) are similar; this is to be expected because the upper and lower facies originate from the same depositional process. However, other parameters do differ, such as: ▪ Natural water content (wn): the wn of the upper stiff clay (approximately 24% to 29%) is lower than the wn of the lower soft clay (approximately 28% to 35%). ▪ Liquidity Index (LI= [wn-PL]/PI): the LI of the upper stiff clay (approximately 0.3 to 0.9) is lower than the LI of the lower soft clay (approximately 0.9 to	*Response Acceptable*	None required

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		1.4). The LI provides an indication of plastic behavior the clay during loading (e.g., the behavior will be plastic when the LI is greater than 0 but less than 1 and will be more deformably plastic when LI is greater than 1). ▪ Preconsolidation pressure (σ'_p): σ'_p is a measure of the maximum past pressure or stress experienced by the soil. The clay in Phase 14 has measured σ'_p values greater than the existing stress state which means it is overconsolidated. The overconsolidation is likely from prior mechanical loading that has been subsequently removed (e.g., load-unload sequence from possible movement of alluvium and wind-blown colluvial sand, as discussed by Gerber, 1996) and/or prehistoric changes in water content due to fluctuating groundwater levels. The upper stiff clay has an average measured σ'_p of 15,940 psf. The lower soft clay has an average measured σ'_p of 9,400 psf. These data support the distinction of the upper facies as being stiff and the lower clay facies as being soft. In summary, it is Golder's and Geosyntec's opinion that the difference in field-observed stiffness between the upper and lower clays is the result of different stress histories. Over consolidation occurs closer to the ground surface where in situ stresses are the lowest and the effects of mechanical loading/unloading and/or prehistoric changes in water content due to groundwater fluctuations are more likely. Differences in the present-day water content of the two units are coincidental to differences in field-observed stiffness rather than causative (i.e., differences in behavior is not attributed to the difference in water content). MEDEP asks: "*If this difference between the stiff clay and the soft clay is attributed to their moisture content, will dewatering the area around the landfill result in converting some soft clay to stiff clay?*" and "*Could this information impact design*?" As stated above, the difference between the stiff upper facies and the lower soft facies is not caused by the difference in water content. Loading from placing waste in the landfill will consolidate both the upper stiff and lower soft clay resulting in increased soil density, strength, and reduced permeability. Although groundwater levels beneath the landfill might decrease during landfill development due to reduced local recharge and removal of the fine silty sand, and the effective water content of the clay may be reduced due to consolidation from the landfill loading, these changes will not "convert" the soft clay facies to the stiff clay facies. Changes in the clay properties resulting from consolidation were accounted for in the landfill design (e.g. slope stability analyses) presented in Volume IV.		

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10	*4.3 Glacial Till, last paragraph, Figure 8b. The till thickness does not equal the difference between the top of till surface and the top of bedrock at some locations, such as MW14-01B, MW14-04B, and MW14-05D, so please check the thickness values used to create the isopach maps and correct the maps if needed.*	Golder has reviewed the isopach thickness and surface contour maps. The till thickness listed at MW14-01B is in error. The till thickness at MW14-04B and MW14-05D are correct. An updated Glacial Till Isopach map (Figure 8b) is included as Attachment A to this memorandum.	*Thank you for correcting the MW14-01B data on Figure 8b, but we are still confused about MW14-05D, which shows till from 26 ft to 46.6 ft on the well log. This would be a till thickness of 20.6 ft, but Figure 8b shows a thickness of 22.2 ft. Are we misinterpreting the logs?*	The sandy clay noted on the boring log from a depth of 24.4 to 26 feet is interpreted as glacial till based on blow counts and the description. The log for MW14-05D has been updated accordingly, and is provided as Appendix C of the Supplemental Geologic and Hydrogeologic Report
11	*4.5 Geologic Cross-Sections*			
	a. Third bullet. "The thickness of the glacial till is variable, but generally thickens to the south." We don't completely concur. Based on Figure 8b, the thickness of the glacial till is quite variable and difficult to characterize, but it appears to thicken to the southwest and the northeast as well as to the south. Also, please describe the variability in numbers. We suggest changing this bullet to read, "The thickness of the glacial till is variable, ranging from 0.4 to 24.5 feet, and appears to thicken to the south, southwest and east."	The referenced statement was made in the context of the geologic cross-sections, the subject of Section 4.5. MEDEP's suggested language is correct in the context of the entire site and consistent with the description of the till thickness at the end of Section 4.3. Golder agrees that the thickness of the glacial till is variable, ranging from 0.4 to 24.5 feet, and appears to thicken to the south, southwest and east.	*Response Acceptable*	None required
	b. Fourth bullet (regarding the lower clay facies). Please describe the variability.	The thickness of the lower clay facies is presented on Figure 7b, Isopach Map of Soft Lower Clay Facies of Presumpscot Formation. The thickness ranges from 0 ft to 22.9 (PZ-14) across the study area, and from 0 to 17.2 feet within the Phase 14 footprint.	*Response Acceptable*	None required
	c. Fifth bullet (regarding the stiff upper clay facies). Please describe the thickness.	The thickness of the upper clay facies is presented on Figure 6b, Isopach Map of Stiff Upper Clay Facies of Presumpscot Formation. The thickness ranges from 1.1ft (PZ-12D) to 12.6 ft (GB-10) across the study area, and from slightly less than 2 ft at the very northern end of Phase 14E to 11.2 ft (PZ-1S) within the Phase 14 boundary.	*Response Acceptable*	None required
12	*5.0 Site Hydrogeology*			
	a. First bullet. Please present the evidence that the water in the silty fine sand is perched.	Water within the silty fine sand was characterized as being perched because the sand is underlain by the much lower permeability Presumpscot Clays which isolate phreatic water in the sand over the clay from groundwater in the till and bedrock groundwater under the clay. The term perched is also applicable because areas of sand saturation are disconnected and in some cases are only seasonally saturated. The degree of hydraulic isolation is evidenced by the very high gradients across the clay, sometimes greater than 1.0 (see response to Comment 16, below).	*MEDEP affirms that the water in the sand could be perched, but in order to confirm that it is perched, one needs evidence of unsaturated soil under the saturated soil. The high hydraulic gradients across the clay indicate that this is an aquitard but does not confirm that the water above it is perched. No response necessary.*	Golder acknowledges MEDEP's point but maintains that groundwater within the silty fine sand is characteristic of perched conditions even though unsaturated soil beneath the silty fine sand has not been identified. In the summary of the site conceptual model (CSM) presented in Section 5.2 of the Supplemental Geologic and Hydrogeologic Report the term "perched" is not used.
	b. Second bullet. Please present the evidence that the heads in the till are artesian.	The term "artesian" is used to indicate that the potentiometric level in the till is above the top of the till (top of the "aquifer"). As discussed in the response to Comment 12c below, the groundwater in the till is confined, and the potentiometric surface is above the top of the till, and therefore by definition[1], the heads are described as being artesian.	*MEDEP concurs that the heads in the till are probably artesian. In order to confirm that they are artesian, one needs evidence that the water is under pressure and the overlying unit is confining. In reviewing boring logs from the 1992 investigation, we recently came across several notes that artesian pressure was encountered when transitioning from the clay to the till. This is the type of evidence for artesian conditions in the till that we were asking for. No response necessary.*	None required
	c. Third bullet. Please present the evidence that the till is confined.	Hydrostratigraphic units are commonly defined as being unconfined when the water table defines the top of the hydrostratigraphic unit and confined when the elevation	*MEDEP concurs that the till is probably confined given the presence of an aquitard and the evidence for artesian conditions in the till at other phases at the Crossroads Landfill. No response necessary.*	None required

[1] "Artesian" is defined as pertaining to groundwater under sufficient hydrostatic pressure to rise above the aquifer containing it (Dictionary of Geologic Terms, American Geological Institute, Bates and Jackson,1984)

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		of the potentiometric surface is higher than the physical top of the hydrostratigraphic unit. The till is overlain by the much lower permeability Presumpscot clays, which hydraulically confine the till. The figure presented in Attachment B illustrates the potentiometric level in the till (Figure 13b from Volume III) superimposed on the top of the till (i.e., bottom of clay) surface (Figure 8b from Volume III). Comparison of these two surfaces shows that the potentiometric surface in the till is above the top of the till surface at all locations except one (PZ-7D), indicating that the potentiometric surface in the till is confined beneath the clay.		
	d. Fourth bullet. Please present the evidence that the bedrock and the till are in direct hydraulic communication	Golder did not identify a zone or layer of low permeability between the till and the bedrock that would restrict flow between the two units. Therefore, the till and bedrock are described as being in direct hydraulic communication. The magnitude of the vertical hydraulic gradients (Table 5 of Volume III) measured between the till and bedrock support this characterization. The measured vertical gradients are weak (i.e., equal to or less than 0.2) and variable, ranging from a downward gradient of 0.02 (MW14-03) to an upward gradient of -0.09 (MW14-01). These vertical gradients contrast with the very strong vertical gradients observed between the phreatic surface and the till, which in many cases exceed 0.5 and in one case exceeds 1.0. Strong vertical gradients are characteristic of aquitards and units where the degree of hydraulic communication is weak. Based on the lack of a low permeability layer and the weak vertical gradients between the till and the bedrock, the units are described as being in "direct hydraulic communication".	*Response Acceptable*	None required
13	*5.1.1.2 Phreatic Surface*			
	a. Please clarify the phrase "from northeast to southwest/southeast". Northeast to southwest is an understandable direction, but northeast to southeast is not. We suspect that this phrase is intended to indicate that the direction is variable, that it is northeast to southwest and northwest to southeast.	Golder agrees with MEDEP that the direction of groundwater flow is variable, and dependent on the portion of the Phase 14 footprint being discussed. In general, groundwater from the Phase 14 area flows towards the southwest, south, and southeast across the downgradient side of the Phase 14 boundary.	*Response Acceptable*	None required
	b. Fourth paragraph. MEDEP does not concur that "any phreatic groundwater that discharges to the streams in the area of S-2 originate north of S-2. Although examination of the potentiometric surfaces in Figures 12a and 12c shows that most of the flow comes from the north, there are some flow lines from northwest of S-2 that would pass through the footprint of Phase 14 on the way to S-2. See diagram below.	Golder acknowledges that the potentiometric surface presented in Figure 12a suggests that some localized groundwater flow from the south may flow towards to the streams near S-2. However, the extent to which this flow line extends beneath Phase 14 is uncertain as the overall horizontal hydraulic gradients beneath the northern portion of Phase 14A are very weak, making it difficult to define the location of the groundwater divide between where groundwater flows northeast towards the stream and southeast towards MW14-02M.	*Response Acceptable*	None required
	c. Fifth paragraph. This section asserts that the area of the proposed landfill expansion does not discharge to any of the stream locations. Please tell us where you think the groundwater from the proposed landfill area does discharge.	The fifth paragraph of Section 5.1.1.2 identifies the stream piezometer/ staff gauges where losing stream conditions were consistently observed (S-1, S-3, S-4, S-5). Based on these observations, phreatic groundwater does not discharge to streams at these locations.	*Response Acceptable*	None required

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		Phreatic groundwater in the Phase 14 area primarily flows towards Phase 12 as depicted in Figure 12b. Additionally, as illustrated on Figure 12b, phreatic groundwater from the Phase 14 footprint discharges to shallow streams and tributaries to Mill Stream in the area of Phases 11 and 12 or continues on a longer flow path to Mill Stream. As a conservative measure, Golder's time-of-travel calculations for the phreatic pathway evaluated a flow path to the streams closest to Phase 14 even though site data indicates that groundwater does not discharge at these locations.		
14	*5.1.1.3 Glacial Till*			
	a. First paragraph. "…the overall direction of groundwater flow in the glacial till is from the northeast to south-southwest/southeast." See Comment 13a.	Please see the response to Comment 13a above.	*Response Acceptable*	None required
	b. Second paragraph. MEDEP finds that, recharge of the till from the clay is possible. Section 5.1.1.2 states that the clay unit receives meteoric recharge as well as groundwater inflow from the northeast. If the clay is recharged locally, it is also possible that the glacial till beneath it can receive some recharge from the overlying clay.	The referenced statement was not intended to imply that no water from the clay enters the till. However, the relative volume of water derived from the clay is considered negligible compared to the recharge that occurs via groundwater inflow from the north-northeast and from the underlying bedrock.	*Response Acceptable*	None required
	c. Second paragraph. Please provide evidence to support confined groundwater conditions in the till.	Please see response to Comment 12c.	*Response Acceptable*	None required
15	*15.5.1.1.4 Bedrock*			
15.a.i	*First paragraph. "northeast to southwest/southeast". See Comment 13a*	See response to Comment 13a.	*Response Acceptable*	None required
15.a.ii	*There are only four data points in Figure 14a that were used to generate the equipotential lines. In our opinion, the northward curve on the west side is unsupported by the data from the four data points. Please provide an explanation for the strong curvature to the lines in the western part of the map.*	The northward curvature of the bedrock potentiometric surface on the west side of Phase 14 is driven by the water level measured in bedrock monitoring well 617C east of ASB shown on Figure 14b. The northward curvature is also consistent with the regional topography and the location of regional groundwater divides as depicted on Figure 14C.	*MEDEP does not concur with the northward curvature in Figure 14C. See Comment 15bii. No response necessary.*	See Response to Comment 15bii
15.b.i	*Second paragraph. This paragraph states that the bedrock is primarily recharged from the north-northeast.* *The modeled bedrock potentiometric surface from the 1992 modeling efforts show that groundwater in the Phase 14 area comes from the north-northwest. Please explain why the model does not agree with this paragraph and evaluate whether the model needs to be redone based on a revised conceptual site model.*	The bedrock potentiometric surface illustrated on Figures 14a, 14b, and 14c is based on head measurements collected from bedrock wells installed in the immediate area of Phase 14. These data were not available at the time of Gerber's model development in 1992. While the Gerber model does illustrate upgradient flow from a more northerly direction, the modeled potentiometric flow pattern beneath and downgradient of Phase 14 are remarkedly consistent with the interpreted potentiometric contours illustrated in Figures 14a, 14b, and 14c, particularly given the difference in datasets available at the time to calibrate the model and the datasets used to develop the Phase 14 potentiometric figures. Results of Gerber's numerical modeling were used to corroborate the analytical time-of-travel calculations as presented in Section 6.4. Given the consistency of the model with conditions beneath and downgradient of Phase 14, the results of the groundwater modeling are	*MEDEP concurs that the bedrock groundwater flow direction is similar in the model as measured in the field. We note that the model results are very simplistic near the Phase 14 area because the input was simplistic outside the area the model was designed to model. We are interested in the statement that the model results were used to corroborate the time-of-travel estimations. Would you please elaborate on how this was done? Did you use the output of the model with a particle-tracking model? Did you compare the output heads with the measured heads in the Phase 14 area?*	Golder qualitatively compared the results of the Phase 14 time of travel calculations with those completed by Gerber, which Gerber based in part on their groundwater modeling. Throughout the original Phase 14 Site Assessment Report (Golder 2019) and the Supplemental Geologic and Hydrogeologic Report we compare the results of investigations and analyses completed for Phase 14 with those that formed the basis for Gerber's modeling efforts as a means of corroborating our results. When accounting for the differences in conceptual pathways for individual landfill units and the differences in the local hydrostratigraphic conditions, the results of Golder's time of travel calculations for Phase 14 are consistent with those of Gerber. In both cases, the shortest travel

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		appropriate for use to support the time-of-travel calculations presented in the Phase 14 application.		times to potential sensitive receptors are in the 10's of years, the longest in 100's of years.
15.b.ii	*MEDEP does not concur that Figure 14b is an accurate representation of the potentiometric surface of the bedrock groundwater. This figure shows a curve in the contour lines that bend up around 310D and 617C. These two wells have screen depths of 172-184 and 150-199.5 ft, respectively, which are significantly deeper than the new Phase 14 bedrock wells which have screen depths varying from 36 to 92 ft. Because these two wells are measuring groundwater potential much deeper in the aquifer, they should not be used with wells of shallower depth in potentiometric maps. Also, there are several elevations on Figure 14b that don't match up with the equipotential lines, such as the Gerber pumping test locations, and were obviously not used in generating the lines. Please clearly identify data on equipotential maps that are not used in generating them. Also, it's not clear if 627A and 628A were used in generating this map. Please provide the screen depths of 627A and 628A and other wells which were used to generate these equipotential lines.*	As described in response to Comment 15.a.ii, the potentiometric surface depicted in Figure 14b was developed to be consistent with the regional topography and the location of regional groundwater divides as depicted on Figure 14C. While it is recognized that the screen depths for 310D and 617C are deeper than the bedrock wells at Phase 14, we believe it is appropriate to use water levels from these for interpretation of the bedrock potentiometric surface at the site-wide scale. Vertical gradients in the bedrock are weak so any error introduced by the differing screened intervals would be limited, particularly at the site-wide scale. Lastly, we note that water levels from 310D and 617C have long been used to develop site-wide bedrock potentiometric contours at the Crossroads facility. The water level elevations obtained from these wells are consistent with the interpretation of regional bedrock flow conditions and yield horizontal hydraulic gradients consistent with those elsewhere at the Crossroads facility. MEDEP is correct that some of the elevations depicted on Figure 14B were not used for contouring. The elevations at the wells listed as "Gerber Bedrock Pumping Wells" were an inadvertent editorial addition to the figure and are not water levels. Data from wells 627A and 628A were not used for contouring however, the data are provided to illustrate bedrock head values near to the south of Phase 10. Well screen/open intervals for wells outside of Phase 14 used to generate Figure 14b are summarized in the following table.	*MEDEP appreciates the clarification of the elevations used in creating Figure 14b. However, we disagree that the vertical gradient can be ignored at 310D and 617C. The distortion in the potentiometric surface in Figure 14b near 310D and 17C indicate that the heads from those two wells may be anomalous. The most logical explanation for this distortion is that we are measuring deeper equipotential lines at those two wells because the well screens are much deeper than at the other wells. There may be insufficient bedrock wells with compatible screen depths to accurately map groundwater heads in the bedrock across the entire area of Figure 14b. No response necessary.*	It is Golder's opinion that the bedrock potentiometric surface depicted on Figure 14 provides useful context for the Phase 14 area bedrock potentiometric surface (Figure 14a) and that it is appropriate to use water levels from 310D and 617C for interpretation of the of the potentiometric surface at this scale..
16	*5.1.2 Vertical Hydraulic Gradients, last paragraph. "…vertical groundwater flow through the Presumpscot clays is negligible due to the very low vertical hydraulic conductivity of the clays, which precludes recharge of the underlying glacial till and bedrock through the clays in the immediate area of Phase 14." MEDEP does not concur with this statement. Due to the low hydraulic conductivity, the flow of water through aquitards such as the Presumpscot Formation would be primarily vertical rather than horizontal, although the flow would be very slow in the absence of fractures. In the presence of fractures in the clay downward flow would be very rapid, so there may be areas where the till is recharged through the clay. For more information, please see K.R. Bradbury et al., 2006, Contaminant Transport Through Aquitard: Technical Guidance for Aquitard Assessment, AWWA Research Foundation.*	Golder agrees with MEDEP that the primary flow direction through the aquitard would be vertical, and never stated otherwise. However, the fact that strong vertical gradients exist across the clays is evidence of the very low vertical hydraulic conductivity of the clay. If there was significant flow across the clay, heads between the clay and till would equilibrate, and vertical gradients would be low, as observed between the till and bedrock (see response to Comment 15). See response to Comments 17a and 17b regarding the potential for fractures in the clay.	*MEDEP appreciates the clarification on flow direction. We would like to clarify that we are more concerned about flow across the clay than through it.* *We concur that flow through unfractured clay will be slow, as we stated, but the presence of fractures could result in rapid transport across it. Significant flow across the clay through fractures might not involve water from within the clay, so heads within the clay wouldn't equilibrate with heads in the till. No response necessary.*	If the clay were fractured as suggested by MEDEP and the fractures provided "rapid transport across the clay" the fractures would function much like wick drains and allow heads in the clay to equilibrate to those within the till. The fractures would also cause heads in the sand overlying the clay to equilibrate with those in the underlying till, thus eliminating the strong vertical gradients observed across the clay. There are strong vertical hydraulic gradients from the clay to the till, and heads in the overlying sand have not equilibrated with the underlying till, supporting the conclusion that fractures through the clay do not exist.

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				This conclusion is further supported by the results of the groundwater pumping test as described in Section 3.0 of the Supplemental Geologic and Hydrogeologic Report.
17	*5.2.2 Presumpscot Formation.*			
17.a	*Third paragraph. "…consistent with the finding that post-depositional features such as desiccation fissures, disruption by roots, frost fracturing, and expansion fracturing were* infrequently observed*…" Please address our concern that these were infrequently noted rather than infrequently observed. We noticed that no descriptions of the clay included anything other than color, stiffness, moistness, except for the descriptions of PZ-1 through PZ-5 which mentioned red mottling and partings. We also noted that these five borings were logged by STD (who also logged PZ-6), but other people logged the other borings, which only described color, stiffness, and moistness. Is it possible a lack of post-depositional features was because they were not noted in the boring logs by the other loggers?*	MEDEP's comment implies that lithologic descriptions of the clays by STD differ significantly from those by others, and that STD's descriptions include descriptions of post-depositional features such as desiccation fissures, disruption by roots, frost fracturing, and expansion fracturing. STD did not record any observations of post-depositional features such as desiccation features, roots, frost fracturing and expansion fracturing. The only difference between STD's lithologic descriptions of the Presumpscot clay and those by others is STD's occasional descriptions of "minor" and "some" red/orange mottling in the upper most portion of the clay. STD also describes "minor silt partings" near the contact between the stiff upper clay and soft lower clay in one of the six borings he logged (PZ-4S), where the total clay thickness is approximately 15 feet. Silt partings are not post-depositional features. None of the post-depositional features listed by MEDEP (desiccation fissures, disruption by roots, frost fracturing, and expansion fracturing) were observed by any of the trained professionals (both Golder employees and Geosyntec employees) who logged the boreholes during the Phase 14 field investigations. The geologic history of the Phase 14 area includes the deposition of the silty fine sands, and thus the Presumpscot clay in the Phase 14 area may not have been exposed to the ground surface/atmosphere for long periods of time and subject to significant post-depositional features like has been observed elsewhere. The lack of evidence of post-depositional features visual to the field staff during the boring investigation and engineers and/or hydrogeologists who post-processed the samples to validate the boring logs for Phase 14 clays corroborates that these features were not observed. The observation and description of "minor silt partings" in one boring logged by STD and the absence of documentation of other post-depositional features indicates they were not found at the location.	*In this response, Golder states that desiccation fissures, disruption by roots, frost fracturing, and expansion fracturing were not observed, yet a 2015 paper by Luettich, et al., described the upper clay at the Crossroads Landfill as often exhibiting "a wide range of post-depositional features such as desiccation fissures, disruption by roots, frost fracturing, and expansion fracturing." In the 1992 investigation, almost all of the borings (B-305, B-1001 to B- 1044, B-103, B-310, B-614, B-615, B-617, B-618, B-620) described the stiff olive clayey silt as mottled, fissured, containing roots and sand seams and the soft gray clayey silt as having sand seams. The test pits logs (31) describe the stiff clay as mottled, fractured, containing roots, sand seams. We examined the photographs of the GB borings, which were the only images provided, and noticed that there were features, such as gray clay mottled with green or brown areas, sandy lenses, and apparent fractures, in the upper stiff clay, but these features were not described in the boring logs. Some examples of images that show features that are not described are GB7-13'-15, GB13-11'-13'(2), GB15-3'-7', GB17-7'-9', PZ-5M-9'-11'. etc. This reinforces our concern that the descriptions of the borings for which we don't have photographs may be missing some information.* *Not all the 1992 test pits encountered the soft clay, but when they did, it is described as generally featureless, but 12 of them described sand layers or seams and a couple describes the presence of vesicles, polygonal fractures or fissures. After a depth of approximately 15 feet, very few features are described in the gray till. Unfortunately, we don't have the boring or test pit logs for Phases 11 and 12.* *Please explain why the upper stiff and lower soft clay units at other phases at the Crossroads Landfill exhibit features that aren't seen at Phase 14, 2500 feet away.*	A detailed review of the information referenced by MEDEP suggests that Golder's and Geosyntec's observations during the Phase 14 investigation are consistent with observations by other investigators. Please see Section 2.0 of the Supplemental Geologic and Hydrogeologic report in which MEDEP's examples are specifically addressed.
17.b	*Fifth paragraph. MEDEP requests a pumping test in the Phase 14 area to assess the vertical hydraulic conductivity. The estimates of vertical hydraulic conductivity were based on laboratory measurements, hence, the differences in hydraulic conductivity between the field-measured slug test results and the laboratory tests is more likely due to the difference in the testing methods rather than a difference in the horizontal or vertical hydraulic conductivity. Because of the possibility*	Golder disagrees that "the differences in hydraulic conductivity between the field-measured slug test results and the laboratory tests is more likely due to the difference in the testing methods rather than a difference in the horizontal or vertical hydraulic conductivity". In the documents referenced by MEDEP (K.R. Bradbury et al., 2006), the "operating principal" for conducting slug tests in aquitards is described as follows:	*We are pleased that WMDSM has agreed to conduct a pumping test and to install two new monitoring wells in the clay, but we want to respond to several points they made in their response:* *Golder disagrees that the difference in the result of the laboratory test and the field test is related to scale or methodology, but thinks it is mostly due to the difference in vertical and horizontal hydraulic conductivity. Not only do we disagree with them, but the former Crossroads consultant for the 1987, 1992, and 1996 investigations, R.G. Gerber Inc, disagreed. Holland and Tolman (1987) (https://umaine.edu/presumpscot-symposium/wp-*	Please see Section 3.0 of the Supplemental Geologic and Hydrogeologic report for details regarding the groundwater pumping test and additional discussion regarding the representativeness of other hydraulic testing conducted at Phase 14.

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	that undetected fractures in the clay can allow rapid transport of contaminants to aquifers beneath the clay, it is important to have a good estimate of the vertical hydraulic conductivity. The 1991 and 1992 pumping tests provided vertical hydraulic conductivity estimates in a more reliable method than the laboratory test, but they tested the soft gray clay only and not the stiff brown clay. The soft clay tested at the other phases varied from 21.5 to 78 feet thick, much greater than the 0 to 17.2 feet thickness within the footprint at Phase 14. The fact that the clay is much thinner at Phase 14 and that the gray clay is missing over about ¼ of the landfill footprint would warrant another pumping test in the Phase 14 area to assess potential fracturing and the vertical hydraulic conductivity in the stiff clay. It is recommended that multilevel monitoring equipment be installed within aquitards (K.R. Bradbury et al., 2006), with piezometers near the changes in lithology, not in the center of units, to evaluate them properly. So they may need to evaluate the need for installing more piezometers with properly short screens. Please submit a detailed plan for conducting a pumping test at Phase 14. We recommend pumping the till aquifer and monitoring wells and piezometers in the till and clay.	"The single-well displacement "slug" test is a simple technique for estimating Kh [horizontal hydraulic conductivity] in the field using wells or piezometers. By measuring the response of a well or piezometer to a rapid pulse, the investigator estimates Kh around the well screen or piezometer tip" Further, K.R. Bradbury et al., 2006 states that: "Due to the stratified nature of geologic materials, the horizontal hydraulic conductivity is typically higher than the vertical conductivity by one or more orders of magnitude." Golder maintains that differences between the field-measured slug test results and the laboratory tests is primarily due to the difference in the horizontal and vertical hydraulic conductivity of the clay and that the results of both testing methods are appropriately representative of the materials tested. As has been discussed with MEDEP, Golder does not share the Department's concern regarding "the possibility that undetected fractures in the clay can allow rapid transport of contaminants to aquifers beneath the clay" for the following reasons: ▪ Field and laboratory investigations did not find evidence of vertical micro-fractures or desiccation cracks. ▪ In-situ hydraulic conductivity tests were completed at eight locations, and no test indicated rapid transport. ▪ Laboratory permeameter tests of the clay did not indicate rapid transport. ▪ The Presumpscot Formation in the Phase 14 area is overlain by both fill and native fine silty sand. The lower few feet of the silty fine sand correspond to the groundwater level and supports the observations as documented on the boring logs that both the upper stiff and lower soft clay facies are moist or saturated. In the moist climate of New England, cracks and micro-fractures would typically only propagate within a freeze-thaw zone above the water table. Our analysis of the boring, CPT, and piezometer locations with respect to the present-day water table and a conservative frost-penetration depth of 6 feet bgs of (ignoring fill) shows no evidence that the lower soft clay would have been subject to frost effects. Likewise, any macro-features caused by frost in the upper stiff clay would have occurred only above the water table. ▪ As stated in the response to comment 16, the fact that strong vertical gradients exist across the clays strongly supports the conclusion of very low	*content/uploads/sites/425/2015/04/holland-1987-presumpscot.pdf) state, "We have concluded that a representative measurement of permeability in samples of fissured clays or silts cannot be obtained without first obtaining a representative sample of the fissures as they exist in the field. Even alleged 'undisturbed' sampling techniques currently in use for conventional drilling projects cause sidewall trauma to the sample, and undoubtedly reduce the aperture of the fissures.", and, "Because of the pronounced vertical prismatic structure of the deposit, the in situ vertical permeability is higher than the lateral permeability, a feature which distinguishes it markedly from the underlying unweathered gray Presumpscot clay/silt." And when referring to the soft, gray clay, "…at field scale where the presence of sand laminae appears to exert a greater influence than at laboratory scale, expect the clay to behave anisotropically with vertical permeability 10 times less than horizontal permeability on average."* *Laboratory permeameter tests of soil cores provide estimates of the bulk hydraulic conductivity of a section of core (2.5 to 3.5 inches long and less than 3 inches in diameter) that is at a much smaller scale than an in-situ slug test or pumping test. The larger the scale of the test, the more likely fractures or large-scale sandy zones will be encountered. To quote Bradbury et al., 2006:* *"One of the major issues in most investigations of aquitard integrity is the determination of whether or not fractures are an important feature. The measurements of physical properties of core samples does not accomplish this determination on its own because the probability of any of the cores having active fractures is small. Fractures generally occur at a spatial scale (i.e., spacing) that is large relative to core size. Therefore, to address the issue of fractures, and to make major use of the core data, field tests using boreholes and wells must also be conducted."* *This is also supported by Smith et al., 2016 (https://agupubs.onlinelibrary.wiley.com/doi/pdf/10.1002/2015WR018448), which states, "While laboratory test can provide an approximate range of small- scale K, they cannot be used to assess the impact of heterogeneity or secondary features such as fractures."* *MEDEP is not persuaded by their lack of concern that "the possibility that undetected fractures in the clay can allow rapid transport of contaminants to aquifers beneath the clay". MEDEP shares the opinion of Bradbury et al (2006) who state: "In reality, flow and transport through aquitards is often dominated by heterogeneities such as fractures, macropores, or sand seams" and "Depending on the contaminant of interest, it may be appropriate to assume an aquitard has through-going fractures until field evidence shows otherwise." The following is our rebuttal to their assertions:* ▪ *They claim that they did not find vertical fractures in this investigation, but in the 1992 investigation of neighboring and contiguous clay units, every test pit and almost every boring showed vertical and horizontal fissures, vesicles, sandy layers and seams. In a paper for the 2015 Symposium on the Presumpscot Formation in Portland Maine, Luettich et al. (https://umaine.edu/presumpscot-symposium/wp-content/uploads/sites/425/2015/10/Luettich_etal_2015_Presumpscot.pdf) describe the upper olive-brown clay unit as exhibiting "a wide range of post-depositional features such as desiccation fissures, disruption by roots, frost fracturing, and expansion fracturing." The likelihood of*	

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		vertical hydraulic conductivity of the clay. If there was significant flow across the clay, heads between the clay and till would equilibrate, and vertical gradients would be low. Regardless, as has been discussed with MEDEP, WMDSM has agreed to conduct a groundwater pumping test to evaluate the bulk vertical hydraulic conductivity of the Presumpscot clay. MEDEP has agreed that existing wells and piezometers are adequate for conducting and monitoring the pumping test. A Work Plan for conducting the pumping test was submitted to the MEDEP on May 29, 2020 and the test will be conducted in June 2020[2]. Results of the pumping test will be presented as a supplementary submittal to Volume III, Geologic and Hydrogeologic Assessment, of the Phase 14 Solid Waste Permit Application.	*intercepting vertical fractures with vertical, 2-inch borings is very small and could explain why they did not encounter fractures.* ▪ *Short-term slug tests within units are unlikely to show transport across units. To quote Holland and Tolman (1987), "We believe that conventional cased drilling techniques render even in-situ permeability tests in fissured clay invalid, again because of damage to the secondary structure." Also, small fractures that would allow the transport of contamination may not* ▪ *Laboratory permeameter tests only test bulk properties and the likelihood of encountering a fracture in a small piece of clay is tiny. See our comments above regarding permeameter tests.* ▪ *They claim that freeze-thaw fractures would only occur above the water table, which would be in the sand or fill. This may be true, but the fact is that polygonal fissures were described in the stiff clay in every test pit in the 1992 investigation, and, although rare, fractures were described in the gray clay to depths of 15 feet.* *In summary, there is abundant evidence that the stiff clay at the Crossroads landfill contains fissures/fractures, sand seams, vesicles, and mottling. Based on Holland and Tolman's previous work at the site and our knowledge of the differences between laboratory permeameter tests and field-scale test, we find that the vertical hydraulic conductivity results from the permeameter tests are probably inaccurate and should not be used for time of travel estimations. No response necessary.*	
18	*5.3 Hydrostratigraphic Cross-Section. Water in the till to the NE appears to flow upward, discharging to the sand in an uphill area. Because there is no surface water body there, this representation is probably inaccurate. See diagram below. Please correct the cross- section.*	As described in response to Comments 12B and 12C, the groundwater in the till is confined, and the potentiometric surface is above the top of the till. In some areas on the north side of Phase 14, the heads in the till are above the top of the Presumpscot Clay, indicating an upward gradient from the till to the overlying sand. Like the situation where strong downward vertical gradients are present across the clay aquitard, the upward gradients observed on the north side of Phase 14 confirm the confining nature of the Presumpscot clay. While upward gradients exist on the north side of Phase 14, the volume of water that migrates through the clay is considered negligible. The transition from upward gradients on the north side of Phase 14 to downward gradients on the south side or Phase 14 is consistent with the conceptual hydrogeologic model presented in Section 5.3. Therefore, no changes to the hydrostratigraphic cross-section are necessary.	*MEDEP does not concur that upward gradients at MW14-01 on the north side of Phase 14 indicate confining conditions. One can get upward or downward flow across confining aquitards. Upward flow indicates a discharge zone and downward flow indicates a recharge zone. At MW14-01, we note that the gradient between the sand and the till wells is typically downward for most dates when it was measured, but it was upward on the date chosen for the cross-section (5/2/2019). The heads in the bedrock well are consistently higher that in the till well, which may indicate the screen in the bedrock intersects a fracture that is directly connected to an area farther upgradient. We do not concur that there is a discharge zone around upgradient well MW14-01. No response necessary.*	Golder did not state that there is a discharge zone in the area of monitoring well MW14-01. The hydrostratigraphic cross-section correctly depicts that the potentiometric head in the till is higher than in the silty fine sand on the date that water levels were measured (May 2, 2019). The upward gradient, even if just seasonal, is consistent with the hydrogeologic conceptual site model (CSM) and the confining nature of the Presumpscot Clay.
19	*6.1 Identification of Potential Sensitive Receptors, third bullet. Please clarify that water is not flowing away from all the aquifers. Sand and gravel aquifers lie to the north and east of the Phase 14 area and groundwater flow "primarily to the south-southwest/southeast, away from the aquifers." Although the flow from the Phase 14 area is not towards the sand and gravel aquifers, it cannot be said to be flowing "away from" the aquifers. It is more accurate to state that groundwater flow is not towards the aquifers or does not intersect the aquifers.*	Please refer to WMDSM's response to Volume I Comment 12b which addresses the same topic. In that response WMDSM agreed to use the term "away from" when referencing groundwater flow relative to the public water supply protection area and the term "not towards" when referencing groundwater flow direction relative to the significant sand and gravel aquifer.	*Response Acceptable*	None required

[2] Golder received comments from MEDEP on the Pumping Test Work Plan on May 29, 2020 and will respond to the comments prior to conducting the pumping test.

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20	*6.1, Identification of Potential Sensitive Receptors, fourth bullet. The groundwater divide is on Figure 14c, not 14b.*	Agreed	*Response Acceptable*	None required
21	*6.1, Identification of Potential Sensitive Receptors. Please include fractured bedrock aquifers in this section. Ch. 400 defines sensitive receptors as including significant groundwater aquifers, such as bedrock aquifers.*	This comment was discussed with MEDEP during the April 30, 2020 conference call. Golder identifies the New Office Well (a bedrock water supply well) as the closest potentially downgradient water supply well and as a potential sensitive receptor for the purpose of the time-of-travel calculations. Golder considers the "New Office Well" to be the "fractured bedrock aquifer" sensitive receptor in the assessment of whether Phase 14 poses an unreasonable threat to sensitive receptors. In a May 26, 2020 letter to WMDSM in response to the April 30, 2020 conference call, MEDEP stated: *"Regarding the question of whether bedrock aquifers in general are considered sensitive receptors, the answer is yes, but site-specific considerations can be accounted for. The bedrock aquifer underlain by Phase 14 is not used directly for water consumption. The nearest downgradient bedrock well is WMDSM's own water supply well, the New Office Well, which is approximately 1500 feet away. Although there are other drinking water wells downgradient of Phase 14, they are more than 2000 feet away, so the Department concurs that using the New Office Well as a sensitive receptor would account for assessing their vulnerability."*	*Response Acceptable*	None required
22	*6.2 Potential Pathways, fourth bullet. MEDEP does not concur with the conceptual model for this pathway. This pathway assumes horizontal migration through the stiff upper clay, but due to the low hydraulic conductivity, transport through aquitards is typically vertical, not horizontal. The aquitard is thin in Pathway 1, which increases the probability of fractures and which allows for rapid transport through the aquitard to the underlying till. The gradient is downward at S-4, which indicates that phreatic water doesn't discharge there. Consider a vertical path through the clay, then a horizontal path through the till. This would have a different flow path to a discharge point, but it might be more realistic. Also, consider a short-circuited path through the clay through fractures and assess how that would impact the time of travel.*	Golder agrees that a purely horizontal pathway through the clay is unlikely at this location. However, Golder took the conservative approach of evaluating this pathway to evaluate time-of-travel to the two intermittent Class B streams located downgradient of Phase 14. Class B streams are identified as potential sensitive receptors. The vertical pathway through the clay into the till is evaluated in WMDSM's "Pathway 3" evaluation. This pathway terminates at the downgradient water supply well, which is the closest sensitive receptor for the till pathway. The till unit does not discharge to Class B steams in the vicinity of Phase 14.	*MEDEP disagrees that a pathway horizontally though the clay (instead of vertical through the clay then horizontal through the till) is a conservative approach. To demonstrate, we calculated the time of travel assuming a 10-ft downward vertical path through the clay, an 800-ft horizontal path through the till (assuming it had to travel further to discharge, then back up through 10 feet of clay (a rough estimate), using the geometric mean K values used in Golder's calculation. Our calculation resulted in 55 years instead of 637 years that Golder estimated, which shows that Golder's approach is not conservative. Our estimation shows that, if the clay and till at this location have the average K values, then the travel time exceeds the required travel time of 6 years, but if the clay and till at this location have the maximum K values, then the travel time would be 2.25 years, which is short of the required 6 years. No response necessary.*	Please see the supplemental time of travel calculations, all of which exceed the required 6 years, presented in Section 4.0 of the Supplemental Geologic and Hydrogeologic Report.
23	*6.2 Potential Pathways, fifth bullet. See Comment 22 and consider a vertical path through the clay, then a horizontal path through the till to the stream and assess how the presence of fractures would impact the time of travel.*	See response to Comment 22. Groundwater in the till does not discharge to the nearby streams. As MEDEP has identified, vertical gradients across the clay in this area of the site are downward, precluding the upward flow of groundwater from the till to the streams. Golder does evaluate a vertical pathway through the clay into the till as part of "Pathway 3". The closest potential sensitive receptor along this pathway is the "New Office Well".	*We are disappointed that WMDSM did not comply with our request, but we have estimated the requested time of travel ourselves. Assuming a downward vertical path through the clay of 14 feet, a horizontal path through the till of 1000 feet (assuming it would take longer to reach a discharge point in the stream), an upward vertical path through clay of 14 feet (rough estimate), and using the geometric mean K values, we estimated a travel time of 79 years. As with pathway 1 (Comment 22), the longer pathway, but with most of it through the till, results in a much shorter travel time. Assuming the K values are the maximum values, the travel time would be 3.24 years. No response necessary.*	Golder completed time of travel calculations for the pathways theorized by MEDEP as part of the supplemental time of travel calculations presented in Section 4.0 of the Supplemental Geologic and Hydrogeologic Report. As shown and explained therein, the revised time of travel exceeds required 6 years.
24	*6.2 Potential Pathways, sixth bullet. MEDEP does not concur that "The assumption that a release would*	MEDEP states, a "near-vertical migration pathway" is "expected". Pathway 3 evaluates a "vertical pathway",	*Response Acceptable*	None required

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	migrate straight downward through the two clay units is considered conservative…" A near-vertical migration pathway through the clay is realistic and expected, not conservative.	not a "near-vertical pathway" and is thus characterized as conservative. Adding an evaluation of the horizontal component of flow across the clay would lengthen the travel time and therefore be less conservative.		
25	*6.4 Time of Travel Results. MEDEP does not concur with the time of travel results. The time of travel results of 1,538 years to travel 650 feet would only be realistic if there were no fractures in the clay. Transport time through clay may be reduced to years in the presence of through-going fractures. Unless you can demonstrate that the clay is unfractured, please present time of travel results in the case of fractured clay. We should also consider that contamination can migrate by diffusion as well. Please include an assessment of transport by diffusion through the clay.*	As discussed in response to comment 17b, even though Golder does not share the Department's concern regarding fracturing in the clay, WMDSM has agreed to conduct a groundwater pumping test to evaluate the bulk vertical hydraulic conductivity of the Presumpscot clay based on MEDEP's acceptance to use existing wells and piezometers to conduct and monitor the test. WMDSM will discuss the role of diffusion as it relates to the time-of-travel calculations in the supplemental report.	*Response Acceptable*	Please see Section 3.0 of the Supplemental Geologic and Hydrogeologic Report for details on the pumping test and the results. Please see Section 4.5 of the Supplemental Geologic and Hydrogeologic Report for a discussion of the diffusion as it relates to the time of travel calculations. As shown, the time of travel for diffusion exceeds the required 6 years.
26	*6.4 Time of Travel Results. MEDEP does not agree with using the mean values of hydraulic conductivity (K) for assessing time of travel. We are interested in worse-case scenarios, so the highest K values are more appropriate. Please present a range of travel times based on the range of K values.*	It is Golder's opinion that using average values for parameters such as hydraulic conductivity is appropriate because they more accurately reflect the range of hydraulic conductivities that exist over an extended pathway. Nonetheless, as discussed with the Department, Golder will conduct a sensitivity analyses of the time-of-travel input parameters (e.g., hydraulic conductivity, gradient, porosity) to provide a range of potential travel times based on a range of hydraulic conductivity. The sensitivity analysis will be included in the supplemental submittal.	*Golder has agreed to a sensitivity analysis but has not described what that would entail. Please let us know what ranges will be used.*	Please see Section 4.0 of the Supplemental Geologic and Hydrogeologic Report for the revised time of travel calculations and the discussion of the range of parameter values used in the sensitivity analysis. Golder first calculated a time of travel for each pathway based on average input values, which we believe is most appropriate for evaluating flow conditions over an extended flow path. We then evaluated the sensitivity of the calculated travel times using high-end input parameters. High-end hydraulic conductivity values are based on 95% upper confidence levels. Use of confidence limits allows for a quantification of the uncertainty of a data set. We also further evaluated the potential range of certain input parameters (e.g. effective porosity and hydraulic gradient) to identify appropriate high-end values for these input parameters. We then combined all high-end input parameters to calculate high-end times of travel, all of which exceed the required 6 years.
27	*6.4 Time of Travel Results, modeling results. Because the modeling was completed prior to the information obtained in this investigation, please evaluate the conceptual site model and the model parameters to determine if the model is still valid.*	Golder will provide a comparison of the conceptual site model and model input parameters to confirm the validity of the previous modeling efforts relative to Phase 14 with the supplemental submittal.	*Response Acceptable*	Section 4.0 of the Supplemental Geologic and Hydrogeologic Report presents the revised time of travel calculations. In each section where input parameters are described we provide a comparison to those previously used by Gerber in their modeling/time-of travel calculations to demonstrate the similarities and the validity of the Gerber model relative to the Phase 14 CSM and analysis.

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28	*7.1 Proposed Groundwater Water Quality Monitoring Program, first paragraph. Ch. 405 (2)(A)(1)(c) requires a minimum of two upgradient wells at new or expanded landfills. Please provide the location of another upgradient well.*	WMDSM will install a second upgradient monitoring well north of Phase 14B. The revised monitoring program will be presented in the supplemental report.	*Response Acceptable*	WMDSM will install a phreatic (MW14-09M) and till (MW14-09D) unit monitoring well at the location north of Phase 14B. See Section 6.0 and Figure 6-1 of the Supplemental Geologic and Hydrogeologic Report for the location of the proposed additional upgradient groundwater monitoring wells. .
29	*7.1 Proposed Groundwater Water Quality Monitoring Program, first paragraph. Ch. 405 (2)(A)(1)(b) requires that each hydrogeologic unit is monitored, yet no bedrock wells are selected as monitoring wells. Please provide locations for at least two bedrock monitoring wells and demonstrate that water released from the landfill would be intersected by these wells*	Any release from the landfill would be detected in the till before being detected in the bedrock. Also, as discussed in Response to Comment 12d, vertical gradients between the till and the bedrock are directionally variable and weak. Given these conditions, it would take a very long time, if ever, for a release from the landfill to be detected in the bedrock. As such, Golder did not include monitoring of bedrock in the water quality monitoring program and maintains that bedrock water quality monitoring is not necessary. Nonetheless, the existing bedrock monitoring wells will be maintained. If a release were to be detected or suspected based on monitoring results from the phreatic wells and/or the till wells, monitoring of bedrock water quality can be conducted.	*MEDEP agrees that given their location, it is unlikely the current bedrock wells will intercept groundwater coming from Phase 14. A groundwater model would answer this better, but we estimate that a bedrock well 50-100 feet away from the landfill would be better situated to intercept groundwater flowing from the landfill. We also agree that the till wells would be the first line of defense and it wouldn't be necessary to sample bedrock wells unless a problem arises in the till wells. We would, however, need background data on the water quality at any well prior to the deposition of the waste in the landfill, so bedrock wells should be installed and sampled prior to that. We recommend obtaining at least 8 rounds of data at the bedrock wells, after which time the bedrock wells would not need to be sampled unless the till wells indicate a possible release. This should provide sufficient data for comparison to any later monitoring results. Again, Ch. 405 (2)(A)(1)(b) requires that each hydrogeologic unit is monitored. Please provide locations for at least two new down-gradient bedrock monitoring wells and demonstrate that water released from the landfill would be intersected by these wells. Also, provide a plan to sample all the wells established to monitor Phase 14 before waste placement. The other bedrock wells should be abandoned in accordance with the rules.*	As previously described, vertical gradients from the till to the bedrock are very weak and directionally variable. Therefore, it would take a very long time, if ever, for a release from the landfill to enter the bedrock. WMDSM agrees that it is prudent to characterize bedrock groundwater quality for potential future use should a release be detected or suspected based on monitoring results from the phreatic wells and/or the till wells. Therefore, WMDSM has revised the proposed groundwater monitoring program to include characterization of bedrock groundwater quality in accordance with *Ch. 405 (2)(C)(1).* However, we believe the location and depth of the existing bedrock wells are appropriate for characterization monitoring. As confirmed by the groundwater pumping test, there is strong hydraulic communication within the upper portion of the bedrock and thus significant variability in bedrock groundwater quality is not expected. Therefore, WMDSM proposes to utilize existing bedrock monitoring wells (1 upgradient, 2 downgradient) for characterization monitoring. We also believe it is prudent to maintain the existing bedrock monitoring wells for potential future monitoring if a release is detected. In the event of a release, additional bedrock monitoring wells can be installed, as needed, for assessment monitoring. WMDSM proposes to collect eight samples from the bedrock monitoring wells. Four samples will be collected prior to waste placement in Phase 14A, and four samples will be collected in subsequent water quality monitoring rounds for a total of eight rounds of data from the bedrock wells. The bedrock

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				monitoring wells will not be included in the triannual water quality monitoring program, as specified in Section 6.0 of the Supplemental Geologic and Hydrogeologic Report.
30	*7.1 Proposed Groundwater Water Quality Monitoring Program, last paragraph. We recommend completing two years of three sampling rounds, which would provide a better understanding of the natural data variability at the site. Four sampling rounds are proposed for the site characterization monitoring, but Ch. 405 (2)(C) states that the actual number of samples required depends on the rate of groundwater flow, data quality and variability of results, so this may need to be adjusted.*	It is Golder's opinion that four characterization monitoring events is typical and adequate and requests additional information regarding the basis for this request.	*As we said, the actual number of samples depend on the data and its variability, so this may need to be adjusted when the results come in. We recommend starting to sample as soon as possible.*	WMDSM will begin characterization monitoring in Spring of 2021. Table 6-2 of the Supplemental Report provides the anticipated sequence of Phase 14 construction milestones and water quality monitoring events. This schedule assumes collection of four samples prior to the waste placement in Phase 14A in the Fall of 2022 (minimum required per Ch. 405 (2)(C), and an additional four samples prior to waste placement in subsequent phases, beginning with Phase 14B in Fall of 2023.
31	*Ch. 401 (2)(B)(2)(a) requires the installation of water table observation wells. Please identify the water table wells.*	While not screened across the water table, MW14-03M, MW14-04M and MW14-05M are considered "phreatic monitoring wells" in that they monitor shallow groundwater quality. The top of the filter sand in these wells is typically within about 2 to 6 feet of the groundwater table surface. When the fine silty sand is removed from the areas upgradient of these wells during landfill construction, the elevation of the water table in the area of these wells is expected to drop and be closer to, or within the screened/filter-packed depth of these three wells. Monitoring wells MW14-07M and MW14-08M have not yet been installed. Golder plans to construct these wells with screened intervals across the water table.	*Response Acceptable*	None required
32	*Ch. 401 (2)(B)(2)(d) requires an isopach map of surficial deposits. Although isopach maps of the individual surficial units are submitted, it would be useful to have an isopach map of the complete overburden sequence.*	Golder will submit an isopach map of the complete overburden sequence with the supplemental submittal.	*Response Acceptable*	See Figure 5-1 of the Supplemental Geologic and Hydrogeologic Report for an isopach of the entire thickness of the overburden sequence in the Phase 14 area.
33	*Although it is not required in the Solid Waste Rules, it is currently standard practice to provide a brief conceptual site model for a hydrogeologic assessment. Please provide a CSM, basically a synopsis of the site hydrogeology, describing how water recharges, flows through, and discharges. Include all the units and receptors in the description.*	Golder will provide a brief conceptual site model for the hydrogeologic assessment as part of the supplemental report.	*Response Acceptable*	See Section 5.0 of the Supplemental Geologic and Hydrogeologic Report for summary of the hydrogeologic CSM of the Phase 14 area.

APPENDIX B

Presumpscot Clay Information

APPENDIX B-1

Summary of Boring Log Lithologic Descriptions Referenced by MEDEP

Appendix B-1 – Summary of Boring Log Lithologic Descriptions Reference by MEDEP

Boring Name/ Reference	Depth of Clay (ft bgs)	Description
103EE 12/27/1989	0-50.9	0-16 Stiff to firm brown mottled clayey silt, probably disturbed 16-20 Stiff to firm brown mottled clayey silt with fine to coarse gravel 20-24 Soft to stiff brown mottled clayey silt with gray silt and clay and some fine to coarse gravel 24-50.9 Soft to firm gray silt and clay
103EER 5/2/1990	0-51.6	0-10 Firm mottled brown clay-silt with some fine sand (FILL) 10-16 Brown clay-silt with some layers of gray clay-silt, probably disturbed 16-20 Firm brown clayey silt with trace fine sand 20-51.6 Firm gray clay-silt with fine sand seams
B-103F 4/3/1992	4-49	4-10 Stiff olive brown and gray clay-silt with some fine to medium sand and trace fine gravel and organics (FILL) 10-17.5 Stiff olive brown and gray clay-silt with trace fine sand, soft zone possible disturbed at 10-11.8' 17.5-49 Soft to firm clay-silt with fine sand seams
B-103W 4/6/1992 [p.235]	4-12.5 (hole terminated)	4-12.5 Olive brown and gray clay-silt with some fine to medium sand and trace fine gravel and organics (FILL)
B-310AW 12/19/1991	2.5-15 (hole terminated)	2.5-5 Stiff olive brown clayey silt with trace fine sand 5-10 Stiff olive brown and gray clayey silt with fine sand 10-15 Firm gray clay-silt with fine sand seams
B-310D 7/20/1985	0-57	0-8 Olive gray slightly mottled clay/silt with some fine sand, some stratification with clay/silt and fine sandy silt layers up to 1 mm, soft 8-57 Gray stratified clay/silt and silty fine sand, fine sand layers are brown up to 1 cm thick, loose to soft
B-305 7/11/1986	5-50	5-6.3 Olive slightly mottled clay/silt with layers of fine sand and silty fine sand layers (1-4mm thick) some Mg staining some vertical fissures, platey structure in clay/silt, uniformly graded 10-12 Gray and olive brown clay/silt and silty fine sand, soft 15-16.5, 20-21.5, 25-27 Gray clay/silt with some silt layers, soft, uniformly graded 30-31.5 Gray clay/silt with some silt layers, soft, uniformly graded, slightly stiffer than below 40-41.5 Gray top dark gray clay/silt, stiff, uniformly graded
B-305+AB 3/4/1991	9-46	9-29 Firm to soft gray clayey silt with fine sand seams 29-46 Soft to firm gray clayey silt
B-305+CD 3/4/1991	4-22 (hole terminated)	4-8 Olive brown mottled clayey silt with fine sand seams 8-10 Olive brown and gray mottled clayey silt 10-22 Gray clayey silt with fine sand seams
B-305+E 3/5/1991	0-11.5 (hole terminated)	0-11.5 Olive brown mottled clayey silt with some fine sand seams
B305F 8/28/1991	0.5-48	0.5-9 Brown silty mottled clay with fine brown sand layers 9-48 Gray silty clay with fine sand layers
B305FA 8/29/1991	0.5-48	0.5-9 Brown silty mottled clay 9-48 Gray silty clay with fine sand layers
B-614A 12/23/1991	0.5-11.5 (hole terminated)	0.5-10 Very stiff olive brown mottled clayey silt with trace fine sand. 10-11.5 Firm gray clay-silt with fine sand seams.
B-614C 12/20/1991	0.5-47	0.5-10 Very stiff olive brown mottled clayey silt with trace fine sand. 10-47 Firm to soft gray clay-silt with fine sand seams.
B-614CR 12/23/1991	0.5-47	0.5-10.5 Very stiff olive brown mottled clayey silt with trace fine sand. 10.5-47 Firm to soft gray clay silt with fine sand seams.
B-615A 12/20/1991	3-14.5 (hole terminated)	3-11 Very stiff olive brown mottled clayey silt with trace fine sand. 11-14.5 Firm gray clay-silt with fine sand seams.
B-615C 12/19/1991	3-51	3-11 Very stiff olive brown mottled clayey silt with trace fine sand. 11-51 Firm to soft gray clay with fine sand seams.
B-617A 1/23/1992	0.5-14.5 (hole terminated)	0.5-9 Stiff olive brown mottled clayey silt with trace fine sand. 9-14.5 Gray clay-silt with fine sand seams.
B-617C 1/21/1992	0.5-52	0.5-10 Very stiff olive brown mottled clayey silt with trace fine sand. 10-52 Gray clay-silt with fine sand seams.
B-618A 12/27/1991	6-15 (hole terminated)	6-13 Stiff olive brown clayey silt with trace fine sand. 13-15 Stiff gray clay-silt with fine sand seams.
B-618C 12/23/1991	7-70	7-13 Stiff olive brown clayey silt with trace fine sand. 13-70 Stiff to soft gray clay-silt with fine sand seams.
B-620A 12/27/1991	0.5-14.5 (hole terminated)	0.5-6 Very stiff olive brown mottled clayey silt with trace fine sand. 6-12.5 Stiff olive brown and gray clayey silt with trace fine sand. 12.5-14.5 Firm gray clay-silt with fine sand seams.
B-620C 12/27/1991	0.5-33	0.5-6 Very stiff olive brown mottled clayey silt with trace fine sand. 6-13 Very stiff olive brown to gray clayey silt with trace fine sand. 13-33 Firm gray clay-silt with fine sand seams.
B-1001A 1/8/1991	0-72	0-12 Hard to stiff olive brown mottled clayey silt with trace fine sand 12-45 Soft to firm gray clayey silt with fine sand seams 45-72 Firm to stiff gray clayey silt
B-1001B 1/11/1991	0.5-77	0.5-11 Stiff to hard olive brown mottled clayey silt with some fine sand seams 11-60 Soft to firm gray clayey silt with silty fine sand seams 60-77 Firm to very stiff gray clayey silt
B-1001E 1/14/1991	0-11 (hole terminated)	0-10 Olive brown mottled clayey silt with trace fine sand 10-11 Gray clayey silt with trace fine sand
B-1002A 2/12/1991	0-35	0-7 Very stiff olive brown mottled clayey silt with trace brown silty fine sand 7-35 Stiff to firm gray clayey silt with gray silty fine sand seams
B-1002A-R 2/25/1991	1-36	1-9 Olive brown mottled clayey silt with some brown fine sand. Frost to 1.5 feet 9-36 Gray clayey silt with gray silty fine sand seams
B-1002B 2/5/1991	1-35	1-8.5 Firm to very stiff olive brown and gray mottled clayey silt with trace fine sand. 8.5-35 Soft to stiff gray clayey silt with gray silty fine sand seams
B-1002E 2/25/1991	1-11.5	1-9 Olive brown clayey silt 9-11.5 Gray clayey silt with fine sand seams

B-1003A 12/7/1990	4-57	4-13 Firm to soft olive brown clayey silt with some fine sand 13-25 Soft to very soft gray clayey silt with sand in seams 25-50 Soft gray clayey silt 50-57 Firm to very stiff gray clayey silt
B-1003B 12/11/1990	4-55	4-13 Brown silty fine sand with some olive brown mottled clay 13-55 Gray clayey silt
B-1003C 2/26/1991	4-35 (hole terminated)	4-14 Brown silty fine sand with some olive brown clayey silt and trace organics 14-35 Gray clayey silt with fine sand seams
B-1003E 2/26/1991	4-15.3 (hole terminated)	4-6 Brown silty fine sand with some olive brown clayey silt, mottled. 6-14 Olive brown clayey silt with fine sand seams 14-15.3 Gray clayey silt with fine sand seams
B-1004AB 1/17/1991	0.5-88	0.5-10 Very stiff to firm light olive brown mottled clayey silt with trace silty fine sand 10-56 Soft gray clayey silt with gray silty fine sand seams 56-88 Firm to stiff gray clayey silt with gray silty fine sand seams
B-1004CDX 1/21/1991	3-44 (hole terminated)	3-10 Stiff moist mottled and fissured olive brown clayey silt with fine sand seams 10-44 Soft gray clayey silt with silty fine sand seams
B-1004E 1/23/1991	0-11.5 (hole terminated)	0-10 Stiff to very stiff olive brown mottled clayey silt with some fine sand and trace organics 10-11.5 Stiff gray clayey silt with gray silty fine sand seams
B-1005AB 1/24/1991	0-45	0-4 Very stiff and olive brown mottled clayey silt with some sand and black linear inclusions 4-21 Soft gray clayey silt with silty fine sand seams 21-41 Soft to firm gray clayey silt 41-45 Stiff gray clayey silt with silty fine sand seams
B-1005CD 1/29/1991	0.5-17.9	0.5-8 Firm to very stiff olive brown and gray clayey silt with gray silty fine sand seams 8-17.9 Soft gray clayey silt with gray silty fine sand seams
B-1005E 1/29/1991	0.5-10.4 (hole terminated)	0.5-5 Very stiff olive brown mottled clayey silt with some brown silty fine sand 5-7 Very stiff olive brown and gray mottled clayey silt 7-10.4 Firm gray clayey silt with gray silty fine sand seams
B-1006A 1/24/1991	0.5-49.5	0.5-8 Hard olive brown clayey silt with some fine sand 8-36 Firm to soft gray clayey silt with fine sand seams 36-49.5 Soft to firm gray clayey silt
B-1006B 1/29/1991	1.5-50	1.5-8 Very stiff moist olive brown mottled clayey silt 8-30 Firm to soft gray clayey silt with silty fine sand seams 30-45 Soft to firm gray clayey silt 45-50 Stiff gray clayey silt with silty fine sand seams
B-1006E 1/29/1991	0.5-13.5 (hole terminated)	0.5-9 Olive brown mottled clayey silt with some fine sand 9-13.5 firm to soft gray clayey silt with brown fine sandy silt seams
B-1007AB 1/2/1991	1-80	1-10 Stiff olive brown mottled clayey silt with trace fine to medium sand 10-32 Soft gray clayey silt with fine sand seams 32-39 Soft gray clayey silt 39-56 Soft to firm gray clayey silt with fine sand seams 56-68 Firm gray clayey silt 68-80 Firm to stiff gray clayey silt with fine sand seams
B-1007CD 1/8/1991	2-75 (hole terminated)	2-8 Dense gray to olive brown mottled clayey silt with some fine sand 8-12 Firm olive brown and gray clayey silt 12-23 Firm gray clayey silt with gray silty fine sand seams 23-48 Soft gray clayey silt with gray silty fine sand seams 48-64 Firm gray clayey silt with gray silty fine sand seams 64-75 Firm gray clayey silt with trace fine sand
B-1007CDR/2 1/9/1991	3-32.8 (hole terminated)	3-12 Olive brown mottled clayey silt with trace fine sand 12-32.8 Gray clayey silt with fine sand seams
B-1007E 1/14/1991	4-14 (hole terminated)	4-8 Very stiff gray and olive brown mottled fine sandy silt to stiff olive brown clayey silt with trace fine to medium sand in seams 8-14 Soft gray clayey silt with trace silty sand seams
B-1008A 12/5/1990	0-41	0-3 Firm olive brown mottled clayey silt 3-10 Stiff to firm olive brown and gray mottled clayey silt 10-31 Soft olive brown and gray mottled clayey silt with silty fine sand seams 31-41 Firm to stiff olive brown and gray mottled clayey silt with silty fine sand seams
B-1008B 12/14/1990	0-40.5	0-6 Stiff olive brown mottled clayey silt with some fine to coarse sand 6-25 Soft olive brown and gray mottled clayey silt with silty fine sand seams, very stiff sand seam encountered at 10.5' 25-40.5 Soft to stiff olive brown and gray mottled clayey silt
B-1008E 2/27/1991	0-12 (hole terminated)	0-9 Olive brown mottled clayey silt with trace fine sand 9-12 Gray clayey silt with fine sand seams
B-1008F 5/26/1992	3-7 (hole terminated)	3-7 Brown mottled clayey silt with silty fine sand seams
B-1009A 1/15/1991	0-33	0-12 Hard to stiff olive brown mottled clayey silt with trace fine to coarse sand 12-25 Firm gray clayey silt with fine sand seams 25-33 Firm gray clayey silt
B-1009B 1/17/1991	0-35	0-12 Hard to stiff olive brown mottled clayey silt with trace fine sand 12-30 Firm gray clayey silt 30-35 Stiff gray clayey silt with trace fine sand and trace fine gravel
B-1009C 1/21/1991	0-23 (hole terminated)	0-12 Olive brown mottled clayey silt with trace fine sand 12-23 Gray clayey silt
B-1009E 1/21/1991	0-11 (hole terminated)	0-11 Olive brown mottled clayey silt with trace fine sand (some organics at surface)
B-1009F 5/26/1992	0-5.5 (hole terminated)	0-5.5 Brown mottled clayey silt with silty fine sand seams
B-1010A 12/20/1990	0-41.5	0-6.5 Hard olive brown clayey silt with some fine sand 6.5-10 Olive brown and gray clayey silt 10-41.5 Soft to firm gray clayey silt with silty fine sand seams
B-1010B 12/27/1990	0-40	0-9 Very stiff olive brown mottled clayey silt 9-30 Soft to firm gray clayey silt with fine sand seams 30-40 Firm gray clayey silt

B-1010C 12/28/1990	0-25 (hole terminated)	0-8 Olive brown clayey silt with trace fine sand 8-25 Gray clayey silt with trace fine sand seams
B-1010E 12/28/1990	0.5-11 (hole terminated)	0.5-8 Olive brown mottled clayey silt with trace fine sand 8-11 Gray clayey silt with silty fine sand seams
B-1010F 5/27/1992	2-4.5 (hole terminated)	2-4.5 Brown mottled clayey silt with trace fine sand
B-1011A 12/17/1990	0.5-48	0.5-10 Very stiff olive brown mottled clayey silt with trace fine to coarse sand 10-13.5 Firm olive brown and gray mottled clayey silt 13.5-23 Soft to firm gray clayey silt 23-32.5 Soft gray clayey silt with gray silty fine sand seams 32.5-48 Soft to stiff gray clayey silt
B-1011B 12/19/1990	1-47	1-13 Very stiff to firm olive brown mottled clayey silt with trace fine sand 13-47 Firm to soft gray clayey silt with fine sand seams
B-1011E 2/26/1991	3-11.5 (hole terminated)	3-11.5 Olive brown clayey silt with fine sand seams
B-1012A 11/14/1990	0.5-58.5	0.5-9 Olive brown mottled clayey silt with trace fine sand 9-13 Stiff olive brown mottled clayey silt with some gray clayey silt 13-50 Soft to firm gray clayey silt with silty fine sand seams 50-58.5 Stiff gray clayey silt with silty fine sand seams
B-1012B 11/15/1990	0.5-55.5 (hole terminated)	0.5-9 Olive brown mottled clayey silt with some brown silty fine to coarse sand 9-12 Olive brown and gray clayey silt 12-55.5 Gray clayey silt with gray silty fine sand seams
B-1012C 11/21/1990	2.5-57.5	2.5-10 Olive brown mottled clayey silt with trace fine sand 10-25 Firm gray clayey silt with gray silty fine sand seams 25-57.5 Soft to firm gray clayey silt
B-1012E 11/12/1990	0-11 (hole terminated)	0-9 Olive brown clayey silt 9-11 Gray clayey silt
B-1014A 11/15/1991	6-44	6-9 Olive brown clayey silt with trace fine sand 9-13 Very stiff olive brown and gray clayey silt with fine sand seams 13-44 Firm to soft gray clay-silt with fine sand seams
B-1014B 11/26/1991	6.5-41.5	6.5-9.5 Olive brown clayey silt with trace fine sand 9-13 Very stiff olive brown and gray clayey silt with fine sand seams 13-41.5 Firm to soft gray clay-silt with fine sand seams
B-1014E 11/27/1991	6-11.5 (hole terminated)	6-10 Olive brown clayey silt with trace fine sand 9-11.5 Very stiff olive brown and gray clayey silt with fine sand seams
B-1014F 5/27/1992	9.5-11.5 (hole terminated)	9.5-11.5 Brown mottled clayey silt with silty fine sand seams
B-1015A 2/6/1991	0-39	0-11 Hard to stiff olive brown mottled clayey silt with some fine sand 11-39 Firm gray clayey silt with fine sand seams
B-1015B 2/1/1991	1.5-39.5	1.5-11 Very stiff to firm, olive brown mottled clayey silt with fine sand seams 11-39.5 Firm wet gray clayey silt with fine sand seams
B-1015C 2/4/1991	1-25 (hole terminated)	1-10.5 Very stiff, olive brown mottled clayey silt with trace fine sand 10.5-25 Gray clayey silt with fine sand seams
B-1015E 2/4/1991	1-12 (hole terminated)	1-10.5 Olive brown mottled clayey silt with fine sand 10.5-12 Gray clayey silt with fine sand seams
B-1015F 5/28/1992	3.5-5.8 (hole terminated)	3.5-5.8 Brown mottled clayey silt with trace fine sand
B-1016A 2/12/1991	0.5-2, 6.5-33.5	0.5-2 Olive brown mottled clayey silt with some fine to medium sand 2-6.5 Dense, damp, brown fine to medium sand with light brown silty fine sand layers 6.5-33.5 Firm gray clayey silt with fine sand seams
B-1016B 2/21/1991	0-2, 6.5-33 (hole terminated)	0-2 Olive brown mottled clayey silt with some fine to medium sand 2-6.5 Brown silty fine to medium sand with light brown silty fine sand seams 6.5-33 Gray clayey silt with fine sand seams
B-1016BR 2/22/1991	0-2, 6.5-33.5	0-2 Olive brown mottled clayey silt with some fine to medium sand 2-6.5 Brown silty fine to medium sand with light brown silty fine sand seams 6.5-30 Gray clayey silt with fine sand seams 30-33.5 Very soft gray clayey silt with trace fine sand seams
B-1016E 2/13/1991 [p.892]	0-2, 6.5-12 (hole terminated)	0-2 Olive brown mottled clayey silt with some fine to medium sand 2-6.5 Brown silty fine to medium sand 6.5-30 Gray clayey silt with fine sand seams
B-1017A 3/13/1991	2-32	2-8 Olive brown mottled clayey silt with brown silty fine sand seams 8-32 Gray clayey silt with gray silty fine sand seams
B-1017B 3/4/1991	1-36	1-8 Hard to stiff gray and olive brown mottled clayey silt with brown silty fine sand seams 8-20 Stiff to firm gray clayey silt 20-30 Soft to firm gray clayey silt with sand seams very stiff seam encountered 20'-21', 3 very stiff sand seams encountered 24.5'-25.5' 30-36 Firm gray clayey silt with sand seams
B-1017C 3/5/1991	2-25 (hole terminated)	2-9 Hard to stiff gray and olive brown mottled clayey silt 9-25 Soft gray clayey silt with gray silty fine sand seams very stiff material encountered between 24'-25' with no sand seams
B-1017E 3/5/1991	2.5-13.5 (hole terminated)	2.5-9 Olive brown mottled clayey silt with sand seams 9-13.5 Gray clayey silt with gray silty fine sand seams
B-1019AB 4/3/1991	5-35	5-14 Stiff olive brown mottled clayey silt with trace fine to coarse sand and trace gray clayey silt 14-35 Firm gray clayey silt with fine sand seams
B-1019CD 4/3/1991	5-21 (hole terminated)	5-14 Olive brown mottled clayey silt with trace fine to coarse sand and trace gray clayey silt 14-21 Gray clayey silt with fine sand seams
B-1019E 4/2/1991	4-14 (hole terminated)	4-13.5 Olive brown mottled clayey silt with trace silty fine sand 13.5-14 Gray clayey silt with fine sand seams
B-1019F 5/28/1991	4-6.5 (hole terminated)	4-6.5 Brown mottled clayey silt with some fine to medium sand
B-1020AB 4/26/1991	2.5-43	2.5-9 Hard to stiff olive brown mottled clayey silt with trace fine sand 9-30 Firm, gray clayey silt with fine sand seams 30-43 Firm gray clayey silt with trace fine sand

B-1020CD 4/27/1991	2-21.5 (hole terminated)	2-9 Olive brown mottled clayey silt with trace fine sand 9-21.5 Gray clayey silt with trace fine sand
B-1020E 5/7/1991	2-11.5 (hole terminated)	2-9 Olive brown mottled clayey silt 9-11.5 Gray clayey silt
B-1020F 5/28/1991	2-4.5 (hole terminated)	2-4.5 Brown mottled clayey silt with silty fine sand seams
B-1021AB 3/20/1991	3-45	3-7 Very stiff olive brown and gray mottled clayey silt 7-33 Firm gray clayey silt with gray silty fine sand seams 33-45 Firm gray clayey silt with gray silty fine sand seams
B-1021CD 3/25/1991	2-20.4 (hole terminated)	2-7 Olive brown and gray mottled clayey silt 7-20.4 Gray clayey silt with gray silty fine sand seams
B-1021E 3/26/1991	3-12 (hole terminated)	3-8 Olive brown and gray mottled clayey silt with trace fine sand 8-12 Gray clayey silt with gray silty fine sand seams
B-1022AB 3/21/1991	8-64.5 (hole terminated)	8-14 Very stiff olive brown mottled clayey silt with some fine sand 14-20 Very stiff to firm gray clayey silt with fine sand seams 20-30 Firm to soft gray clayey silt with fine sand seams 30-42 Soft gray clayey silt with fine sand seams 42-62.5 Firm gray clayey silt 62.5-64.5 Hard gray clayey silt with some fine sand and trace fine gravel with cobbles @62.6’
B-1022CD 3/25/1991	8-32 (hole terminated)	8-14 Olive brown clayey silt with some fine sand 14-32 Gray clayey silt with fine sand seams
B-1022E 3/21/1991	8-11.5 (hole terminated)	8-11.5 Olive brown clayey silt with some fine sand
B-1022F	4-6 (hole terminated)	4-6 Brown mottled clayey silt with some fine sand layers
B-1023A 3/26/1991	0.5-39	0.5-8.5 Olive brown clayey silt with trace to some sand 8.5-39 Soft gray clayey silt
B-1023B 4/3/1991	None encountered	
B-1023C 4/4/1991	3.5-24 (hole terminated)	3.5-8.5 Brown silty clay, mottled 8.5-24 Gray silt and clay with gray silty fine sand seams
B-1023E 4/4/1991	3.5-12 (hole terminated)	3.5-8.5 Brown silty clay, mottled 8.5-12 Gray silt and clay with gray silty fine sand seams
B-1023F 5/27/1992	3-5.3 (hole terminated)	3-5.3 Brown mottled clayey silt with trace silty fine sand
B-1026A 3/21/1991	3.5-39	3.5-8 Olive brown mottled clayey silt with brown silty fine sand seams 8-16 Gray clayey silt with gray silty fine sand seams 16-39 Gray clayey silt
B-1026B 4/1/1991	3-43.5	3-8 Brown clay and silt, mottled 8-33 Gray clay and silt with gray silty fine sand seams, two sand seams 15’-16’ 33-43.5 Gray clay and silt with gray silty fine sand seams, stiff, mottled, sand seam 37’-38’
B-1026C 3/27/1991	2.5-25 (hole terminated)	2.5-8 Very stiff to stiff olive brown and gray mottled clayey silt with fine sand seams 8-25 Firm to soft gray clayey silt with gray silty fine sand seams
B-1026E 4/2/1991	3.5-12 (hole terminated)	3.5-8 Olive brown mottled clayey silt 8-12 Gray clayey silt
B-1026F 5/29/1992	4-6.5 (hole terminated)	4-6.5 Brown mottled clayey silt with silty fine sand seams
B-1027A 4/3/1991	10-52	10-14 Olive brown clayey silt with trace to some fine sand 14-52 Soft gray clayey silt
B-1027B 2/28/1991	10-51	10-12 Stiff olive brown mottled clayey silt with brown silty fine sand seams 12-14 Hard olive brown and gray clayey silt 14-51 Firm to soft gray clayey silt with gray silty fine sand seams, 8 sand seams encountered 43’-44’
B-1027E 2/28/1991	10-11.5 (hole terminated)	10-11.5 Olive brown mottled clayey silt with brown silty fine sand seams
B-1028A 3/29/1991	1.5-47.5	1.5-8.5 Olive brown clayey silt with some sand 8.5-47.5 Gray clayey silt
B-1028B 3/14/1991	0.5-49	0.5-8.5 Hard olive brown and gray mottled clayey silt with some fine sand 8.5-49 Firm to soft gray clayey silt with sand seams
B-1028C 3/18/1991	3.5-30 (hole terminated)	3.5-8.5 Stiff olive brown and gray clayey silt with trace black organics 8.5-30 Gray clayey silt with gray silty fine sand seams
B-1028E 3/20/1991	3.5-12 (hole terminated)	3.5-8.5 Olive brown and gray clayey silt 8.5-12 Gray clayey silt with gray silty fine sand seams
B-1029A 4/17/1991	0.5-48.3	0.5-7 Very stiff olive brown clayey silt with brown fine sand 7-9 Olive brown clayey silt with trace gray fine sand 9-48.3 Firm gray clayey silt with fine sand seams, sand layer 41’-41.5
B-1029B 3/8/1991	1-49	1-5 Olive brown mottled clayey silt 5-9 Very stiff to hard olive brown and gray mottled clayey silt with gray and brown silty fine sand seams, sand layer >0.1’ noted 5’-6.5’ 9-49 Soft to firm gray clayey silt with silty fine sand seams
B-1029E 3/11/1991	1-12 (hole terminated)	1-8 Olive brown mottled clayey silt 8-12 Gray clayey silt with gray silty fine sand seams
B-1030A 4/9/1991	0-21	0-14 Stiff to soft olive brown clayey silt with trace fine sand 14-21 Soft gray clayey silt
B-1030B 4/15/1991	2-16	2-11.5 Hard olive brown mottled clayey silt 11.5-16 Soft gray clayey silt with gray silty fine sand seams, layer of brown silty fine to coarse sand with some gravel at 13.3’
B-1030C 4/16/1991	2-11.5 (hole terminated)	2-11.5 Hard olive brown mottled clayey silt
B-1030E 4/15/1991	2-12 (hole terminated)	2-11.5 Hard olive brown mottled clayey silt 11.5-12 Gray clayey silt
B-1034A 4/24/1991	0.5-17.5	0.5-9 Hard to very stiff olive brown mottled clayey silt with trace organics and trace sand 9-17.5 Firm gray clayey silt with fine sand seams, 3 sand seams encountered between 14’-15’
B-1034B 4/25/1991	1-18	1-11 Olive brown mottled clayey silt with fine sand seams 11-18 Gray clayey silt

B-1034C 4/25/1991	1-18	1-9 Olive brown mottled clayey silt 9-15 Gray mottled clayey silt with fine sand seams 15-18 Gray clayey silt with fine sand seams
B-1034E 4/25/1991	1-11.5 (hole terminated)	1-11 Olive brown mottled clayey silt with fine sand seams 11-11.5 Gray clayey silt
B-1036A 4/5/1991	3-9.5	3-9.5 Very stiff olive brown clayey silt with some brown fine sand
B-1036B 4/8/1991	3-9	3-9 Very stiff olive brown clayey silt with some brown fine sand
B-1036E 4/8/1991	3-9.5	3-9.5 Olive brown mottled clayey silt with trace brown fine sand
B-1036F 8/26/1991	3-9	3-9 Brown silty mottled clay
B-1036FA 8/29/1991	3-9	3-9 Brown silty mottled clay
B-1037A 3/28/1991	4.5-13	4.5-13 Hard olive brown clayey silt with trace fine sand
B-1037B 3/29/1991	2-14	2-14 Stiff olive brown mottled clayey silt with trace fine sand
B-1037E 3/28/1991	2-13 (hole terminated)	2-10 Olive brown mottled clayey silt with some fine sand 10-13 Stiff olive brown clayey silt with trace fine sand
B-1040A 4/11/1991	0.5-2.5	0.5-2.5 Olive brown mottled clayey silt with some brown fine sand, trace silt
B-1040B/1040E 4/11/1991	None encountered	
B-1041A/1041B/ 1041E 4/8/1991	None encountered	
B-1042A 4/1/1991	3-14	3-8 Stiff to hard olive brown clayey silt with some fine sand 8-14 Hard olive brown mottled clayey silt with trace gray clayey silt
B-1042B 4/2/1991	3-15	3-7 Hard olive brown mottled clayey silt with brown fine sand seams and trace organics 7-10 Olive brown and gray mottled clayey silt 10-15 Soft gray clayey silt with some fine sand seams
B-1042E 4/2/1991	3-14 (hole terminated)	3-7 Olive brown mottled clayey silt with brown fine sand seams 7-10 Olive brown and gray mottled clayey silt 10-14 Gray clayey silt with some fine sand seams
B-1044A 4/18/1991	6-16	6-8 Hard olive brown mottled clayey silt 8-16 Soft to firm gray clayey silt
B-1044B 4/12/1991	6-13	6-8 Olive brown clayey silt 8-13 Gray clayey silt
B-1044C 4/18/1991	6-13 (hole terminated)	6-8 Olive brown mottled clayey silt 8-13 Gray clayey silt
B-1044E 4/19/1991	5-11.5 (hole terminated)	5-9 Olive brown mottled clayey silt 9-11.5 Gray clayey silt

ft bgs= feet below ground surface
= Mottled clay descriptions.
= Clay descriptions including sand seams
= Clay descriptions including fissures

Prepared by: DFSC
Checked by: TK
Reviewed by: APTM

APPENDIX B-2

Summary of Test Pit Log Lithologic Descriptions

Appendix B-2 – Summary of Test Pit Log Lithologic Descriptions

Boring Name/ Reference	Depth of Clay (ft bgs)	Description
Phase 12 test pit (TP 2000) 3/1/93	0.5-20.5 (bottom of test pit)	0.5-4.0 - Olive brown clay-silt, prismatic fracturing with some root hairs in vertical fractures 3-20.5 - Gray clay-silt, soft to moderately stiff, massive soil structure, with indications of varied density and moisture content with depth
Phase 12 test pit (TP 2001) 3/1/93	1.5-18 (bottom of test pit)	1.5-3.5 - Olive brown clay-silt, prismatic fracturing, with some root hairs in vertical fractures 3.5-18 Gray clay-silt, soft to moderately stiff, massive soil structure with indications of varied density and moisture with depth. Thin seam of medium to coarse sand (1/2 inch thick @ 11.5)
Phase 12 test pit (TP 2002) 3/1/93	4.5-19.5 (bottom of test pit)	4.5-6.5 Olive brown clay-silt grading to gray with depth, firm to moderately stiff 6.5-18 Gray clay-silt, uniform color, massive soil structure, small variations in moisture content and density with depth.
Phase 12 test pit (TP 2003) 3/1/93	3.5-20.5 (bottom of test pit)	3.5 – 11 Olive brown fine sandy silt grading to grey with depth, vertical and horizontal blocky to prismatic fractures, medium stiff 11-20.5 Gray clay-silt, uniform color, massive structure, small variations in moisture content and density with depth
Phase 12 test pit (TP 2004) 3/1/93	14-20.5 (bottom of test pit)	14-17 Olive brown clay-silt, mottled, less apparent fracturing 17-20.5 Gray clay-silt, uniform color, massive structure, small variations in moisture content and density with depth
Phase 12 test pit (TP 2005) 3/1/93	3.5-20.5 (bottom of test pit)	3.5-8.5 Olive brown clay-silt, mottled, less apparent fracturing 8.5-20.5 Gray clay-silt, uniform color, massive structure, below 10.5 small variations in moisture content and density with depth

ft bgs= feet below ground surface
NP= not provided
= Mottled clay descriptions.
= Clay descriptions including sand seams.
= Clay descriptions including fracturing.
= Clay descriptions including root hair.

Prepared by: DFSC
Checked by: TK
Reviewed by: APTM

APPENDIX B-3

Geosyntec Memorandum

Information Relevant to MEDEP Comment 17.a.

289 Great Road, Suite 202
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Technical Memorandum

Date: 30 July 2020

To: Alistair Macdonald, Golder Associates
Sherwood McKenney, WMDSM

From: Zachary Tanguay, Nicholas Yafrate, P.E., and Scott Luettich, P.E.
Geosyntec Consultants

Subject: Information Relevant to MEDEP Comment #17.a
Volume III - Geologic and Hydrogeologic Assessment
Phase 14 Solid Waste Permit Application
Crossroads Landfill, Norridgewock, Maine

The purpose of this memorandum is to provide information regarding Comment 17.a received from the Maine Department of Environmental Protection (MEDEP) during their review of Volume III, *Geologic and Hydrogeologic Assessment* prepared by Golder Associates (Golder) as part of the Phase 14 Solid Waste Permit Application, dated 24 October 2019. MEDEP's Comment #17.a was presented in their second round of Volume III comments transmitted in a memorandum from Linda Butler to Waste Management Disposal Services of Maine (WMDSM) on 22 June 2020. The portion of MEDEP's comment addressed herein is underlined and yellow-highlighted below.

MEDEP Comment 17.a *In this response, Golder states that desiccation fissures, disruption by roots, frost fracturing, and expansion fracturing were not observed, yet a 2015 paper by Luettich, et al., described the upper clay at the Crossroads Landfill as often exhibiting "a wide range of post-depositional features such as desiccation fissures, disruption by roots, frost fracturing, and expansion fracturing." In the 1992 investigation, almost all of the borings (B-305, B-1001 to B- 1044, B-103, B-310, B-614, B-615, B-617, B-618, B-620) described the stiff olive clayey silt as mottled, fissured, containing roots and sand seams and the soft gray clayey silt as having sand seams. The test pits logs (31) describe the stiff clay as mottled, fractured, containing roots, sand seams. We examined the photographs of the GB borings, which were the only images provided, and noticed that there were features, such as gray clay mottled with green or brown areas, sandy lenses, and apparent fractures, in the upper stiff clay, but these features were not described in the boring logs. Some examples of images that show features that are not described are GB7-13'-15, GB13-11'-13'(2), GB15-3'-7', GB17-7'-9', PZ-5M-9'-11'. etc. This reinforces our concern that the descriptions of the borings for which we don't have photographs may be missing some information.*

Geosyntec has gone through each Phase 14 boring log and photograph cited by MEDEP above in the yellow-highlighted part of Comment 17.a. Since MEDEP did not identify exactly which features they were alluding to, we have annotated the logs and photographs to address features that might be relevant to their comment. Prior to discussing specific features, however, it is imperative to clarify that the purpose of the geotechnical borings was to provide information about the depth, thickness, and strength of the stratigraphic layers for geotechnical aspects of the landfill design, namely slope stability and settlement of the liner system. A secondary purpose was to provide information to evaluate the suitability and quantity of silty-sand overburden soil that will be excavated for potential re-use in constructing the perimeter berm. As such, the geotechnical field investigation was performed using split-spoon sampling which provides valuable Standard Penetration Test strength information (SPT, aka blow counts) and allows for field index classification of the soils, but creates substantial disturbance from the dynamic action of the drive hammer. And extracting the sampler, breaking apart the split spoon, and cutting the sample for soil-indexing purposes then creates additional disturbance. This is further addressed in a footnote in Golder's Supplemental Geologic and Hydrogeologic Report which explains:

"As noted in WMDSM's June 2020 Response to Comment document, no photographs of intact/undisturbed soil samples were taken during the site investigations. The sample classification process involved breaking the split spoon sampler apart, cutting the soil sample in half, removing sections of soil from the split spoon for inspection and pocket penetrometer and/or torvane testing to assess properties. The photographs provided to MEDEP reflect the condition of the samples after the field testing/classification process and are not representative of in-situ or undisturbed conditions."

In light of the above clarification, we were not surprised to observe instances in the sample photographs and logs identified by MEDEP where it is not possible to definitively conclude whether features were naturally occurring (e.g., layers of fine sand/silt or post-depositional fissures) or were an artifact of the split-spoon sampling procedure. When the origin of such features (annotated on the attached photographs) was plausibly from sample disturbance, details were not included on the geotechnical descriptions in the logs. We have also added annotations to the attached photographs where features are consistent with descriptions on the boring logs and our macro understanding of the subsurface geotechnical conditions formulated by a holistic compilation of all the data after the field work was completed.

* * * * *

ATTACHMENT A – Pertinent Phase 14 Boring Logs and Photographs of Field Samples

ATTACHMENT A

Pertinent Phase 14 Boring Logs and Photographs of Field Samples listed by MEDEP in Comment 17.a

Geosyntec consultants

BOREHOLE LOG

GB-07

Client: WMDSM - Crossroads Landfill
Project Location: Norridgewock, Maine
Project Name: 2019 Phase 14 Geotechnical Investigation
Project Number: BE0232

Drilling Contractor: New England Boring Contractors
Drilling Method/Rig: Drive and Wash/CME
Drillers: Tom Shaefer, Mark Titus
Drilling Date: Start: 6 March 2019 **End:** 6 March 2019
Borehole Coordinates:
N 685,137.35 E 3,039,242.06

Surface Elevation (ft.): 286.87 (NAVD 88)
Total Depth (ft.): 36
Abandonment Method: Bentonite Chips
Logged By: Zachary Tanguay

Sample Type	Blows per 6 inches	Sample Recovery (Inches)	Elev. Depth (ft.)	Graphic Log	USCS Stratum Designation	Material Description
			0			(0'-1') Roller bit through ice and frost.
SS	6 6 4 5	24/12			ML SP	(1'-1.6') Dry, stiff, brown, SILT, some coarse to fine sand, little fine gravel, little organics (ML) (1.6-2') Dry, loose, brown, medium to fine SAND, little silt, little organics (SP)
SS	2 2 3 3	24/10			SM	(3'-3.8') Dry, loose, brown, medium to fine SAND, some silt (SM)
SS	4 5 6 7	24/18	5		SP	(5'-6.5') Moist, medium dense, brown, medium to fine SAND, little silt (SP) Red staining observed at 6 ft bgs.
SS	4 8 9 4	24/18			SP	(7'-8.5') Wet, medium dense, grayish brown, medium to fine SAND, little silt (SP) Red staining observed at 8 ft bgs.
SS	3 5 6 10	24/14	10		CL	(9'-10.2') Wet, stiff, grayish brown, CLAY, some silt, little fine sand (CL)
SS	4 6 9 8	24/21			CL	(11'-12.7') Wet, stiff, gray, CLAY, some silt, trace fine sand (CL)
SS	3 4 6 6	24/22			CL	(13'-14.8') Wet, stiff, gray, CLAY, some silt (CL) Refer to annotations on the photograph of this sample for plausible interpretations about MEDEP's comment.
SS	2 3 4 4	24/24	15		CL	(15'-17') Wet, firm, gray, CLAY, little silt (CL)
SH		24/22				(17'-19') Shelby Tube collected.
	WOH WOH				CL	(19'-20.8') Wet, very soft, gray, CLAY (CL) 1/8 inch thick fine sand lens at 22.7 ft bgs.

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
HA - Hand Auger
AR - Air Rotary
DTR - Dual Tube Rotary
FR - Foam Rotary
MR - Mud Rotary
RC - Reverse Circulation
CT - Cable Tool
JET - Jetting
D - Driving
DTC - Drill Through Casing

SAMPLING TYPES:
AS - Auger/Grab Sample
CS - California Sampler
BX - 1.5" Rock Core
NX - 2.1" Rock Core
GP - Geoprobe
HP - Hydro Punch
SS - Split Spoon
ST - Shelby Tube
WS - Wash Sample
OTHER:
AGS - Above Ground Surface

REMARKS

1. Wash water started at 9 ft bgs.
2. Depth measured from top of 1-ft thick ice and frost.

Reviewed by: NJY & YMC **Date:** 17 June 2019

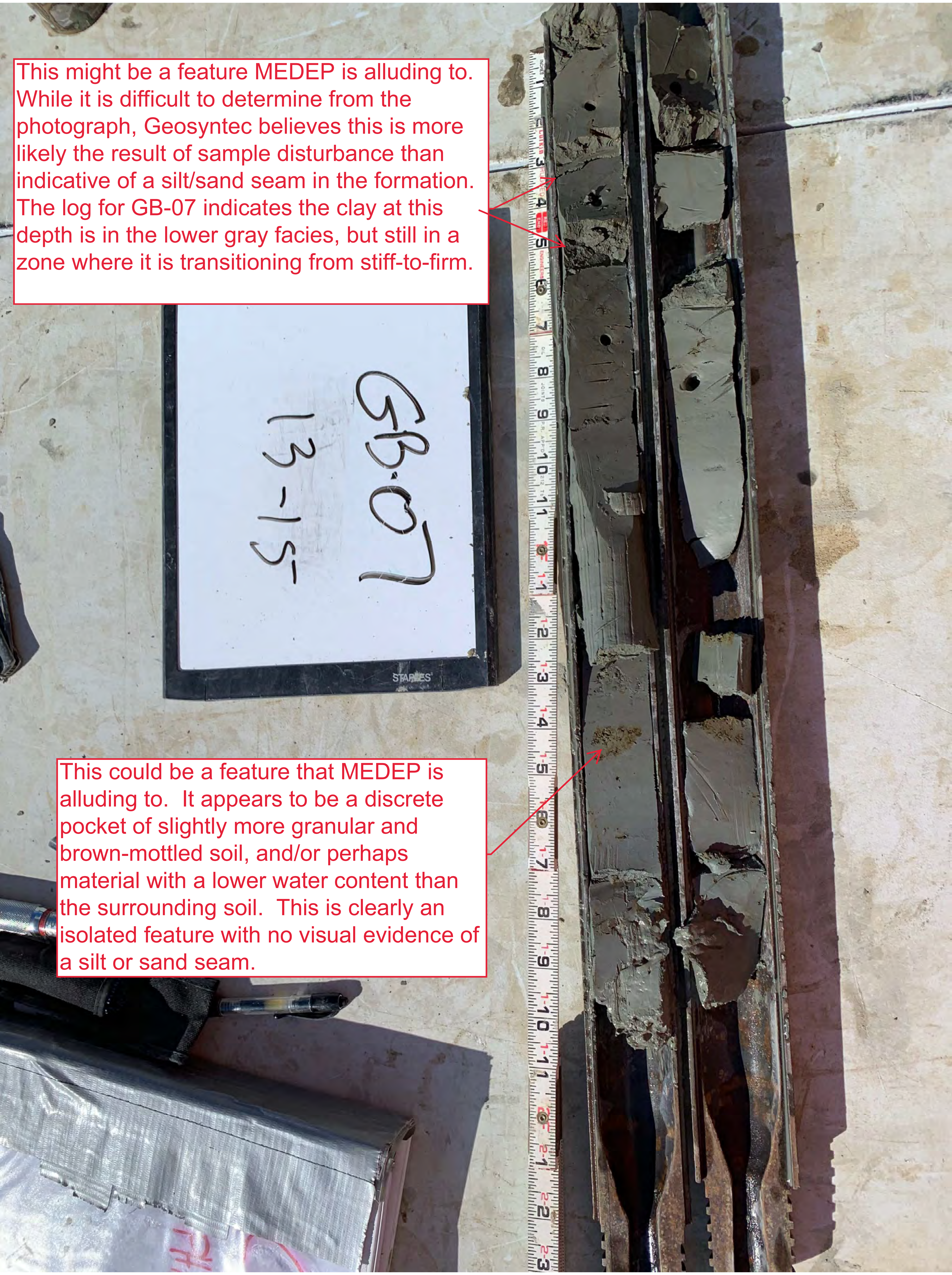
Geosyntec consultants

BOREHOLE LOG

GB-07

Client: WMDSM - Crossroads Landfill
Project Location: Norridgewock, Maine
Project Name: 2019 Phase 14 Geotechnical Investigation
Project Number: BE0232

Sample Type	Blows per 6 inches	Sample Recovery (Inches)	Elev. Depth (ft.)	Graphic Log	USCS Stratum Designation	Material Description
SS	WOH 10	24/24	20		SM	(20.8'-21') Wet, very loose, gray, coarse to fine SAND, some silt, little fine gravel (SM)
SS	10 7 3 3	24/0	25			No Recovery.
SS	72/6"	6/6	30		ML	(30'-30.5') Wet, very hard, gray, SILT, some coarse to fine sand, little fine gravel (ML) Bedrock encountered at 33.8 ft bgs. Roller bit 2 ft into bedrock for confirmation. End of exploration at 36 ft bgs.
			35			
			40			
			45			
			50			



This might be a feature MEDEP is alluding to. While it is difficult to determine from the photograph, Geosyntec believes this is more likely the result of sample disturbance than indicative of a silt/sand seam in the formation. The log for GB-07 indicates the clay at this depth is in the lower gray facies, but still in a zone where it is transitioning from stiff-to-firm.

This could be a feature that MEDEP is alluding to. It appears to be a discrete pocket of slightly more granular and brown-mottled soil, and/or perhaps material with a lower water content than the surrounding soil. This is clearly an isolated feature with no visual evidence of a silt or sand seam.

Geosyntec consultants

BOREHOLE LOG

GB-13

Client: WMDSM - Crossroads Landfill
Project Location: Norridgewock, Maine
Project Name: 2019 Phase 14 Geotechnical Investigation
Project Number: BE0232

Drilling Contractor: New England Boring Contractors
Drilling Method/Rig: Drive and Wash/CME
Drillers: Tom Shaefer, Mark Titus
Drilling Date: Start: 27 February 2019 **End:** 27 February 2019
Borehole Coordinates:
N 685,193.13 E 3,040,012.07

Surface Elevation (ft.): 290.42 (NAVD 88)
Total Depth (ft.): 27
Abandonment Method: Bentonite Chips
Logged By: Zachary Tanguay

Sample Type	Blows per 6 inches	Sample Recovery (Inches)	Elev. Depth (ft.)	Graphic Log	USCS Stratum Designation	Material Description
			0			(0'-1') Roller bit through ice and frost.
SS	3 4 4 5	24/12			SM	(1'-2') Dry, loose, reddish brown, medium to fine SAND, little silt, little fine gravel, organics (SM)
SS	4 4 5 6	24/22			SM	(3'-4.8') Moist, loose, brown, medium to fine SAND, some silt, trace organics (SM)
SS	12 18 20 22	24/20	5		SM	(5'-6.7') Moist, dense, brown, medium to fine SAND, some silt (SM)
SS	9 11 13 8	24/18			SM	(7'-8.5') Wet, medium dense, brown, medium to fine SAND, some silt (SM)
SS	3 5 7 11	24/18	10		CL	(9'-10.5') Wet, stiff, brown, CLAY, some silt, little coarse to fine sand (CL)
SS	5 8 9 11	24/20			CL	(11'-12.8') Wet, very stiff, gray, CLAY, some silt, trace medium to fine sand (CL) Refer to annotations on the photograph of this sample for plausible interpretations about MEDEP's comment.
SS	4 5 6 6	24/24			CL	(13'-15') Wet, stiff, gray, CLAY, little silt (CL) 1/8 inch thick lens of fine sand observed at 14 and 14.8 ft bgs
			15			Roller bit to 17 ft bgs. No sample collected.
SH		24/24			CL	(17'-19') Shelby Tube collected. Wet, gray, CLAY, little silt (CL) Pocket Penetrometer: 1.25, 1.25, and 1.25 Tons/FT2
	WOH WOH				CL	(19'-21') Wet, very soft, gray, CLAY (CL)

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
HA - Hand Auger
AR - Air Rotary
DTR - Dual Tube Rotary
FR - Foam Rotary
MR - Mud Rotary
RC - Reverse Circulation
CT - Cable Tool
JET - Jetting
D - Driving
DTC - Drill Through Casing

SAMPLING TYPES:
AS - Auger/Grab Sample
CS - California Sampler
BX - 1.5" Rock Core
NX - 2.1" Rock Core
GP - Geoprobe
HP - Hydro Punch
SS - Split Spoon
ST - Shelby Tube
WS - Wash Sample
OTHER:
AGS - Above Ground Surface

REMARKS

1. Wash water started at 9 ft bgs.
2. Depth measured from top of 1-ft thick ice and frost.

Reviewed by: NJY & YMC **Date:** 17 June 2019

Geosyntec consultants

BOREHOLE LOG

GB-13

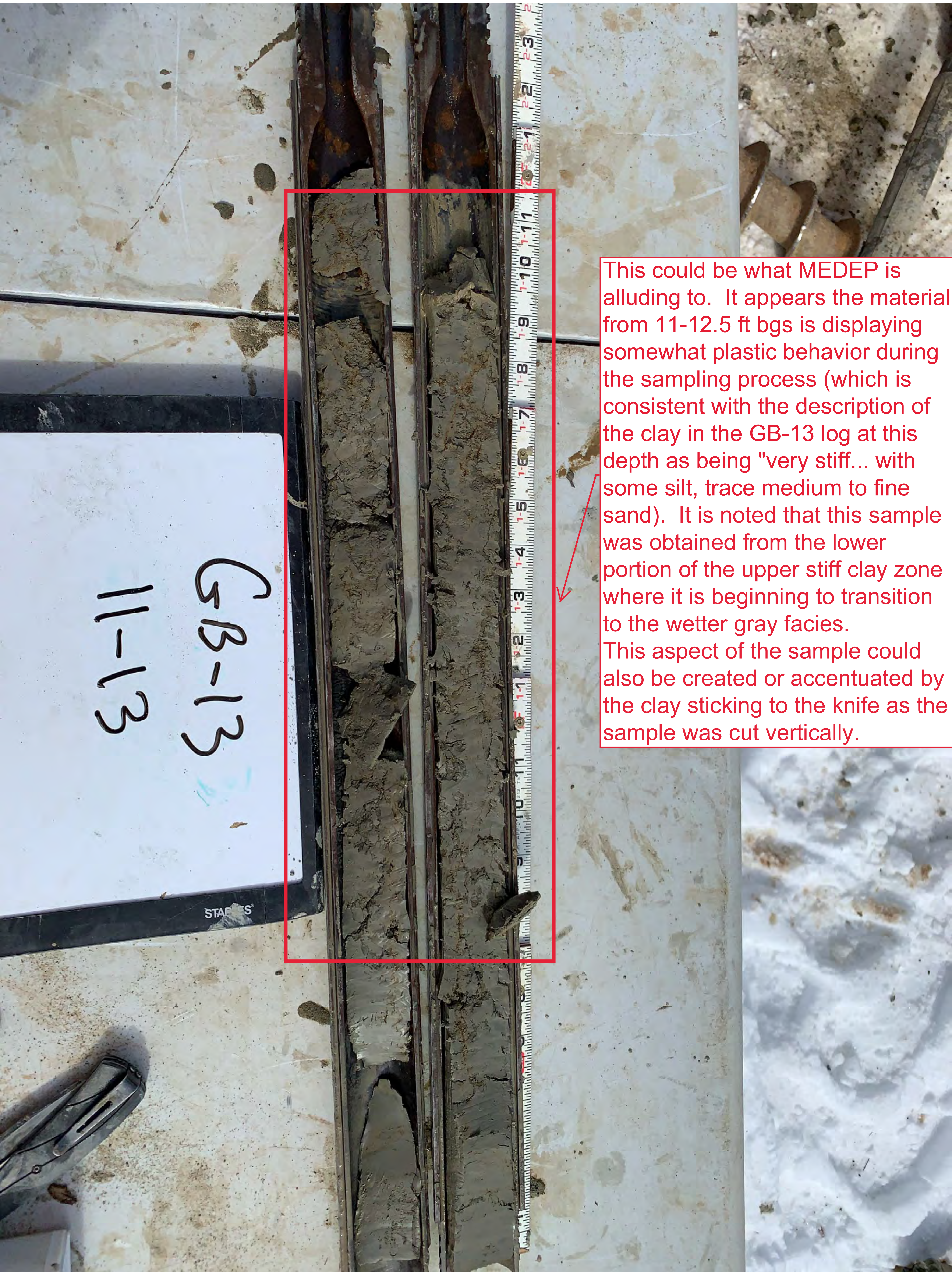
Client: WMDSM - Crossroads Landfill

Project Location: Norridgewock, Maine

Project Name: 2019 Phase 14 Geotechnical Investigation

Project Number: BE0232

Sample Type	Blows per 6 inches	Sample Recovery (Inches)	Elev. Depth (ft.)	Graphic Log	USCS Stratum Designation	Material Description
SS	WOH WOH	24/24	20			
SS	WOH 20 20 20	24/16			CL	(21'-22') Wet, hard, gray, CLAY (CL)
					ML	(22'-22.4') Wet, hard, gray, SILT, some coarse to fine sand, little fine gravel (ML)
						Bedrock encountered at 24.8 ft bgs. Roller bit 2 ft into bedrock for confirmation. End of exploration at 27 ft bgs.
			25			
			30			
			35			
			40			
			45			
			50			



This could be what MEDEP is alluding to. It appears the material from 11-12.5 ft bgs is displaying somewhat plastic behavior during the sampling process (which is consistent with the description of the clay in the GB-13 log at this depth as being "very stiff... with some silt, trace medium to fine sand). It is noted that this sample was obtained from the lower portion of the upper stiff clay zone where it is beginning to transition to the wetter gray facies.
This aspect of the sample could also be created or accentuated by the clay sticking to the knife as the sample was cut vertically.

Geosyntec consultants

BOREHOLE LOG

GB-15

Client: WMDSM - Crossroads Landfill
Project Name: 2019 Phase 14 Geotechnical Investigation
Project Location: Norridgewock, Maine
Project Number: BE0232

Drilling Contractor: New England Boring Contractors
Surface Elevation (ft.): 280.27 (NAVD 88)
Drilling Method/Rig: Drive and Wash/CME
Total Depth (ft.): 19.5
Drillers: Tom Shaefer, Mark Titus
Abandonment Method: Bentonite Chips
Drilling Date: Start: 12 March 2019 **End:** 13 March 2019
Logged By: Zachary Tanguay
Borehole Coordinates:
N 685,379.41 E 3,040,280.31

Sample Type	Blows per 6 inches	Sample Recovery (Inches)	Elev. Depth (ft.)	Graphic Log	USCS Stratum Designation	Material Description
			0			(0'-1') Roller bit through ice and frost.
SS	1 2 2 9	24/18			SM	(1'-2.1') Moist, very loose, brown, medium to fine SAND, some silt, some organics (SM)
					ML	(2.1'-2.5') Moist, soft, grayish brown, SILT, some medium to fine sand (ML)
SS	8 8 10 9	24/24			CL	(3'-5') Moist, very stiff, brown, CLAY, little silt (CL) Refer to annotations on the photograph of this sample for plausible interpretations about MEDEP's comment.
SS	5 7 8 11	24/24	5		CL	(5'-7') Moist, stiff, brown, CLAY, little silt (CL) Refer to annotations on the photograph of this sample for plausible interpretations about MEDEP's comment.
SH		24/24			CL	(7'-9') Shelby tube collected. Wet, brown, CLAY, little silt (CL)
SS	WOH 1 2 1	24/11	10		CL	(9'-9.9') Wet, soft, gray, CLAY (CL)
SH		24/24			CL	(11'-13') Shelby tube collected. Wet, gray, CLAY (CL)
SS	WOH WOH WOH WOH	24/24			CL	(13'-15') Wet, very soft, gray, CLAY (CL)
SS	WOH 15 20 17	24/7	15		CL	(15'-15.6') Wet, hard, gray, CLAY (CL) Rock in tip of split spoon.
SS	50/3"	3/0				No recovery. Bedrock encountered at 17.5 ft bgs. Roller bit 2 ft into bedrock for confirmation. End of exploration at 19.5 ft bgs.

EXPLANATION OF ABBREVIATIONS

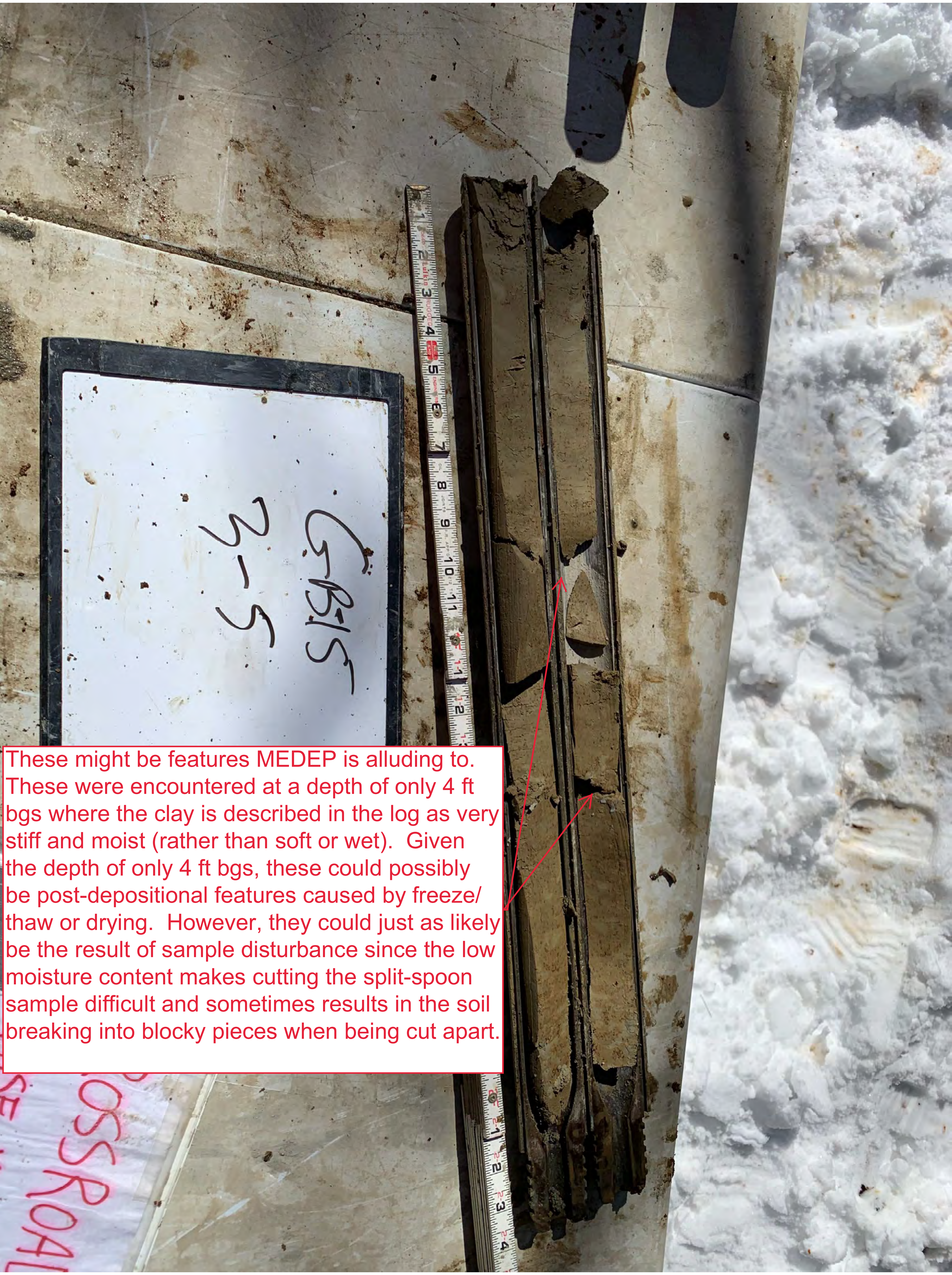
DRILLING METHODS:
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
HA - Hand Auger
AR - Air Rotary
DTR - Dual Tube Rotary
FR - Foam Rotary
MR - Mud Rotary
RC - Reverse Circulation
CT - Cable Tool
JET - Jetting
D - Driving
DTC - Drill Through Casing

SAMPLING TYPES:
AS - Auger/Grab Sample
CS - California Sampler
BX - 1.5" Rock Core
NX - 2.1" Rock Core
GP - Geoprobe
HP - Hydro Punch
SS - Split Spoon
ST - Shelby Tube
WS - Wash Sample
OTHER:
AGS - Above Ground Surface

REMARKS

1. Wash water started at 7 ft bgs.
2. Depth measured from top of 1-ft thick ice and frost.

Reviewed by: NJY & YMC
Date: 17 June 2019



These might be features MEDEP is alluding to. These were encountered at a depth of only 4 ft bgs where the clay is described in the log as very stiff and moist (rather than soft or wet). Given the depth of only 4 ft bgs, these could possibly be post-depositional features caused by freeze/thaw or drying. However, they could just as likely be the result of sample disturbance since the low moisture content makes cutting the split-spoon sample difficult and sometimes results in the soil breaking into blocky pieces when being cut apart.


See Geosyntec's remarks in the photograph of GB-15 at 3-5 ft depth.
This might be a feature MEDEP is alluding to. This appears to be a spot where difficulty cutting the sample was encountered more so than a post-depositional feature.
GB15
5-7
STAPLES

Geosyntec consultants

BOREHOLE LOG

GB-17

Client: WMDSM - Crossroads Landfill
Project Location: Norridgewock, Maine
Project Name: 2019 Phase 14 Geotechnical Investigation
Project Number: BE0232

Drilling Contractor: New England Boring Contractors
Drilling Method/Rig: Drive and Wash/CME
Drillers: Tom Shaefer, Mark Titus
Drilling Date: Start: 13 March 2019 **End:** 14 March 2019
Borehole Coordinates:
N 684,549.23 E 3,040,314.07

Surface Elevation (ft.): 273.77 (NAVD 88)
Total Depth (ft.): 27.5
Abandonment Method: Bentonite Chips
Logged By: Zachary Tanguay

Sample Type	Blows per 6 inches	Sample Recovery (Inches)	Elev. Depth (ft.)	Graphic Log	USCS Stratum Designation	Material Description
			0			(0'-1') Roller bit through ice and frost.
SS	5 1 2 4	24/11			SM	(1'-1.9') Moist, very loose, brown, medium to fine SAND, some silt, little organics (SM)
SS	WOH 4 4 4	24/16			SP	(3'-3.5') Moist, loose, brown, medium to fine SAND, little silt (SP)
					CL	(3.5'-4.4') Moist, firm, brown, CLAY, little silt (CL)
SS	3 5 7 7	24/24	5		CL	(5'-7') Moist, stiff, brown, CLAY, little silt (CL)
SS	1 4 5 6	24/22			CL	(7'-7.9') Moist, stiff, grayish brown, CLAY, little silt (CL)
					CL	(7.9'-8.9') Moist, stiff, gray, CLAY (CL)
SS	2 3 4 5	24/20	10		CL	(9'-10.8') Wet, firm, gray, CLAY, little silt (CL)
SS	1 2 3 3	24/24			CL	(11'-13') Wet, firm, gray, CLAY (CL)
					CL	(13'-15') Shelby tube attempted. No recovery. Split spoon hydraulically advanced. Wet, gray, CLAY (CL)
SH		24/24	15		CL	(15'-17') Shelby tube collected. Wet, gray, CLAY (CL)
SS	WOH WOH WOH WOH	24/24			CL	(17'-19') Wet, very soft, gray, CLAY (CL)
	WOH WOH				CL	(19'-21') Wet, very soft, gray, CLAY (CL) 1/8 inch thick lens of silt at 20.3 ft bgs.

Refer to annotations on the photograph of this sample for plausible interpretations about MEDEP's comment.

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
HA - Hand Auger
AR - Air Rotary
DTR - Dual Tube Rotary
FR - Foam Rotary
MR - Mud Rotary
RC - Reverse Circulation
CT - Cable Tool
JET - Jetting
D - Driving
DTC - Drill Through Casing

SAMPLING TYPES:
AS - Auger/Grab Sample
CS - California Sampler
BX - 1.5" Rock Core
NX - 2.1" Rock Core
GP - Geoprobe
HP - Hydro Punch
SS - Split Spoon
ST - Shelby Tube
WS - Wash Sample
OTHER:
AGS - Above Ground Surface

REMARKS

1. Wash water started at 9 ft bgs.
2. Depth measured from top of 1-ft thick ice and frost.

Reviewed by: NJY & YMC **Date:** 17 June 2019

Geosyntec consultants

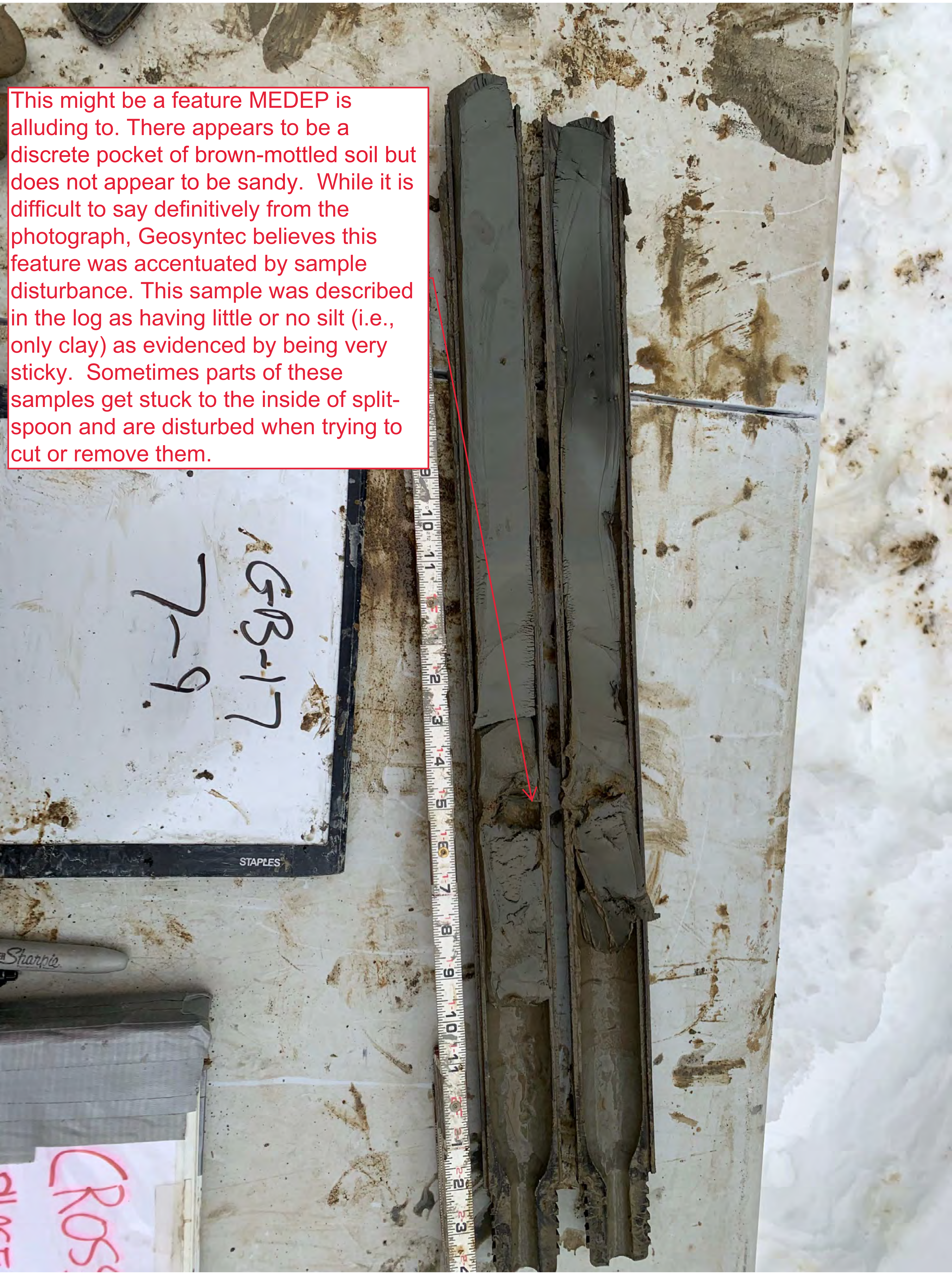
BOREHOLE LOG

GB-17

Client: WMDSM - Crossroads Landfill
Project Name: 2019 Phase 14 Geotechnical Investigation
Project Location: Norridgewock, Maine
Project Number: BE0232

Sample Type	Blows per 6 inches	Sample Recovery (Inches)	Elev. Depth (ft.)	Graphic Log	USCS Stratum Designation	Material Description
SS	WOH WOH	24/24	20			
SS	WOH WOH WOH WOH	24/24			CL	(21'-23') Wet, very soft, gray, CLAY (CL)
SS	WOH WOH WOH 7	24/24			CL	(23'-25') Wet, very soft, gray, CLAY (CL)
			25			Bedrock encountered at 25.6 ft bgs. Roller bit 2 ft into bedrock for confirmation. End of exploration at 27.5 ft bgs.
			30			
			35			
			40			
			45			
			50			

This might be a feature MEDEP is alluding to. There appears to be a discrete pocket of brown-mottled soil but does not appear to be sandy. While it is difficult to say definitively from the photograph, Geosyntec believes this feature was accentuated by sample disturbance. This sample was described in the log as having little or no silt (i.e., only clay) as evidenced by being very sticky. Sometimes parts of these samples get stuck to the inside of split-spoon and are disturbed when trying to cut or remove them.



Geosyntec consultants

BOREHOLE LOG

PZ-5M

Client: WMDSM - Crossroads Landfill
Project Location: Norridgewock, Maine
Project Name: 2019 Phase 14 Geotechnical Investigation
Project Number: BE0232

Drilling Contractor: New England Boring Contractors
Drilling Method/Rig: Drive and Wash/CME
Drillers: Tom Shaefer, Mark Titus
Drilling Date: Start: 20 March 2019 **End:** 20 March 2019
Borehole Coordinates:
N 685,620.52 E 3,038,720.59

Surface Elevation (ft.): 286.12 (NAVD 88)
Total Depth (ft.): 15
Abandonment Method: Piezometer, Sand, and Bentonite Chips
Logged By: Zachary Tanguay

Sample Type	Blows per 6 inches	Sample Recovery (Inches)	Elev. Depth (ft.)	Graphic Log	USCS Stratum Designation	Material Description
			0			(0'-1') Roller bit through ice and frost.
SS	3 3 4 5	24/14			SP	(1'-2.2') Moist, loose, brown, medium to fine SAND, some organics, little silt (SP)
SS	3 3 5 7	24/20			SP	(3'-4.3') Moist, loose, brown, medium to fine SAND, little silt, little organics (SP)
					CL	(4.3'-4.8') Moist, firm, brown, CLAY, little silt (CL)
SS	5 5 6 10	24/19	5		CL	(5'-6.6') Moist, stiff, brown, CLAY, little silt (CL) 3 inch thick lens of silt at 6.3 ft bgs.
SS	4 5 7 7	24/20			CL	(7'-8.7') Moist, stiff, brown, CLAY, little silt (CL)
SS	3 4 5 4	24/24	10		CL	(9'-11') Wet, stiff, brown, CLAY, little silt (CL) 2 inch thick lens of coarse to fine sand at 10.3 ft bgs.
SS	1 2 1 2	24/18			CL	(11'-12.5') Wet, soft, gray, CLAY (CL)
SS	12 20 17 29	24/3			ML	(13'-13.3') Wet, hard, gray, SILT, some medium to fine gravel, little coarse to fine sand (ML)
			15			End of exploration at 15 ft bgs. PZ-5M installed. Screen Interval: 7-12 ft bgs Sand Interval: 6-12.5 ft bgs Screen: 10,000 Sand: 1 S Remainder of borehole backfilled with bentonite chips.

Refer to annotations on the photograph of this sample for plausible interpretations about MEDEP's comment.

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
HA - Hand Auger
AR - Air Rotary
DTR - Dual Tube Rotary
FR - Foam Rotary
MR - Mud Rotary
RC - Reverse Circulation
CT - Cable Tool
JET - Jetting
D - Driving
DTC - Drill Through Casing

SAMPLING TYPES:
AS - Auger/Grab Sample
CS - California Sampler
BX - 1.5" Rock Core
NX - 2.1" Rock Core
GP - Geoprobe
HP - Hydro Punch
SS - Split Spoon
ST - Shelby Tube
WS - Wash Sample
OTHER:
AGS - Above Ground Surface

REMARKS

1. Wash water started at 7 ft bgs.
2. Depth measured from top of 1-ft thick ice and frost.

Reviewed by: NJY & YMC **Date:** 17 June 2019

This might be a feature MEDEP is alluding to. The log describes a 2-inch thick lens of sand in this sample at approximately this depth.

APPENDIX C

Piezometer Boring and Installation Logs

RECORD OF WELL CONSTRUCTION PZ-22M

PROJECT: Crossroads Expansion
PROJECT NUMBER: 19119078
DRILLED DEPTH: 14.2 ft
AZIMUTH: N/A
LOCATION: Norridgewock, ME

DRILL METHOD: Drive and Wash
DRILL RIG: Diedrich D-50 T
HAMMER TYPE: NA
DATE STARTED: 6/11/20
DATE COMPLETED: 6/11/20

COORDS: N: 684,492.30 E: 3,039,409.60
GS ELEVATION: 276.46 ft
TOC ELEVATION: 279.25 ft
WEATHER: Rain showers
TEMPERATURE: 70's F

INCLINATION: 90
DEPTH W.L.: NA
ELEVATION W.L.:
DATE W.L.: NA
TIME W.L.: NA

DEPTH ft	ELEVATION ft	SOIL PROFILE: LITHOLOGY DESCRIPTION	GRAPHIC LOG	USCS	N Value	WELL DETAILS: WELL GRAPHICS	Well Construction Information
0.0		0.0 - 3.5ft ORGANICS; root and wood material; brown					
	275						
		3.5 - 6.5ft Fine SILTY SAND; olive gray-brown		SM			Annulus Seal
5.0							
	270	6.5 - 10.0ft Medium stiff CLAY; olive gray-brown		CL			Filter pack Seal
10.0		10.0 - 14.2ft Medium stiff CLAY; olive gray		CL			Filter Pack Screen Filter Pack
	265						
15.0		Boring completed at 14.2 ft *No soil samples collected at this location. Lithology at this location based on MW14-03B					
20.0							
25.0							
30.0							
35.0							
40.0							

WELL CASING
Interval (ft): 0-11.06
Material: PVC
Diameter (in): 2
Joint Type: Threaded

WELL SCREEN
Interval (ft): 11.06-13.06
Material: PVC
Diameter (in): 2
Slot Size: 0.01

FILTER PACK
Interval (ft): 9.1-14.2
Type: #2 Sand

FILTER PACK SEAL
Interval (ft): 8.5-9.1
Type: Bentonite Chips

SURFACE SEAL
Interval (ft): 0-8.5
Type: Bentonite Grout Mix

Organics/Topsoil

USCS Silty Sand (SM)

USCS Low Plasticity Clay (CL)

DRILLING COMPANY: SW Cole
DRILLER: K. Hanscom

GA INSPECTOR: BDL
CHECKED BY: CRH
DATE: 7/16/20

Golder Associates

RECORD OF BOREHOLE PZ-23D

PROJECT: Crossroads Expansion
PROJECT NUMBER: 19119078
DRILLED DEPTH: 27.0 ft
AZIMUTH: N/A
LOCATION: Norridgewock, ME

DRILL METHOD: Drive and Wash
HAMMER TYPE: Auto SPT
DATE STARTED: 6/10/20
DATE COMPLETED: 6/10/20

COORDS: N: 684,528.95 E: 3,039,399.46 GS ELEVATION: 277.38 ft
TOC ELEVATION: 278.93 ft
WEATHER: Sunny
TEMPERATURE: 70's F

INCLINATION: 90
DEPTH W.L.: NA
ELEVATION W.L.:
DATE W.L.: NA
TIME W.L.: NA

SOIL PROFILE				SAMPLE INFORMATION					
DEPTH ft	ELEVATION ft	LITHOLOGY DESCRIPTION	USCS	SAMPLE DEPTH	NUMBER	BLOW COUNT	N	REC / ATT	SAMPLE DESCRIPTION
0.0		0.0 - 2.3ft ORGANICS; root and wood material; brown		0.0	1	WOH	NA	0.0 / 2.0	0.0 - 2.0': ORGANICS; root and wood material; dark brown
	275	2.3 - 6.0ft Fine SILTY SAND; gray to light-brown	SM	2.0	2	WOH-4-5-5	NA	1.3 / 2.0	2.0 - 2.3': ORGANICS; root and wood material; dark brown. 2.3 - 4.0': (SM) Fine SILTY SAND, some fines; light gray; wet.
5.0				4.0	3	4-4-4-3	8	1.5 / 2.0	4.0 - 6.0': (SM) Fine SILTY SAND, some fines; light gray-brown; wet.
	270	6.0 - 14.0ft Medium stiff CLAY; olive gray	CL	6.0	4	2-2-3-5	5	1.5 / 2.0	6 - 6.3': (CL) Sandy CLAY; olive gray-brown; soft. 6.3 - 8.0': (CL) CLAY; olive gray; medium stiff; wet.
				8.0	5	3-4-7-9	11	2.0 / 2.0	8 - 10': (CL) CLAY; olive gray; stiff; wet.
10.0				10.0	6	3-3-5-6	8	2.0 / 2.0	10 - 12': (CL) CLAY; olive gray; stiff; wet.
	265			12.0	7	2-2-2-3	4	2.0 / 2.0	12 - 13.5': (CL) CLAY; olive gray; stiff; wet. 13.5 - 14': (CL) CLAY; olive gray; medium stiff; wet. Transition zone
15.0		14.0 - 20.8ft Soft to very soft CLAY; olive gray	CL	14.0	8	1-1-2-2	3	2.0 / 2.0	14 - 16': (CL) CLAY; olive gray; soft; wet. Transition zone
	260			16.0	9	WOH-WOH-WOH-1	NA	2.0 / 2.0	16 - 18': (CL) CLAY; olive gray; very soft; wet.
				18.0	10	WOR-WOH-WOH-WOH	NA	2.0 / 2.0	18 - 20': (CL) CLAY; olive gray; very soft; wet.
20.0		20.0 - 22.0ft Glacial till - Fine SILTY SAND, little medium to coarse sand; gray-brown	SM	20.0	11	4-7-10-7	17	1.6 / 2.0	20 - 20.8': (CL) CLAY; olive gray; very soft; wet. 20.8 - 22': (SM) Fine SAND; gray-brown; some fine till; little gravel; wet.
	255	22.0 - 25.0ft Glacial till - Fine to coarse SAND, some gravel; gray-brown	GM	22.0	12	12-13-14-18	27	0.8 / 2.0	22 - 24': (GM/SM) Fine to Coarse SAND,gray-brown; fines, some gravel up to 1/2"; wet.
25.0		25.0 - 27.0ft Glacial till - Fine to coarse SANDY SILTY GRAVEL; gray-brown	GM	25.0	13	14-12-11-11	23	0.2 / 2.0	25 - 27': (GM/SM) Fine to coarse SANDY SILTY GRAVEL; gray-brown; wet.

WELL INFORMATION

WELL GRAPHICS

Boring completed at 27.0 ft

WELL CASING
Interval (ft): 0-21.9
Material: PVC
Diameter: 2
Joint Type: Threaded

WELL SCREEN
Interval (ft): 21.9-23.9
Material: PVC
Diameter: 2
Slot Size: 0.01

FILTER PACK
Interval (ft): 20.8-24.5
Type: #2 Sand
Quantity: 150 lbs

FILTER PACK SEAL
Interval (ft): 19.5-20.8
Type: Bentonite Chips

SURFACE SEAL
Interval (ft): 0-19.5
Type: Bentonite Grout Mix

Organics/Topsoil | USCS Silty Sand (SM) | USCS Low Plasticity Clay (CL) | USCS Silty Gravel

DRILLING COMPANY: SW Cole
DRILLER: K. Hanscom
DRILL RIG: Diedrich D-50 T

LOGGED BY: BDL
CHECKED BY: CRH
DATE: 7/16/20

Golder Associates

RECORD OF WELL CONSTRUCTION PZ-23M

SHEET 1 of 1

PROJECT: Crossroads Expansion	DRILL METHOD: Drive and Wash	COORDS: N: 684,524.41 E: 3,039,402.93	INCLINATION: 90
PROJECT NUMBER: 19119078	DRILL RIG: Diedrich D-50 T	GS ELEVATION: 277.10 ft	DEPTH W.L.: NA
DRILLED DEPTH: 14.4 ft	HAMMER TYPE: NA	TOC ELEVATION: 279.53 ft	ELEVATION W.L.:
AZIMUTH: N/A	DATE STARTED: 6/10/20	WEATHER: Sunny	DATE W.L.: NA
LOCATION: Norridgewock, ME	DATE COMPLETED: 6/10/20	TEMPERATURE: 70's F	TIME W.L.: NA

DEPTH ft	ELEVATION ft	SOIL PROFILE: LITHOLOGY DESCRIPTION	GRAPHIC LOG	USCS	N Value	WELL DETAILS: WELL GRAPHICS	Well Construction Information
0.0		0.0 - 2.0ft ORGANICS; root and wood material; brown.					
	275	2.0 - 5.5ft Fine SILTY SAND; gray to light brown		SM			Annulus Seal
5.0	270	5.5 - 14.0ft Medium stiff CLAY; olive gray		CL			Filter pack Seal
10.0	265						Filter Pack Screen
		14.0 - 14.4ft Soft to very soft CLAY; olive gray		CL			Filter Pack
15.0							

Boring completed at 14.4 ft

*No soil samples collected at this location.
Lithology at this location based on PZ-23D

20.0
25.0
30.0
35.0
40.0

WELL CASING
Interval (ft): 0-11.85
Material: PVC
Diameter (in): 2
Joint Type: Threaded

WELL SCREEN
Interval (ft): 11.85-13.85
Material: PVC
Diameter (in): 2
Slot Size: 0.01

FILTER PACK
Interval (ft): 9.7-14.4
Type: #2 Sand

FILTER PACK SEAL
Interval (ft): 9.2-9.7
Type: Bentonite Chips

SURFACE SEAL
Interval (ft): 0-9.2
Type: Bentonite Grout Mix

Organics/Topsoil
USCS Silty Sand (SM)
USCS Low Plasticity Clay (CL)

DRILLING COMPANY: SW Cole
DRILLER: K. Hanscom

GA INSPECTOR: BDL
CHECKED BY: CRH
DATE: 7/16/20

Golder Associates

RECORD OF BOREHOLE MW14-05D

PROJECT: Crossroads Expansion
PROJECT NUMBER: 19119078
DRILLED DEPTH: 48.0 ft
AZIMUTH: N/A
LOCATION: Norridgewock, ME

DRILL METHOD: Drive and Wash
HAMMER TYPE: Auto SPT
DATE STARTED: 4/1/19
DATE COMPLETED: 4/1/19

COORDS: N: 685,216.49 E: 3,038,280.59
GS ELEVATION: 276.0 ft
TOC ELEVATION: 278.9 ft
WEATHER: Partly cloudy
TEMPERATURE: 30's F

INCLINATION: 90
DEPTH W.L.: NA
ELEVATION W.L.:
DATE W.L.: NA
TIME W.L.: NA

SOIL PROFILE					SAMPLE INFORMATION						WELL INFORMATION
DEPTH ft	ELEVATION ft	LITHOLOGY DESCRIPTION	USCS	GRAPHIC LOG	SAMPLE DEPTH	NUMBER	BLOW COUNT	N	REC / ATT	SAMPLE DESCRIPTION	WELL GRAPHICS
0.0		0.0 - 0.1ft ORGANICS	CL		0.0	1	1 for 12"-2-2	NA	1.2 / 2.0	0-0.1': ORGANICS 0.1-1: Soft SILTY CLAY; orange; dry 1-2': Fine SILTY SAND, little fines; gray-brown; moist	
	275	0.1 - 1.0ft Soft SILTY CLAY; orange									
		1.0 - 7.4ft Fine SILTY SAND; gray-brown	SM		2.0	2	5-9-8-7	17	1.2 / 2.0	(SP) Fine SILTY SAND, little fines; gray-brown; wet	
5.0					4.0	3	5-7-8-7	15	1.3 / 2.0	(SP) Fine SILTY SAND, little fines; gray-brown; wet	
	270				6.0	4	4-5-6-7	11	2.0 / 2.0	6-7.4': (SP) Fine SILTY SAND, little fines; gray-brown; moist 7.4-8: (CL) CLAY; gray-brown; medium stiff; dry	
		7.4 - 14.0ft Medium stiff CLAY; olive gray	CL		8.0	5	4-5-5-7	10	1.8 / 2.0	(CL) CLAY; olive gray; medium stiff; dry	
10.0	265				10.0	6	3-5-5-5	10	1.5 / 2.0	(CL) CLAY; olive gray; medium stiff; damp	
					12.0	7	1-3-3-4	6	1.7 / 2.0	(CL) CLAY; olive gray; medium stiff; moist	
		14.0 - 24.4ft Very soft to soft CLAY; olive gray	CL		14.0	8	1-2-2-2	4	1.8 / 2.0	(CL) CLAY; olive gray; soft; moist	
15.0	260				16.0	9	WOH-WOH-WOH-2	NA	2.0 / 2.0	(CL) CLAY; olive gray; soft; moist	
					18.0	10	WOH-WOH-WOH-WOH	NA	2.0 / 2.0	(CL) CLAY; olive gray; very soft; moist	
20.0	255				20.0	11	WOR-WOH-WOH-WOH	NA	2.0 / 2.0	(CL) CLAY; olive gray; very soft; moist	
					22.0	12	WOR-WOR-WOR-WOR	NA	2.0 / 2.0	(CL) CLAY; olive gray; very soft; moist	
25.0		24.4 - 26.0ft Glacial till - medium stiff SANDY CLAY; gray	SC		24.0	13	WOR-3-12-14	NA	1.3 / 2.0	24-24.4': (CL) CLAY; olive gray; very soft; moist 24.4-26': (SC) SANDY CLAY; gray; medium stiff; dry	
	250	26.0 - 36.0ft Glacial till - Fine to coarse SILTY SAND, little coarse gravel; gray-black	SM		26.0	14	7-9-4-8	13	0.7 / 2.0	(SM) Fine to medium SILTY SAND, little coarse sand and fine to coarse gravel; gray; wet	
					28.0	15	18-14-14-12	28	0.5 / 2.0	(SM) Fine to coarse SILTY SAND, little coarse gravel; gray-black; wet	
30.0	245				30.0	16	24-10-9-12	19	0.3 / 2.0	(GM) Fine to coarse SANDY GRAVEL, little fines; gray-black; wet; gravel up to 1" in diameter	
35.0	240	36.0 - 46.6ft Glacial till - Fine SILTY SAND, little coarse gravel; gray	GM		35.0	17	74-57-18-18	75	0.6 / 2.0	(GM) 35-36': Fine to coarse SANDY GRAVEL; gray-black; wet, gravel up to 1" in diameter (SM) 36-37': Fine to medium SILTY SAND; gray-black; wet	
40.0											

Log continued on next page

WELL CASING
Interval (ft): 0-40.8
Material: PVC
Diameter: 2
Joint Type: Threaded

WELL SCREEN
Interval (ft): 40.8-45.8
Material: PVC
Diameter: 2
Slot Size: 0.01

FILTER PACK
Interval (ft): 36.5-38.5
Type: #2 Sand
Quantity: 150 lbs

FILTER PACK SEAL
Interval (ft): 36.5-38.5
Type: Bentonite Chips

SURFACE SEAL
Interval (ft): 0-36.5
Type: Bentonite Grout Mix
Quantity: 270 lbs

USCS Low Plasticity Clay (CL) | USCS Silty Sand (SM) | USCS Clayey Sand (SC) | USCS Silty Gravel | Bedrock

DRILLING COMPANY: SW Cole
DRILLER: K. Hanscom
DRILL RIG: Diedrich D-50 T

LOGGED BY: LWL
CHECKED BY: BDL
DATE: 7/15/19

Golder Associates

RECORD OF BOREHOLE MW14-05D

PROJECT: Crossroads Expansion
PROJECT NUMBER: 19119078
DRILLED DEPTH: 48.0 ft
AZIMUTH: N/A
LOCATION: Norridgewock, ME

DRILL METHOD: Drive and Wash
HAMMER TYPE: Auto SPT
DATE STARTED: 4/1/19
DATE COMPLETED: 4/1/19

COORDS: N: 685,216.49 E: 3,038,280.59
GS ELEVATION: 276.0 ft
TOC ELEVATION: 278.9 ft
WEATHER: Partly cloudy
TEMPERATURE: 30's F

INCLINATION: 90
DEPTH W.L.: NA
ELEVATION W.L.:
DATE W.L.: NA
TIME W.L.: NA

SOIL PROFILE					SAMPLE INFORMATION						WELL INFORMATION
DEPTH ft	ELEVATION ft	LITHOLOGY DESCRIPTION	USCS	GRAPHIC LOG	SAMPLE DEPTH	NUMBER	BLOW COUNT	N	REC / ATT	SAMPLE DESCRIPTION	WELL GRAPHICS
40.0	235		GM		40.0	18	49-129	NA	0.7 / 1.0	(SM) Fine SILTY SAND, little coarse gravel; gray; wet	
45.0	230				45.0	19	36-49-136 for 4"	NA	1.0 / 1.3	(SM) Fine SILTY SAND; gray; wet	
		46.6 - 48.0ft BEDROCK (?)									

Boring completed at 48.0 ft

WELL CASING
Interval (ft): 0-40.8
Material: PVC
Diameter: 2
Joint Type: Threaded

WELL SCREEN
Interval (ft): 40.8-45.8
Material: PVC
Diameter: 2
Slot Size: 0.01

FILTER PACK
Interval (ft): 36.5-38.5
Type: #2 Sand
Quantity: 150 lbs

FILTER PACK SEAL
Interval (ft): 36.5-38.5
Type: Bentonite Chips

SURFACE SEAL
Interval (ft): 0-36.5
Type: Bentonite Grout Mix
Quantity: 270 lbs

USCS Low Plasticity Clay (CL) | USCS Silty Sand (SM) | USCS Clayey Sand (SC) | USCS Silty Gravel | Bedrock

DRILLING COMPANY: SW Cole
DRILLER: K. Hanscom
DRILL RIG: Diedrich D-50 T

LOGGED BY: LWL
CHECKED BY: BDL
DATE: 7/15/19

Golder Associates

APPENDIX D

Pumping Test Data Plots

APPENDIX D-1

Step Test Data Plots

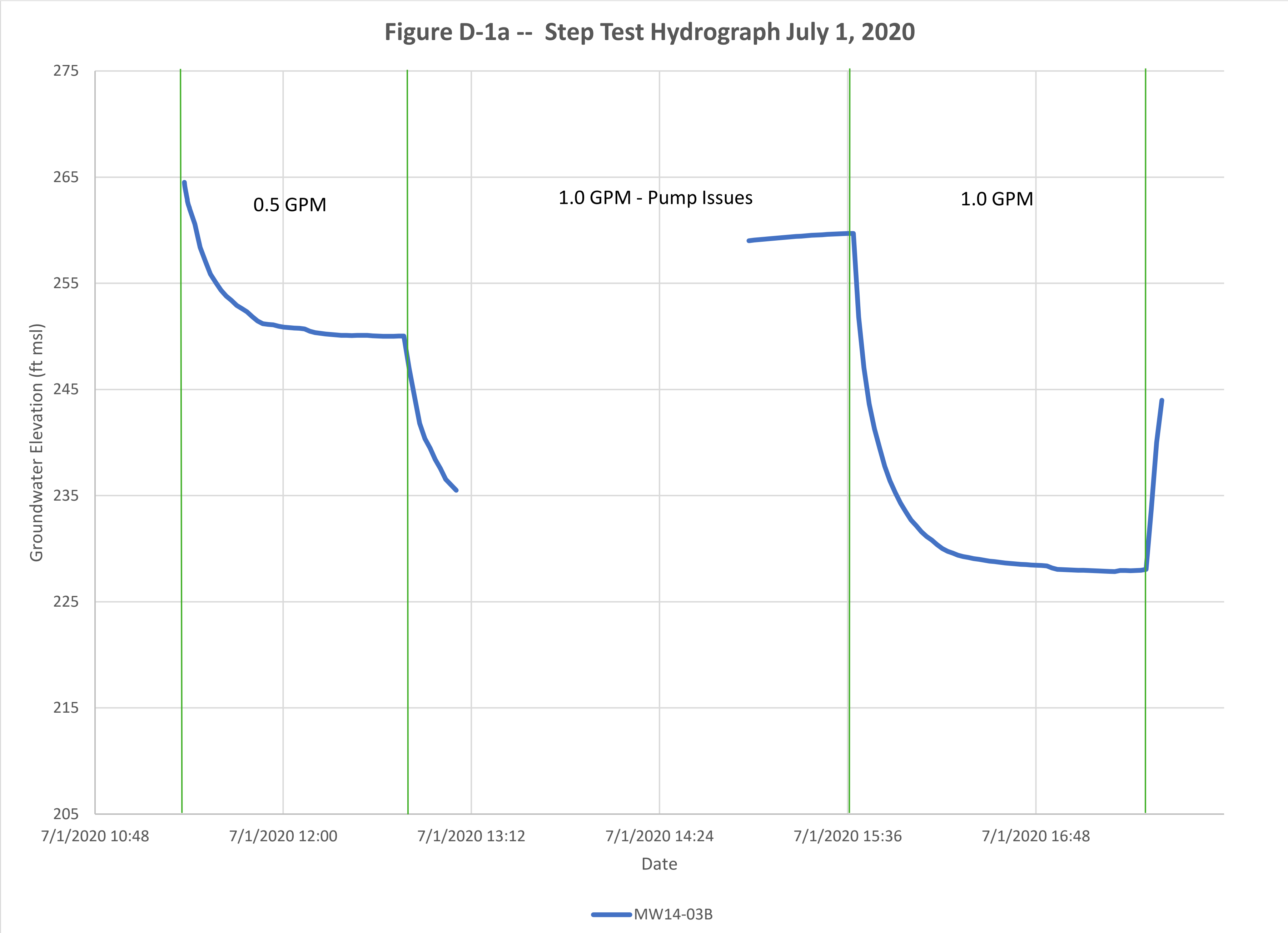


Figure D-1a -- Step Test Hydrograph July 1, 2020
0.5 GPM
1.0 GPM - Pump Issues
1.0 GPM
Groundwater Elevation (ft msl)
275
265
255
245
235
225
215
205
7/1/2020 10:48
7/1/2020 12:00
7/1/2020 13:12
7/1/2020 14:24
7/1/2020 15:36
7/1/2020 16:48
Date
MW14-03B

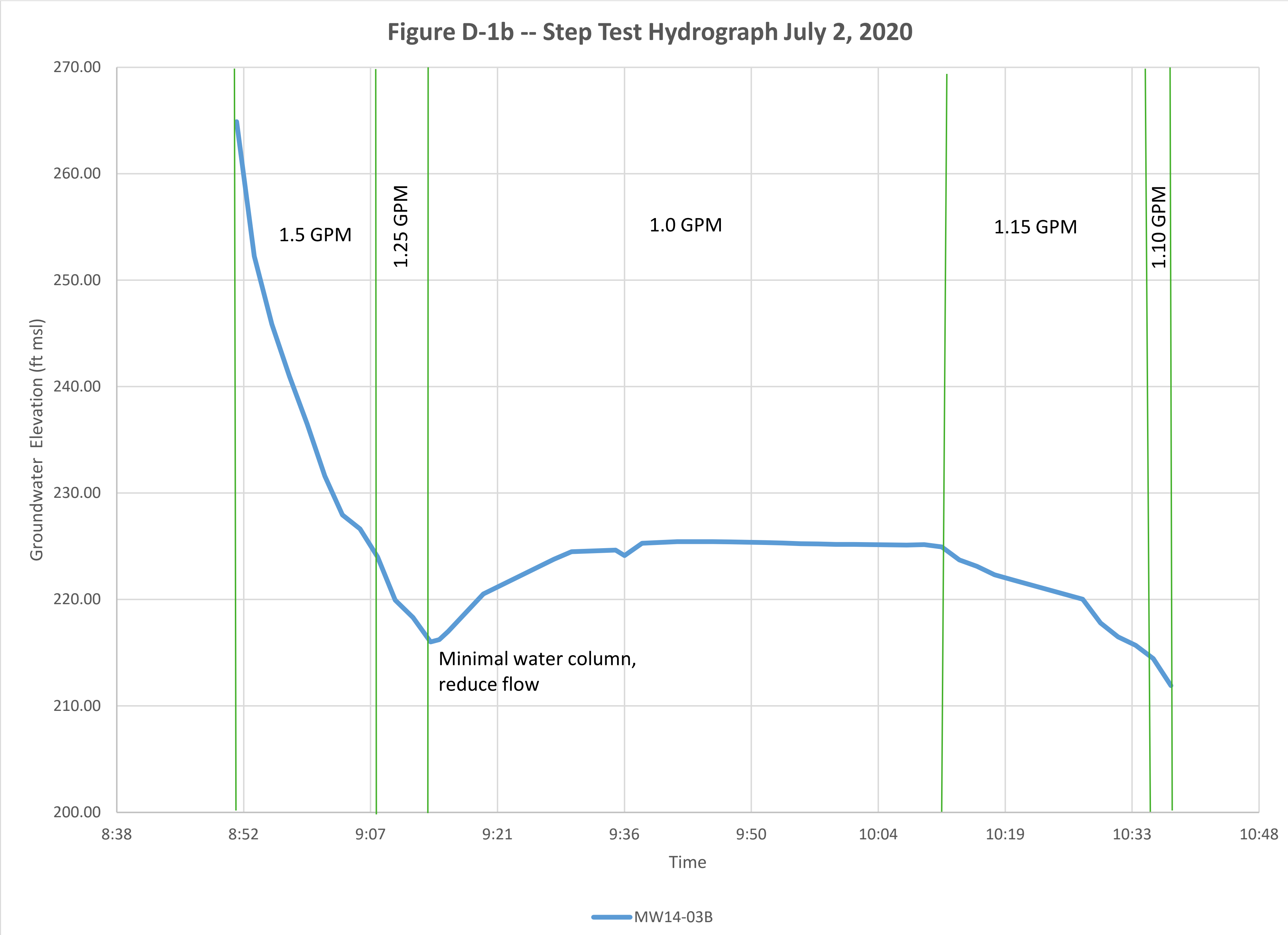


Figure D-1b -- Step Test Hydrograph July 2, 2020
270.00
260.00
250.00
240.00
230.00
220.00
210.00
200.00
Groundwater Elevation (ft msl)
1.5 GPM
1.25 GPM
1.0 GPM
1.15 GPM
1.10 GPM
Minimal water column,
reduce flow
8:38
8:52
9:07
9:21
9:36
9:50
10:04
10:19
10:33
10:48
Time
MW14-03B

APPENDIX D-2

Antecedent Monitoring Period Data Plots

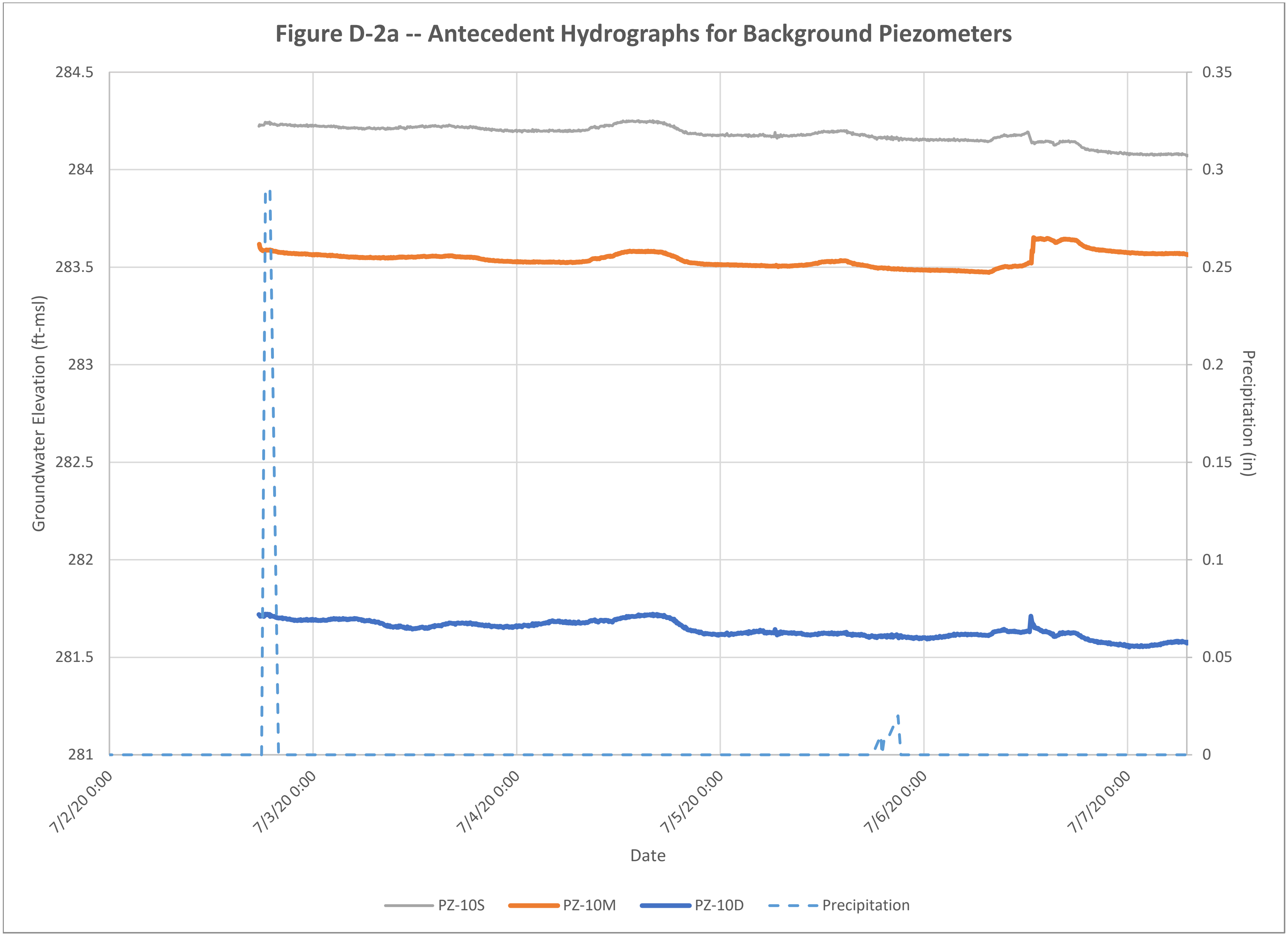


Figure D-2a -- Antecedent Hydrographs for Background Piezometers
Groundwater Elevation (ft-msl)
284.5
284
283.5
283
282.5
282
281.5
281
Precipitation (in)
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
7/2/20 0:00
7/3/20 0:00
7/4/20 0:00
7/5/20 0:00
7/6/20 0:00
7/7/20 0:00
Date
PZ-10S
PZ-10M
PZ-10D
Precipitation

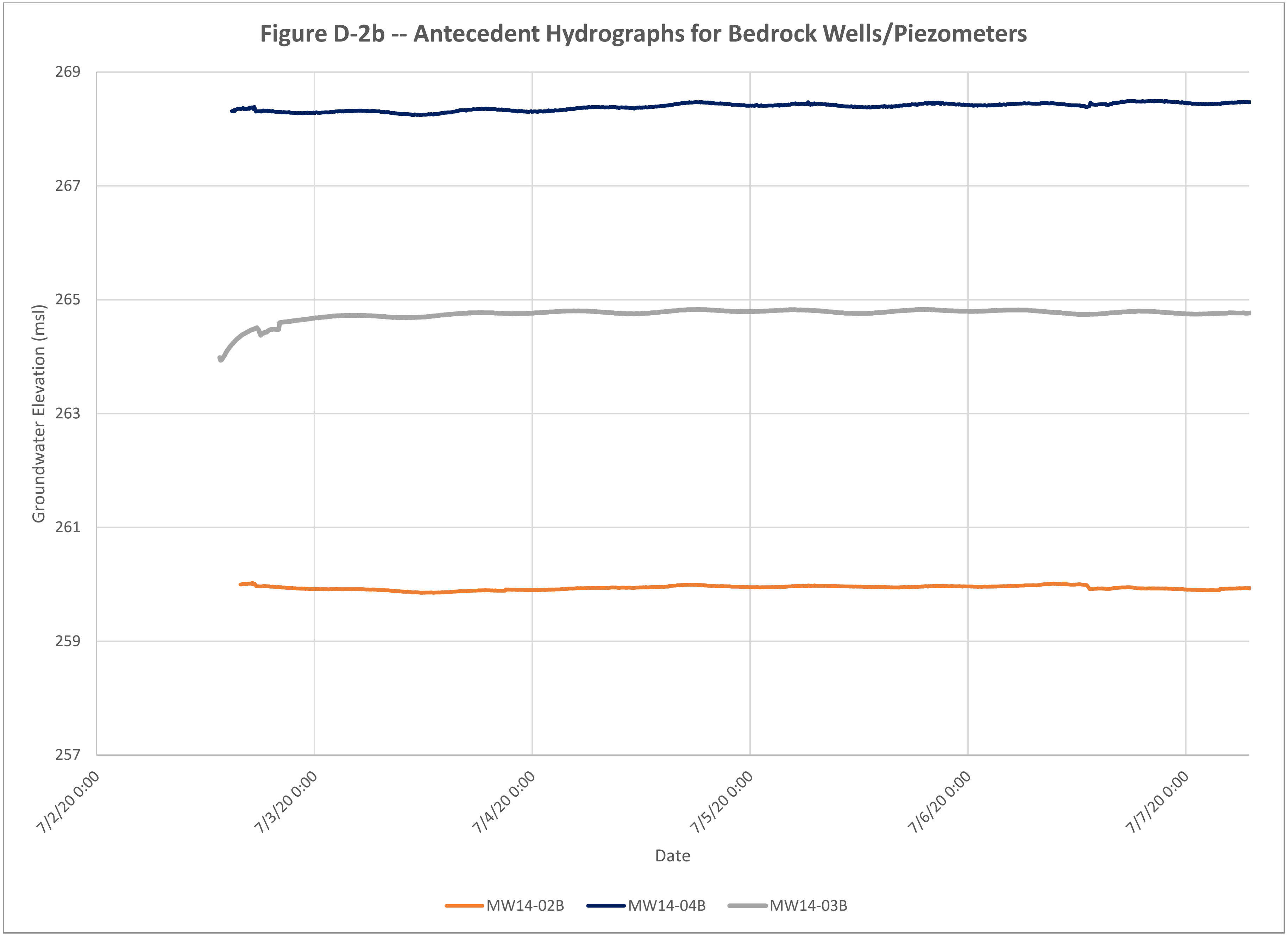


Figure D-2b -- Antecedent Hydrographs for Bedrock Wells/Piezometers
269
267
265
263
261
259
257
Groundwater Elevation (msl)
7/2/20 0:00
7/3/20 0:00
7/4/20 0:00
7/5/20 0:00
7/6/20 0:00
7/7/20 0:00
Date
MW14-02B
MW14-04B
MW14-03B

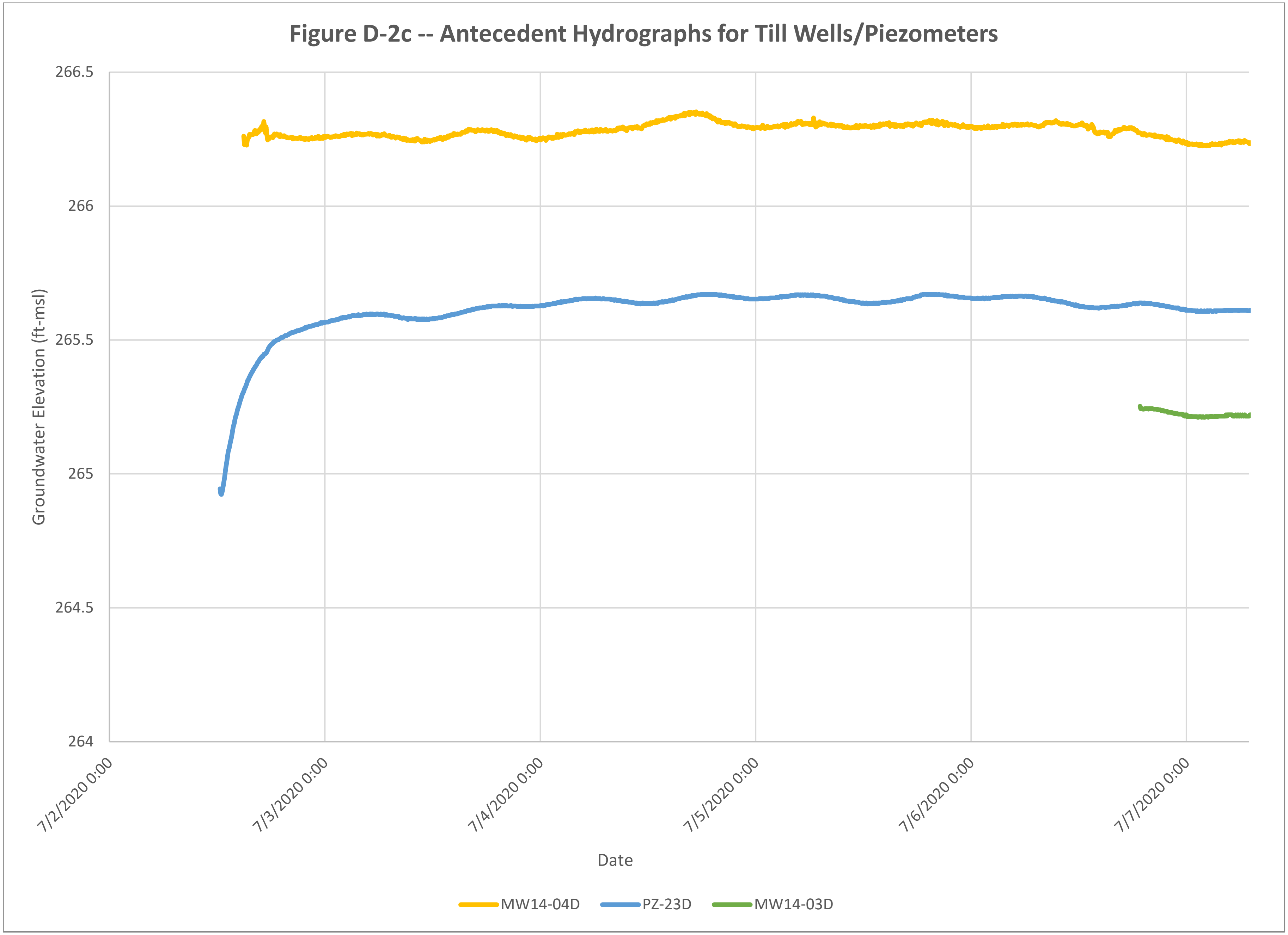


Figure D-2c -- Antecedent Hydrographs for Till Wells/Piezometers
266.5
266
265.5
265
264.5
264
Groundwater Elevation (ft-msl)
7/2/2020 0:00
7/3/2020 0:00
7/4/2020 0:00
7/5/2020 0:00
7/6/2020 0:00
7/7/2020 0:00
Date
MW14-04D
PZ-23D
MW14-03D

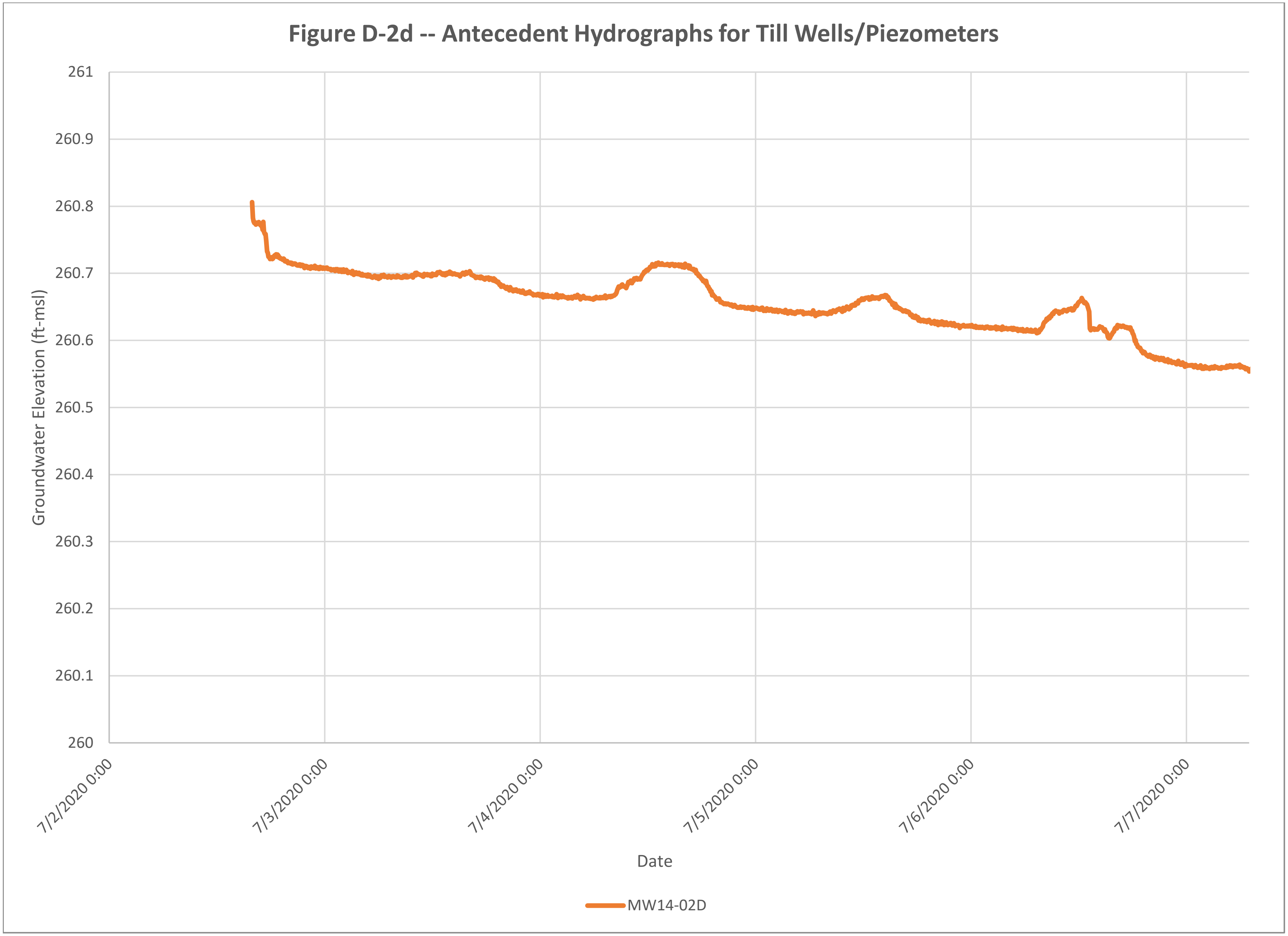


Figure D-2d -- Antecedent Hydrographs for Till Wells/Piezometers
261
260.9
260.8
260.7
260.6
260.5
260.4
260.3
260.2
260.1
260
Groundwater Elevation (ft-msl)
7/2/2020 0:00
7/3/2020 0:00
7/4/2020 0:00
7/5/2020 0:00
7/6/2020 0:00
7/7/2020 0:00
Date
MW14-02D

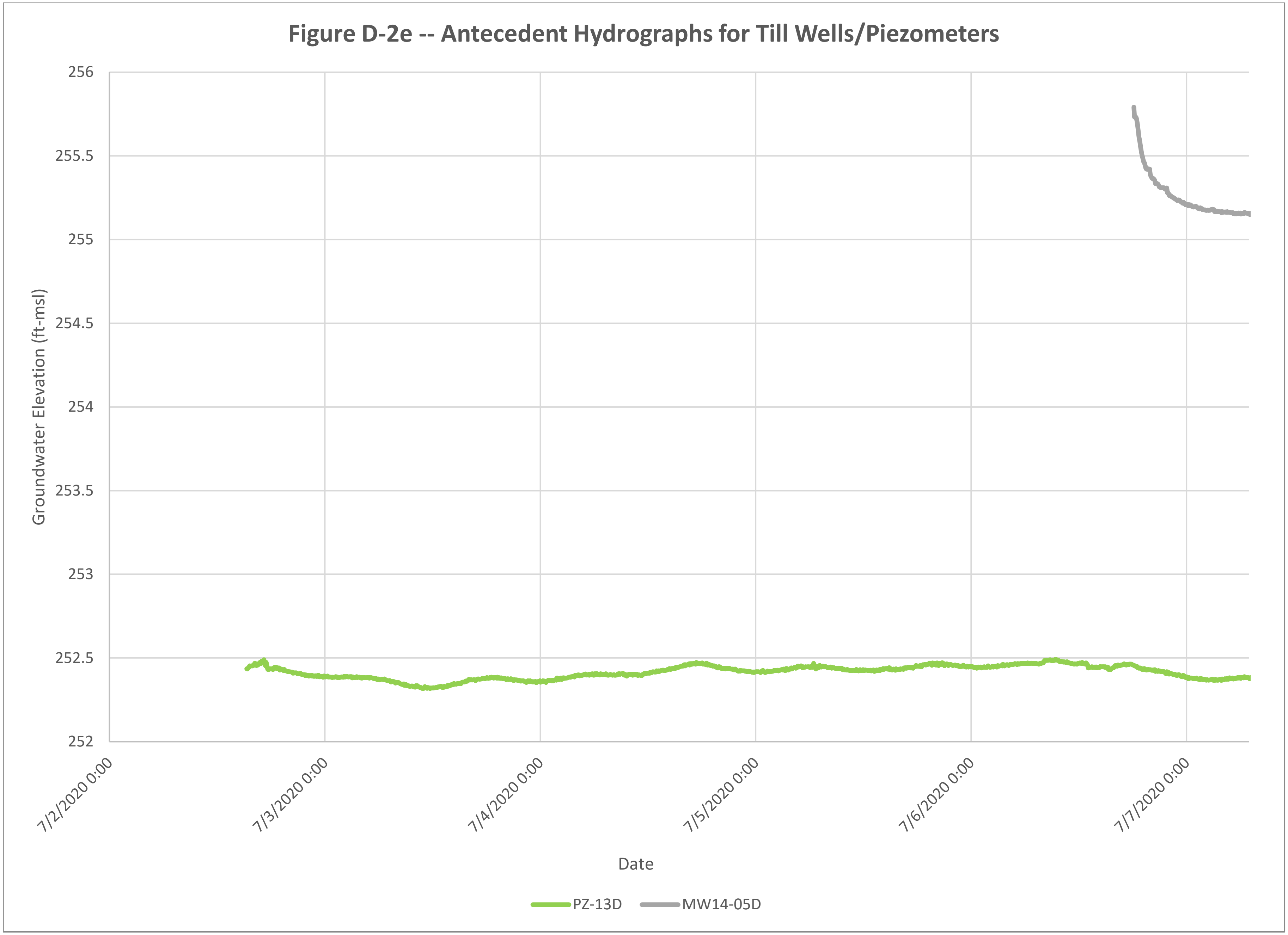


Figure D-2e -- Antecedent Hydrographs for Till Wells/Piezometers
Groundwater Elevation (ft-msl)
256
255.5
255
254.5
254
253.5
253
252.5
252
7/2/2020 0:00
7/3/2020 0:00
7/4/2020 0:00
7/5/2020 0:00
7/6/2020 0:00
7/7/2020 0:00
Date
PZ-13D
MW14-05D

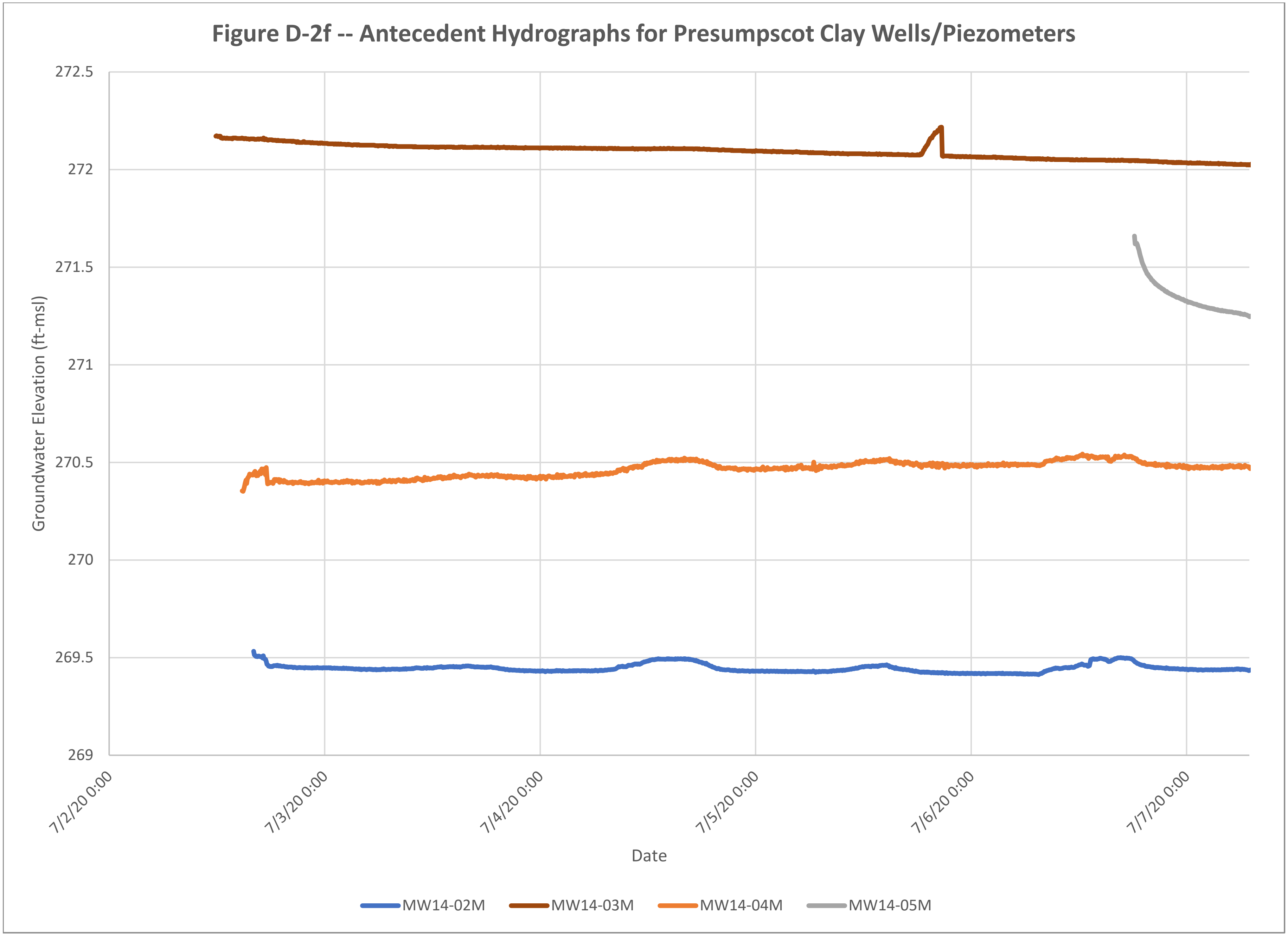


Figure D-2f -- Antecedent Hydrographs for Presumpscot Clay Wells/Piezometers
272.5
272
271.5
271
270.5
270
269.5
269
Groundwater Elevation (ft-msl)
7/2/20 0:00
7/3/20 0:00
7/4/20 0:00
7/5/20 0:00
7/6/20 0:00
7/7/20 0:00
Date
MW14-02M
MW14-03M
MW14-04M
MW14-05M

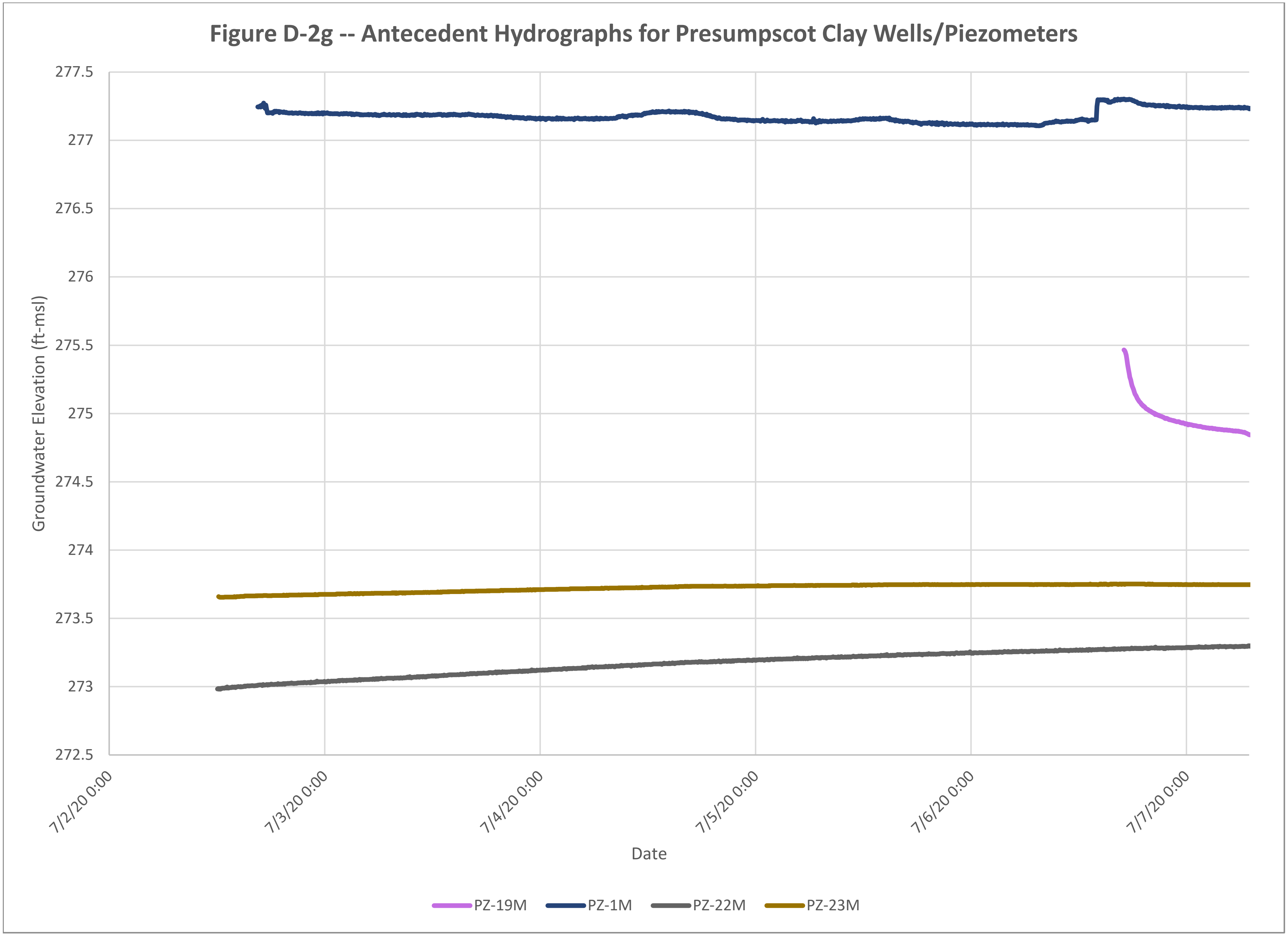


Figure D-2g -- Antecedent Hydrographs for Presumpscot Clay Wells/Piezometers
Groundwater Elevation (ft-msl)
277.5
277
276.5
276
275.5
275
274.5
274
273.5
273
272.5
7/2/20 0:00
7/3/20 0:00
7/4/20 0:00
7/5/20 0:00
7/6/20 0:00
7/7/20 0:00
Date
PZ-19M
PZ-1M
PZ-22M
PZ-23M

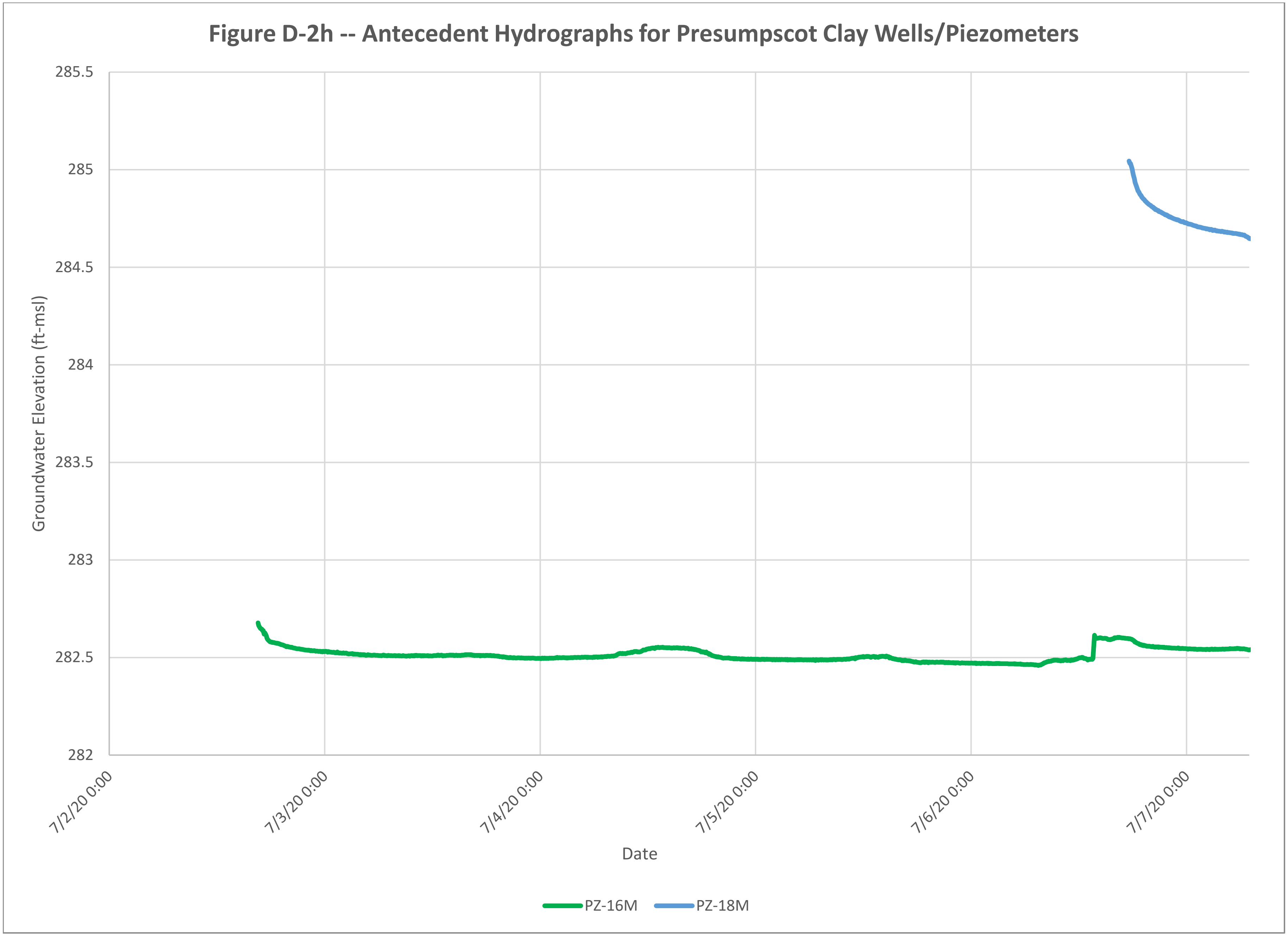


Figure D-2h -- Antecedent Hydrographs for Presumpscot Clay Wells/Piezometers
285.5
285
284.5
284
283.5
283
282.5
282
Groundwater Elevation (ft-msl)
7/2/20 0:00
7/3/20 0:00
7/4/20 0:00
7/5/20 0:00
7/6/20 0:00
7/7/20 0:00
Date
PZ-16M
PZ-18M

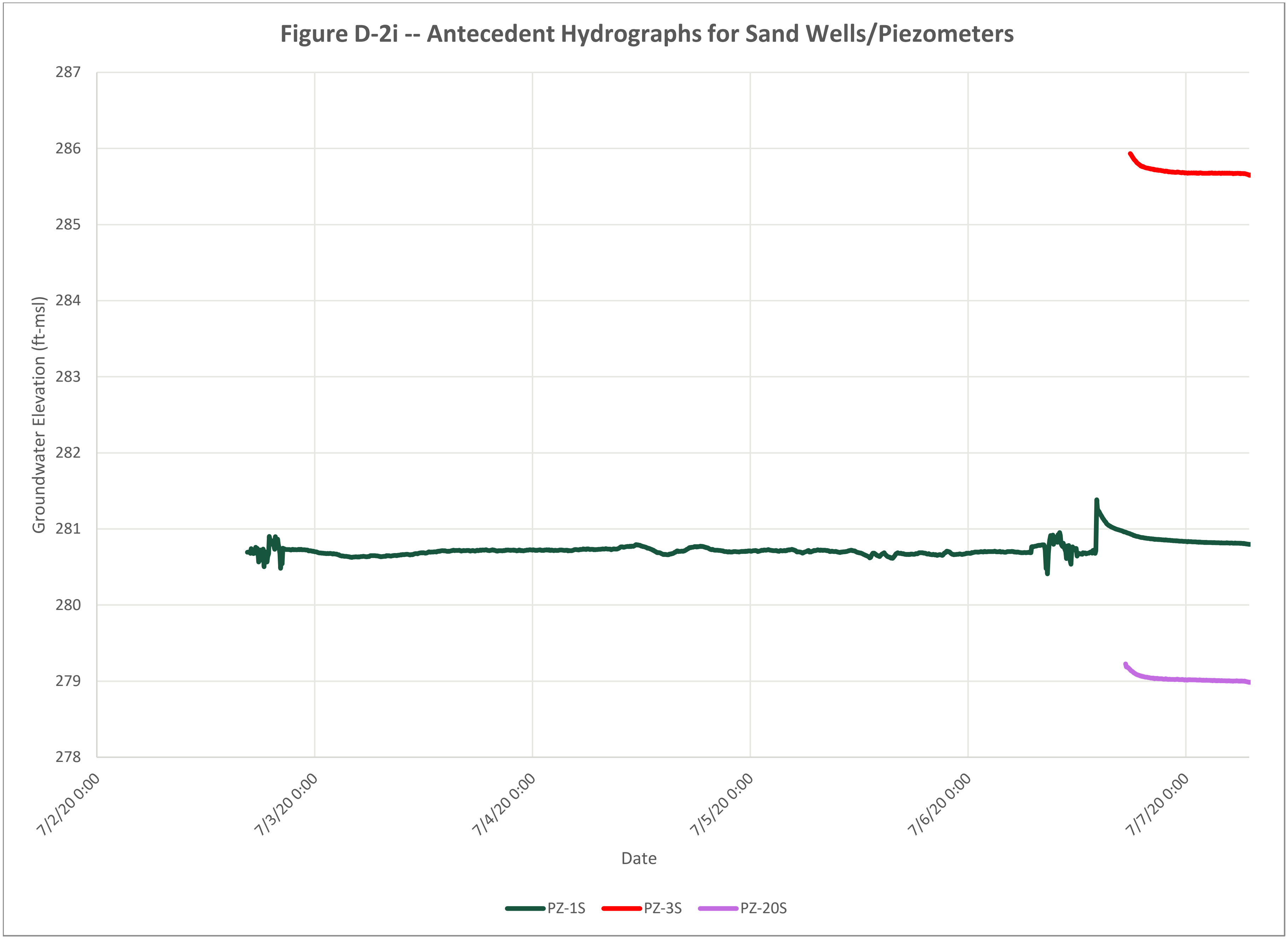


Figure D-2i -- Antecedent Hydrographs for Sand Wells/Piezometers
Groundwater Elevation (ft-msl)
287
286
285
284
283
282
281
280
279
278
7/2/20 0:00
7/3/20 0:00
7/4/20 0:00
7/5/20 0:00
7/6/20 0:00
7/7/20 0:00
Date
PZ-1S
PZ-3S
PZ-20S

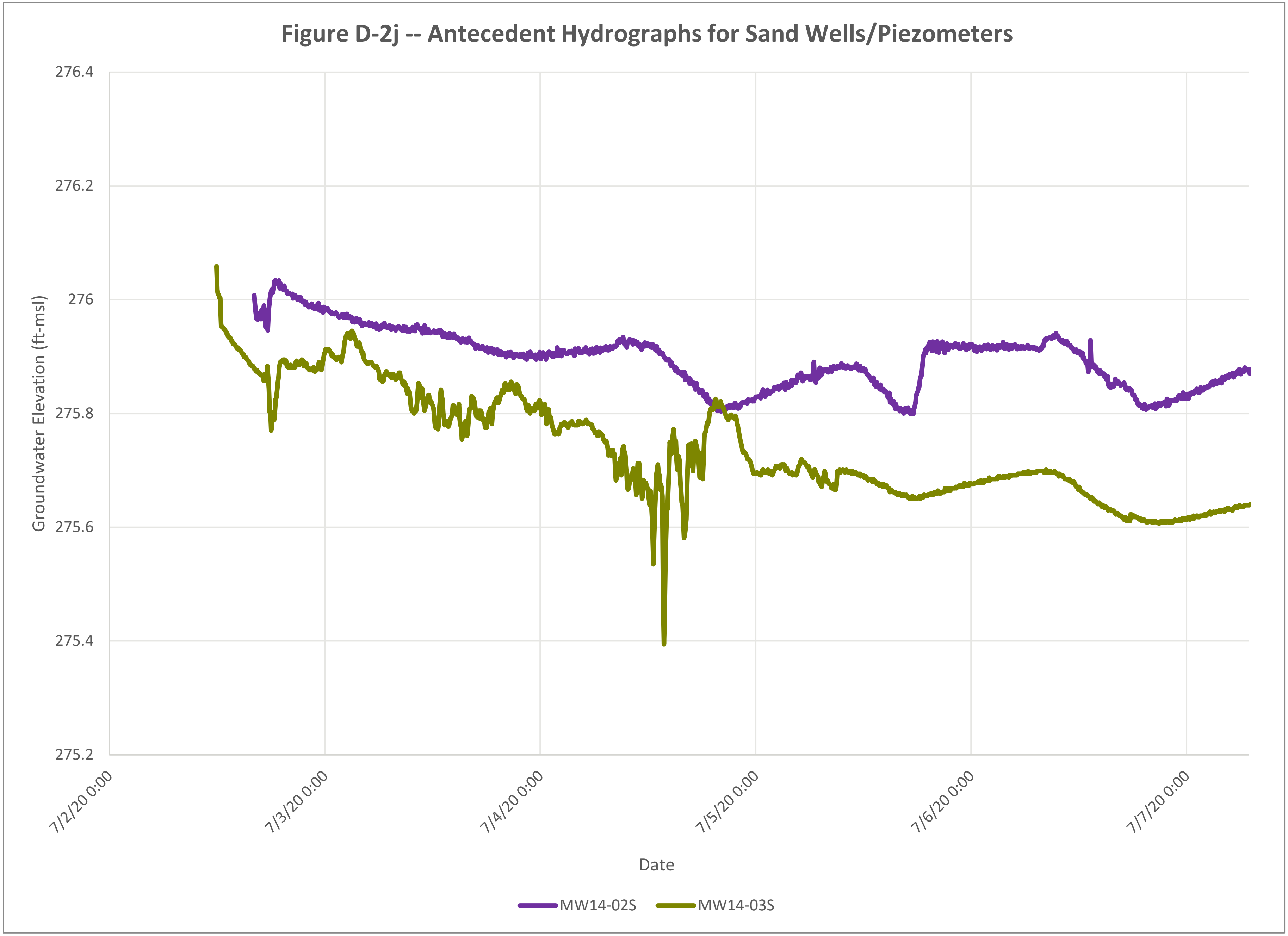


Figure D-2j -- Antecedent Hydrographs for Sand Wells/Piezometers
276.4
276.2
276
275.8
275.6
275.4
275.2
Groundwater Elevation (ft-msl)
7/2/20 0:00
7/3/20 0:00
7/4/20 0:00
7/5/20 0:00
7/6/20 0:00
7/7/20 0:00
Date
MW14-02S
MW14-03S

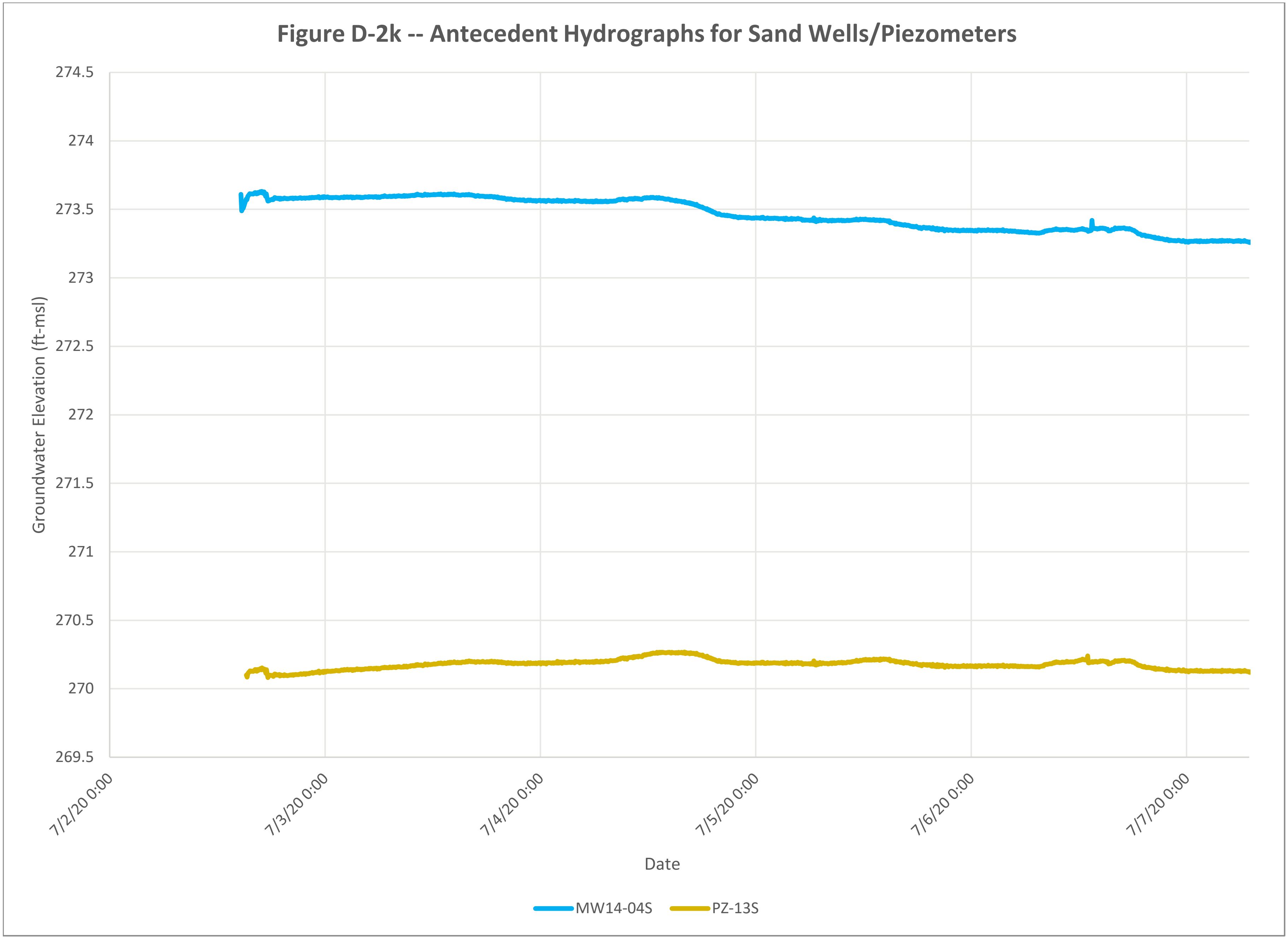


Figure D-2k -- Antecedent Hydrographs for Sand Wells/Piezometers
Groundwater Elevation (ft-msl)
274.5
274
273.5
273
272.5
272
271.5
271
270.5
270
269.5
7/2/20 0:00
7/3/20 0:00
7/4/20 0:00
7/5/20 0:00
7/6/20 0:00
7/7/20 0:00
Date
MW14-04S
PZ-13S

APPENDIX D-3

Constant Rate Pumping Period Data Plots

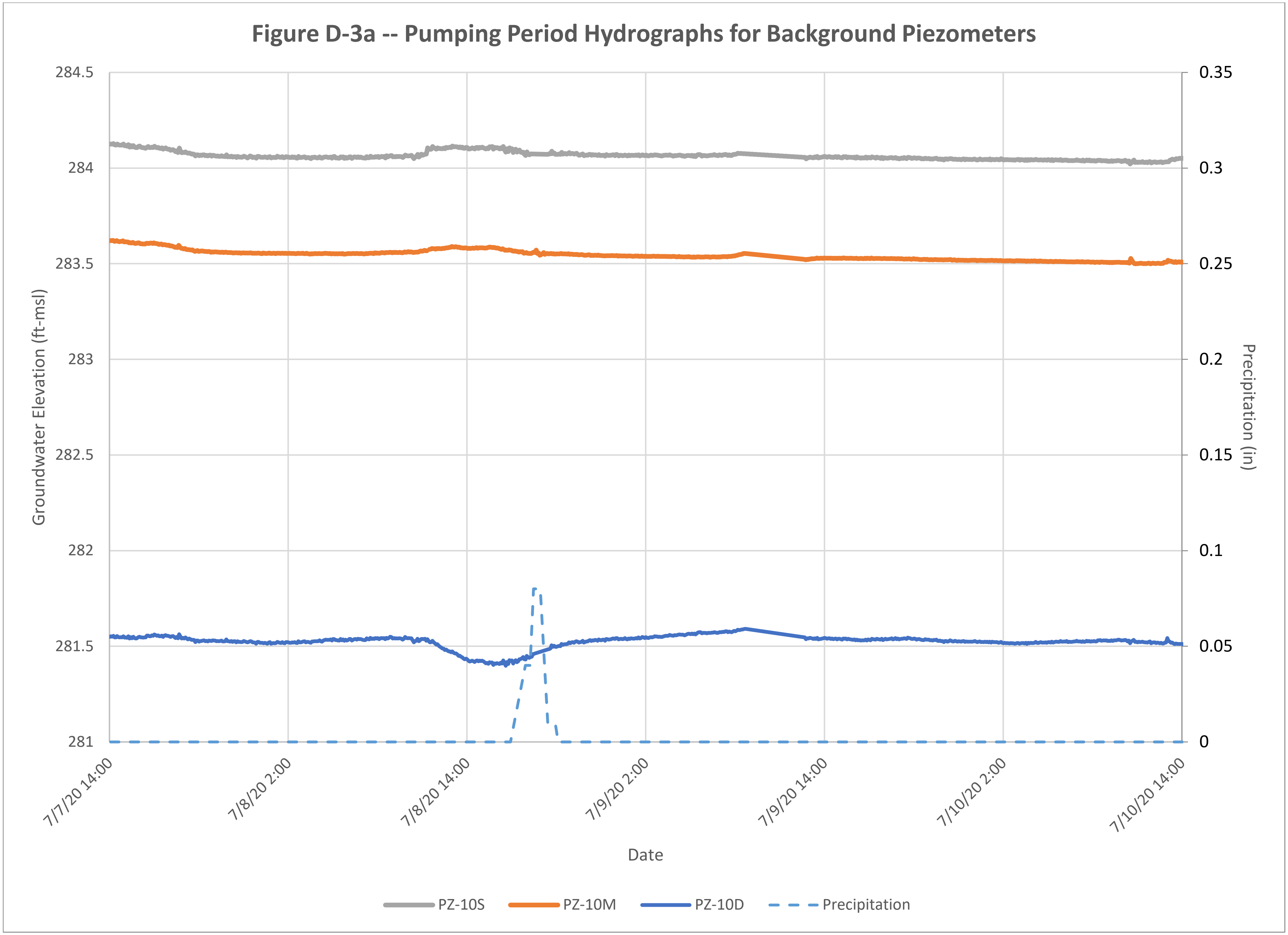


Figure D-3a -- Pumping Period Hydrographs for Background Piezometers
Groundwater Elevation (ft-msl)
284.5
284
283.5
283
282.5
282
281.5
281
Precipitation (in)
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
7/7/20 14:00
7/8/20 2:00
7/8/20 14:00
7/9/20 2:00
7/9/20 14:00
7/10/20 2:00
7/10/20 14:00
Date
PZ-10S
PZ-10M
PZ-10D
Precipitation

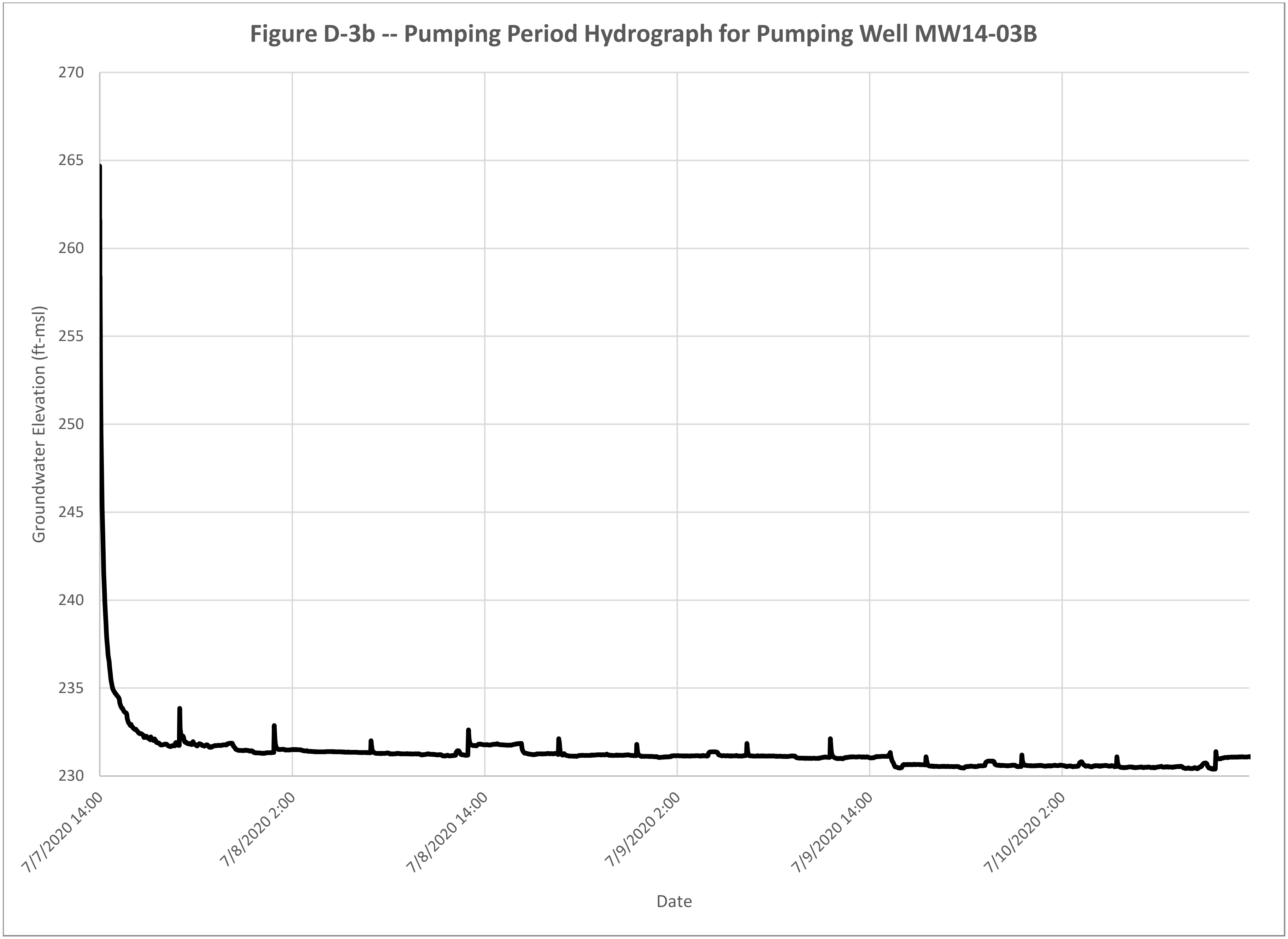


Figure D-3b -- Pumping Period Hydrograph for Pumping Well MW14-03B
270
265
260
255
250
245
240
235
230
Groundwater Elevation (ft-msl)
7/7/2020 14:00
7/8/2020 2:00
7/8/2020 14:00
7/9/2020 2:00
7/9/2020 14:00
7/10/2020 2:00
Date

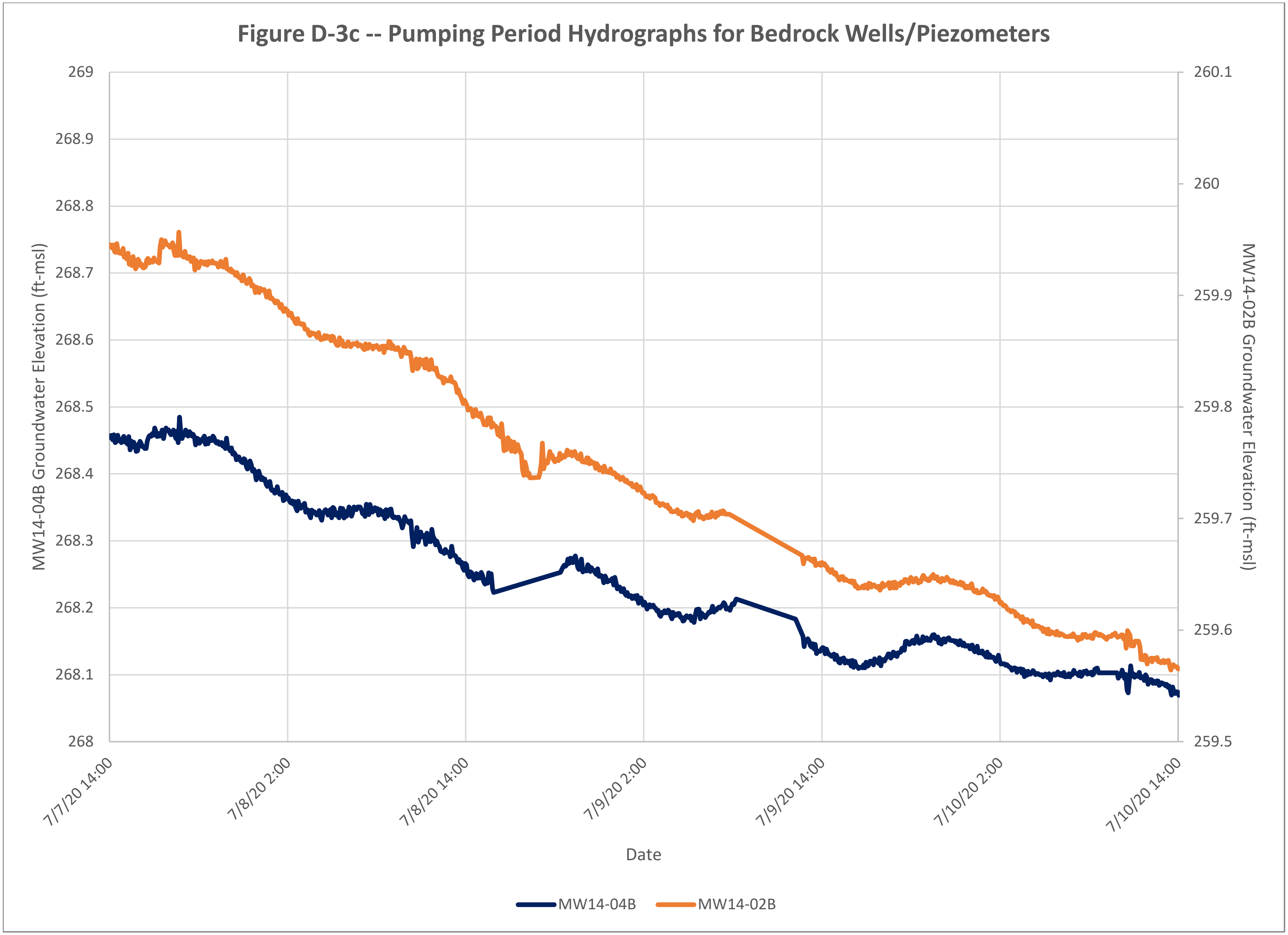


Figure D-3c -- Pumping Period Hydrographs for Bedrock Wells/Piezometers
269
268.9
268.8
268.7
268.6
268.5
268.4
268.3
268.2
268.1
268
260.1
260
259.9
259.8
259.7
259.6
259.5
MW14-04B Groundwater Elevation (ft-msl)
MW14-02B Groundwater Elevation (ft-msl)
7/7/20 14:00
7/8/20 2:00
7/8/20 14:00
7/9/20 2:00
7/9/20 14:00
7/10/20 2:00
7/10/20 14:00
Date
MW14-04B
MW14-02B

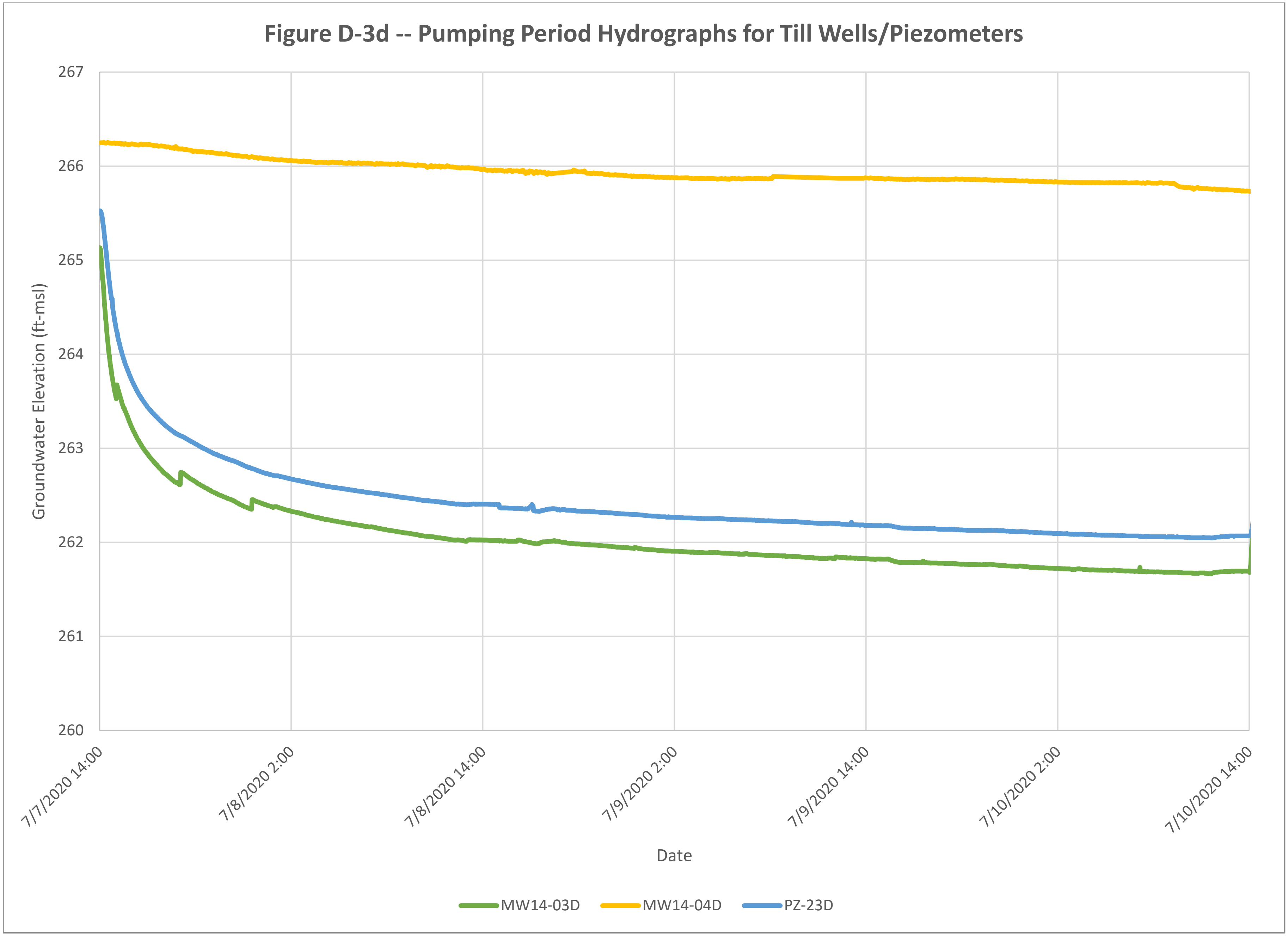


Figure D-3d -- Pumping Period Hydrographs for Till Wells/Piezometers
Groundwater Elevation (ft-msl)
267
266
265
264
263
262
261
260
7/7/2020 14:00
7/8/2020 2:00
7/8/2020 14:00
7/9/2020 2:00
7/9/2020 14:00
7/10/2020 2:00
7/10/2020 14:00
Date
MW14-03D
MW14-04D
PZ-23D

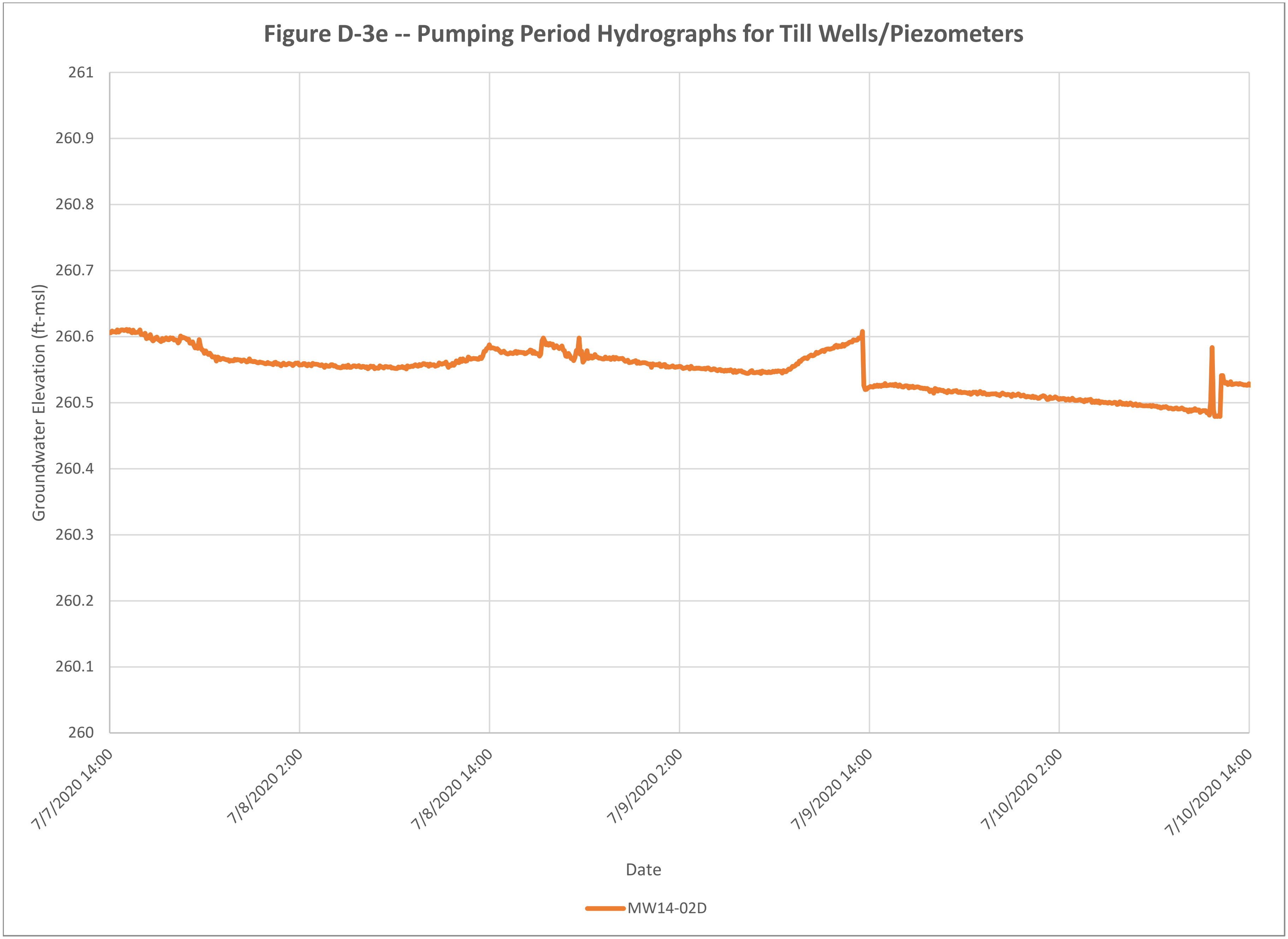


Figure D-3e -- Pumping Period Hydrographs for Till Wells/Piezometers
261
260.9
260.8
260.7
260.6
260.5
260.4
260.3
260.2
260.1
260
Groundwater Elevation (ft-msl)
7/7/2020 14:00
7/8/2020 2:00
7/8/2020 14:00
7/9/2020 2:00
7/9/2020 14:00
7/10/2020 2:00
7/10/2020 14:00
Date
MW14-02D

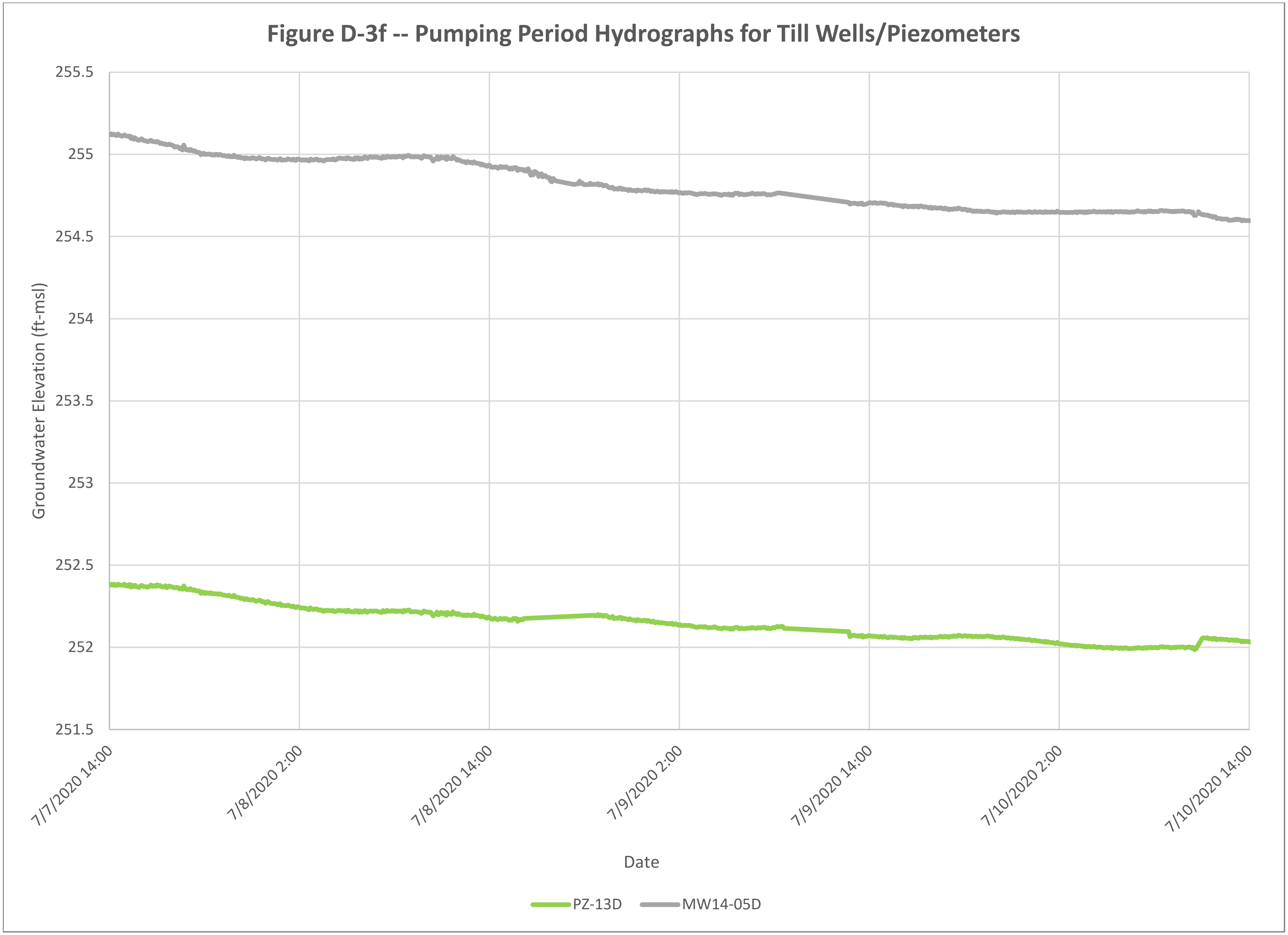


Figure D-3f -- Pumping Period Hydrographs for Till Wells/Piezometers
Groundwater Elevation (ft-msl)
255.5
255
254.5
254
253.5
253
252.5
252
251.5
7/7/2020 14:00
7/8/2020 2:00
7/8/2020 14:00
7/9/2020 2:00
7/9/2020 14:00
7/10/2020 2:00
7/10/2020 14:00
Date
PZ-13D
MW14-05D

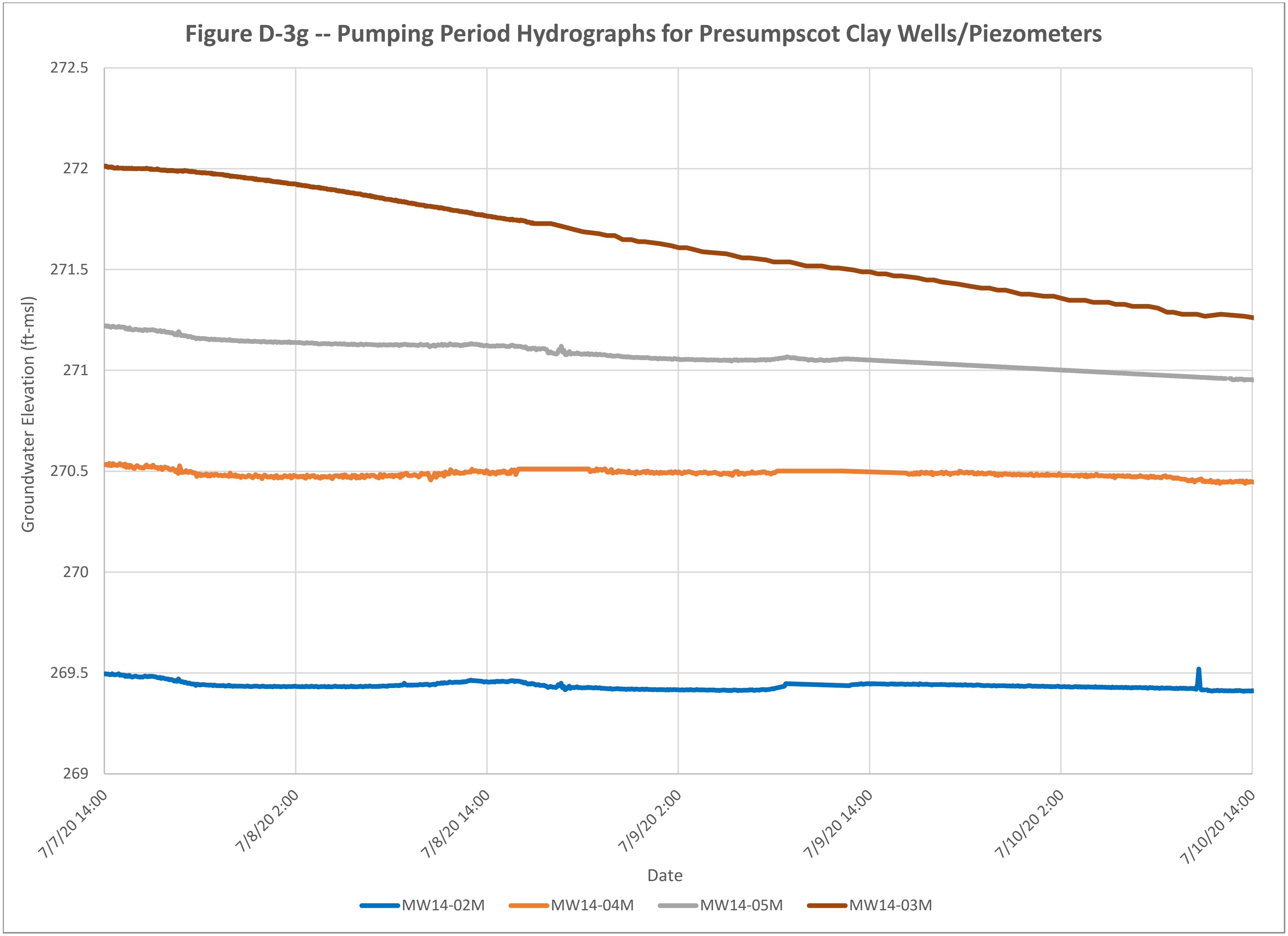


Figure D-3g -- Pumping Period Hydrographs for Presumpscot Clay Wells/Piezometers
272.5
272
271.5
271
270.5
270
269.5
269
Groundwater Elevation (ft-msl)
7/7/20 14:00
7/8/20 2:00
7/8/20 14:00
7/9/20 2:00
7/9/20 14:00
7/10/20 2:00
7/10/20 14:00
Date
MW14-02M
MW14-04M
MW14-05M
MW14-03M

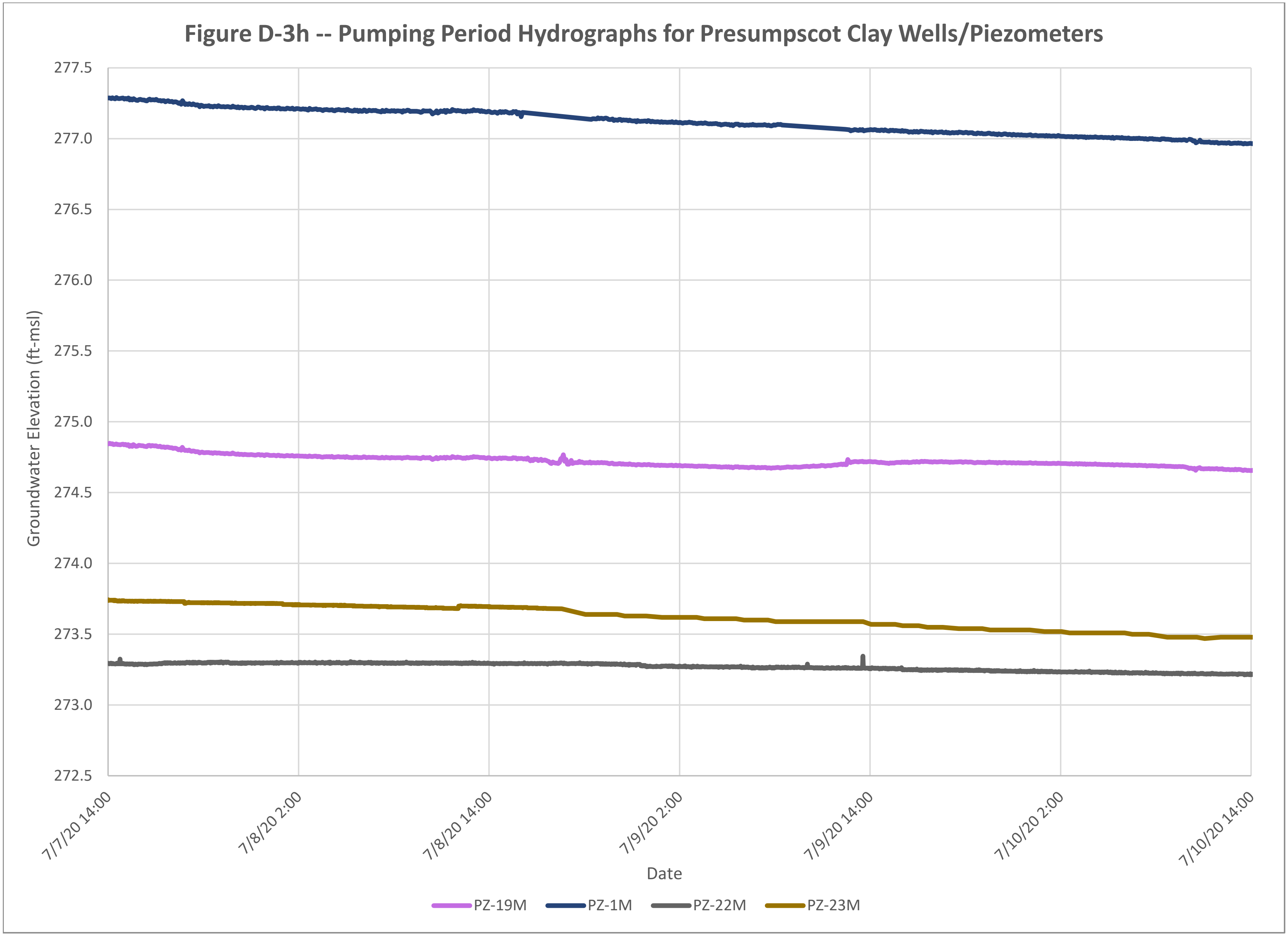


Figure D-3h -- Pumping Period Hydrographs for Presumpscot Clay Wells/Piezometers
Groundwater Elevation (ft-msl)
277.5
277.0
276.5
276.0
275.5
275.0
274.5
274.0
273.5
273.0
272.5
7/7/20 14:00
7/8/20 2:00
7/8/20 14:00
7/9/20 2:00
7/9/20 14:00
7/10/20 2:00
7/10/20 14:00
Date
PZ-19M
PZ-1M
PZ-22M
PZ-23M

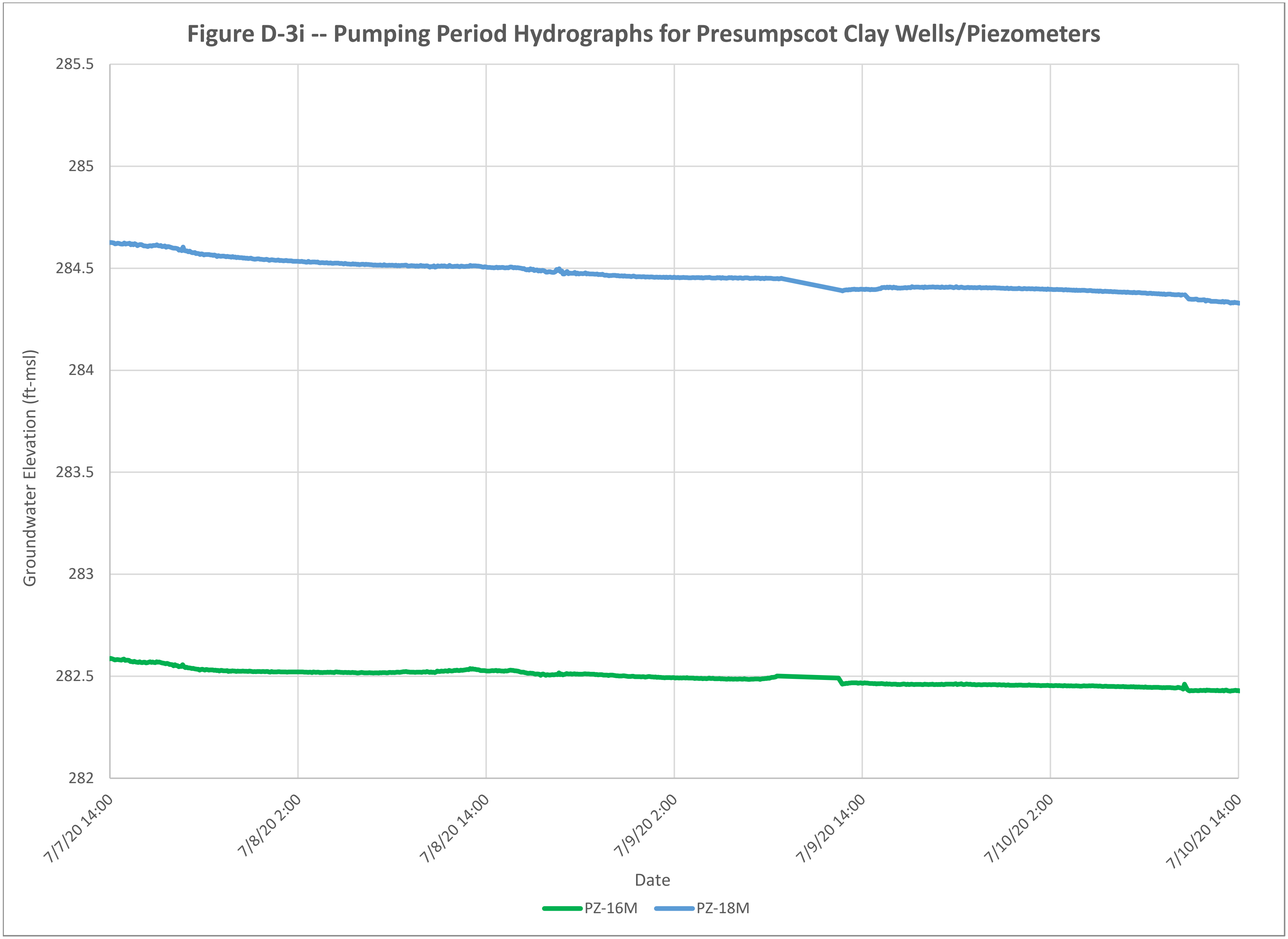


Figure D-3i -- Pumping Period Hydrographs for Presumpscot Clay Wells/Piezometers
285.5
285
284.5
284
283.5
283
282.5
282
Groundwater Elevation (ft-msl)
7/7/20 14:00
7/8/20 2:00
7/8/20 14:00
7/9/20 2:00
7/9/20 14:00
7/10/20 2:00
7/10/20 14:00
Date
PZ-16M
PZ-18M

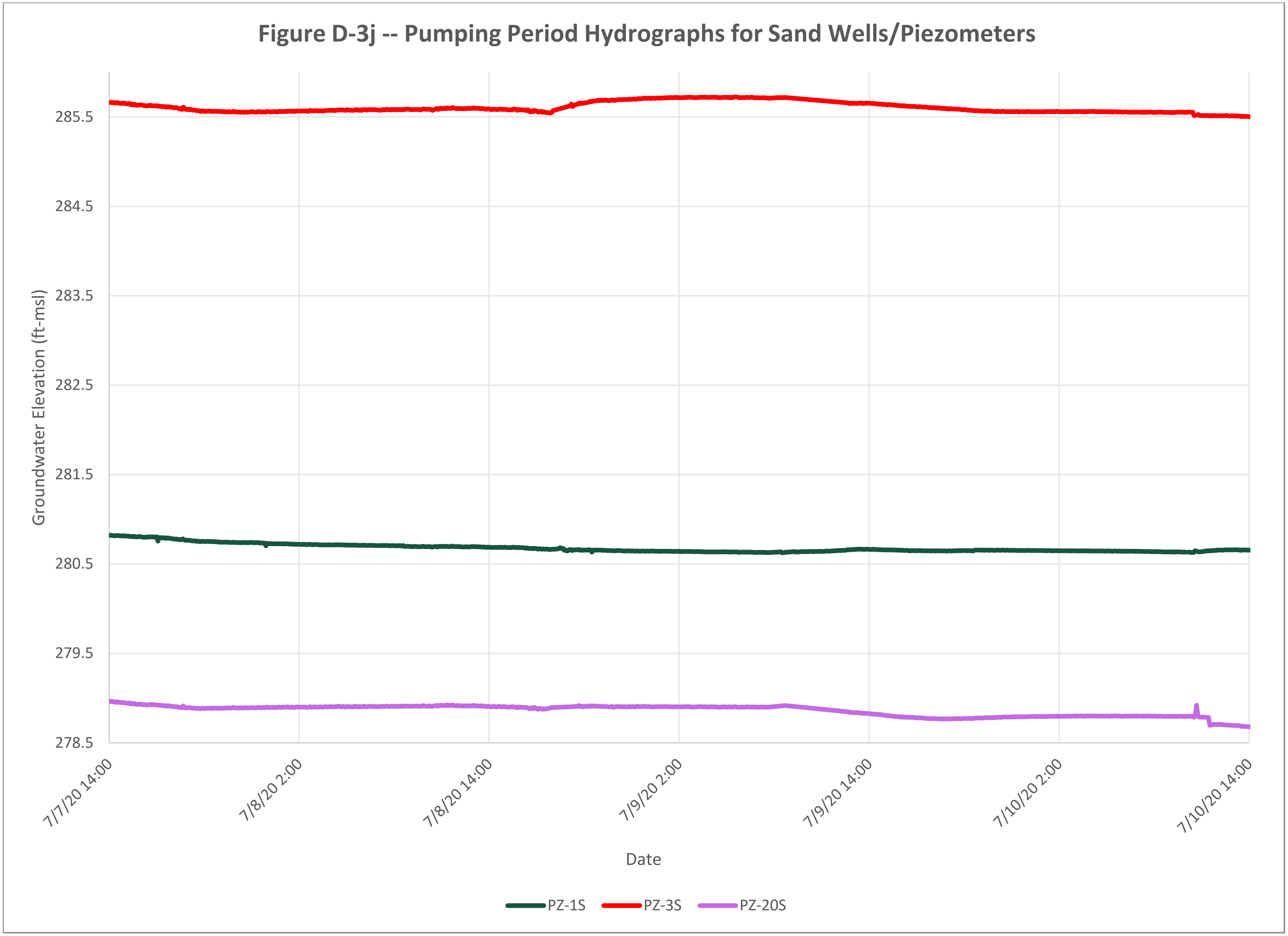


Figure D-3j -- Pumping Period Hydrographs for Sand Wells/Piezometers
Groundwater Elevation (ft-msl)
285.5
284.5
283.5
282.5
281.5
280.5
279.5
278.5
7/7/20 14:00
7/8/20 2:00
7/8/20 14:00
7/9/20 2:00
7/9/20 14:00
7/10/20 2:00
7/10/20 14:00
Date
PZ-1S
PZ-3S
PZ-20S

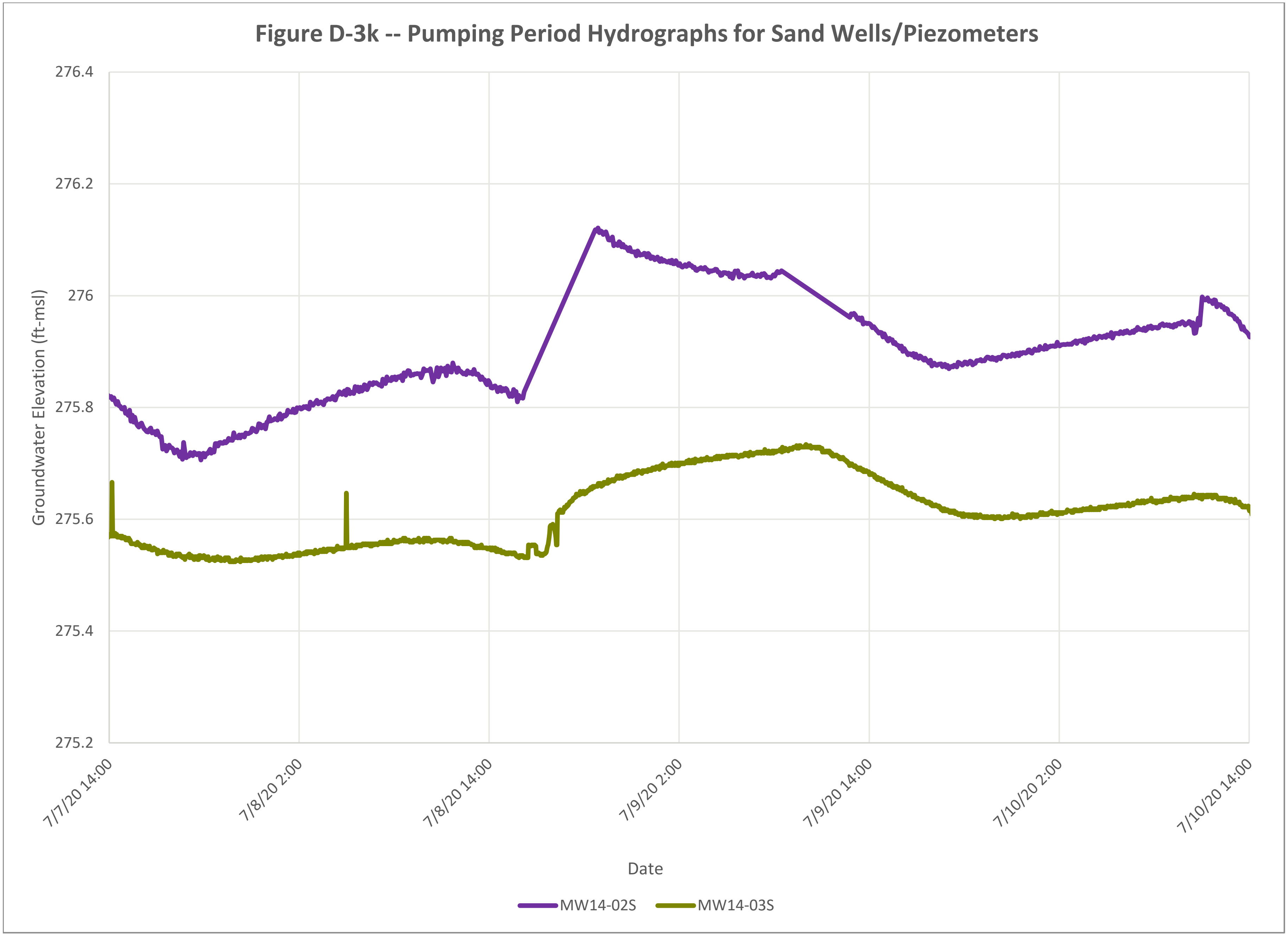


Figure D-3k -- Pumping Period Hydrographs for Sand Wells/Piezometers
276.4
276.2
276
275.8
275.6
275.4
275.2
Groundwater Elevation (ft-msl)
7/7/20 14:00
7/8/20 2:00
7/8/20 14:00
7/9/20 2:00
7/9/20 14:00
7/10/20 2:00
7/10/20 14:00
Date
MW14-02S
MW14-03S

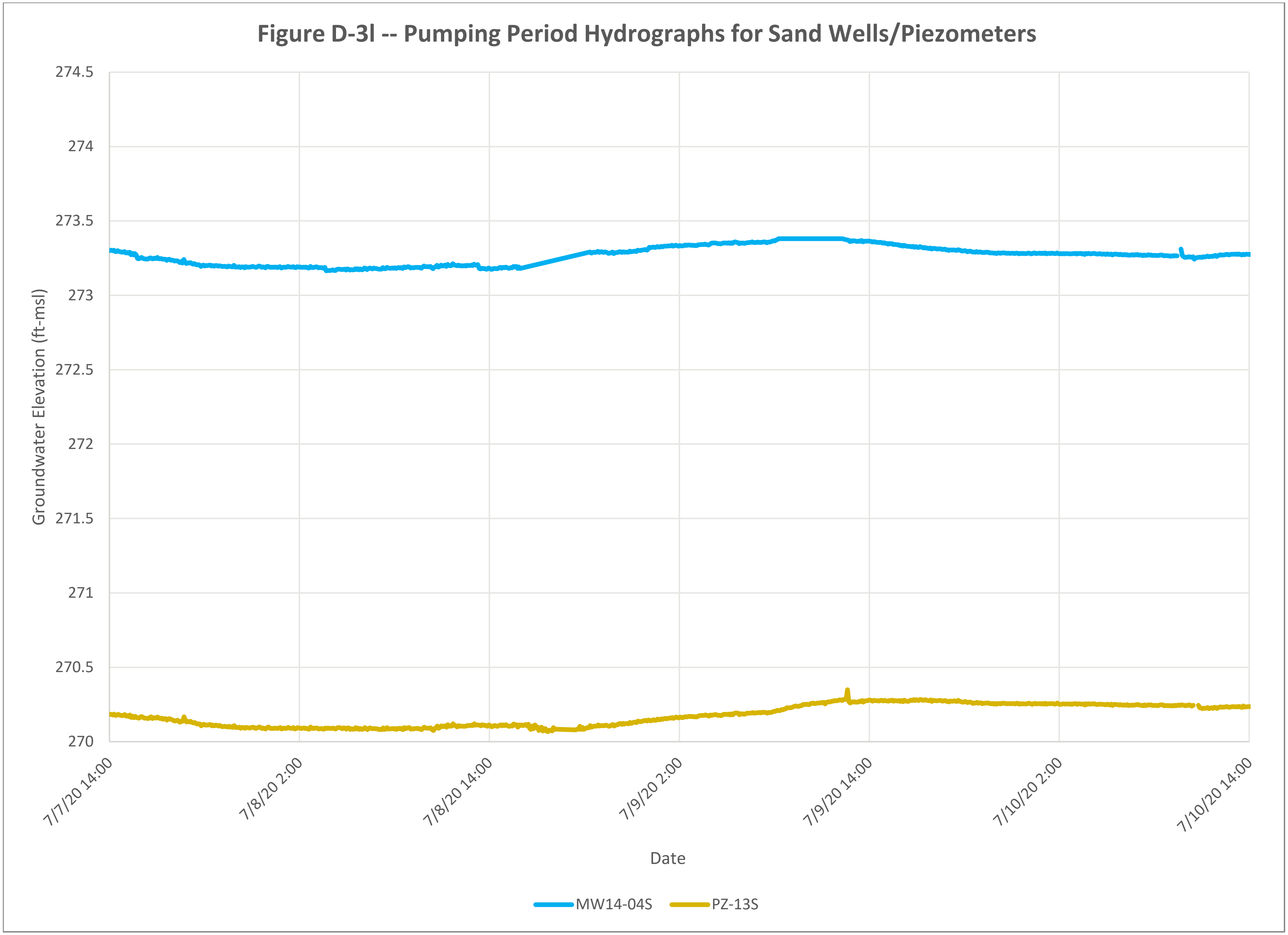


Figure D-3l -- Pumping Period Hydrographs for Sand Wells/Piezometers
274.5
274
273.5
273
272.5
272
271.5
271
270.5
270
Groundwater Elevation (ft-msl)
7/7/20 14:00
7/8/20 2:00
7/8/20 14:00
7/9/20 2:00
7/9/20 14:00
7/10/20 2:00
7/10/20 14:00
Date
MW14-04S
PZ-13S

APPENDIX D-4

Recovery Monitoring Period Data Plots

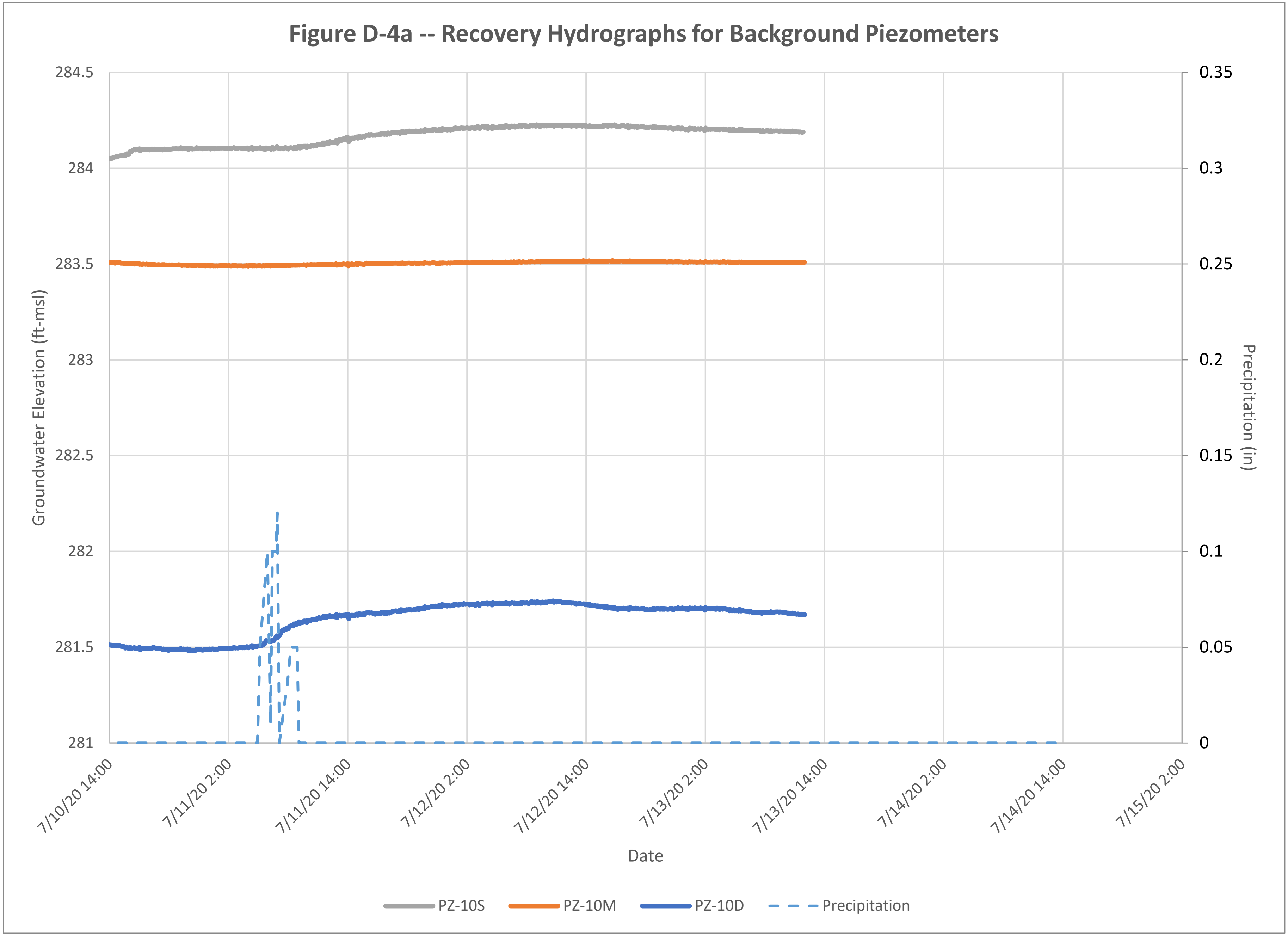


Figure D-4a -- Recovery Hydrographs for Background Piezometers
Groundwater Elevation (ft-msl)
284.5
284
283.5
283
282.5
282
281.5
281
Precipitation (in)
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
7/10/20 14:00
7/11/20 2:00
7/11/20 14:00
7/12/20 2:00
7/12/20 14:00
7/13/20 2:00
7/13/20 14:00
7/14/20 2:00
7/14/20 14:00
7/15/20 2:00
Date
PZ-10S
PZ-10M
PZ-10D
Precipitation

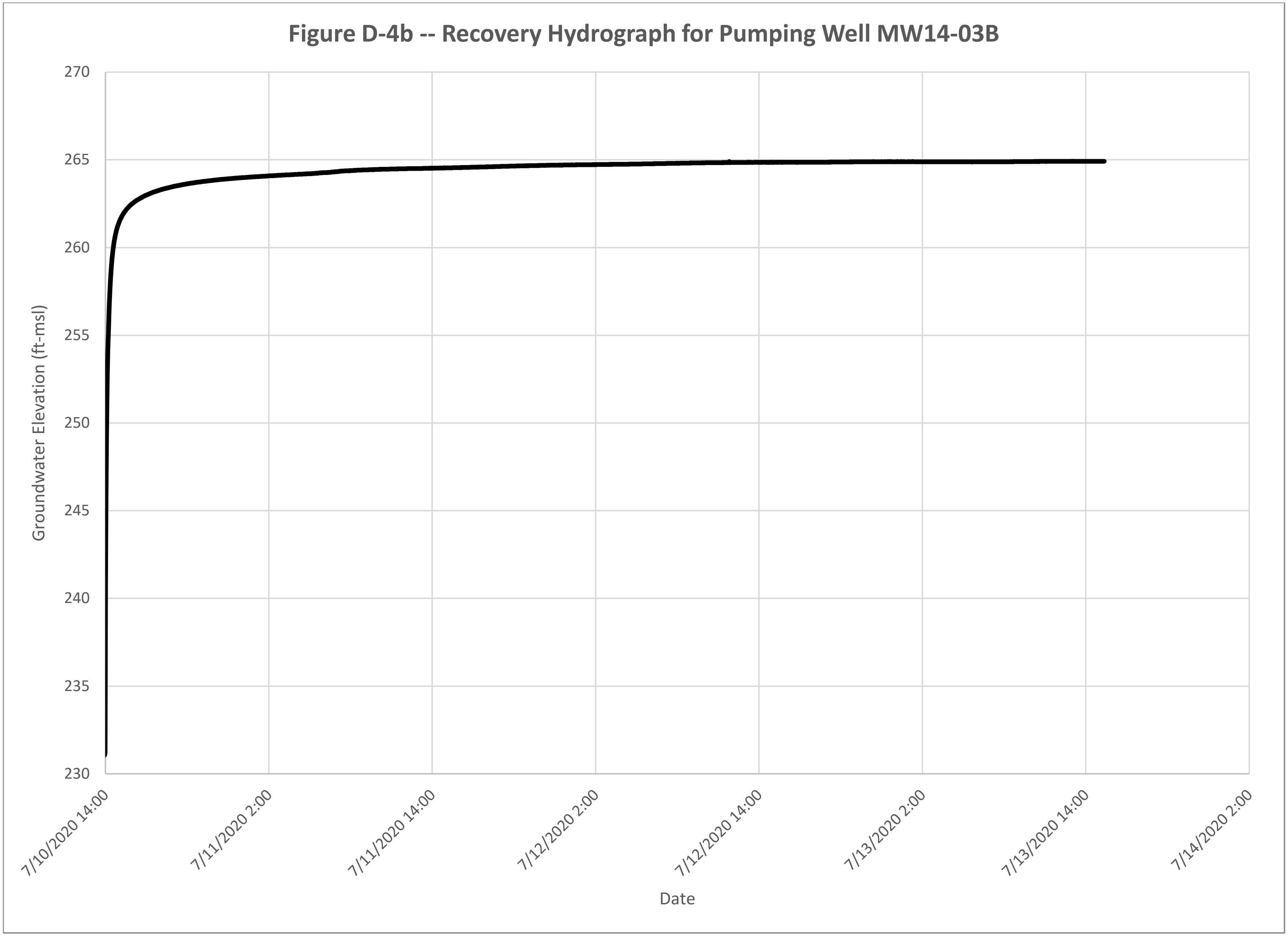


Figure D-4b -- Recovery Hydrograph for Pumping Well MW14-03B
270
265
260
255
250
245
240
235
230
Groundwater Elevation (ft-msl)
7/10/2020 14:00
7/11/2020 2:00
7/11/2020 14:00
7/12/2020 2:00
7/12/2020 14:00
7/13/2020 2:00
7/13/2020 14:00
7/14/2020 2:00
Date

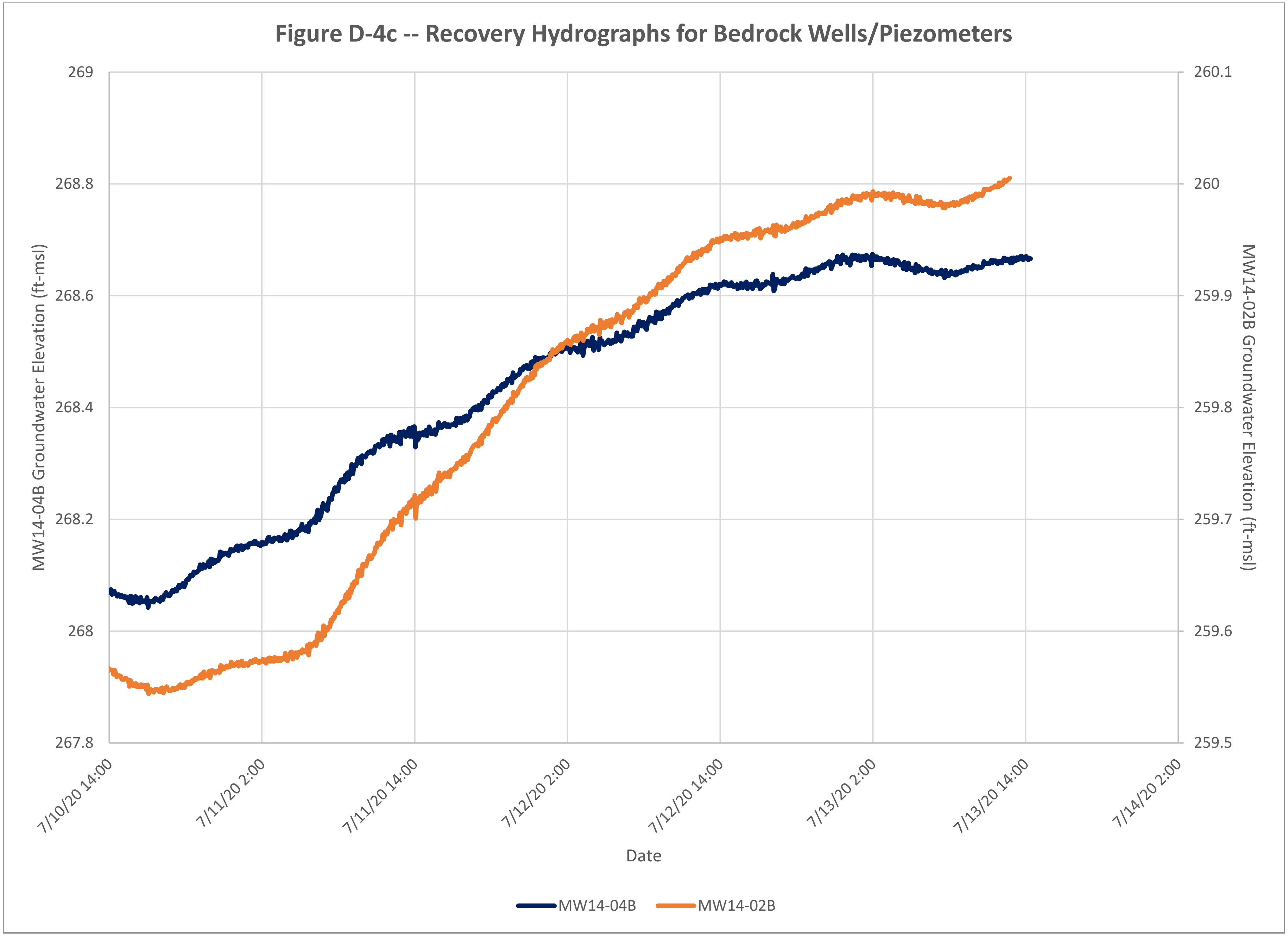


Figure D-4c -- Recovery Hydrographs for Bedrock Wells/Piezometers
MW14-04B Groundwater Elevation (ft-msl)
MW14-02B Groundwater Elevation (ft-msl)
269
268.8
268.6
268.4
268.2
268
267.8
260.1
260
259.9
259.8
259.7
259.6
259.5
7/10/20 14:00
7/11/20 2:00
7/11/20 14:00
7/12/20 2:00
7/12/20 14:00
7/13/20 2:00
7/13/20 14:00
7/14/20 2:00
Date
MW14-04B
MW14-02B

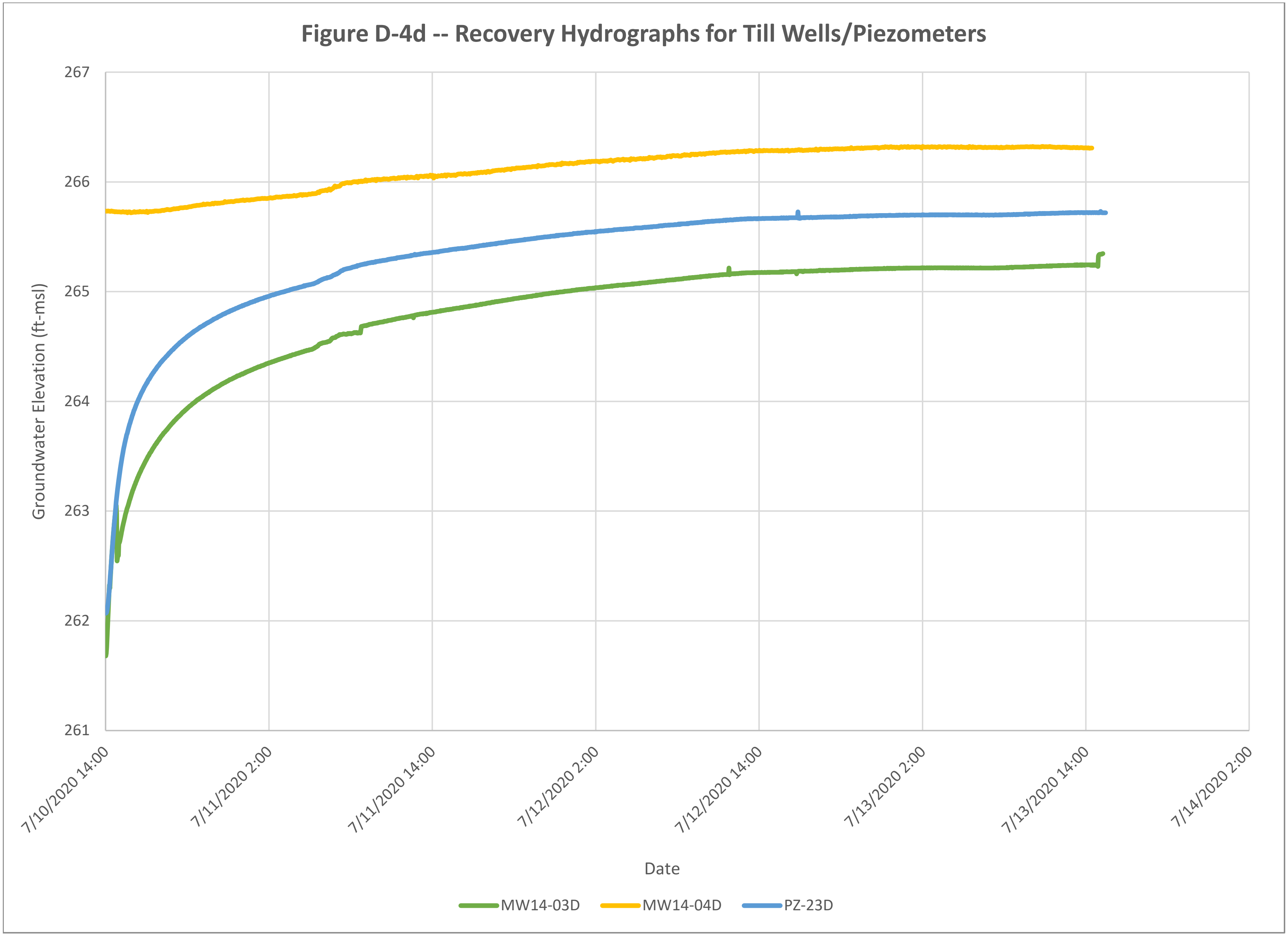


Figure D-4d -- Recovery Hydrographs for Till Wells/Piezometers
Groundwater Elevation (ft-msl)
267
266
265
264
263
262
261
7/10/2020 14:00
7/11/2020 2:00
7/11/2020 14:00
7/12/2020 2:00
7/12/2020 14:00
7/13/2020 2:00
7/13/2020 14:00
7/14/2020 2:00
Date
MW14-03D
MW14-04D
PZ-23D

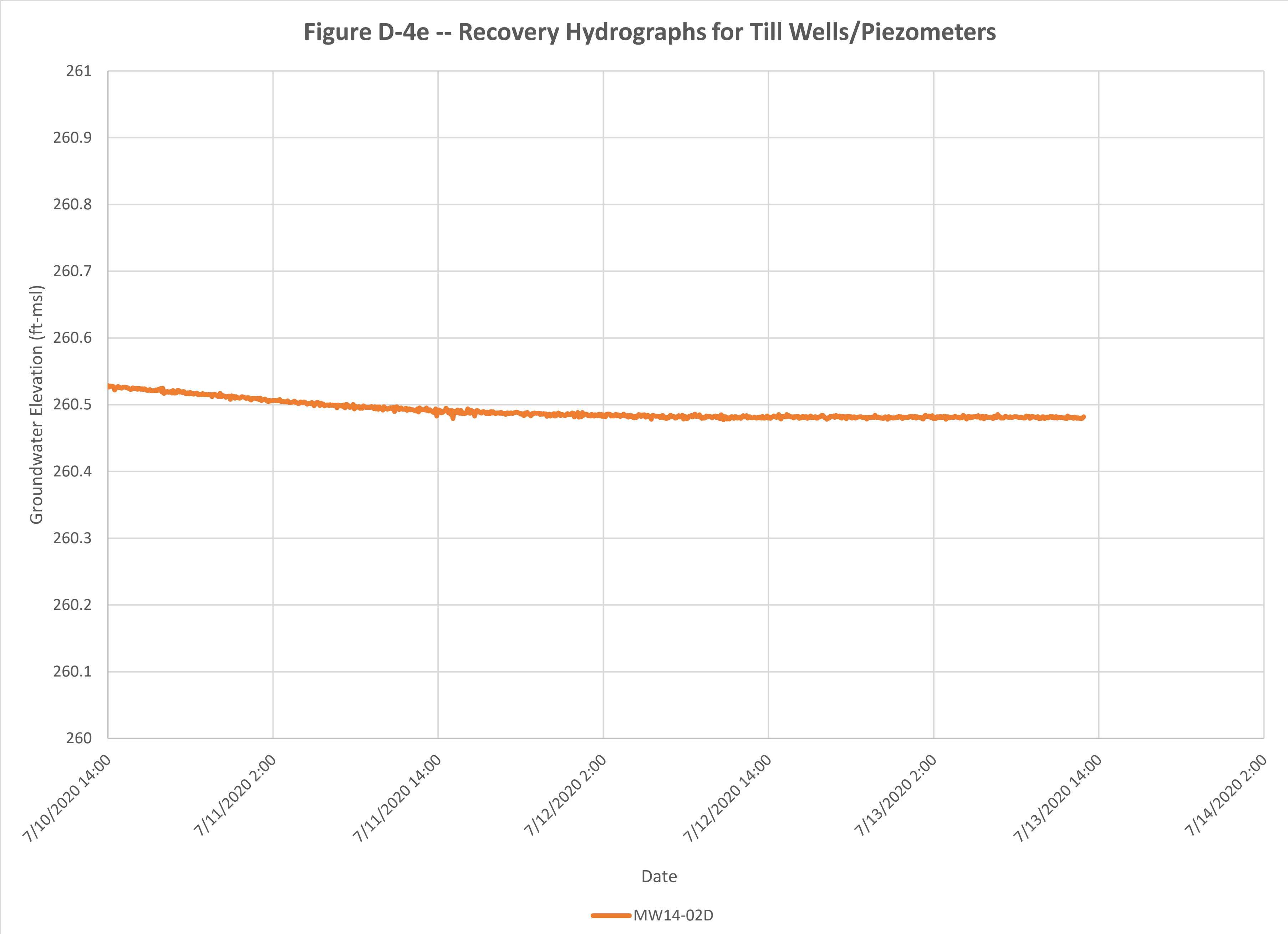


Figure D-4e -- Recovery Hydrographs for Till Wells/Piezometers
Groundwater Elevation (ft-msl)
261
260.9
260.8
260.7
260.6
260.5
260.4
260.3
260.2
260.1
260
7/10/2020 14:00
7/11/2020 2:00
7/11/2020 14:00
7/12/2020 2:00
7/12/2020 14:00
7/13/2020 2:00
7/13/2020 14:00
7/14/2020 2:00
Date
MW14-02D

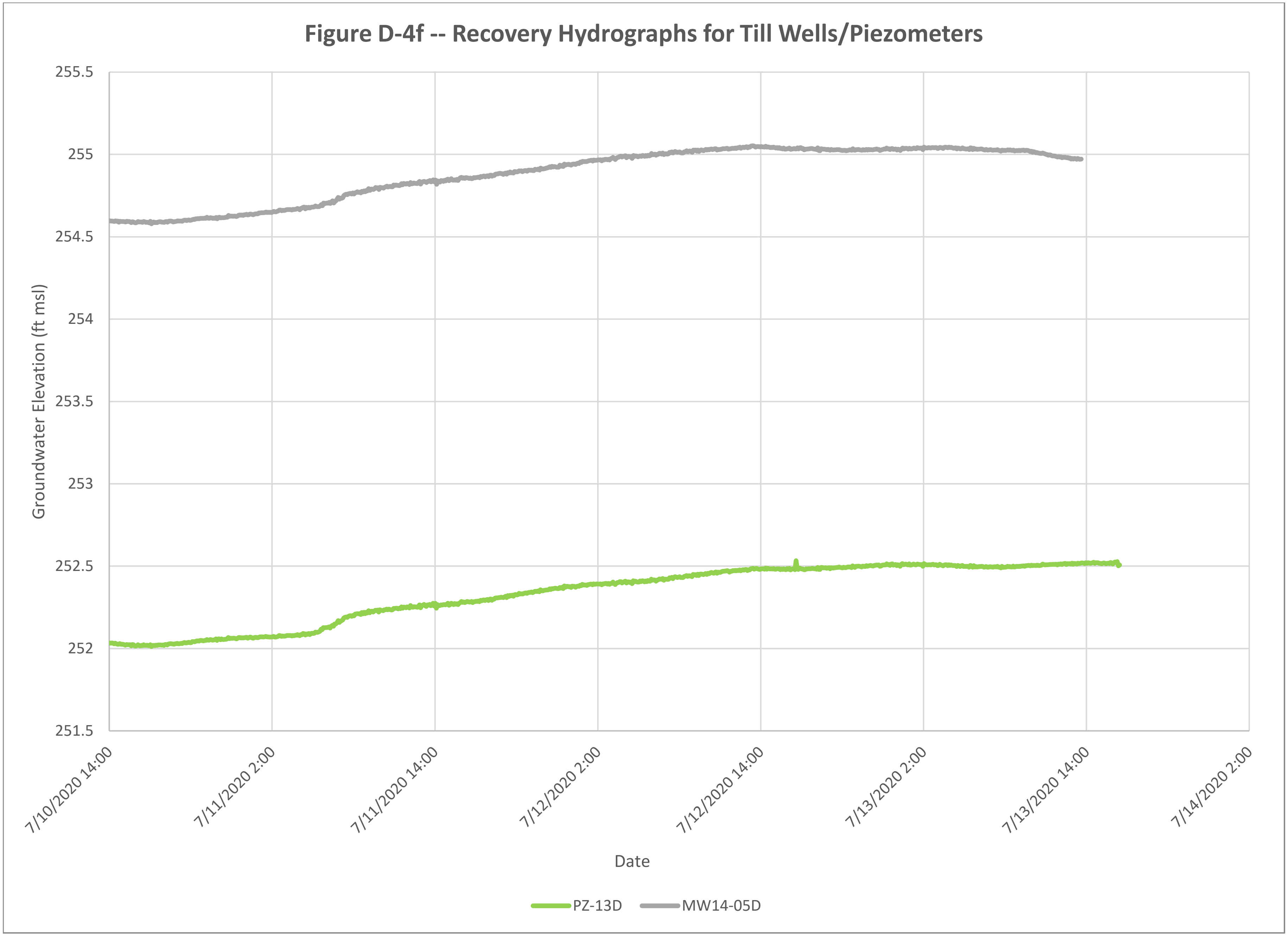


Figure D-4f -- Recovery Hydrographs for Till Wells/Piezometers
Groundwater Elevation (ft msl)
255.5
255
254.5
254
253.5
253
252.5
252
251.5
7/10/2020 14:00
7/11/2020 2:00
7/11/2020 14:00
7/12/2020 2:00
7/12/2020 14:00
7/13/2020 2:00
7/13/2020 14:00
7/14/2020 2:00
Date
PZ-13D
MW14-05D

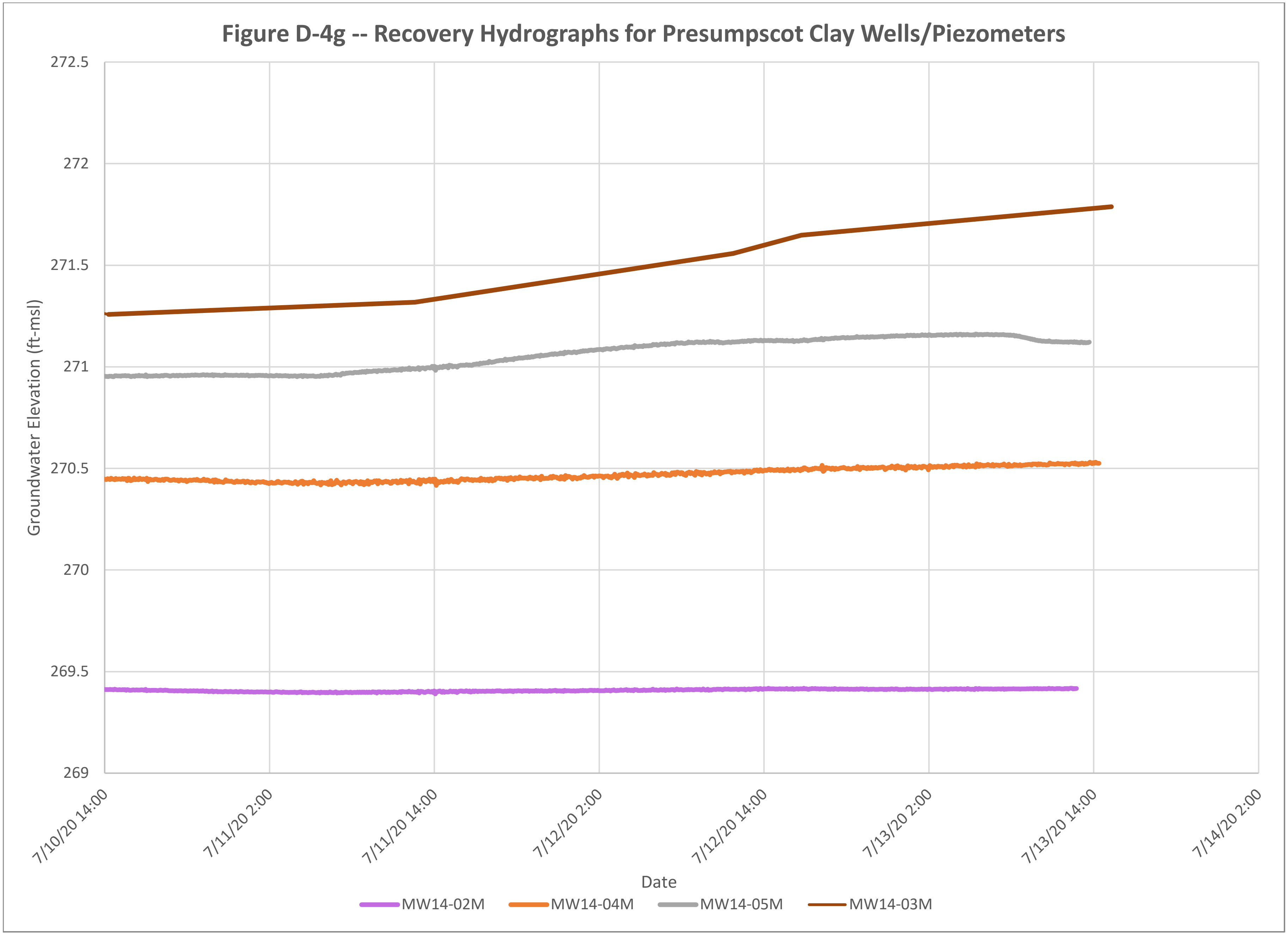
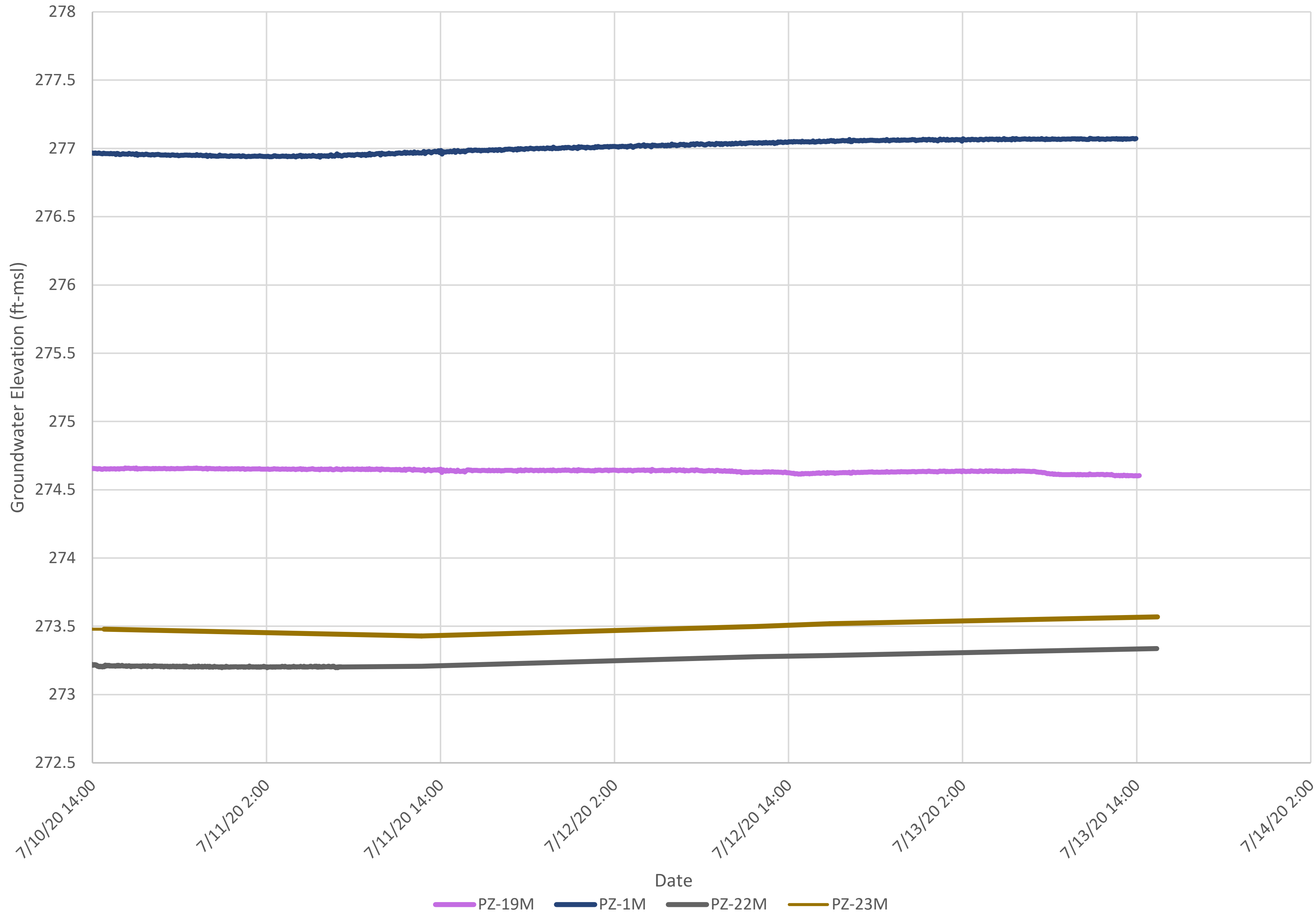


Figure D-4g -- Recovery Hydrographs for Presumpscot Clay Wells/Piezometers
272.5
272
271.5
271
270.5
270
269.5
269
Groundwater Elevation (ft-msl)
7/10/20 14:00
7/11/20 2:00
7/11/20 14:00
7/12/20 2:00
7/12/20 14:00
7/13/20 2:00
7/13/20 14:00
7/14/20 2:00
Date
MW14-02M
MW14-04M
MW14-05M
MW14-03M

Figure D-4h -- Recovery Hydrographs for Presumpscot Clay Wells/Piezometers



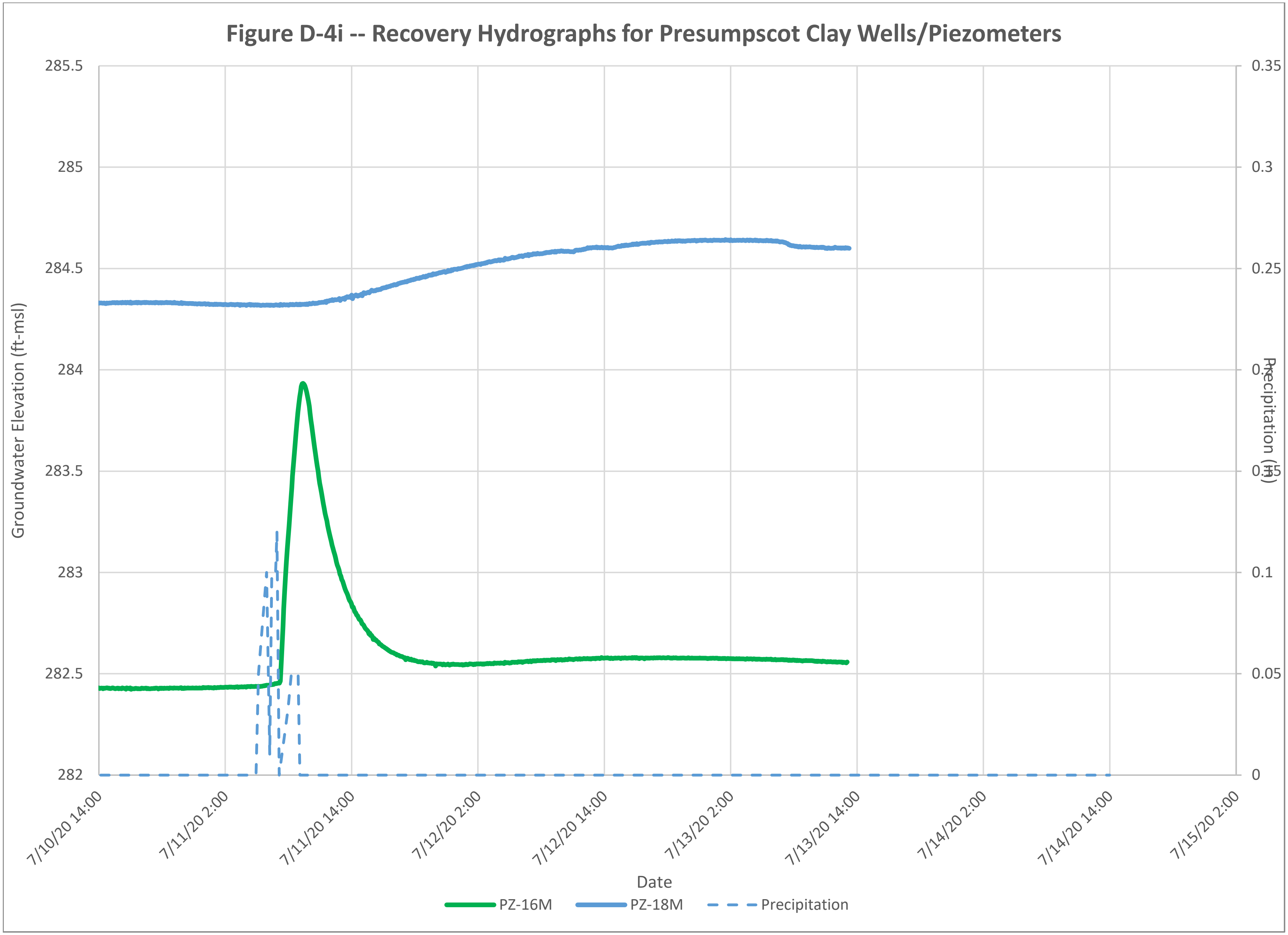


Figure D-4i -- Recovery Hydrographs for Presumpscot Clay Wells/Piezometers
Groundwater Elevation (ft-msl)
285.5
285
284.5
284
283.5
283
282.5
282
Precipitation (in)
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
7/10/20 14:00
7/11/20 2:00
7/11/20 14:00
7/12/20 2:00
7/12/20 14:00
7/13/20 2:00
7/13/20 14:00
7/14/20 2:00
7/14/20 14:00
7/15/20 2:00
Date
PZ-16M
PZ-18M
Precipitation

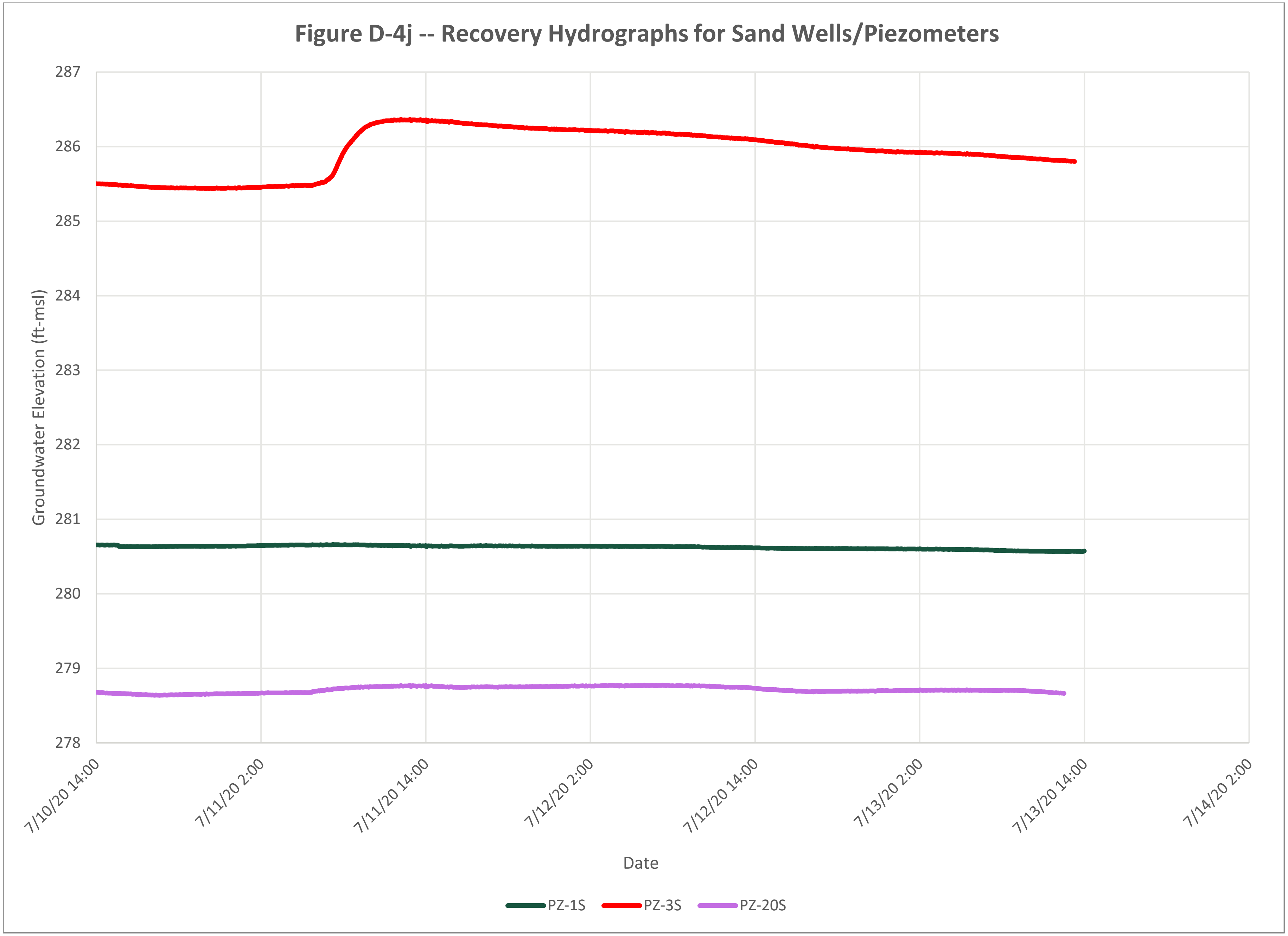


Figure D-4j -- Recovery Hydrographs for Sand Wells/Piezometers
Groundwater Elevation (ft-msl)
287
286
285
284
283
282
281
280
279
278
7/10/20 14:00
7/11/20 2:00
7/11/20 14:00
7/12/20 2:00
7/12/20 14:00
7/13/20 2:00
7/13/20 14:00
7/14/20 2:00
Date
PZ-1S
PZ-3S
PZ-20S

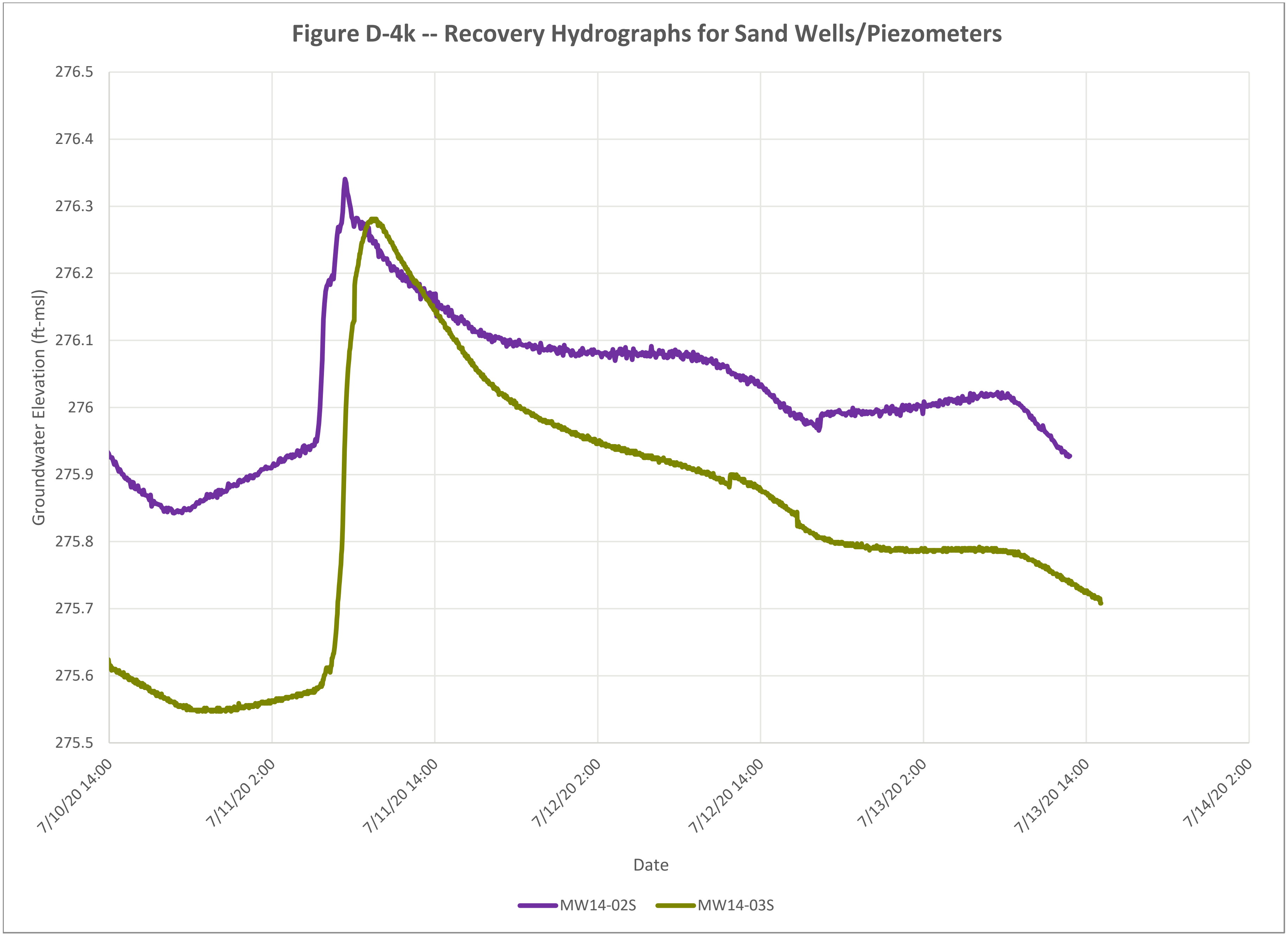


Figure D-4k -- Recovery Hydrographs for Sand Wells/Piezometers
Groundwater Elevation (ft-msl)
276.5
276.4
276.3
276.2
276.1
276
275.9
275.8
275.7
275.6
275.5
7/10/20 14:00
7/11/20 2:00
7/11/20 14:00
7/12/20 2:00
7/12/20 14:00
7/13/20 2:00
7/13/20 14:00
7/14/20 2:00
Date
MW14-02S
MW14-03S

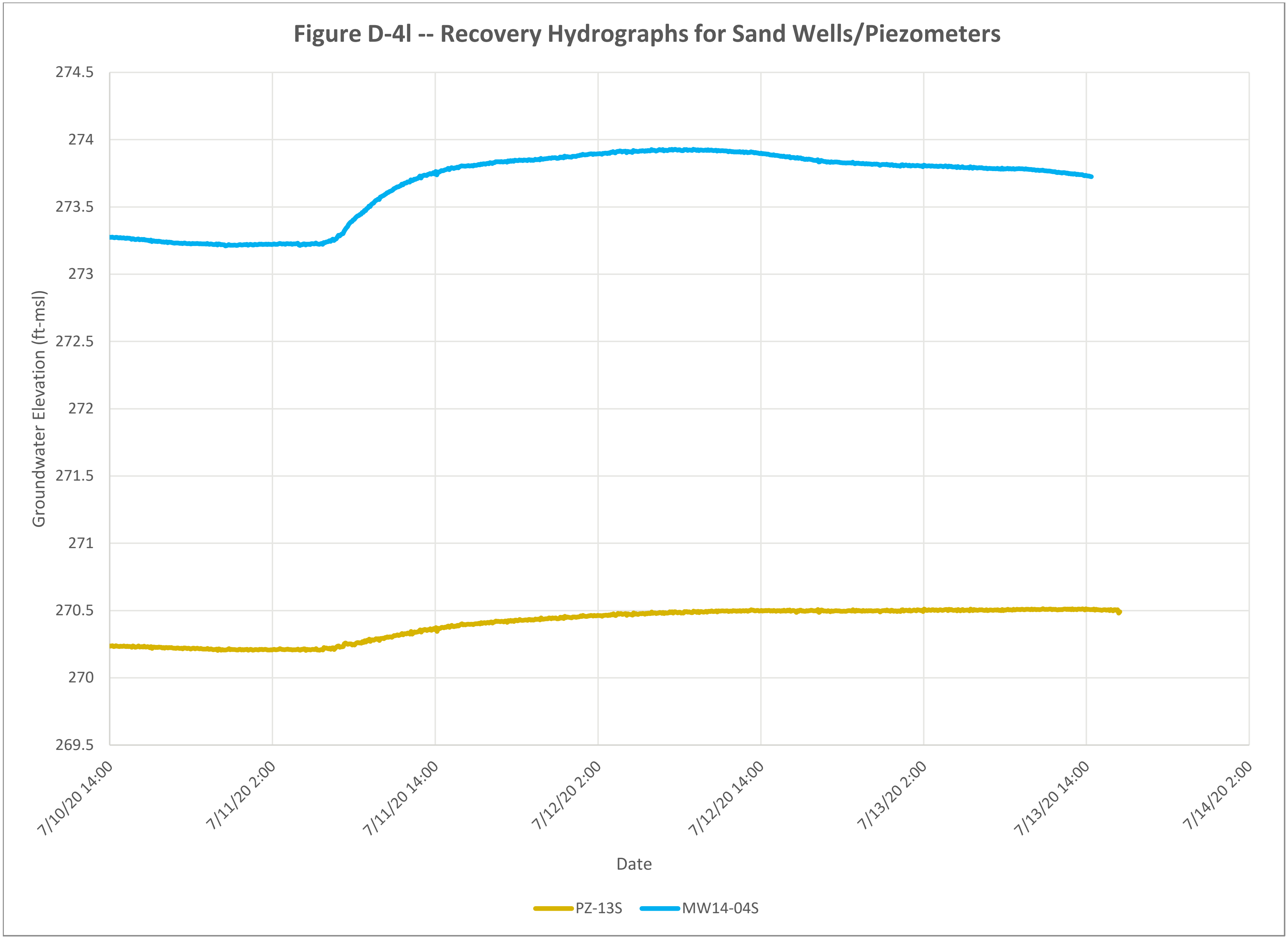


Figure D-4l -- Recovery Hydrographs for Sand Wells/Piezometers
274.5
274
273.5
273
272.5
272
271.5
271
270.5
270
269.5
Groundwater Elevation (ft-msl)
7/10/20 14:00
7/11/20 2:00
7/11/20 14:00
7/12/20 2:00
7/12/20 14:00
7/13/20 2:00
7/13/20 14:00
7/14/20 2:00
Date
PZ-13S
MW14-04S

APPENDIX E

Pumping Test Analysis

APPENDIX E-1

Hantush Pumping Period Data Analysis Report Files

Data Set: C:\Users\BCampelia\Desktop\Crossroads Pumping Test Files\2020-07-10 Files\2020-07-26 Updated File
Date: 07/26/20
Time: 10:39:06

PROJECT INFORMATION

Company: Golder Associates, Inc.
Client: Crossroads
Location: ME
Test Date: 7/7/2020
Test Well: MW14-03B

AQUIFER DATA

Saturated Thickness: 70. ft
Anisotropy Ratio (Kz/Kr): 1.
Aquitard Thickness (b'): 12.5 ft
Aquitard Thickness (b"): 12.5 ft

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: MW14-03B

X Location: 3039420.818 ft
Y Location: 684500.912 ft

Casing Radius: 0. ft
Well Radius: 0.1875 ft

Partially Penetrating Well
Depth to Top of Screen: 28. ft
Depth to Bottom of Screen: 51. ft

No. of pumping periods: 1

Pumping Period Data

Time (min)	Rate (gal/min)
0.	1.

OBSERVATION WELL DATA

No. of observation wells: 1

Observation Well No. 1: MW14-03D

X Location: 3039425.578 ft
Y Location: 684504.177 ft

Radial distance from MW14-03B: 5.772159475 ft

Partially Penetrating Well
Depth to Top of Screen: 1. ft
Depth to Bottom of Screen: 10. ft

No. of Observations: 2358

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.01	-2.22E-7	1964.	3.119
0.02	-4.44E-7	1966.	3.119
0.03	-6.65E-7	1968.	3.119
0.04	-1.11E-6	1970.	3.122
0.05	-1.33E-6	1972.	3.122
0.06	-1.55E-6	1974.	3.122
0.07	-2.0E-6	1976.	3.122

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.08	-2.22E-6	1978.	3.122
0.09	-0.001002	1980.	3.122
0.1	-0.001003	1982.	3.122
0.11	-0.001003	1984.	3.124
0.12	-0.001003	1986.	3.122
0.13	-0.001004	1988.	3.124
0.14	-0.001004	1990.	3.124
0.15	-0.001004	1992.	3.124
0.16	-0.001004	1994.	3.127
0.17	-0.001004	1996.	3.123
0.18	-0.001005	1998.	3.126
0.19	-0.001005	2000.	3.126
0.2	-0.001005	2002.	3.126
0.21	-0.001006	2004.	3.126
0.22	-0.001006	2006.	3.126
0.23	-0.001006	2008.	3.126
0.24	-0.001006	2010.	3.129
0.25	-0.001007	2012.	3.115
0.26	-0.001007	2014.	3.121
0.27	-0.001007	2016.	3.121
0.28	-0.001008	2018.	3.121
0.29	-0.001008	2020.	3.123
0.3	-0.001008	2022.	3.123
0.31	-0.001008	2024.	3.126
0.32	-0.001009	2026.	3.126
0.33	-0.001009	2028.	3.129
0.34	-0.001009	2030.	3.129
0.35	-0.001009	2032.	3.128
0.36	-0.00101	2034.	3.131
0.37	-0.00101	2036.	3.131
0.38	-0.00101	2038.	3.131
0.39	-0.00101	2040.	3.133
0.4	-0.001011	2042.	3.133
0.41	-0.001011	2044.	3.133
0.42	-0.001011	2046.	3.136
0.43	-0.001012	2048.	3.136
0.44	-0.001012	2050.	3.136
0.45	-0.001012	2052.	3.136
0.46	-0.001012	2054.	3.136
0.47	-0.003012	2056.	3.136
0.48	-0.001013	2058.	3.139
0.49	-0.001013	2060.	3.139
0.5	-0.001013	2062.	3.139
0.51	-0.001014	2064.	3.139
0.52	-0.001014	2066.	3.142
0.53	-0.001014	2068.	3.142
0.54	-0.001014	2070.	3.141
0.55	-0.001015	2072.	3.141
0.56	-0.001015	2074.	3.141
0.57	-0.001015	2076.	3.141
0.58	-0.001016	2078.	3.141
0.59	-0.001016	2080.	3.141
0.6	-0.004016	2082.	3.143
0.61	-0.001016	2084.	3.143
0.62	-0.004017	2086.	3.143
0.63	-0.004017	2088.	3.143
0.64	-0.004017	2090.	3.143
0.65	-0.003017	2092.	3.146
0.66	-0.004018	2094.	3.146
0.67	-0.004018	2096.	3.146
0.68	-0.001018	2098.	3.146
0.69	-0.004018	2100.	3.149
0.7	-0.004019	2102.	3.146
0.71	-0.004019	2104.	3.149
0.72	-0.004019	2106.	3.149
0.73	-0.00402	2108.	3.145

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.74	-0.00402	2110.	3.148
0.75	-0.00402	2112.	3.15
0.76	-0.00402	2114.	3.148
0.77	-0.004021	2116.	3.148
0.78	-0.004021	2118.	3.15
0.79	-0.004021	2120.	3.148
0.8	-0.004021	2122.	3.15
0.81	-0.006022	2124.	3.15
0.82	-0.004022	2126.	3.153
0.83	-0.004022	2128.	3.15
0.84	-0.004022	2130.	3.153
0.85	-0.004023	2132.	3.15
0.86	-0.004023	2134.	3.153
0.87	-0.004023	2136.	3.15
0.88	-0.004023	2138.	3.153
0.89	-0.004024	2140.	3.153
0.9	-0.004024	2142.	3.153
0.91	-0.004024	2144.	3.153
0.92	-0.004024	2146.	3.152
0.93	-0.004025	2148.	3.152
0.94	-0.004025	2150.	3.155
0.95	-0.004025	2152.	3.155
0.96	-0.004026	2154.	3.155
0.97	-0.004026	2156.	3.155
0.98	-0.004026	2158.	3.152
0.99	-0.004026	2160.	3.155
1.	-0.006027	2162.	3.155
1.01	-0.006027	2164.	3.155
1.02	-0.006027	2166.	3.155
1.03	-0.006027	2168.	3.155
1.04	-0.006028	2170.	3.155
1.05	-0.006028	2172.	3.155
1.06	-0.006028	2174.	3.155
1.07	-0.006029	2176.	3.155
1.08	-0.006029	2178.	3.155
1.09	-0.006029	2180.	3.158
1.1	-0.006029	2182.	3.158
1.11	-0.00603	2184.	3.157
1.12	-0.00603	2186.	3.157
1.13	-0.00603	2188.	3.157
1.14	-0.00603	2190.	3.159
1.15	-0.006031	2192.	3.159
1.16	-0.006031	2194.	3.157
1.17	-0.006031	2196.	3.159
1.18	-0.006032	2198.	3.159
1.19	-0.006032	2200.	3.159
1.2	-0.006032	2202.	3.159
1.21	-0.006032	2204.	3.159
1.22	-0.006033	2206.	3.159
1.23	-0.006033	2208.	3.162
1.24	-0.006033	2210.	3.162
1.25	-0.006033	2212.	3.162
1.26	-0.006033	2214.	3.162
1.27	-0.006034	2216.	3.162
1.28	-0.006034	2218.	3.162
1.29	-0.006034	2220.	3.161
1.3	-0.006035	2222.	3.164
1.31	-0.009035	2224.	3.164
1.32	-0.006035	2226.	3.161
1.33	-0.009035	2228.	3.161
1.34	-0.009036	2230.	3.161
1.35	-0.009036	2232.	3.164
1.36	-0.009036	2234.	3.161
1.37	-0.009037	2236.	3.164
1.38	-0.009037	2238.	3.164
1.39	-0.009037	2240.	3.164

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1.4	-0.009037	2242.	3.164
1.41	-0.006037	2244.	3.164
1.42	-0.009038	2246.	3.164
1.43	-0.009038	2248.	3.164
1.44	-0.009038	2250.	3.167
1.45	-0.009039	2252.	3.164
1.46	-0.009039	2254.	3.167
1.47	-0.009039	2256.	3.167
1.48	-0.009039	2258.	3.163
1.49	-0.00904	2260.	3.163
1.5	-0.00904	2262.	3.166
1.51	-0.00904	2264.	3.166
1.52	-0.009041	2266.	3.166
1.53	-0.009041	2268.	3.166
1.54	-0.009041	2270.	3.166
1.55	-0.009041	2272.	3.168
1.56	-0.009041	2274.	3.168
1.57	-0.009042	2276.	3.168
1.58	-0.009042	2278.	3.168
1.59	-0.009042	2280.	3.168
1.6	-0.009043	2282.	3.168
1.61	-0.009043	2284.	3.168
1.62	-0.009043	2286.	3.168
1.63	-0.009043	2288.	3.168
1.64	-0.009044	2290.	3.166
1.65	-0.009044	2292.	3.166
1.66	-0.009044	2294.	3.166
1.67	-0.009045	2296.	3.162
1.68	-0.009045	2298.	3.165
1.69	-0.009045	2300.	3.162
1.7	-0.01205	2302.	3.165
1.71	-0.01205	2304.	3.162
1.72	-0.01205	2306.	3.162
1.73	-0.01205	2308.	3.162
1.74	-0.01205	2310.	3.162
1.75	-0.01205	2312.	3.162
1.76	-0.01205	2314.	3.162
1.77	-0.01205	2316.	3.162
1.78	-0.01205	2318.	3.162
1.79	-0.01205	2320.	3.162
1.8	-0.01205	2322.	3.165
1.81	-0.009048	2324.	3.167
1.82	-0.01205	2326.	3.165
1.83	-0.01205	2328.	3.167
1.84	-0.01205	2330.	3.167
1.85	-0.01205	2332.	3.167
1.86	-0.01205	2334.	3.166
1.87	-0.01205	2336.	3.169
1.88	-0.01205	2338.	3.169
1.89	-0.01205	2340.	3.169
1.9	-0.01205	2342.	3.169
1.91	-0.01205	2344.	3.169
1.92	-0.01205	2346.	3.169
1.93	-0.01505	2348.	3.172
1.94	-0.01505	2350.	3.169
1.95	-0.01205	2352.	3.169
1.96	-0.01205	2354.	3.169
1.97	-0.01205	2356.	3.172
1.98	-0.01205	2358.	3.172
1.99	-0.01205	2360.	3.172
3.98	-0.000106	2362.	3.172
5.98	0.04884	2364.	3.172
7.98	0.1278	2366.	3.172
9.98	0.2177	2368.	3.172
11.98	0.3127	2370.	3.173
13.98	0.3322	2372.	3.173

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
15.98	0.4191	2374.	3.173
17.98	0.5041	2376.	3.173
19.98	0.588	2378.	3.173
21.98	0.665	2380.	3.173
23.98	0.7379	2382.	3.176
25.98	0.8059	2384.	3.176
27.98	0.8718	2386.	3.176
29.98	0.9318	2388.	3.176
31.98	0.9917	2390.	3.176
33.98	1.046	2392.	3.176
35.98	1.095	2394.	3.176
37.98	1.141	2396.	3.176
39.98	1.188	2398.	3.176
41.98	1.228	2400.	3.179
43.98	1.271	2402.	3.176
45.98	1.309	2404.	3.179
47.98	1.348	2406.	3.176
49.98	1.383	2408.	3.178
51.98	1.418	2410.	3.178
53.98	1.451	2412.	3.178
55.98	1.484	2414.	3.178
57.98	1.511	2416.	3.178
59.98	1.538	2418.	3.178
61.98	1.563	2420.	3.175
63.98	1.59	2422.	3.178
65.98	1.441	2424.	3.178
67.98	1.46	2426.	3.175
69.98	1.482	2428.	3.172
71.98	1.501	2430.	3.175
73.98	1.523	2432.	3.173
75.98	1.545	2434.	3.172
77.98	1.561	2436.	3.175
79.98	1.582	2438.	3.178
81.98	1.601	2440.	3.178
83.98	1.62	2442.	3.178
85.98	1.642	2444.	3.181
87.98	1.656	2446.	3.18
89.98	1.672	2448.	3.18
91.98	1.688	2450.	3.18
93.98	1.69	2452.	3.18
95.98	1.711	2454.	3.18
97.98	1.722	2456.	3.18
100.	1.736	2458.	3.18
102.	1.75	2460.	3.18
104.	1.763	2462.	3.182
106.	1.777	2464.	3.18
108.	1.793	2466.	3.182
110.	1.809	2468.	3.182
112.	1.823	2470.	3.182
114.	1.837	2472.	3.182
116.	1.849	2474.	3.185
118.	1.863	2476.	3.185
120.	1.877	2478.	3.185
122.	1.887	2480.	3.185
124.	1.904	2482.	3.185
126.	1.915	2484.	3.187
128.	1.928	2486.	3.184
130.	1.939	2488.	3.184
132.	1.95	2490.	3.187
134.	1.958	2492.	3.187
136.	1.972	2494.	3.187
138.	1.983	2496.	3.187
140.	1.994	2498.	3.187
142.	2.005	2500.	3.187
144.	2.016	2502.	3.189
146.	2.024	2504.	3.187

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
148.	2.032	2506.	3.187
150.	2.043	2508.	3.189
152.	2.054	2510.	3.189
154.	2.061	2512.	3.187
156.	2.072	2514.	3.189
158.	2.08	2516.	3.189
160.	2.088	2518.	3.189
162.	2.099	2520.	3.188
164.	2.107	2522.	3.188
166.	2.115	2524.	3.188
168.	2.126	2526.	3.186
170.	2.132	2528.	3.188
172.	2.14	2530.	3.188
174.	2.145	2532.	3.188
176.	2.156	2534.	3.191
178.	2.162	2536.	3.191
180.	2.17	2538.	3.191
182.	2.175	2540.	3.191
184.	2.183	2542.	3.191
186.	2.192	2544.	3.191
188.	2.2	2546.	3.191
190.	2.208	2548.	3.191
192.	2.212	2550.	3.194
194.	2.218	2552.	3.191
196.	2.226	2554.	3.194
198.	2.232	2556.	3.194
200.	2.237	2558.	3.193
202.	2.245	2560.	3.193
204.	2.251	2562.	3.193
206.	2.259	2564.	3.193
208.	2.267	2566.	3.193
210.	2.27	2568.	3.196
212.	2.278	2570.	3.193
214.	2.283	2572.	3.193
216.	2.289	2574.	3.193
218.	2.294	2576.	3.196
220.	2.302	2578.	3.193
222.	2.308	2580.	3.196
224.	2.316	2582.	3.198
226.	2.321	2584.	3.196
228.	2.327	2586.	3.196
230.	2.331	2588.	3.196
232.	2.337	2590.	3.196
234.	2.342	2592.	3.196
236.	2.35	2594.	3.196
238.	2.359	2596.	3.195
240.	2.361	2598.	3.195
242.	2.369	2600.	3.195
244.	2.372	2602.	3.195
246.	2.378	2604.	3.197
248.	2.38	2606.	3.197
250.	2.389	2608.	3.197
252.	2.391	2610.	3.197
254.	2.394	2612.	3.198
256.	2.402	2614.	3.197
258.	2.405	2616.	3.2
260.	2.41	2618.	3.197
262.	2.416	2620.	3.2
264.	2.421	2622.	3.2
266.	2.423	2624.	3.2
268.	2.431	2626.	3.197
270.	2.434	2628.	3.2
272.	2.439	2630.	3.2
274.	2.445	2632.	3.2
276.	2.447	2634.	3.202
278.	2.453	2636.	3.202

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
280.	2.458	2638.	3.205
282.	2.464	2640.	3.205
284.	2.469	2642.	3.205
286.	2.472	2644.	3.205
288.	2.472	2646.	3.205
290.	2.472	2648.	3.205
292.	2.477	2650.	3.205
294.	2.48	2652.	3.207
296.	2.483	2654.	3.205
298.	2.488	2656.	3.207
300.	2.494	2658.	3.207
302.	2.497	2660.	3.207
304.	2.493	2662.	3.207
306.	2.364	2664.	3.207
308.	2.364	2666.	3.207
310.	2.366	2668.	3.207
312.	2.369	2670.	3.21
314.	2.372	2672.	3.209
316.	2.375	2674.	3.209
318.	2.38	2676.	3.209
320.	2.383	2678.	3.209
322.	2.388	2680.	3.209
324.	2.394	2682.	3.212
326.	2.396	2684.	3.209
328.	2.402	2686.	3.212
330.	2.405	2688.	3.212
332.	2.41	2690.	3.212
334.	2.415	2692.	3.212
336.	2.418	2694.	3.212
338.	2.424	2696.	3.214
340.	2.426	2698.	3.214
342.	2.431	2700.	3.212
344.	2.434	2702.	3.214
346.	2.436	2704.	3.217
348.	2.439	2706.	3.217
350.	2.445	2708.	3.216
352.	2.447	2710.	3.216
354.	2.45	2712.	3.216
356.	2.453	2714.	3.216
358.	2.458	2716.	3.213
360.	2.461	2718.	3.216
362.	2.464	2720.	3.216
364.	2.469	2722.	3.216
366.	2.472	2724.	3.216
368.	2.477	2726.	3.216
370.	2.48	2728.	3.216
372.	2.485	2730.	3.216
374.	2.488	2732.	3.216
376.	2.491	2734.	3.219
378.	2.494	2736.	3.216
380.	2.495	2738.	3.213
382.	2.501	2740.	3.213
384.	2.503	2742.	3.211
386.	2.506	2744.	3.211
388.	2.509	2746.	3.21
390.	2.514	2748.	3.21
392.	2.514	2750.	3.212
394.	2.52	2752.	3.212
396.	2.523	2754.	3.215
398.	2.525	2756.	3.215
400.	2.528	2758.	3.218
402.	2.531	2760.	3.218
404.	2.533	2762.	3.218
406.	2.536	2764.	3.218
408.	2.542	2766.	3.199
410.	2.544	2768.	3.199

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
412.	2.547	2770.	3.199
414.	2.55	2772.	3.199
416.	2.553	2774.	3.201
418.	2.554	2776.	3.201
420.	2.56	2778.	3.201
422.	2.562	2780.	3.204
424.	2.565	2782.	3.204
426.	2.568	2784.	3.203
428.	2.57	2786.	3.203
430.	2.573	2788.	3.203
432.	2.576	2790.	3.203
434.	2.579	2792.	3.203
436.	2.582	2794.	3.206
438.	2.584	2796.	3.206
440.	2.584	2798.	3.206
442.	2.59	2800.	3.206
444.	2.592	2802.	3.206
446.	2.595	2804.	3.206
448.	2.598	2806.	3.209
450.	2.601	2808.	3.206
452.	2.603	2810.	3.209
454.	2.602	2812.	3.209
456.	2.605	2814.	3.209
458.	2.61	2816.	3.209
460.	2.61	2818.	3.209
462.	2.613	2820.	3.209
464.	2.616	2822.	3.205
466.	2.619	2824.	3.21
468.	2.621	2826.	3.21
470.	2.621	2828.	3.208
472.	2.624	2830.	3.208
474.	2.627	2832.	3.21
476.	2.63	2834.	3.21
478.	2.632	2836.	3.21
480.	2.635	2838.	3.21
482.	2.638	2840.	3.213
484.	2.64	2842.	3.21
486.	2.643	2844.	3.21
488.	2.643	2846.	3.21
490.	2.646	2848.	3.21
492.	2.645	2850.	3.213
494.	2.648	2852.	3.213
496.	2.65	2854.	3.213
498.	2.653	2856.	3.213
500.	2.656	2858.	3.213
502.	2.656	2860.	3.212
504.	2.661	2862.	3.212
506.	2.661	2864.	3.212
508.	2.667	2866.	3.212
510.	2.672	2868.	3.212
512.	2.672	2870.	3.212
514.	2.677	2872.	3.212
516.	2.68	2874.	3.212
518.	2.686	2876.	3.212
520.	2.686	2878.	3.212
522.	2.688	2880.	3.212
524.	2.694	2882.	3.215
526.	2.697	2884.	3.215
528.	2.699	2886.	3.217
530.	2.701	2888.	3.215
532.	2.704	2890.	3.215
534.	2.707	2892.	3.217
536.	2.709	2894.	3.217
538.	2.712	2896.	3.216
540.	2.717	2898.	3.219
542.	2.717	2900.	3.219

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
544.	2.72	2902.	3.216
546.	2.723	2904.	3.219
548.	2.726	2906.	3.216
550.	2.728	2908.	3.219
552.	2.728	2910.	3.216
554.	2.731	2912.	3.219
556.	2.734	2914.	3.227
558.	2.736	2916.	3.222
560.	2.737	2918.	3.219
562.	2.742	2920.	3.219
564.	2.742	2922.	3.216
566.	2.745	2924.	3.216
568.	2.746	2926.	3.216
570.	2.749	2928.	3.216
572.	2.752	2930.	3.216
574.	2.647	2932.	3.219
576.	2.649	2934.	3.215
578.	2.649	2936.	3.215
580.	2.652	2938.	3.218
582.	2.655	2940.	3.218
584.	2.66	2942.	3.218
586.	2.66	2944.	3.218
588.	2.666	2946.	3.218
590.	2.666	2948.	3.218
592.	2.668	2950.	3.218
594.	2.671	2952.	3.218
596.	2.671	2954.	3.218
598.	2.674	2956.	3.218
600.	2.677	2958.	3.218
602.	2.679	2960.	3.215
604.	2.682	2962.	3.215
606.	2.681	2964.	3.215
608.	2.684	2966.	3.218
610.	2.686	2968.	3.218
612.	2.686	2970.	3.224
614.	2.692	2972.	3.223
616.	2.692	2974.	3.228
618.	2.695	2976.	3.228
620.	2.697	2978.	3.231
622.	2.7	2980.	3.231
624.	2.7	2982.	3.233
626.	2.703	2984.	3.236
628.	2.703	2986.	3.239
630.	2.706	2988.	3.239
632.	2.708	2990.	3.242
634.	2.708	2992.	3.244
636.	2.711	2994.	3.244
638.	2.714	2996.	3.244
640.	2.714	2998.	3.247
642.	2.715	3000.	3.247
644.	2.718	3002.	3.247
646.	2.718	3004.	3.25
648.	2.721	3006.	3.25
650.	2.724	3008.	3.25
652.	2.724	3010.	3.252
654.	2.729	3012.	3.249
656.	2.726	3014.	3.249
658.	2.721	3016.	3.249
660.	2.721	3018.	3.249
662.	2.721	3020.	3.249
664.	2.721	3022.	3.249
666.	2.721	3024.	3.249
668.	2.724	3026.	3.249
670.	2.726	3028.	3.249
672.	2.726	3030.	3.249
674.	2.729	3032.	3.249

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
676.	2.732	3034.	3.246
678.	2.735	3036.	3.249
680.	2.734	3038.	3.249
682.	2.736	3040.	3.249
684.	2.736	3042.	3.249
686.	2.739	3044.	3.249
688.	2.742	3046.	3.248
690.	2.744	3048.	3.248
692.	2.744	3050.	3.248
694.	2.747	3052.	3.248
696.	2.75	3054.	3.248
698.	2.75	3056.	3.248
700.	2.753	3058.	3.248
702.	2.752	3060.	3.251
704.	2.755	3062.	3.251
706.	2.755	3064.	3.251
708.	2.758	3066.	3.248
710.	2.758	3068.	3.248
712.	2.764	3070.	3.248
714.	2.761	3072.	3.251
716.	2.763	3074.	3.251
718.	2.765	3076.	3.251
720.	2.765	3078.	3.251
722.	2.768	3080.	3.251
724.	2.771	3082.	3.251
726.	2.771	3084.	3.25
728.	2.773	3086.	3.25
730.	2.773	3088.	3.25
732.	2.773	3090.	3.25
734.	2.776	3092.	3.252
736.	2.776	3094.	3.247
738.	2.776	3096.	3.233
740.	2.779	3098.	3.247
742.	2.782	3100.	3.247
744.	2.781	3102.	3.247
746.	2.784	3104.	3.247
748.	2.784	3106.	3.25
750.	2.784	3108.	3.25
752.	2.787	3110.	3.25
754.	2.79	3112.	3.252
756.	2.789	3114.	3.252
758.	2.789	3116.	3.255
760.	2.791	3118.	3.252
762.	2.791	3120.	3.252
764.	2.794	3122.	3.254
766.	2.797	3124.	3.257
768.	2.797	3126.	3.254
770.	2.797	3128.	3.254
772.	2.8	3130.	3.254
774.	2.802	3132.	3.254
776.	2.805	3134.	3.254
778.	2.805	3136.	3.254
780.	2.808	3138.	3.254
782.	2.808	3140.	3.254
784.	2.811	3142.	3.254
786.	2.81	3144.	3.254
788.	2.813	3146.	3.254
790.	2.813	3148.	3.254
792.	2.815	3150.	3.257
794.	2.815	3152.	3.257
796.	2.818	3154.	3.257
798.	2.818	3156.	3.257
800.	2.82	3158.	3.257
802.	2.82	3160.	3.256
804.	2.823	3162.	3.256
806.	2.826	3164.	3.256

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
808.	2.826	3166.	3.256
810.	2.826	3168.	3.256
812.	2.826	3170.	3.256
814.	2.829	3172.	3.256
816.	2.829	3174.	3.256
818.	2.831	3176.	3.258
820.	2.834	3178.	3.258
822.	2.834	3180.	3.258
824.	2.834	3182.	3.258
826.	2.837	3184.	3.258
828.	2.837	3186.	3.256
830.	2.839	3188.	3.256
832.	2.839	3190.	3.258
834.	2.841	3192.	3.258
836.	2.844	3194.	3.258
838.	2.841	3196.	3.256
840.	2.844	3198.	3.257
842.	2.847	3200.	3.255
844.	2.847	3202.	3.255
846.	2.849	3204.	3.255
848.	2.852	3206.	3.257
850.	2.849	3208.	3.257
852.	2.852	3210.	3.257
854.	2.852	3212.	3.257
856.	2.852	3214.	3.26
858.	2.855	3216.	3.26
860.	2.855	3218.	3.257
862.	2.855	3220.	3.26
864.	2.857	3222.	3.26
866.	2.86	3224.	3.26
868.	2.859	3226.	3.26
870.	2.859	3228.	3.263
872.	2.862	3230.	3.263
874.	2.862	3232.	3.263
876.	2.862	3234.	3.263
878.	2.865	3236.	3.265
880.	2.865	3238.	3.262
882.	2.867	3240.	3.262
884.	2.867	3242.	3.265
886.	2.867	3244.	3.262
888.	2.867	3246.	3.262
890.	2.87	3248.	3.262
892.	2.87	3250.	3.265
894.	2.87	3252.	3.265
896.	2.873	3254.	3.265
898.	2.876	3256.	3.265
900.	2.876	3258.	3.265
902.	2.876	3260.	3.265
904.	2.876	3262.	3.265
906.	2.877	3264.	3.265
908.	2.877	3266.	3.265
910.	2.877	3268.	3.267
912.	2.88	3270.	3.267
914.	2.88	3272.	3.266
916.	2.883	3274.	3.266
918.	2.883	3276.	3.266
920.	2.886	3278.	3.266
922.	2.885	3280.	3.266
924.	2.886	3282.	3.269
926.	2.888	3284.	3.266
928.	2.888	3286.	3.266
930.	2.888	3288.	3.266
932.	2.891	3290.	3.266
934.	2.891	3292.	3.266
936.	2.894	3294.	3.266
938.	2.894	3296.	3.269

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
940.	2.894	3298.	3.269
942.	2.896	3300.	3.266
944.	2.895	3302.	3.269
946.	2.895	3304.	3.269
948.	2.898	3306.	3.269
950.	2.898	3308.	3.266
952.	2.901	3310.	3.268
954.	2.898	3312.	3.268
956.	2.901	3314.	3.268
958.	2.901	3316.	3.268
960.	2.901	3318.	3.268
962.	2.901	3320.	3.265
964.	2.904	3322.	3.265
966.	2.906	3324.	3.265
968.	2.906	3326.	3.265
970.	2.906	3328.	3.263
972.	2.909	3330.	3.263
974.	2.909	3332.	3.263
976.	2.909	3334.	3.265
978.	2.912	3336.	3.263
980.	2.911	3338.	3.263
982.	2.911	3340.	3.263
984.	2.911	3342.	3.263
986.	2.913	3344.	3.263
988.	2.913	3346.	3.26
990.	2.916	3348.	3.259
992.	2.916	3350.	3.262
994.	2.919	3352.	3.262
996.	2.919	3354.	3.262
998.	2.919	3356.	3.262
1000.	2.922	3358.	3.264
1002.	2.919	3360.	3.264
1004.	2.924	3362.	3.267
1006.	2.922	3364.	3.267
1008.	2.924	3366.	3.267
1010.	2.924	3368.	3.267
1012.	2.927	3370.	3.27
1014.	2.927	3372.	3.27
1016.	2.927	3374.	3.27
1018.	2.926	3376.	3.27
1020.	2.923	3378.	3.27
1022.	2.923	3380.	3.273
1024.	2.923	3382.	3.273
1026.	2.926	3384.	3.273
1028.	2.926	3386.	3.272
1030.	2.929	3388.	3.272
1032.	2.929	3390.	3.272
1034.	2.931	3392.	3.272
1036.	2.931	3394.	3.272
1038.	2.934	3396.	3.274
1040.	2.934	3398.	3.272
1042.	2.937	3400.	3.274
1044.	2.937	3402.	3.274
1046.	2.937	3404.	3.274
1048.	2.94	3406.	3.277
1050.	2.942	3408.	3.277
1052.	2.942	3410.	3.277
1054.	2.945	3412.	3.277
1056.	2.944	3414.	3.277
1058.	2.947	3416.	3.277
1060.	2.944	3418.	3.277
1062.	2.947	3420.	3.277
1064.	2.95	3422.	3.276
1066.	2.95	3424.	3.276
1068.	2.95	3426.	3.279
1070.	2.952	3428.	3.276

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1072.	2.952	3430.	3.276
1074.	2.952	3432.	3.279
1076.	2.952	3434.	3.279
1078.	2.955	3436.	3.279
1080.	2.955	3438.	3.279
1082.	2.958	3440.	3.279
1084.	2.958	3442.	3.281
1086.	2.958	3444.	3.281
1088.	2.96	3446.	3.281
1090.	2.96	3448.	3.281
1092.	2.96	3450.	3.281
1094.	2.959	3452.	3.282
1096.	2.96	3454.	3.276
1098.	2.962	3456.	3.276
1100.	2.965	3458.	3.276
1102.	2.965	3460.	3.275
1104.	2.968	3462.	3.275
1106.	2.968	3464.	3.278
1108.	2.968	3466.	3.278
1110.	2.97	3468.	3.278
1112.	2.97	3470.	3.278
1114.	2.97	3472.	3.28
1116.	2.973	3474.	3.28
1118.	2.973	3476.	3.283
1120.	2.973	3478.	3.283
1122.	2.976	3480.	3.283
1124.	2.976	3482.	3.283
1126.	2.976	3484.	3.283
1128.	2.976	3486.	3.286
1130.	2.978	3488.	3.286
1132.	2.978	3490.	3.286
1134.	2.978	3492.	3.286
1136.	2.98	3494.	3.286
1138.	2.98	3496.	3.289
1140.	2.983	3498.	3.288
1142.	2.983	3500.	3.288
1144.	2.983	3502.	3.288
1146.	2.986	3504.	3.288
1148.	2.988	3506.	3.288
1150.	2.986	3508.	3.288
1152.	2.988	3510.	3.288
1154.	2.988	3512.	3.29
1156.	2.988	3514.	3.29
1158.	2.988	3516.	3.29
1160.	2.991	3518.	3.29
1162.	2.991	3520.	3.29
1164.	2.991	3522.	3.29
1166.	2.991	3524.	3.29
1168.	2.993	3526.	3.293
1170.	2.993	3528.	3.29
1172.	2.996	3530.	3.293
1174.	2.993	3532.	3.293
1176.	2.996	3534.	3.293
1178.	2.996	3536.	3.292
1180.	2.998	3538.	3.292
1182.	2.998	3540.	3.292
1184.	3.001	3542.	3.292
1186.	3.001	3544.	3.292
1188.	3.001	3546.	3.292
1190.	3.001	3548.	3.292
1192.	3.004	3550.	3.292
1194.	3.004	3552.	3.295
1196.	3.007	3554.	3.295
1198.	3.007	3556.	3.295
1200.	3.009	3558.	3.295
1202.	3.009	3560.	3.295

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1204.	3.012	3562.	3.295
1206.	3.011	3564.	3.295
1208.	3.011	3566.	3.298
1210.	3.014	3568.	3.298
1212.	3.014	3570.	3.298
1214.	3.014	3572.	3.295
1216.	3.014	3574.	3.297
1218.	3.016	3576.	3.297
1220.	3.016	3578.	3.297
1222.	3.019	3580.	3.297
1224.	3.019	3582.	3.297
1226.	3.019	3584.	3.297
1228.	3.019	3586.	3.297
1230.	3.019	3588.	3.299
1232.	3.022	3590.	3.297
1234.	3.019	3592.	3.299
1236.	3.022	3594.	3.299
1238.	3.022	3596.	3.299
1240.	3.022	3598.	3.299
1242.	3.022	3600.	3.299
1244.	3.021	3602.	3.299
1246.	3.024	3604.	3.299
1248.	3.024	3606.	3.302
1250.	3.024	3608.	3.299
1252.	3.024	3610.	3.298
1254.	3.026	3612.	3.301
1256.	3.026	3614.	3.301
1258.	3.026	3616.	3.301
1260.	3.029	3618.	3.301
1262.	3.029	3620.	3.301
1264.	3.032	3622.	3.304
1266.	3.032	3624.	3.304
1268.	3.032	3626.	3.301
1270.	3.032	3628.	3.304
1272.	3.035	3630.	3.304
1274.	3.034	3632.	3.304
1276.	3.035	3634.	3.304
1278.	3.035	3636.	3.304
1280.	3.035	3638.	3.304
1282.	3.033	3640.	3.304
1284.	3.039	3642.	3.304
1286.	3.039	3644.	3.306
1288.	3.039	3646.	3.304
1290.	3.039	3648.	3.305
1292.	3.039	3650.	3.305
1294.	3.042	3652.	3.305
1296.	3.039	3654.	3.308
1298.	3.042	3656.	3.305
1300.	3.042	3658.	3.305
1302.	3.044	3660.	3.308
1304.	3.047	3662.	3.305
1306.	3.047	3664.	3.305
1308.	3.047	3666.	3.308
1310.	3.047	3668.	3.305
1312.	3.05	3670.	3.305
1314.	3.05	3672.	3.305
1316.	3.05	3674.	3.303
1318.	3.052	3676.	3.303
1320.	3.052	3678.	3.303
1322.	3.054	3680.	3.303
1324.	3.054	3682.	3.3
1326.	3.054	3684.	3.303
1328.	3.054	3686.	3.304
1330.	3.057	3688.	3.304
1332.	3.057	3690.	3.304
1334.	3.057	3692.	3.304

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1336.	3.057	3694.	3.304
1338.	3.06	3696.	3.304
1340.	3.057	3698.	3.307
1342.	3.057	3700.	3.307
1344.	3.057	3702.	3.304
1346.	3.054	3704.	3.307
1348.	3.054	3706.	3.307
1350.	3.057	3708.	3.307
1352.	3.057	3710.	3.307
1354.	3.057	3712.	3.31
1356.	3.059	3714.	3.31
1358.	3.059	3716.	3.31
1360.	3.059	3718.	3.31
1362.	3.061	3720.	3.313
1364.	3.061	3722.	3.31
1366.	3.062	3724.	3.312
1368.	3.064	3726.	3.309
1370.	3.064	3728.	3.312
1372.	3.067	3730.	3.309
1374.	3.067	3732.	3.309
1376.	3.067	3734.	3.309
1378.	3.07	3736.	3.309
1380.	3.07	3738.	3.312
1382.	3.064	3740.	3.312
1384.	3.059	3742.	3.312
1386.	3.053	3744.	3.312
1388.	3.053	3746.	3.312
1390.	3.053	3748.	3.312
1392.	3.053	3750.	3.314
1394.	3.05	3752.	3.312
1396.	3.052	3754.	3.312
1398.	3.052	3756.	3.314
1400.	3.052	3758.	3.314
1402.	3.052	3760.	3.313
1404.	3.052	3762.	3.311
1406.	3.052	3764.	3.313
1408.	3.052	3766.	3.311
1410.	3.052	3768.	3.313
1412.	3.052	3770.	3.313
1414.	3.055	3772.	3.313
1416.	3.052	3774.	3.313
1418.	3.055	3776.	3.313
1420.	3.052	3778.	3.313
1422.	3.055	3780.	3.313
1424.	3.052	3782.	3.313
1426.	3.055	3784.	3.313
1428.	3.052	3786.	3.313
1430.	3.052	3788.	3.313
1432.	3.054	3790.	3.316
1434.	3.051	3792.	3.313
1436.	3.054	3794.	3.313
1438.	3.054	3796.	3.313
1440.	3.054	3798.	3.312
1442.	3.054	3800.	3.312
1444.	3.057	3802.	3.312
1446.	3.054	3804.	3.315
1448.	3.057	3806.	3.315
1450.	3.054	3808.	3.312
1452.	3.054	3810.	3.31
1454.	3.054	3812.	3.31
1456.	3.054	3814.	3.31
1458.	3.057	3816.	3.31
1460.	3.057	3818.	3.312
1462.	3.057	3820.	3.312
1464.	3.057	3822.	3.312
1466.	3.059	3824.	3.315

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1468.	3.059	3826.	3.315
1470.	3.059	3828.	3.315
1472.	3.056	3830.	3.315
1474.	3.058	3832.	3.315
1476.	3.058	3834.	3.318
1478.	3.056	3836.	3.317
1480.	3.059	3838.	3.317
1482.	3.058	3840.	3.317
1484.	3.058	3842.	3.317
1486.	3.058	3844.	3.317
1488.	3.058	3846.	3.319
1490.	3.058	3848.	3.319
1492.	3.059	3850.	3.319
1494.	3.058	3852.	3.319
1496.	3.058	3854.	3.319
1498.	3.061	3856.	3.322
1500.	3.061	3858.	3.319
1502.	3.061	3860.	3.319
1504.	3.064	3862.	3.319
1506.	3.06	3864.	3.319
1508.	3.06	3866.	3.319
1510.	3.06	3868.	3.319
1512.	3.06	3870.	3.319
1514.	3.063	3872.	3.322
1516.	3.063	3874.	3.321
1518.	3.063	3876.	3.321
1520.	3.063	3878.	3.321
1522.	3.06	3880.	3.321
1524.	3.06	3882.	3.321
1526.	3.06	3884.	3.321
1528.	3.063	3886.	3.321
1530.	3.063	3888.	3.321
1532.	3.063	3890.	3.324
1534.	3.063	3892.	3.321
1536.	3.063	3894.	3.321
1538.	3.066	3896.	3.321
1540.	3.063	3898.	3.321
1542.	3.066	3900.	3.321
1544.	3.065	3902.	3.321
1546.	3.065	3904.	3.324
1548.	3.065	3906.	3.324
1550.	3.065	3908.	3.324
1552.	3.065	3910.	3.28
1554.	3.065	3912.	3.326
1556.	3.065	3914.	3.326
1558.	3.065	3916.	3.323
1560.	3.065	3918.	3.323
1562.	3.065	3920.	3.323
1564.	3.065	3922.	3.323
1566.	3.065	3924.	3.323
1568.	3.065	3926.	3.323
1570.	3.062	3928.	3.323
1572.	3.051	3930.	3.323
1574.	3.051	3932.	3.326
1576.	3.051	3934.	3.328
1578.	3.054	3936.	3.326
1580.	3.051	3938.	3.326
1582.	3.053	3940.	3.323
1584.	3.053	3942.	3.326
1586.	3.055	3944.	3.326
1588.	3.058	3946.	3.326
1590.	3.061	3948.	3.325
1592.	3.061	3950.	3.325
1594.	3.064	3952.	3.325
1596.	3.066	3954.	3.325
1598.	3.066	3956.	3.325

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1600.	3.066	3958.	3.325
1602.	3.066	3960.	3.325
1604.	3.069	3962.	3.327
1606.	3.072	3964.	3.325
1608.	3.072	3966.	3.325
1610.	3.072	3968.	3.327
1612.	3.072	3970.	3.327
1614.	3.075	3972.	3.325
1616.	3.077	3974.	3.325
1618.	3.077	3976.	3.325
1620.	3.076	3978.	3.325
1622.	3.079	3980.	3.325
1624.	3.079	3982.	3.325
1626.	3.082	3984.	3.327
1628.	3.082	3986.	3.326
1630.	3.082	3988.	3.326
1632.	3.082	3990.	3.324
1634.	3.084	3992.	3.326
1636.	3.084	3994.	3.327
1638.	3.087	3996.	3.326
1640.	3.087	3998.	3.326
1642.	3.09	4000.	3.326
1644.	3.09	4002.	3.332
1646.	3.087	4004.	3.329
1648.	3.087	4006.	3.326
1650.	3.087	4008.	3.329
1652.	3.084	4010.	3.329
1654.	3.084	4012.	3.329
1656.	3.082	4014.	3.326
1658.	3.078	4016.	3.329
1660.	3.073	4018.	3.329
1662.	3.073	4020.	3.329
1664.	3.07	4022.	3.329
1666.	3.067	4024.	3.328
1668.	3.067	4026.	3.328
1670.	3.07	4028.	3.328
1672.	3.067	4030.	3.328
1674.	3.067	4032.	3.328
1676.	3.067	4034.	3.328
1678.	3.064	4036.	3.328
1680.	3.064	4038.	3.328
1682.	3.064	4040.	3.328
1684.	3.064	4042.	3.328
1686.	3.064	4044.	3.328
1688.	3.064	4046.	3.328
1690.	3.062	4048.	3.328
1692.	3.062	4050.	3.328
1694.	3.061	4052.	3.328
1696.	3.061	4054.	3.331
1698.	3.058	4056.	3.331
1700.	3.058	4058.	3.328
1702.	3.058	4060.	3.331
1704.	3.058	4062.	3.33
1706.	3.055	4064.	3.33
1708.	3.055	4066.	3.33
1710.	3.058	4068.	3.333
1712.	3.055	4070.	3.333
1714.	3.061	4072.	3.333
1716.	3.061	4074.	3.333
1718.	3.061	4076.	3.333
1720.	3.061	4078.	3.333
1722.	3.061	4080.	3.333
1724.	3.061	4082.	3.333
1726.	3.061	4084.	3.335
1728.	3.063	4086.	3.335
1730.	3.063	4088.	3.335

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1732.	3.065	4090.	3.335
1734.	3.068	4092.	3.335
1736.	3.068	4094.	3.335
1738.	3.071	4096.	3.335
1740.	3.071	4098.	3.334
1742.	3.071	4100.	3.334
1744.	3.071	4102.	3.334
1746.	3.071	4104.	3.334
1748.	3.071	4106.	3.334
1750.	3.071	4108.	3.337
1752.	3.073	4110.	3.337
1754.	3.076	4112.	3.334
1756.	3.076	4114.	3.337
1758.	3.079	4116.	3.337
1760.	3.079	4118.	3.337
1762.	3.079	4120.	3.337
1764.	3.079	4122.	3.337
1766.	3.079	4124.	3.337
1768.	3.081	4126.	3.337
1770.	3.08	4128.	3.337
1772.	3.08	4130.	3.337
1774.	3.08	4132.	3.334
1776.	3.083	4134.	3.332
1778.	3.08	4136.	3.331
1780.	3.083	4138.	3.331
1782.	3.083	4140.	3.331
1784.	3.083	4142.	3.331
1786.	3.086	4144.	3.331
1788.	3.086	4146.	3.331
1790.	3.086	4148.	3.331
1792.	3.086	4150.	3.331
1794.	3.089	4152.	3.331
1796.	3.086	4154.	3.333
1798.	3.086	4156.	3.336
1800.	3.089	4158.	3.336
1802.	3.089	4160.	3.336
1804.	3.086	4162.	3.339
1806.	3.089	4164.	3.339
1808.	3.088	4166.	3.339
1810.	3.09	4168.	3.339
1812.	3.088	4170.	3.339
1814.	3.09	4172.	3.341
1816.	3.09	4174.	3.34
1818.	3.088	4176.	3.343
1820.	3.09	4178.	3.34
1822.	3.09	4180.	3.338
1824.	3.09	4182.	3.332
1826.	3.093	4184.	3.332
1828.	3.093	4186.	3.33
1830.	3.093	4188.	3.327
1832.	3.093	4190.	3.327
1834.	3.093	4192.	3.324
1836.	3.093	4194.	3.324
1838.	3.096	4196.	3.324
1840.	3.093	4198.	3.324
1842.	3.096	4200.	3.321
1844.	3.092	4202.	3.324
1846.	3.095	4204.	3.321
1848.	3.095	4206.	3.321
1850.	3.095	4208.	3.319
1852.	3.095	4210.	3.321
1854.	3.095	4212.	3.318
1856.	3.095	4214.	3.318
1858.	3.095	4216.	3.318
1860.	3.095	4218.	3.318
1862.	3.097	4220.	3.318

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1864.	3.095	4222.	3.318
1866.	3.097	4224.	3.318
1868.	3.097	4226.	3.315
1870.	3.097	4228.	3.318
1872.	3.097	4230.	3.315
1874.	3.1	4232.	3.315
1876.	3.1	4234.	3.315
1878.	3.1	4236.	3.315
1880.	3.1	4238.	3.315
1882.	3.102	4240.	3.315
1884.	3.102	4242.	3.315
1886.	3.102	4244.	3.312
1888.	3.102	4246.	3.315
1890.	3.102	4248.	3.315
1892.	3.105	4250.	3.314
1894.	3.105	4252.	3.311
1896.	3.105	4254.	3.311
1898.	3.105	4256.	3.311
1900.	3.105	4258.	3.311
1902.	3.105	4260.	3.311
1904.	3.105	4262.	3.314
1906.	3.105	4264.	3.311
1908.	3.107	4266.	3.311
1910.	3.105	4268.	3.311
1912.	3.107	4270.	3.311
1914.	3.11	4272.	3.311
1916.	3.11	4274.	3.311
1918.	3.11	4276.	3.311
1920.	3.109	4278.	3.311
1922.	3.109	4280.	3.311
1924.	3.109	4282.	3.311
1926.	3.109	4284.	3.311
1928.	3.112	4286.	3.311
1930.	3.112	4288.	3.31
1932.	3.112	4290.	3.31
1934.	3.112	4292.	3.31
1936.	3.112	4294.	3.313
1938.	3.112	4296.	3.31
1940.	3.115	4298.	3.31
1942.	3.115	4300.	3.31
1944.	3.117	4302.	3.31
1946.	3.115	4304.	3.31
1948.	3.117	4306.	3.31
1950.	3.115	4308.	3.31
1952.	3.117	4310.	3.31
1954.	3.117	4312.	3.31
1956.	3.117	4314.	3.31
1958.	3.116	4316.	3.31
1960.	3.119	4318.	3.31
1962.	3.119	4320.	3.313

SOLUTION

Pumping Test
Aquifer Model: Leaky
Solution Method: Hantush

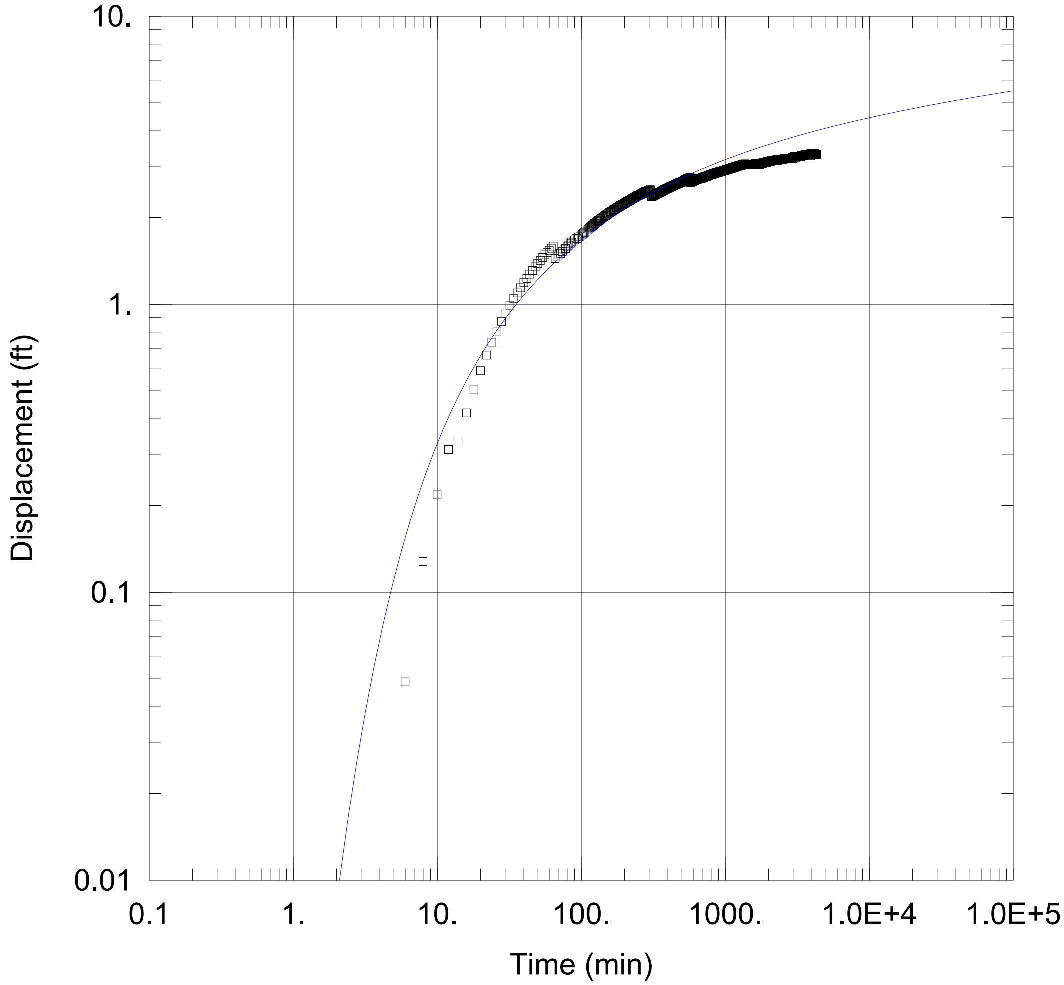
VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	0.1997	cm^2/sec
S	0.009755	
r/B'	0.003445	
ß'	0.03106	

r/B"	1.072E-5
ß"	1.072E-5

K = T/b = 9.36E-5 cm/sec
Ss = S/b = 0.0001394 1/ft
K'/b' = 4.595E-9 min^{-1}
K' = 2.918E-8 cm/sec
K"/b" = 4.445E-14 min^{-1}
K" = 2.822E-13 cm/sec



WELL TEST ANALYSIS

Data Set: C:\...\Pumping Test_2020-07-26_MW14-03D.aqt
Date: 07/29/20 Time: 10:10:51

PROJECT INFORMATION

Company: Golder Associates, Inc.
Client: Crossroads
Location: ME
Test Well: MW14-03B
Test Date: 7/7/2020

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
MW14-03B	3039420.818	684500.912

Observation Wells

Well Name	X (ft)	Y (ft)
□ MW14-03D	3039425.578	684504.177

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush

T = 0.1997 cm^2/sec
S = 0.009755
r/B' = 0.003445
ß' = 0.03106
r/B" = 1.072E-5
ß" = 1.072E-5

Data Set: C:\Users\BCampelia\Desktop\Crossroads Pumping Test Files\2020-07-10 Files\2020-07-26 Updated File
Date: 07/26/20
Time: 10:33:45

PROJECT INFORMATION

Company: Golder Associates, Inc.
Client: Crossroads
Location: ME
Test Date: 7/7/2020
Test Well: MW14-03B

AQUIFER DATA

Saturated Thickness: 70. ft
Anisotropy Ratio (Kz/Kr): 1.
Aquitard Thickness (b'): 12.5 ft
Aquitard Thickness (b"): 12.5 ft

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: MW14-03B

X Location: 3039420.818 ft
Y Location: 684500.912 ft

Casing Radius: 0. ft
Well Radius: 0.1875 ft

Partially Penetrating Well
Depth to Top of Screen: 28. ft
Depth to Bottom of Screen: 51. ft

No. of pumping periods: 1

Pumping Period Data

Time (min)	Rate (gal/min)
0.	1.

OBSERVATION WELL DATA

No. of observation wells: 2

Observation Well No. 1: MW14-03B

X Location: 3039420.818 ft
Y Location: 684500.912 ft

Radial distance from MW14-03B: 0. ft

Partially Penetrating Well
Depth to Top of Screen: 28. ft
Depth to Bottom of Screen: 51. ft

No. of Observations: 2161

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1.	0.	2162.	33.39
2.	3.285	2164.	33.38
4.	11.85	2166.	33.39
6.	15.12	2168.	33.39
8.	17.6	2170.	33.4
10.	19.46	2172.	33.4
12.	20.88	2174.	33.4

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
14.	21.99	2176.	33.39
16.	23.15	2178.	33.4
18.	24.09	2180.	33.4
20.	24.8	2182.	33.4
22.	25.31	2184.	33.41
24.	26.01	2186.	33.4
26.	26.58	2188.	33.41
28.	26.97	2190.	33.41
30.	27.4	2192.	33.4
32.	27.77	2194.	33.41
34.	28.03	2196.	33.4
36.	28.18	2198.	33.4
38.	28.49	2200.	33.4
40.	28.83	2202.	33.4
42.	29.09	2204.	33.41
44.	29.28	2206.	33.41
46.	29.48	2208.	33.41
48.	29.61	2210.	33.4
50.	29.72	2212.	33.41
52.	29.8	2214.	33.4
54.	29.86	2216.	33.4
56.	29.91	2218.	33.4
58.	29.97	2220.	33.4
60.	29.98	2222.	33.4
62.	30.04	2224.	33.4
64.	30.07	2226.	33.4
66.	30.11	2228.	33.4
68.	30.15	2230.	33.39
70.	30.18	2232.	33.4
72.	30.21	2234.	33.39
74.	30.32	2236.	33.38
76.	30.53	2238.	33.39
78.	30.65	2240.	33.39
80.	30.72	2242.	33.4
82.	30.77	2244.	33.4
84.	30.83	2246.	33.41
86.	30.84	2248.	33.4
88.	30.88	2250.	33.41
90.	30.97	2252.	33.39
92.	31.01	2254.	33.39
94.	31.03	2256.	33.4
96.	31.06	2258.	33.38
98.	31.09	2260.	33.39
100.	31.1	2262.	33.4
102.	31.18	2264.	33.39
104.	31.41	2266.	33.4
106.	31.53	2268.	33.4
108.	31.62	2270.	33.4
110.	31.67	2272.	33.41
112.	31.72	2274.	33.41
114.	31.77	2276.	33.39
116.	31.81	2278.	33.26
118.	31.75	2280.	33.21
120.	31.82	2282.	33.17
122.	31.87	2284.	33.18
124.	31.9	2286.	33.18
126.	31.95	2288.	33.17
128.	31.98	2290.	33.16
130.	32.	2292.	33.16
132.	32.03	2294.	33.16
134.	32.04	2296.	33.17
136.	32.01	2298.	33.16
138.	32.07	2300.	33.17
140.	32.1	2302.	33.17
142.	32.13	2304.	33.17
144.	32.18	2306.	33.18

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
146.	32.22	2308.	33.18
148.	32.25	2310.	33.19
150.	32.27	2312.	33.21
152.	32.26	2314.	33.28
154.	32.27	2316.	33.33
156.	32.27	2318.	33.35
158.	32.28	2320.	33.36
160.	32.32	2322.	33.38
162.	32.34	2324.	33.38
164.	32.36	2326.	33.39
166.	32.36	2328.	33.39
168.	32.35	2330.	33.4
170.	32.34	2332.	33.39
172.	32.34	2334.	33.39
174.	32.29	2336.	33.39
176.	32.28	2338.	33.39
178.	32.33	2340.	33.4
180.	32.35	2342.	33.4
182.	32.4	2344.	33.4
184.	32.42	2346.	33.4
186.	32.43	2348.	33.38
188.	32.43	2350.	33.39
190.	32.49	2352.	33.4
192.	32.33	2354.	33.4
194.	32.4	2356.	33.4
196.	32.44	2358.	33.41
198.	32.46	2360.	33.4
200.	32.49	2362.	33.41
202.	32.52	2364.	33.4
204.	32.46	2366.	33.41
206.	32.43	2368.	33.4
208.	32.5	2370.	33.4
210.	32.53	2372.	33.4
212.	32.61	2374.	33.4
214.	32.64	2376.	33.4
216.	32.65	2378.	33.4
218.	32.66	2380.	33.4
220.	32.67	2382.	33.38
222.	32.67	2384.	33.39
224.	32.7	2386.	33.4
226.	32.74	2388.	33.41
228.	32.77	2390.	33.41
230.	32.78	2392.	33.41
232.	32.78	2394.	33.4
234.	32.77	2396.	33.41
236.	32.77	2398.	33.42
238.	32.77	2400.	33.42
240.	32.75	2402.	33.41
242.	32.74	2404.	33.41
244.	32.73	2406.	33.4
246.	32.73	2408.	33.39
248.	32.73	2410.	33.4
250.	32.73	2412.	33.39
252.	32.74	2414.	33.38
254.	32.79	2416.	33.38
256.	32.82	2418.	33.37
258.	32.83	2420.	33.37
260.	32.84	2422.	32.7
262.	32.86	2424.	33.09
264.	32.87	2426.	33.24
266.	32.87	2428.	33.33
268.	32.85	2430.	33.37
270.	32.84	2432.	33.39
272.	32.83	2434.	33.39
274.	32.81	2436.	33.4
276.	32.82	2438.	33.4

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
278.	32.83	2440.	33.4
280.	32.83	2442.	33.4
282.	32.82	2444.	33.41
284.	32.68	2446.	33.41
286.	32.64	2448.	33.41
288.	32.67	2450.	33.41
290.	32.75	2452.	33.41
292.	32.78	2454.	33.41
294.	32.79	2456.	33.41
296.	32.81	2458.	33.41
298.	32.8	2460.	33.41
300.	30.7	2462.	33.39
302.	31.85	2464.	33.4
304.	32.17	2466.	33.41
306.	32.25	2468.	33.41
308.	32.27	2470.	33.41
310.	32.27	2472.	33.41
312.	32.27	2474.	33.4
314.	32.34	2476.	33.4
316.	32.48	2478.	33.41
318.	32.58	2480.	33.4
320.	32.63	2482.	33.41
322.	32.63	2484.	33.41
324.	32.61	2486.	33.4
326.	32.68	2488.	33.41
328.	32.68	2490.	33.41
330.	32.69	2492.	33.41
332.	32.72	2494.	33.41
334.	32.71	2496.	33.41
336.	32.69	2498.	33.41
338.	32.73	2500.	33.41
340.	32.7	2502.	33.4
342.	32.73	2504.	33.41
344.	32.76	2506.	33.41
346.	32.76	2508.	33.41
348.	32.64	2510.	33.4
350.	32.58	2512.	33.41
352.	32.66	2514.	33.41
354.	32.73	2516.	33.41
356.	32.74	2518.	33.41
358.	32.77	2520.	33.4
360.	32.77	2522.	33.4
362.	32.79	2524.	33.41
364.	32.83	2526.	33.41
366.	32.83	2528.	33.42
368.	32.77	2530.	33.42
370.	32.75	2532.	33.41
372.	32.73	2534.	33.42
374.	32.7	2536.	33.42
376.	32.72	2538.	33.42
378.	32.73	2540.	33.42
380.	32.74	2542.	33.42
382.	32.76	2544.	33.41
384.	32.8	2546.	33.42
386.	32.81	2548.	33.42
388.	32.82	2550.	33.42
390.	32.84	2552.	33.42
392.	32.84	2554.	33.43
394.	32.83	2556.	33.43
396.	32.81	2558.	33.43
398.	32.8	2560.	33.43
400.	32.77	2562.	33.43
402.	32.76	2564.	33.43
404.	32.79	2566.	33.43
406.	32.82	2568.	33.43
408.	32.84	2570.	33.43

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
410.	32.89	2572.	33.43
412.	32.91	2574.	33.44
414.	32.91	2576.	33.43
416.	32.91	2578.	33.43
418.	32.91	2580.	33.43
420.	32.89	2582.	33.43
422.	32.86	2584.	33.42
424.	32.86	2586.	33.41
426.	32.85	2588.	33.4
428.	32.83	2590.	33.4
430.	32.82	2592.	33.41
432.	32.82	2594.	33.41
434.	32.81	2596.	33.4
436.	32.82	2598.	33.41
438.	32.82	2600.	33.41
440.	32.8	2602.	33.41
442.	32.81	2604.	33.47
444.	32.8	2606.	33.49
446.	32.81	2608.	33.51
448.	32.81	2610.	33.51
450.	32.81	2612.	33.52
452.	32.8	2614.	33.52
454.	32.8	2616.	33.52
456.	32.8	2618.	33.53
458.	32.79	2620.	33.53
460.	32.79	2622.	33.53
462.	32.78	2624.	33.53
464.	32.77	2626.	33.53
466.	32.77	2628.	33.53
468.	32.77	2630.	33.53
470.	32.77	2632.	33.53
472.	32.78	2634.	33.53
474.	32.77	2636.	33.54
476.	32.77	2638.	33.53
478.	32.72	2640.	33.54
480.	32.7	2642.	33.54
482.	32.7	2644.	33.53
484.	32.69	2646.	33.53
486.	32.69	2648.	33.54
488.	32.68	2650.	33.54
490.	32.69	2652.	33.54
492.	32.68	2654.	33.54
494.	32.68	2656.	33.53
496.	32.68	2658.	33.54
498.	32.73	2660.	33.54
500.	32.82	2662.	33.54
502.	32.84	2664.	33.54
504.	32.91	2666.	33.54
506.	32.93	2668.	33.54
508.	32.98	2670.	33.53
510.	33.02	2672.	33.53
512.	33.04	2674.	33.53
514.	33.06	2676.	33.54
516.	33.07	2678.	33.54
518.	33.08	2680.	33.54
520.	33.08	2682.	33.54
522.	33.09	2684.	33.54
524.	33.09	2686.	33.54
526.	33.09	2688.	33.54
528.	33.09	2690.	33.53
530.	33.1	2692.	33.54
532.	33.09	2694.	33.53
534.	33.1	2696.	33.51
536.	33.1	2698.	33.5
538.	33.1	2700.	33.5
540.	33.09	2702.	33.5

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
542.	33.09	2704.	33.49
544.	33.08	2706.	33.49
546.	33.09	2708.	33.47
548.	33.08	2710.	33.47
550.	33.08	2712.	33.47
552.	33.09	2714.	33.47
554.	33.09	2716.	33.47
556.	33.1	2718.	33.47
558.	33.1	2720.	33.47
560.	33.12	2722.	33.47
562.	33.12	2724.	33.47
564.	33.13	2726.	33.47
566.	33.12	2728.	33.48
568.	33.1	2730.	33.49
570.	33.12	2732.	33.48
572.	33.12	2734.	32.42
574.	33.15	2736.	32.97
576.	33.19	2738.	33.21
578.	33.21	2740.	33.33
580.	33.22	2742.	33.4
582.	33.22	2744.	33.44
584.	33.23	2746.	33.46
586.	33.23	2748.	33.49
588.	33.23	2750.	33.5
590.	33.23	2752.	33.51
592.	33.23	2754.	33.53
594.	33.23	2756.	33.54
596.	33.23	2758.	33.54
598.	33.23	2760.	33.55
600.	33.24	2762.	33.56
602.	33.25	2764.	33.56
604.	33.25	2766.	33.56
606.	33.25	2768.	33.55
608.	33.26	2770.	33.54
610.	33.25	2772.	33.55
612.	33.25	2774.	33.54
614.	33.25	2776.	33.56
616.	33.26	2778.	33.56
618.	33.24	2780.	33.57
620.	33.24	2782.	33.56
622.	33.23	2784.	33.53
624.	33.22	2786.	33.52
626.	33.22	2788.	33.5
628.	33.22	2790.	33.49
630.	33.22	2792.	33.49
632.	33.22	2794.	33.5
634.	33.21	2796.	33.49
636.	33.23	2798.	33.48
638.	33.22	2800.	33.48
640.	33.21	2802.	33.47
642.	33.21	2804.	33.47
644.	33.21	2806.	33.46
646.	33.21	2808.	33.47
648.	33.2	2810.	33.47
650.	33.2	2812.	33.46
652.	33.2	2814.	33.46
654.	31.68	2816.	33.44
656.	32.43	2818.	33.45
658.	32.73	2820.	33.44
660.	32.88	2822.	33.45
662.	32.94	2824.	33.46
664.	32.98	2826.	33.46
666.	33.	2828.	33.46
668.	33.02	2830.	33.47
670.	33.04	2832.	33.46
672.	33.04	2834.	33.46

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
674.	33.04	2836.	33.47
676.	33.04	2838.	33.45
678.	33.03	2840.	33.45
680.	33.03	2842.	33.45
682.	33.03	2844.	33.44
684.	33.03	2846.	33.45
686.	33.02	2848.	33.46
688.	33.02	2850.	33.46
690.	33.03	2852.	33.47
692.	33.05	2854.	33.47
694.	33.06	2856.	33.47
696.	33.06	2858.	33.45
698.	33.07	2860.	33.46
700.	33.06	2862.	33.47
702.	33.07	2864.	33.47
704.	33.06	2866.	33.47
706.	33.07	2868.	33.47
708.	33.07	2870.	33.45
710.	33.07	2872.	33.45
712.	33.06	2874.	33.46
714.	33.05	2876.	33.47
716.	33.05	2878.	33.49
718.	33.05	2880.	33.5
720.	33.04	2882.	33.51
722.	33.05	2884.	33.52
724.	33.04	2886.	33.52
726.	33.05	2888.	33.52
728.	33.04	2890.	33.5
730.	33.05	2892.	33.5
732.	33.04	2894.	33.51
734.	33.04	2896.	33.5
736.	33.05	2898.	33.49
738.	33.04	2900.	33.47
740.	33.05	2902.	33.46
742.	33.05	2904.	33.46
744.	33.05	2906.	33.44
746.	33.05	2908.	33.45
748.	33.06	2910.	33.44
750.	33.06	2912.	33.44
752.	33.06	2914.	33.44
754.	33.06	2916.	33.44
756.	33.08	2918.	33.44
758.	33.09	2920.	33.43
760.	33.1	2922.	33.44
762.	33.1	2924.	33.42
764.	33.11	2926.	33.43
766.	33.11	2928.	33.42
768.	33.11	2930.	33.43
770.	33.12	2932.	33.42
772.	33.11	2934.	33.42
774.	33.11	2936.	33.42
776.	33.11	2938.	33.43
778.	33.12	2940.	33.43
780.	33.14	2942.	33.43
782.	33.14	2944.	33.42
784.	33.14	2946.	33.41
786.	33.14	2948.	33.42
788.	33.15	2950.	33.42
790.	33.15	2952.	33.43
792.	33.14	2954.	33.32
794.	33.15	2956.	33.27
796.	33.15	2958.	33.21
798.	33.15	2960.	33.39
800.	33.16	2962.	33.55
802.	33.16	2964.	33.64
804.	33.17	2966.	33.71

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
806.	33.16	2968.	33.75
808.	33.16	2970.	33.81
810.	33.17	2972.	33.91
812.	33.17	2974.	33.96
814.	33.17	2976.	34.01
816.	33.17	2978.	34.03
818.	33.17	2980.	34.03
820.	33.17	2982.	34.04
822.	33.17	2984.	34.05
824.	33.17	2986.	34.06
826.	33.17	2988.	34.08
828.	33.17	2990.	34.08
830.	33.17	2992.	34.08
832.	33.16	2994.	34.09
834.	33.17	2996.	34.07
836.	33.17	2998.	34.07
838.	33.17	3000.	34.07
840.	33.17	3002.	34.02
842.	33.17	3004.	33.95
844.	33.17	3006.	33.91
846.	33.16	3008.	33.89
848.	33.15	3010.	33.89
850.	33.15	3012.	33.9
852.	33.15	3014.	33.9
854.	33.16	3016.	33.91
856.	33.16	3018.	33.89
858.	33.16	3020.	33.9
860.	33.16	3022.	33.89
862.	33.15	3024.	33.9
864.	33.15	3026.	33.89
866.	33.16	3028.	33.89
868.	33.16	3030.	33.9
870.	33.15	3032.	33.89
872.	33.15	3034.	33.89
874.	33.16	3036.	33.91
876.	33.16	3038.	33.9
878.	33.16	3040.	33.89
880.	33.16	3042.	33.9
882.	33.16	3044.	33.89
884.	33.16	3046.	33.89
886.	33.16	3048.	33.88
888.	33.16	3050.	33.89
890.	33.17	3052.	33.9
892.	33.17	3054.	33.89
894.	33.17	3056.	33.89
896.	33.17	3058.	33.89
898.	33.17	3060.	33.89
900.	33.17	3062.	33.88
902.	33.17	3064.	33.89
904.	33.17	3066.	33.89
906.	33.18	3068.	33.9
908.	33.16	3070.	33.89
910.	33.17	3072.	33.9
912.	33.18	3074.	33.9
914.	33.18	3076.	33.9
916.	33.19	3078.	33.9
918.	33.19	3080.	33.9
920.	33.19	3082.	33.9
922.	33.19	3084.	33.9
924.	33.19	3086.	33.9
926.	33.19	3088.	33.92
928.	33.18	3090.	33.91
930.	33.19	3092.	33.45
932.	33.19	3094.	33.68
934.	33.2	3096.	33.78
936.	33.19	3098.	33.89

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
938.	33.19	3100.	33.94
940.	33.2	3102.	33.97
942.	33.19	3104.	33.97
944.	33.2	3106.	33.98
946.	33.2	3108.	33.98
948.	33.19	3110.	33.97
950.	33.19	3112.	33.98
952.	33.2	3114.	33.98
954.	33.2	3116.	33.98
956.	33.19	3118.	33.99
958.	33.19	3120.	33.98
960.	33.2	3122.	34.
962.	33.2	3124.	34.
964.	33.2	3126.	34.
966.	33.2	3128.	33.99
968.	33.2	3130.	33.99
970.	33.21	3132.	33.99
972.	33.2	3134.	34.
974.	33.21	3136.	34.01
976.	33.21	3138.	34.
978.	33.21	3140.	34.
980.	33.21	3142.	34.
982.	33.22	3144.	34.
984.	33.21	3146.	34.
986.	33.21	3148.	34.
988.	33.21	3150.	34.
990.	33.21	3152.	34.
992.	33.2	3154.	34.
994.	33.21	3156.	34.
996.	33.21	3158.	34.01
998.	33.21	3160.	34.
1000.	33.21	3162.	34.
1002.	33.21	3164.	34.01
1004.	33.21	3166.	34.
1006.	33.21	3168.	34.
1008.	33.22	3170.	34.01
1010.	33.22	3172.	33.99
1012.	33.22	3174.	33.99
1014.	33.21	3176.	34.
1016.	32.54	3178.	34.
1018.	32.9	3180.	34.
1020.	33.05	3182.	34.01
1022.	33.12	3184.	34.01
1024.	33.17	3186.	34.01
1026.	33.2	3188.	34.01
1028.	33.22	3190.	34.01
1030.	33.24	3192.	34.01
1032.	33.25	3194.	34.01
1034.	33.26	3196.	34.02
1036.	33.26	3198.	34.01
1038.	33.26	3200.	34.
1040.	33.26	3202.	34.
1042.	33.26	3204.	34.
1044.	33.26	3206.	34.
1046.	33.26	3208.	34.
1048.	33.26	3210.	34.
1050.	33.27	3212.	34.
1052.	33.26	3214.	34.01
1054.	33.27	3216.	34.05
1056.	33.26	3218.	34.06
1058.	33.26	3220.	34.07
1060.	33.26	3222.	34.07
1062.	33.26	3224.	34.08
1064.	33.26	3226.	34.08
1066.	33.26	3228.	34.07
1068.	33.26	3230.	34.08

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1070.	33.25	3232.	34.09
1072.	33.25	3234.	34.09
1074.	33.24	3236.	34.05
1076.	33.23	3238.	34.04
1078.	33.23	3240.	34.02
1080.	33.23	3242.	34.01
1082.	33.26	3244.	34.
1084.	33.26	3246.	34.01
1086.	33.28	3248.	34.
1088.	33.29	3250.	34.
1090.	33.29	3252.	34.
1092.	33.29	3254.	33.99
1094.	33.29	3256.	33.99
1096.	33.29	3258.	33.98
1098.	33.29	3260.	33.98
1100.	33.28	3262.	33.99
1102.	33.29	3264.	33.99
1104.	33.29	3266.	33.99
1106.	33.28	3268.	34.
1108.	33.28	3270.	34.01
1110.	33.27	3272.	34.01
1112.	33.26	3274.	34.01
1114.	33.26	3276.	34.01
1116.	33.27	3278.	34.01
1118.	33.27	3280.	34.
1120.	33.26	3282.	34.
1122.	33.27	3284.	34.
1124.	33.28	3286.	33.99
1126.	33.28	3288.	33.97
1128.	33.28	3290.	33.97
1130.	33.28	3292.	33.97
1132.	33.29	3294.	33.96
1134.	33.29	3296.	33.96
1136.	33.29	3298.	33.96
1138.	33.29	3300.	33.97
1140.	33.29	3302.	33.97
1142.	33.28	3304.	33.97
1144.	33.29	3306.	33.97
1146.	33.29	3308.	33.95
1148.	33.28	3310.	33.95
1150.	33.27	3312.	33.95
1152.	33.28	3314.	33.81
1154.	33.29	3316.	33.76
1156.	33.28	3318.	33.73
1158.	33.28	3320.	33.72
1160.	33.29	3322.	33.71
1162.	33.29	3324.	33.7
1164.	33.28	3326.	33.69
1166.	33.29	3328.	33.7
1168.	33.29	3330.	33.7
1170.	33.29	3332.	33.7
1172.	33.3	3334.	33.7
1174.	33.3	3336.	33.7
1176.	33.29	3338.	33.7
1178.	33.29	3340.	33.7
1180.	33.28	3342.	33.7
1182.	33.28	3344.	33.71
1184.	33.29	3346.	33.74
1186.	33.29	3348.	33.83
1188.	33.29	3350.	33.88
1190.	33.28	3352.	33.9
1192.	33.28	3354.	33.91
1194.	33.29	3356.	33.92
1196.	33.29	3358.	33.93
1198.	33.29	3360.	33.93
1200.	33.31	3362.	33.94

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1202.	33.33	3364.	33.93
1204.	33.34	3366.	33.93
1206.	33.35	3368.	33.95
1208.	33.34	3370.	33.95
1210.	33.33	3372.	33.95
1212.	33.33	3374.	33.95
1214.	33.32	3376.	33.94
1216.	33.32	3378.	33.95
1218.	33.32	3380.	33.94
1220.	33.32	3382.	33.95
1222.	33.31	3384.	33.95
1224.	33.3	3386.	33.95
1226.	33.29	3388.	33.96
1228.	33.28	3390.	33.95
1230.	33.29	3392.	33.95
1232.	33.29	3394.	33.96
1234.	33.31	3396.	33.96
1236.	33.31	3398.	33.96
1238.	33.31	3400.	33.96
1240.	33.31	3402.	33.95
1242.	33.32	3404.	33.96
1244.	33.31	3406.	33.95
1246.	33.32	3408.	33.95
1248.	33.31	3410.	33.95
1250.	33.31	3412.	33.93
1252.	33.32	3414.	33.92
1254.	33.32	3416.	33.92
1256.	33.33	3418.	33.94
1258.	33.33	3420.	33.92
1260.	33.33	3422.	33.92
1262.	33.34	3424.	33.93
1264.	33.34	3426.	33.95
1266.	33.35	3428.	33.97
1268.	33.34	3430.	33.99
1270.	33.33	3432.	33.99
1272.	33.33	3434.	34.01
1274.	33.32	3436.	34.01
1276.	33.33	3438.	34.01
1278.	33.33	3440.	34.01
1280.	33.36	3442.	34.
1282.	33.39	3444.	34.
1284.	33.39	3446.	34.
1286.	33.4	3448.	34.
1288.	33.4	3450.	33.34
1290.	33.38	3452.	33.64
1292.	33.41	3454.	33.78
1294.	33.4	3456.	33.84
1296.	33.39	3458.	33.9
1298.	33.38	3460.	33.93
1300.	33.37	3462.	33.93
1302.	33.36	3464.	33.95
1304.	33.37	3466.	33.94
1306.	33.4	3468.	33.94
1308.	33.4	3470.	33.96
1310.	33.4	3472.	33.95
1312.	33.39	3474.	33.95
1314.	33.4	3476.	33.95
1316.	33.39	3478.	33.95
1318.	33.38	3480.	33.96
1320.	33.38	3482.	33.96
1322.	33.37	3484.	33.96
1324.	33.39	3486.	33.97
1326.	33.38	3488.	33.96
1328.	33.38	3490.	33.97
1330.	33.37	3492.	33.96
1332.	33.36	3494.	33.96

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1334.	33.21	3496.	33.97
1336.	33.16	3498.	33.96
1338.	33.12	3500.	33.95
1340.	33.11	3502.	33.95
1342.	33.1	3504.	33.96
1344.	33.11	3506.	33.95
1346.	33.15	3508.	33.95
1348.	33.23	3510.	33.95
1350.	33.28	3512.	33.95
1352.	33.32	3514.	33.94
1354.	33.33	3516.	33.95
1356.	33.34	3518.	33.95
1358.	33.34	3520.	33.95
1360.	33.34	3522.	33.94
1362.	33.34	3524.	33.95
1364.	33.35	3526.	33.95
1366.	33.36	3528.	33.96
1368.	33.37	3530.	33.96
1370.	33.37	3532.	33.98
1372.	33.36	3534.	33.98
1374.	33.36	3536.	33.98
1376.	33.35	3538.	34.
1378.	33.36	3540.	33.98
1380.	31.92	3542.	33.97
1382.	32.34	3544.	33.97
1384.	32.58	3546.	33.97
1386.	32.68	3548.	33.97
1388.	32.74	3550.	33.96
1390.	32.77	3552.	33.96
1392.	32.79	3554.	33.96
1394.	32.8	3556.	33.96
1396.	32.81	3558.	33.98
1398.	32.82	3560.	33.97
1400.	32.81	3562.	33.97
1402.	32.81	3564.	33.95
1404.	32.81	3566.	33.96
1406.	32.82	3568.	33.95
1408.	32.82	3570.	33.94
1410.	32.83	3572.	33.94
1412.	32.79	3574.	33.93
1414.	32.76	3576.	33.94
1416.	32.76	3578.	33.95
1418.	32.74	3580.	33.95
1420.	32.74	3582.	33.95
1422.	32.74	3584.	33.95
1424.	32.73	3586.	33.95
1426.	32.73	3588.	33.95
1428.	32.74	3590.	33.94
1430.	32.75	3592.	33.93
1432.	32.75	3594.	33.93
1434.	32.76	3596.	33.94
1436.	32.76	3598.	33.93
1438.	32.76	3600.	33.94
1440.	32.77	3602.	33.94
1442.	32.76	3604.	33.95
1444.	32.77	3606.	33.95
1446.	32.77	3608.	33.96
1448.	32.77	3610.	33.97
1450.	32.76	3612.	33.97
1452.	32.77	3614.	33.98
1454.	32.78	3616.	34.01
1456.	32.78	3618.	34.
1458.	32.78	3620.	34.
1460.	32.79	3622.	33.99
1462.	32.78	3624.	33.98
1464.	32.78	3626.	33.98

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1466.	32.77	3628.	33.98
1468.	32.76	3630.	33.98
1470.	32.75	3632.	33.97
1472.	32.75	3634.	33.98
1474.	32.74	3636.	33.99
1476.	32.74	3638.	34.01
1478.	32.74	3640.	34.01
1480.	32.73	3642.	34.
1482.	32.73	3644.	34.
1484.	32.74	3646.	34.
1486.	32.73	3648.	34.01
1488.	32.71	3650.	34.01
1490.	32.73	3652.	34.
1492.	32.74	3654.	33.99
1494.	32.76	3656.	33.98
1496.	32.76	3658.	33.98
1498.	32.76	3660.	33.99
1500.	32.76	3662.	33.96
1502.	32.77	3664.	33.87
1504.	32.77	3666.	33.8
1506.	32.77	3668.	33.77
1508.	32.77	3670.	33.75
1510.	32.77	3672.	33.73
1512.	32.78	3674.	33.73
1514.	32.79	3676.	33.77
1516.	32.78	3678.	33.83
1518.	32.78	3680.	33.88
1520.	32.79	3682.	33.91
1522.	32.78	3684.	33.92
1524.	32.79	3686.	33.95
1526.	32.79	3688.	33.98
1528.	32.79	3690.	33.98
1530.	32.79	3692.	33.97
1532.	32.79	3694.	33.97
1534.	32.79	3696.	33.97
1536.	32.79	3698.	33.96
1538.	32.79	3700.	33.96
1540.	32.79	3702.	33.98
1542.	32.79	3704.	34.
1544.	32.77	3706.	34.01
1546.	32.77	3708.	34.02
1548.	32.75	3710.	34.02
1550.	32.75	3712.	34.02
1552.	32.74	3714.	34.
1554.	32.74	3716.	33.98
1556.	32.73	3718.	33.99
1558.	32.72	3720.	33.97
1560.	32.72	3722.	33.97
1562.	32.71	3724.	33.98
1564.	32.71	3726.	33.95
1566.	32.7	3728.	33.95
1568.	32.71	3730.	33.96
1570.	32.7	3732.	33.97
1572.	32.7	3734.	33.97
1574.	32.7	3736.	33.95
1576.	32.7	3738.	33.98
1578.	32.69	3740.	34.
1580.	32.91	3742.	33.99
1582.	33.06	3744.	33.97
1584.	33.13	3746.	33.98
1586.	33.17	3748.	33.97
1588.	33.21	3750.	33.95
1590.	33.24	3752.	33.96
1592.	33.25	3754.	33.97
1594.	33.25	3756.	33.96
1596.	33.26	3758.	33.95

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1598.	33.26	3760.	33.95
1600.	33.27	3762.	33.94
1602.	33.28	3764.	33.94
1604.	33.29	3766.	33.95
1606.	33.29	3768.	33.95
1608.	33.3	3770.	33.95
1610.	33.29	3772.	33.98
1612.	33.31	3774.	33.98
1614.	33.31	3776.	33.98
1616.	33.32	3778.	33.98
1618.	33.32	3780.	33.99
1620.	33.32	3782.	33.98
1622.	33.33	3784.	33.95
1624.	33.33	3786.	33.95
1626.	33.33	3788.	33.96
1628.	33.32	3790.	33.96
1630.	33.33	3792.	33.97
1632.	33.32	3794.	33.98
1634.	33.31	3796.	34.01
1636.	33.29	3798.	34.
1638.	33.29	3800.	34.
1640.	33.29	3802.	33.99
1642.	33.28	3804.	34.01
1644.	33.28	3806.	33.44
1646.	33.29	3808.	33.76
1648.	33.29	3810.	33.9
1650.	33.29	3812.	33.95
1652.	33.28	3814.	33.99
1654.	33.29	3816.	34.02
1656.	33.29	3818.	34.03
1658.	33.29	3820.	34.05
1660.	33.28	3822.	34.05
1662.	33.28	3824.	34.05
1664.	33.29	3826.	34.06
1666.	33.28	3828.	34.07
1668.	33.29	3830.	34.07
1670.	33.28	3832.	34.06
1672.	33.28	3834.	34.06
1674.	33.27	3836.	34.05
1676.	33.27	3838.	34.06
1678.	33.26	3840.	34.07
1680.	33.27	3842.	34.06
1682.	33.27	3844.	34.05
1684.	33.28	3846.	34.04
1686.	33.28	3848.	34.04
1688.	33.27	3850.	34.03
1690.	33.27	3852.	34.03
1692.	33.27	3854.	34.03
1694.	33.28	3856.	34.03
1696.	33.28	3858.	34.04
1698.	33.28	3860.	34.04
1700.	33.27	3862.	34.05
1702.	33.27	3864.	34.03
1704.	33.26	3866.	34.05
1706.	33.26	3868.	34.06
1708.	33.26	3870.	34.06
1710.	33.26	3872.	34.07
1712.	33.27	3874.	34.05
1714.	33.3	3876.	34.07
1716.	33.32	3878.	34.07
1718.	32.42	3880.	34.05
1720.	32.67	3882.	34.05
1722.	33.	3884.	34.06
1724.	33.17	3886.	34.05
1726.	33.26	3888.	34.04
1728.	33.31	3890.	34.04

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1730.	33.34	3892.	34.04
1732.	33.36	3894.	34.03
1734.	33.34	3896.	34.04
1736.	33.3	3898.	34.04
1738.	33.27	3900.	34.04
1740.	33.31	3902.	34.06
1742.	33.34	3904.	34.07
1744.	33.36	3906.	34.07
1746.	33.37	3908.	34.05
1748.	33.38	3910.	34.04
1750.	33.39	3912.	34.04
1752.	33.39	3914.	34.04
1754.	33.4	3916.	34.04
1756.	33.41	3918.	34.05
1758.	33.41	3920.	34.05
1760.	33.41	3922.	34.04
1762.	33.41	3924.	34.03
1764.	33.42	3926.	34.03
1766.	33.41	3928.	34.04
1768.	33.41	3930.	34.05
1770.	33.41	3932.	34.06
1772.	33.41	3934.	34.06
1774.	33.42	3936.	34.07
1776.	33.41	3938.	34.06
1778.	33.42	3940.	34.06
1780.	33.41	3942.	34.04
1782.	33.42	3944.	34.06
1784.	33.42	3946.	34.07
1786.	33.42	3948.	34.07
1788.	33.41	3950.	34.07
1790.	33.4	3952.	34.05
1792.	33.38	3954.	34.04
1794.	33.39	3956.	34.04
1796.	33.38	3958.	34.03
1798.	33.38	3960.	34.02
1800.	33.38	3962.	34.03
1802.	33.38	3964.	34.02
1804.	33.37	3966.	34.01
1806.	33.37	3968.	34.
1808.	33.37	3970.	34.
1810.	33.37	3972.	33.99
1812.	33.37	3974.	34.01
1814.	33.37	3976.	34.03
1816.	33.37	3978.	34.04
1818.	33.38	3980.	34.04
1820.	33.38	3982.	34.04
1822.	33.37	3984.	34.04
1824.	33.37	3986.	34.03
1826.	33.38	3988.	34.02
1828.	33.37	3990.	34.02
1830.	33.38	3992.	34.02
1832.	33.38	3994.	34.02
1834.	33.38	3996.	34.01
1836.	33.38	3998.	34.04
1838.	33.37	4000.	34.04
1840.	33.35	4002.	34.04
1842.	33.37	4004.	34.02
1844.	33.35	4006.	34.03
1846.	33.35	4008.	34.03
1848.	33.36	4010.	34.04
1850.	33.36	4012.	34.04
1852.	33.35	4014.	34.05
1854.	33.35	4016.	34.04
1856.	33.35	4018.	34.03
1858.	33.35	4020.	34.01
1860.	33.35	4022.	34.02

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1862.	33.33	4024.	34.03
1864.	33.34	4026.	34.02
1866.	33.33	4028.	34.01
1868.	33.33	4030.	34.
1870.	33.33	4032.	34.
1872.	33.33	4034.	34.
1874.	33.35	4036.	34.01
1876.	33.34	4038.	34.01
1878.	33.34	4040.	34.
1880.	33.34	4042.	33.99
1882.	33.34	4044.	33.99
1884.	33.34	4046.	33.99
1886.	33.34	4048.	34.01
1888.	33.34	4050.	34.02
1890.	33.34	4052.	34.06
1892.	33.34	4054.	34.09
1894.	33.34	4056.	34.08
1896.	33.32	4058.	34.09
1898.	33.3	4060.	34.11
1900.	33.33	4062.	34.12
1902.	33.34	4064.	34.11
1904.	33.36	4066.	34.11
1906.	33.35	4068.	34.11
1908.	33.36	4070.	34.1
1910.	33.37	4072.	34.09
1912.	33.37	4074.	34.08
1914.	33.36	4076.	34.1
1916.	33.38	4078.	34.11
1918.	33.38	4080.	34.12
1920.	33.37	4082.	34.12
1922.	33.38	4084.	34.11
1924.	33.37	4086.	34.13
1926.	33.38	4088.	34.12
1928.	33.37	4090.	34.12
1930.	33.36	4092.	34.1
1932.	33.37	4094.	34.09
1934.	33.37	4096.	34.07
1936.	33.35	4098.	34.07
1938.	33.36	4100.	34.1
1940.	33.38	4102.	34.11
1942.	33.38	4104.	34.12
1944.	33.35	4106.	34.13
1946.	33.37	4108.	34.12
1948.	33.36	4110.	34.11
1950.	33.37	4112.	34.07
1952.	33.36	4114.	34.05
1954.	33.38	4116.	34.04
1956.	33.37	4118.	34.03
1958.	33.37	4120.	34.
1960.	33.36	4122.	34.
1962.	33.35	4124.	33.95
1964.	33.35	4126.	33.89
1966.	33.34	4128.	33.86
1968.	33.35	4130.	33.83
1970.	33.35	4132.	33.81
1972.	33.35	4134.	33.82
1974.	33.34	4136.	33.8
1976.	33.33	4138.	33.8
1978.	33.34	4140.	33.83
1980.	33.35	4142.	33.85
1982.	33.35	4144.	33.95
1984.	33.36	4146.	34.01
1986.	33.37	4148.	34.05
1988.	33.37	4150.	34.1
1990.	33.37	4152.	34.09
1992.	33.37	4154.	34.09

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1994.	33.37	4156.	34.11
1996.	33.39	4158.	34.14
1998.	33.38	4160.	34.14
2000.	33.39	4162.	34.14
2002.	33.39	4164.	34.12
2004.	33.38	4166.	34.15
2006.	33.38	4168.	34.16
2008.	33.39	4170.	34.15
2010.	32.74	4172.	34.12
2012.	33.11	4174.	34.15
2014.	33.26	4176.	33.16
2016.	33.33	4178.	33.43
2018.	33.35	4180.	33.52
2020.	33.38	4182.	33.54
2022.	33.39	4184.	33.57
2024.	33.41	4186.	33.57
2026.	33.42	4188.	33.57
2028.	33.42	4190.	33.56
2030.	33.42	4192.	33.56
2032.	33.42	4194.	33.56
2034.	33.43	4196.	33.54
2036.	33.42	4198.	33.53
2038.	33.42	4200.	33.53
2040.	33.42	4202.	33.52
2042.	33.43	4204.	33.52
2044.	33.43	4206.	33.51
2046.	33.42	4208.	33.5
2048.	33.42	4210.	33.49
2050.	33.43	4212.	33.49
2052.	33.42	4214.	33.48
2054.	33.43	4216.	33.49
2056.	33.43	4218.	33.49
2058.	33.42	4220.	33.5
2060.	33.43	4222.	33.48
2062.	33.43	4224.	33.48
2064.	33.44	4226.	33.48
2066.	33.43	4228.	33.47
2068.	33.44	4230.	33.47
2070.	33.44	4232.	33.48
2072.	33.44	4234.	33.47
2074.	33.44	4236.	33.47
2076.	33.45	4238.	33.47
2078.	33.45	4240.	33.47
2080.	33.45	4242.	33.47
2082.	33.44	4244.	33.46
2084.	33.44	4246.	33.47
2086.	33.46	4248.	33.47
2088.	33.47	4250.	33.47
2090.	33.47	4252.	33.47
2092.	33.49	4254.	33.47
2094.	33.49	4256.	33.46
2096.	33.49	4258.	33.46
2098.	33.49	4260.	33.46
2100.	33.48	4262.	33.46
2102.	33.48	4264.	33.46
2104.	33.48	4266.	33.45
2106.	33.48	4268.	33.46
2108.	33.47	4270.	33.46
2110.	33.46	4272.	33.46
2112.	33.46	4274.	33.45
2114.	33.46	4276.	33.46
2116.	33.46	4278.	33.46
2118.	33.46	4280.	33.46
2120.	33.45	4282.	33.46
2122.	33.46	4284.	33.46
2124.	33.46	4286.	33.46

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
2126.	33.47	4288.	33.46
2128.	33.45	4290.	33.47
2130.	33.46	4292.	33.46
2132.	33.45	4294.	33.46
2134.	33.45	4296.	33.46
2136.	33.43	4298.	33.45
2138.	33.44	4300.	33.45
2140.	33.4	4302.	33.44
2142.	33.4	4304.	33.44
2144.	33.39	4306.	33.46
2146.	33.39	4308.	33.47
2148.	33.39	4310.	33.48
2150.	33.39	4312.	33.48
2152.	33.39	4314.	33.49
2154.	33.39	4316.	33.49
2156.	33.4	4318.	33.48
2158.	33.39	4320.	33.31
2160.	33.39		

Observation Well No. 2: MW14-04D

X Location: 3038830.66 ft
Y Location: 684713.22 ft

Radial distance from MW14-03B: 627.1851017 ft

Partially Penetrating Well
Depth to Top of Screen: 8.5 ft
Depth to Bottom of Screen: 11. ft

No. of Observations: 862

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
5.	-0.003609	2160.	0.3711
10.	0.	2165.	0.3684
15.	-0.004593	2170.	0.3717
20.	0.002297	2175.	0.375
25.	0.003281	2180.	0.3737
30.	-0.004265	2185.	0.3704
35.	0.003281	2190.	0.374
40.	0.002297	2195.	0.3727
45.	0.005249	2200.	0.3704
50.	0.002953	2205.	0.3727
55.	0.0003281	2210.	0.3724
60.	0.008202	2215.	0.377
65.	0.002297	2220.	0.3763
70.	0.008202	2225.	0.3796
75.	0.001969	2230.	0.3819
80.	0.01542	2235.	0.3776
85.	0.007218	2240.	0.3773
90.	0.0164	2245.	0.3773
95.	0.007218	2250.	0.3776
100.	0.01509	2255.	0.378
105.	0.01903	2260.	0.3757
110.	0.02001	2265.	0.378
115.	0.01312	2270.	0.3799
120.	0.009514	2275.	0.3819
125.	0.01345	2280.	0.3783
130.	0.01706	2285.	0.3796
135.	0.01936	2290.	0.3776
140.	0.02067	2295.	0.3793
145.	0.02329	2300.	0.3763
150.	0.01608	2305.	0.3786
155.	0.01181	2310.	0.3819
160.	0.0187	2315.	0.3806

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
165.	0.01739	2320.	0.3862
170.	0.0164	2325.	0.3839
175.	0.01739	2330.	0.3819
180.	0.01936	2335.	0.3796
185.	0.01476	2340.	0.3802
190.	0.02231	2345.	0.3829
195.	0.02297	2350.	0.3799
200.	0.02395	2355.	0.3862
205.	0.03018	2360.	0.3809
210.	0.02887	2365.	0.3881
215.	0.02854	2370.	0.3806
220.	0.03675	2375.	0.3753
225.	0.03412	2380.	0.3757
230.	0.03117	2385.	0.3757
235.	0.03445	2390.	0.3842
240.	0.03609	2395.	0.3806
245.	0.03871	2400.	0.3796
250.	0.04495	2405.	0.3819
255.	0.04364	2410.	0.3845
260.	0.04298	2415.	0.3825
265.	0.04987	2420.	0.3822
270.	0.05545	2425.	0.3806
275.	0.05085	2430.	0.3789
280.	0.06102	2435.	0.3796
285.	0.0374	2440.	0.3747
290.	0.05446	2445.	0.3796
295.	0.06726	2450.	0.3802
300.	0.06168	2455.	0.3812
305.	0.06627	2460.	0.3766
310.	0.06234	2465.	0.3776
315.	0.06857	2470.	0.3793
320.	0.07087	2475.	0.3773
325.	0.06824	2480.	0.3783
330.	0.07382	2485.	0.3753
335.	0.07743	2490.	0.378
340.	0.07776	2495.	0.3829
345.	0.08136	2500.	0.3789
350.	0.09252	2505.	0.3809
355.	0.08563	2510.	0.3832
360.	0.08661	2515.	0.3806
365.	0.09416	2520.	0.376
370.	0.09121	2525.	0.3789
375.	0.09383	2530.	0.375
380.	0.09285	2535.	0.3724
385.	0.09088	2540.	0.375
390.	0.09744	2545.	0.3737
395.	0.09547	2550.	0.3707
400.	0.1017	2555.	0.3711
405.	0.09711	2560.	0.3701
410.	0.09875	2565.	0.3684
415.	0.1037	2570.	0.3622
420.	0.1014	2575.	0.3622
425.	0.104	2580.	0.3638
430.	0.1066	2585.	0.3655
435.	0.1099	2590.	0.3648
440.	0.1093	2595.	0.3602
445.	0.1148	2600.	0.3589
450.	0.1145	2605.	0.357
455.	0.1122	2610.	0.3589
460.	0.1165	2615.	0.3606
465.	0.1188	2620.	0.3596
470.	0.1201	2625.	0.3593
475.	0.1122	2630.	0.3537
480.	0.1227	2635.	0.3507
485.	0.1243	2640.	0.3524
490.	0.128	2645.	0.3507

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
495.	0.126	2650.	0.3543
500.	0.1335	2655.	0.3556
505.	0.1306	2660.	0.3494
510.	0.1325	2665.	0.3484
515.	0.1401	2670.	0.3471
520.	0.1352	2675.	0.351
525.	0.1394	2680.	0.3494
530.	0.1417	2685.	0.3488
535.	0.1444	2690.	0.3488
540.	0.1444	2695.	0.3501
545.	0.1411	2700.	0.3465
550.	0.1424	2705.	0.3481
555.	0.1483	2710.	0.3481
560.	0.1526	2715.	0.3563
565.	0.1512	2720.	0.3514
570.	0.1457	2725.	0.3491
575.	0.1486	2730.	0.352
580.	0.1565	2735.	0.3524
585.	0.1558	2740.	0.3501
590.	0.1568	2745.	0.3504
595.	0.1657	2750.	0.3461
600.	0.1575	2755.	0.3491
605.	0.1572	2760.	0.3501
610.	0.164	2765.	0.3468
615.	0.165	2770.	0.3451
620.	0.1677	2775.	0.3438
625.	0.168	2780.	0.3491
630.	0.1673	2785.	0.3428
635.	0.1706	2790.	0.3442
640.	0.1749	2795.	0.3432
645.	0.1699	2800.	0.3015
650.	0.1696	2805.	0.4163
655.	0.1788	2810.	0.4259
660.	0.1782	2815.	0.4193
665.	0.1788	2820.	0.4213
670.	0.1808	2825.	0.4186
675.	0.1811	2830.	0.418
680.	0.1765	2835.	0.4222
685.	0.1795	2840.	0.4242
690.	0.1818	2845.	0.4206
695.	0.1841	2850.	0.4262
700.	0.1811	2855.	0.4177
705.	0.1883	2860.	0.4278
710.	0.1903	2865.	0.4259
715.	0.1847	2870.	0.4265
720.	0.186	2875.	0.4255
725.	0.1893	2880.	0.4213
730.	0.1926	2885.	0.4222
735.	0.1923	2890.	0.4229
740.	0.1909	2895.	0.4252
745.	0.1959	2900.	0.4219
750.	0.1942	2905.	0.4236
755.	0.1988	2910.	0.4265
760.	0.2008	2915.	0.4259
765.	0.1916	2920.	0.4295
770.	0.1975	2925.	0.4275
775.	0.2005	2930.	0.4259
780.	0.1991	2935.	0.4298
785.	0.1972	2940.	0.4259
790.	0.1959	2945.	0.4301
795.	0.2031	2950.	0.4308
800.	0.2037	2955.	0.4354
805.	0.2031	2960.	0.4295
810.	0.2073	2965.	0.4304
815.	0.2106	2970.	0.4288
820.	0.2051	2975.	0.4334

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
825.	0.207	2980.	0.4314
830.	0.2057	2985.	0.4331
835.	0.206	2990.	0.4341
840.	0.2083	2995.	0.4337
845.	0.2087	3000.	0.437
850.	0.2051	3005.	0.4324
855.	0.211	3010.	0.438
860.	0.2123	3015.	0.4334
865.	0.2067	3020.	0.4367
870.	0.2073	3025.	0.4373
875.	0.2041	3030.	0.439
880.	0.2077	3035.	0.437
885.	0.2093	3040.	0.437
890.	0.2087	3045.	0.439
895.	0.2077	3050.	0.4347
900.	0.2136	3055.	0.4386
905.	0.2067	3060.	0.4337
910.	0.2083	3065.	0.4383
915.	0.2149	3070.	0.4383
920.	0.2139	3075.	0.4327
925.	0.2178	3080.	0.4337
930.	0.2175	3085.	0.4357
935.	0.2093	3090.	0.4383
940.	0.2162	3095.	0.4341
945.	0.211	3100.	0.4367
950.	0.2201	3105.	0.4367
955.	0.2139	3110.	0.4403
960.	0.2185	3115.	0.435
965.	0.2182	3120.	0.4429
970.	0.2103	3125.	0.4373
975.	0.2129	3130.	0.436
980.	0.2221	3135.	0.4383
985.	0.2178	3140.	0.4386
990.	0.2142	3145.	0.4373
995.	0.2156	3150.	0.4357
1000.	0.2178	3155.	0.4341
1005.	0.2142	3160.	0.4393
1010.	0.2175	3165.	0.437
1015.	0.2165	3170.	0.4337
1020.	0.2211	3175.	0.439
1025.	0.2234	3180.	0.436
1030.	0.2247	3185.	0.4409
1035.	0.2283	3190.	0.439
1040.	0.2169	3195.	0.4377
1045.	0.2244	3200.	0.4377
1050.	0.2264	3205.	0.436
1055.	0.2159	3210.	0.4364
1060.	0.2234	3215.	0.4383
1065.	0.2228	3220.	0.4308
1070.	0.2261	3225.	0.4321
1075.	0.2218	3230.	0.4341
1080.	0.2254	3235.	0.437
1085.	0.2231	3240.	0.436
1090.	0.229	3245.	0.4334
1095.	0.2241	3250.	0.4344
1100.	0.2257	3255.	0.4393
1105.	0.2254	3260.	0.4364
1110.	0.2231	3265.	0.4367
1115.	0.2316	3270.	0.4357
1120.	0.2215	3275.	0.4406
1125.	0.2287	3280.	0.4386
1130.	0.2257	3285.	0.44
1135.	0.2228	3290.	0.436
1140.	0.2228	3295.	0.4396
1145.	0.2313	3300.	0.4393
1150.	0.2306	3305.	0.439

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1155.	0.2336	3310.	0.4409
1160.	0.2329	3315.	0.4413
1165.	0.2339	3320.	0.4419
1170.	0.2359	3325.	0.44
1175.	0.2359	3330.	0.439
1180.	0.2379	3335.	0.4383
1185.	0.2438	3340.	0.4419
1190.	0.2408	3345.	0.4439
1195.	0.232	3350.	0.4413
1200.	0.2362	3355.	0.4465
1205.	0.2372	3360.	0.4442
1210.	0.2369	3365.	0.4488
1215.	0.2395	3370.	0.4449
1220.	0.2385	3375.	0.4459
1225.	0.2497	3380.	0.4478
1230.	0.2615	3385.	0.4472
1235.	0.2549	3390.	0.4439
1240.	0.2526	3395.	0.4442
1245.	0.2408	3400.	0.4469
1250.	0.2566	3405.	0.4491
1255.	0.253	3410.	0.4469
1260.	0.2434	3415.	0.4491
1265.	0.2497	3420.	0.4508
1270.	0.2513	3425.	0.4488
1275.	0.2448	3430.	0.4488
1280.	0.2592	3435.	0.4528
1285.	0.2461	3440.	0.4498
1290.	0.2516	3445.	0.4485
1295.	0.2572	3450.	0.4544
1300.	0.2552	3455.	0.4521
1305.	0.2418	3460.	0.4534
1310.	0.2493	3465.	0.4544
1315.	0.253	3470.	0.4531
1320.	0.2572	3475.	0.4537
1325.	0.2536	3480.	0.4547
1330.	0.2589	3485.	0.4524
1335.	0.2595	3490.	0.4511
1340.	0.2618	3495.	0.4577
1345.	0.2631	3500.	0.459
1350.	0.2628	3505.	0.4583
1355.	0.268	3510.	0.4541
1360.	0.2612	3515.	0.4583
1365.	0.2644	3520.	0.4596
1370.	0.2651	3525.	0.4593
1375.	0.2644	3530.	0.458
1380.	0.2671	3535.	0.459
1385.	0.2602	3540.	0.4593
1390.	0.2671	3545.	0.4626
1395.	0.2674	3550.	0.458
1400.	0.2664	3555.	0.4639
1405.	0.2697	3560.	0.4603
1410.	0.2766	3565.	0.4636
1415.	0.2723	3570.	0.4636
1420.	0.2766	3575.	0.4626
1425.	0.2762	3580.	0.4619
1430.	0.2828	3585.	0.4636
1435.	0.2854	3590.	0.4656
1440.	0.2792	3595.	0.459
1445.	0.2815	3600.	0.4639
1450.	0.2887	3605.	0.4662
1455.	0.2917	3610.	0.4665
1460.	0.29	3615.	0.4662
1465.	0.289	3620.	0.4662
1470.	0.291	3625.	0.4675
1475.	0.2966	3630.	0.4682
1480.	0.292	3635.	0.4675

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1485.	0.2881	3640.	0.4692
1490.	0.2963	3645.	0.4692
1495.	0.2897	3650.	0.4711
1500.	0.2933	3655.	0.4698
1505.	0.2894	3660.	0.4685
1510.	0.2927	3665.	0.4692
1515.	0.2979	3670.	0.4718
1520.	0.3028	3675.	0.4698
1525.	0.2972	3680.	0.4701
1530.	0.3015	3685.	0.4698
1535.	0.2923	3690.	0.4724
1540.	0.293	3695.	0.4685
1545.	0.2917	3700.	0.4751
1550.	0.3077	3705.	0.4705
1555.	0.2972	3710.	0.4744
1560.	0.2995	3715.	0.4708
1565.	0.2963	3720.	0.4731
1570.	0.2979	3725.	0.4721
1575.	0.3051	3730.	0.4728
1580.	0.2976	3735.	0.4685
1585.	0.3054	3740.	0.4718
1590.	0.289	3745.	0.4734
1595.	0.3077	3750.	0.4718
1600.	0.3248	3755.	0.4708
1605.	0.3071	3760.	0.4708
1610.	0.3219	3765.	0.4751
1615.	0.2982	3770.	0.4728
1620.	0.3012	3775.	0.4738
1625.	0.3038	3780.	0.4751
1630.	0.3248	3785.	0.4724
1635.	0.3107	3790.	0.4741
1640.	0.3031	3795.	0.476
1645.	0.3209	3800.	0.4708
1650.	0.31	3805.	0.4767
1655.	0.3064	3810.	0.4738
1660.	0.3163	3815.	0.4711
1665.	0.3182	3820.	0.4724
1670.	0.3094	3825.	0.4734
1675.	0.3271	3830.	0.4751
1680.	0.3346	3835.	0.4711
1685.	0.3159	3840.	0.4744
1690.	0.3219	3845.	0.4754
1695.	0.3314	3850.	0.4721
1700.	0.3251	3855.	0.4744
1705.	0.3287	3860.	0.4721
1710.	0.3173	3865.	0.476
1715.	0.2664	3870.	0.476
1720.	0.2677	3875.	0.4767
1725.	0.2165	3880.	0.4741
1730.	0.2933	3885.	0.4764
1735.	0.271	3890.	0.4747
1740.	0.333	3895.	0.4754
1745.	0.3376	3900.	0.4715
1750.	0.3176	3905.	0.4747
1755.	0.2887	3910.	0.4754
1760.	0.334	3915.	0.4751
1765.	0.3251	3920.	0.478
1770.	0.3228	3925.	0.4731
1775.	0.3215	3930.	0.4787
1780.	0.3219	3935.	0.4777
1785.	0.3051	3940.	0.4721
1790.	0.3192	3945.	0.4764
1795.	0.313	3950.	0.4731
1800.	0.3225	3955.	0.4774
1805.	0.3241	3960.	0.476
1810.	0.3238	3965.	0.4774

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1815.	0.3215	3970.	0.4757
1820.	0.3255	3975.	0.4774
1825.	0.314	3980.	0.4783
1830.	0.3232	3985.	0.4734
1835.	0.3235	3990.	0.4734
1840.	0.3228	3995.	0.4724
1845.	0.3255	4000.	0.478
1850.	0.3264	4005.	0.4767
1855.	0.3196	4010.	0.4751
1860.	0.3268	4015.	0.4757
1865.	0.3228	4020.	0.4764
1870.	0.3232	4025.	0.48
1875.	0.3297	4030.	0.4806
1880.	0.3255	4035.	0.482
1885.	0.3241	4050.	0.4574
1890.	0.3294	4055.	0.4574
1895.	0.3353	4060.	0.4659
1900.	0.3366	4065.	0.4672
1905.	0.335	4070.	0.4689
1910.	0.3314	4075.	0.4702
1915.	0.3425	4080.	0.4761
1920.	0.3406	4085.	0.4744
1925.	0.3409	4090.	0.4754
1930.	0.3425	4095.	0.4725
1935.	0.3379	4100.	0.4738
1940.	0.3369	4105.	0.4807
1945.	0.3455	4110.	0.4777
1950.	0.3409	4115.	0.4928
1955.	0.3451	4120.	0.484
1960.	0.3435	4125.	0.3449
1965.	0.3451	4130.	0.4728
1970.	0.3501	4135.	0.484
1975.	0.3445	4140.	0.4827
1980.	0.3501	4145.	0.4872
1985.	0.352	4150.	0.4843
1990.	0.3524	4155.	0.4859
1995.	0.3507	4160.	0.4863
2000.	0.3586	4165.	0.4833
2005.	0.3501	4170.	0.4902
2010.	0.3543	4175.	0.4892
2015.	0.3556	4180.	0.4892
2020.	0.3583	4185.	0.4928
2025.	0.3576	4190.	0.4899
2030.	0.354	4195.	0.4882
2035.	0.353	4200.	0.4964
2040.	0.3599	4205.	0.4958
2045.	0.3537	4210.	0.4941
2050.	0.353	4215.	0.4928
2055.	0.3593	4220.	0.4994
2060.	0.3586	4225.	0.4968
2065.	0.3576	4230.	0.5
2070.	0.3629	4235.	0.4987
2075.	0.3615	4240.	0.4971
2080.	0.3593	4245.	0.502
2085.	0.3632	4250.	0.502
2090.	0.3665	4255.	0.502
2095.	0.3625	4260.	0.5014
2100.	0.3668	4265.	0.5014
2105.	0.3648	4270.	0.5046
2110.	0.3655	4275.	0.502
2115.	0.3668	4280.	0.5053
2120.	0.3671	4285.	0.505
2125.	0.3652	4290.	0.5089
2130.	0.3694	4295.	0.5132
2135.	0.3638	4300.	0.5092
2140.	0.3698	4305.	0.5128

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
2145.	0.3701	4310.	0.5128
2150.	0.3661	4315.	0.5112
2155.	0.3698	4320.	0.5122

SOLUTION

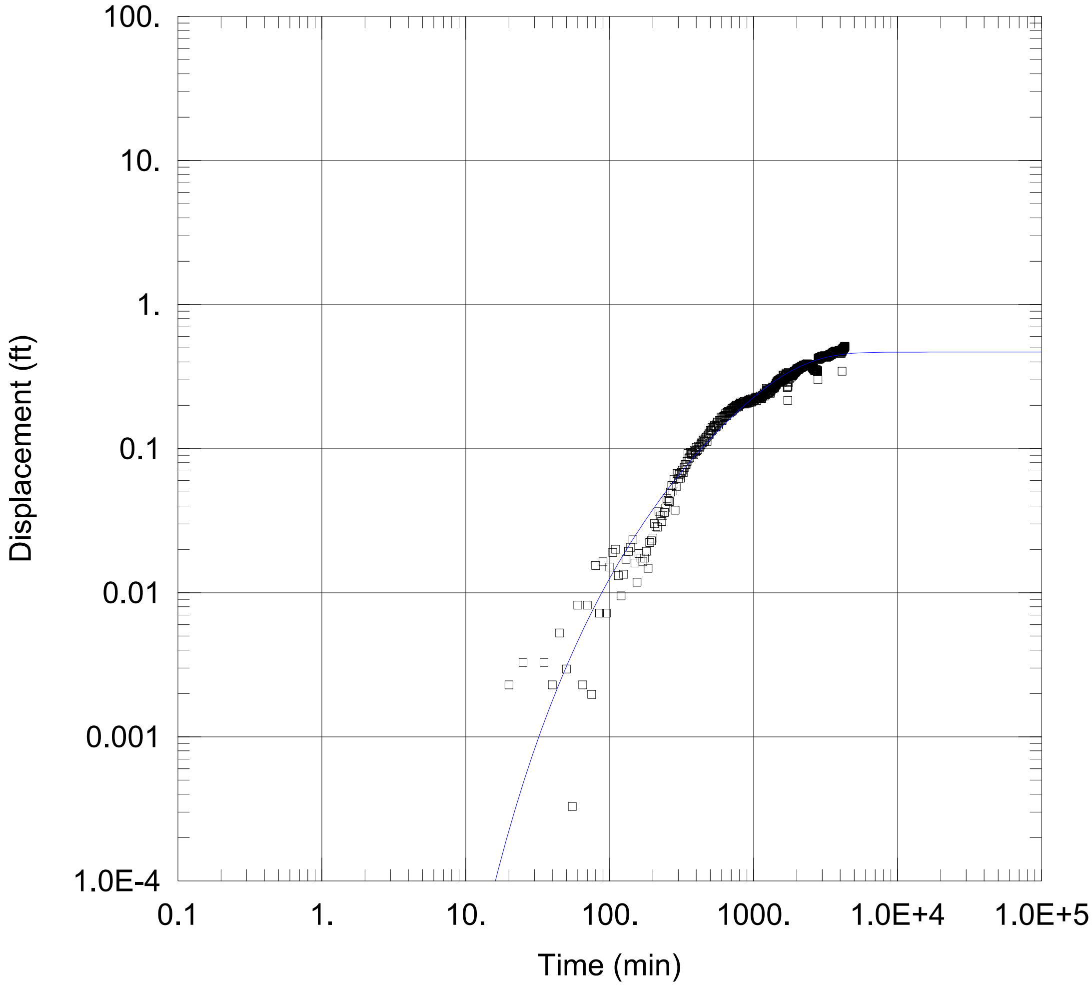
Pumping Test
Aquifer Model: Leaky
Solution Method: Hantush

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	0.07253	cm^2/sec
S	1.401E-6	
1/B'	0.003317	ft^{-1}
ß'/r	0.008844	ft^{-1}
1/B"	5.715E-5	ft^{-1}
ß"/r	5.715E-5	ft^{-1}

K = T/b = 3.399E-5 cm/sec
Ss = S/b = 2.001E-8 1/ft
K'/b' = 5.154E-8 min^{-1}
K' = 3.273E-7 cm/sec
K"/b" = 1.53E-11 min^{-1}
K" = 9.714E-11 cm/sec



WELL TEST ANALYSIS

Data Set: C:\...\Pumping Test_2020-07-23_MW14-04D.aqt
Date: 07/29/20 Time: 10:03:05

PROJECT INFORMATION

Company: Golder Associates, Inc.
Client: Crossroads
Location: ME
Test Well: MW14-03B
Test Date: 7/7/2020

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
MW14-03B	3039420.818	684500.912

Observation Wells

Well Name	X (ft)	Y (ft)
□ MW14-04D	3038830.66	684713.22

SOLUTION

Aquifer Model: Leaky

Solution Method: Hantush

T = 0.07253 cm^2/sec
1/B' = 0.003317 ft^{-1}
1/B" = 5.715E-5 ft^{-1}

S = 1.401E-6
ß'/r = 0.008844 ft^{-1}
ß"/r = 5.715E-5 ft^{-1}

Data Set: C:\Users\BCampelia\Desktop\Crossroads Pumping Test Files\2020-07-10 Files\2020-07-26 Updated File
Date: 07/26/20
Time: 10:36:11

PROJECT INFORMATION

Company: Golder Associates, Inc.
Client: Crossroads
Location: ME
Test Date: 7/7/2020
Test Well: MW14-03B

AQUIFER DATA

Saturated Thickness: 70. ft
Anisotropy Ratio (Kz/Kr): 1.
Aquitard Thickness (b'): 12.5 ft
Aquitard Thickness (b"): 12.5 ft

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: MW14-03B

X Location: 3039420.818 ft
Y Location: 684500.912 ft

Casing Radius: 0. ft
Well Radius: 0.1875 ft

Partially Penetrating Well
Depth to Top of Screen: 28. ft
Depth to Bottom of Screen: 51. ft

No. of pumping periods: 1

Pumping Period Data

Time (min)	Rate (gal/min)
0.	1.

OBSERVATION WELL DATA

No. of observation wells: 2

Observation Well No. 1: MW14-03B

X Location: 3039420.818 ft
Y Location: 684500.912 ft

Radial distance from MW14-03B: 0. ft

Partially Penetrating Well
Depth to Top of Screen: 28. ft
Depth to Bottom of Screen: 51. ft

No. of Observations: 2161

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1.	0.	2162.	33.39
2.	3.285	2164.	33.38
4.	11.85	2166.	33.39
6.	15.12	2168.	33.39
8.	17.6	2170.	33.4
10.	19.46	2172.	33.4
12.	20.88	2174.	33.4

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
14.	21.99	2176.	33.39
16.	23.15	2178.	33.4
18.	24.09	2180.	33.4
20.	24.8	2182.	33.4
22.	25.31	2184.	33.41
24.	26.01	2186.	33.4
26.	26.58	2188.	33.41
28.	26.97	2190.	33.41
30.	27.4	2192.	33.4
32.	27.77	2194.	33.41
34.	28.03	2196.	33.4
36.	28.18	2198.	33.4
38.	28.49	2200.	33.4
40.	28.83	2202.	33.4
42.	29.09	2204.	33.41
44.	29.28	2206.	33.41
46.	29.48	2208.	33.41
48.	29.61	2210.	33.4
50.	29.72	2212.	33.41
52.	29.8	2214.	33.4
54.	29.86	2216.	33.4
56.	29.91	2218.	33.4
58.	29.97	2220.	33.4
60.	29.98	2222.	33.4
62.	30.04	2224.	33.4
64.	30.07	2226.	33.4
66.	30.11	2228.	33.4
68.	30.15	2230.	33.39
70.	30.18	2232.	33.4
72.	30.21	2234.	33.39
74.	30.32	2236.	33.38
76.	30.53	2238.	33.39
78.	30.65	2240.	33.39
80.	30.72	2242.	33.4
82.	30.77	2244.	33.4
84.	30.83	2246.	33.41
86.	30.84	2248.	33.4
88.	30.88	2250.	33.41
90.	30.97	2252.	33.39
92.	31.01	2254.	33.39
94.	31.03	2256.	33.4
96.	31.06	2258.	33.38
98.	31.09	2260.	33.39
100.	31.1	2262.	33.4
102.	31.18	2264.	33.39
104.	31.41	2266.	33.4
106.	31.53	2268.	33.4
108.	31.62	2270.	33.4
110.	31.67	2272.	33.41
112.	31.72	2274.	33.41
114.	31.77	2276.	33.39
116.	31.81	2278.	33.26
118.	31.75	2280.	33.21
120.	31.82	2282.	33.17
122.	31.87	2284.	33.18
124.	31.9	2286.	33.18
126.	31.95	2288.	33.17
128.	31.98	2290.	33.16
130.	32.	2292.	33.16
132.	32.03	2294.	33.16
134.	32.04	2296.	33.17
136.	32.01	2298.	33.16
138.	32.07	2300.	33.17
140.	32.1	2302.	33.17
142.	32.13	2304.	33.17
144.	32.18	2306.	33.18

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
146.	32.22	2308.	33.18
148.	32.25	2310.	33.19
150.	32.27	2312.	33.21
152.	32.26	2314.	33.28
154.	32.27	2316.	33.33
156.	32.27	2318.	33.35
158.	32.28	2320.	33.36
160.	32.32	2322.	33.38
162.	32.34	2324.	33.38
164.	32.36	2326.	33.39
166.	32.36	2328.	33.39
168.	32.35	2330.	33.4
170.	32.34	2332.	33.39
172.	32.34	2334.	33.39
174.	32.29	2336.	33.39
176.	32.28	2338.	33.39
178.	32.33	2340.	33.4
180.	32.35	2342.	33.4
182.	32.4	2344.	33.4
184.	32.42	2346.	33.4
186.	32.43	2348.	33.38
188.	32.43	2350.	33.39
190.	32.49	2352.	33.4
192.	32.33	2354.	33.4
194.	32.4	2356.	33.4
196.	32.44	2358.	33.41
198.	32.46	2360.	33.4
200.	32.49	2362.	33.41
202.	32.52	2364.	33.4
204.	32.46	2366.	33.41
206.	32.43	2368.	33.4
208.	32.5	2370.	33.4
210.	32.53	2372.	33.4
212.	32.61	2374.	33.4
214.	32.64	2376.	33.4
216.	32.65	2378.	33.4
218.	32.66	2380.	33.4
220.	32.67	2382.	33.38
222.	32.67	2384.	33.39
224.	32.7	2386.	33.4
226.	32.74	2388.	33.41
228.	32.77	2390.	33.41
230.	32.78	2392.	33.41
232.	32.78	2394.	33.4
234.	32.77	2396.	33.41
236.	32.77	2398.	33.42
238.	32.77	2400.	33.42
240.	32.75	2402.	33.41
242.	32.74	2404.	33.41
244.	32.73	2406.	33.4
246.	32.73	2408.	33.39
248.	32.73	2410.	33.4
250.	32.73	2412.	33.39
252.	32.74	2414.	33.38
254.	32.79	2416.	33.38
256.	32.82	2418.	33.37
258.	32.83	2420.	33.37
260.	32.84	2422.	32.7
262.	32.86	2424.	33.09
264.	32.87	2426.	33.24
266.	32.87	2428.	33.33
268.	32.85	2430.	33.37
270.	32.84	2432.	33.39
272.	32.83	2434.	33.39
274.	32.81	2436.	33.4
276.	32.82	2438.	33.4

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
278.	32.83	2440.	33.4
280.	32.83	2442.	33.4
282.	32.82	2444.	33.41
284.	32.68	2446.	33.41
286.	32.64	2448.	33.41
288.	32.67	2450.	33.41
290.	32.75	2452.	33.41
292.	32.78	2454.	33.41
294.	32.79	2456.	33.41
296.	32.81	2458.	33.41
298.	32.8	2460.	33.41
300.	30.7	2462.	33.39
302.	31.85	2464.	33.4
304.	32.17	2466.	33.41
306.	32.25	2468.	33.41
308.	32.27	2470.	33.41
310.	32.27	2472.	33.41
312.	32.27	2474.	33.4
314.	32.34	2476.	33.4
316.	32.48	2478.	33.41
318.	32.58	2480.	33.4
320.	32.63	2482.	33.41
322.	32.63	2484.	33.41
324.	32.61	2486.	33.4
326.	32.68	2488.	33.41
328.	32.68	2490.	33.41
330.	32.69	2492.	33.41
332.	32.72	2494.	33.41
334.	32.71	2496.	33.41
336.	32.69	2498.	33.41
338.	32.73	2500.	33.41
340.	32.7	2502.	33.4
342.	32.73	2504.	33.41
344.	32.76	2506.	33.41
346.	32.76	2508.	33.41
348.	32.64	2510.	33.4
350.	32.58	2512.	33.41
352.	32.66	2514.	33.41
354.	32.73	2516.	33.41
356.	32.74	2518.	33.41
358.	32.77	2520.	33.4
360.	32.77	2522.	33.4
362.	32.79	2524.	33.41
364.	32.83	2526.	33.41
366.	32.83	2528.	33.42
368.	32.77	2530.	33.42
370.	32.75	2532.	33.41
372.	32.73	2534.	33.42
374.	32.7	2536.	33.42
376.	32.72	2538.	33.42
378.	32.73	2540.	33.42
380.	32.74	2542.	33.42
382.	32.76	2544.	33.41
384.	32.8	2546.	33.42
386.	32.81	2548.	33.42
388.	32.82	2550.	33.42
390.	32.84	2552.	33.42
392.	32.84	2554.	33.43
394.	32.83	2556.	33.43
396.	32.81	2558.	33.43
398.	32.8	2560.	33.43
400.	32.77	2562.	33.43
402.	32.76	2564.	33.43
404.	32.79	2566.	33.43
406.	32.82	2568.	33.43
408.	32.84	2570.	33.43

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
410.	32.89	2572.	33.43
412.	32.91	2574.	33.44
414.	32.91	2576.	33.43
416.	32.91	2578.	33.43
418.	32.91	2580.	33.43
420.	32.89	2582.	33.43
422.	32.86	2584.	33.42
424.	32.86	2586.	33.41
426.	32.85	2588.	33.4
428.	32.83	2590.	33.4
430.	32.82	2592.	33.41
432.	32.82	2594.	33.41
434.	32.81	2596.	33.4
436.	32.82	2598.	33.41
438.	32.82	2600.	33.41
440.	32.8	2602.	33.41
442.	32.81	2604.	33.47
444.	32.8	2606.	33.49
446.	32.81	2608.	33.51
448.	32.81	2610.	33.51
450.	32.81	2612.	33.52
452.	32.8	2614.	33.52
454.	32.8	2616.	33.52
456.	32.8	2618.	33.53
458.	32.79	2620.	33.53
460.	32.79	2622.	33.53
462.	32.78	2624.	33.53
464.	32.77	2626.	33.53
466.	32.77	2628.	33.53
468.	32.77	2630.	33.53
470.	32.77	2632.	33.53
472.	32.78	2634.	33.53
474.	32.77	2636.	33.54
476.	32.77	2638.	33.53
478.	32.72	2640.	33.54
480.	32.7	2642.	33.54
482.	32.7	2644.	33.53
484.	32.69	2646.	33.53
486.	32.69	2648.	33.54
488.	32.68	2650.	33.54
490.	32.69	2652.	33.54
492.	32.68	2654.	33.54
494.	32.68	2656.	33.53
496.	32.68	2658.	33.54
498.	32.73	2660.	33.54
500.	32.82	2662.	33.54
502.	32.84	2664.	33.54
504.	32.91	2666.	33.54
506.	32.93	2668.	33.54
508.	32.98	2670.	33.53
510.	33.02	2672.	33.53
512.	33.04	2674.	33.53
514.	33.06	2676.	33.54
516.	33.07	2678.	33.54
518.	33.08	2680.	33.54
520.	33.08	2682.	33.54
522.	33.09	2684.	33.54
524.	33.09	2686.	33.54
526.	33.09	2688.	33.54
528.	33.09	2690.	33.53
530.	33.1	2692.	33.54
532.	33.09	2694.	33.53
534.	33.1	2696.	33.51
536.	33.1	2698.	33.5
538.	33.1	2700.	33.5
540.	33.09	2702.	33.5

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
542.	33.09	2704.	33.49
544.	33.08	2706.	33.49
546.	33.09	2708.	33.47
548.	33.08	2710.	33.47
550.	33.08	2712.	33.47
552.	33.09	2714.	33.47
554.	33.09	2716.	33.47
556.	33.1	2718.	33.47
558.	33.1	2720.	33.47
560.	33.12	2722.	33.47
562.	33.12	2724.	33.47
564.	33.13	2726.	33.47
566.	33.12	2728.	33.48
568.	33.1	2730.	33.49
570.	33.12	2732.	33.48
572.	33.12	2734.	32.42
574.	33.15	2736.	32.97
576.	33.19	2738.	33.21
578.	33.21	2740.	33.33
580.	33.22	2742.	33.4
582.	33.22	2744.	33.44
584.	33.23	2746.	33.46
586.	33.23	2748.	33.49
588.	33.23	2750.	33.5
590.	33.23	2752.	33.51
592.	33.23	2754.	33.53
594.	33.23	2756.	33.54
596.	33.23	2758.	33.54
598.	33.23	2760.	33.55
600.	33.24	2762.	33.56
602.	33.25	2764.	33.56
604.	33.25	2766.	33.56
606.	33.25	2768.	33.55
608.	33.26	2770.	33.54
610.	33.25	2772.	33.55
612.	33.25	2774.	33.54
614.	33.25	2776.	33.56
616.	33.26	2778.	33.56
618.	33.24	2780.	33.57
620.	33.24	2782.	33.56
622.	33.23	2784.	33.53
624.	33.22	2786.	33.52
626.	33.22	2788.	33.5
628.	33.22	2790.	33.49
630.	33.22	2792.	33.49
632.	33.22	2794.	33.5
634.	33.21	2796.	33.49
636.	33.23	2798.	33.48
638.	33.22	2800.	33.48
640.	33.21	2802.	33.47
642.	33.21	2804.	33.47
644.	33.21	2806.	33.46
646.	33.21	2808.	33.47
648.	33.2	2810.	33.47
650.	33.2	2812.	33.46
652.	33.2	2814.	33.46
654.	31.68	2816.	33.44
656.	32.43	2818.	33.45
658.	32.73	2820.	33.44
660.	32.88	2822.	33.45
662.	32.94	2824.	33.46
664.	32.98	2826.	33.46
666.	33.	2828.	33.46
668.	33.02	2830.	33.47
670.	33.04	2832.	33.46
672.	33.04	2834.	33.46

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
674.	33.04	2836.	33.47
676.	33.04	2838.	33.45
678.	33.03	2840.	33.45
680.	33.03	2842.	33.45
682.	33.03	2844.	33.44
684.	33.03	2846.	33.45
686.	33.02	2848.	33.46
688.	33.02	2850.	33.46
690.	33.03	2852.	33.47
692.	33.05	2854.	33.47
694.	33.06	2856.	33.47
696.	33.06	2858.	33.45
698.	33.07	2860.	33.46
700.	33.06	2862.	33.47
702.	33.07	2864.	33.47
704.	33.06	2866.	33.47
706.	33.07	2868.	33.47
708.	33.07	2870.	33.45
710.	33.07	2872.	33.45
712.	33.06	2874.	33.46
714.	33.05	2876.	33.47
716.	33.05	2878.	33.49
718.	33.05	2880.	33.5
720.	33.04	2882.	33.51
722.	33.05	2884.	33.52
724.	33.04	2886.	33.52
726.	33.05	2888.	33.52
728.	33.04	2890.	33.5
730.	33.05	2892.	33.5
732.	33.04	2894.	33.51
734.	33.04	2896.	33.5
736.	33.05	2898.	33.49
738.	33.04	2900.	33.47
740.	33.05	2902.	33.46
742.	33.05	2904.	33.46
744.	33.05	2906.	33.44
746.	33.05	2908.	33.45
748.	33.06	2910.	33.44
750.	33.06	2912.	33.44
752.	33.06	2914.	33.44
754.	33.06	2916.	33.44
756.	33.08	2918.	33.44
758.	33.09	2920.	33.43
760.	33.1	2922.	33.44
762.	33.1	2924.	33.42
764.	33.11	2926.	33.43
766.	33.11	2928.	33.42
768.	33.11	2930.	33.43
770.	33.12	2932.	33.42
772.	33.11	2934.	33.42
774.	33.11	2936.	33.42
776.	33.11	2938.	33.43
778.	33.12	2940.	33.43
780.	33.14	2942.	33.43
782.	33.14	2944.	33.42
784.	33.14	2946.	33.41
786.	33.14	2948.	33.42
788.	33.15	2950.	33.42
790.	33.15	2952.	33.43
792.	33.14	2954.	33.32
794.	33.15	2956.	33.27
796.	33.15	2958.	33.21
798.	33.15	2960.	33.39
800.	33.16	2962.	33.55
802.	33.16	2964.	33.64
804.	33.17	2966.	33.71

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
806.	33.16	2968.	33.75
808.	33.16	2970.	33.81
810.	33.17	2972.	33.91
812.	33.17	2974.	33.96
814.	33.17	2976.	34.01
816.	33.17	2978.	34.03
818.	33.17	2980.	34.03
820.	33.17	2982.	34.04
822.	33.17	2984.	34.05
824.	33.17	2986.	34.06
826.	33.17	2988.	34.08
828.	33.17	2990.	34.08
830.	33.17	2992.	34.08
832.	33.16	2994.	34.09
834.	33.17	2996.	34.07
836.	33.17	2998.	34.07
838.	33.17	3000.	34.07
840.	33.17	3002.	34.02
842.	33.17	3004.	33.95
844.	33.17	3006.	33.91
846.	33.16	3008.	33.89
848.	33.15	3010.	33.89
850.	33.15	3012.	33.9
852.	33.15	3014.	33.9
854.	33.16	3016.	33.91
856.	33.16	3018.	33.89
858.	33.16	3020.	33.9
860.	33.16	3022.	33.89
862.	33.15	3024.	33.9
864.	33.15	3026.	33.89
866.	33.16	3028.	33.89
868.	33.16	3030.	33.9
870.	33.15	3032.	33.89
872.	33.15	3034.	33.89
874.	33.16	3036.	33.91
876.	33.16	3038.	33.9
878.	33.16	3040.	33.89
880.	33.16	3042.	33.9
882.	33.16	3044.	33.89
884.	33.16	3046.	33.89
886.	33.16	3048.	33.88
888.	33.16	3050.	33.89
890.	33.17	3052.	33.9
892.	33.17	3054.	33.89
894.	33.17	3056.	33.89
896.	33.17	3058.	33.89
898.	33.17	3060.	33.89
900.	33.17	3062.	33.88
902.	33.17	3064.	33.89
904.	33.17	3066.	33.89
906.	33.18	3068.	33.9
908.	33.16	3070.	33.89
910.	33.17	3072.	33.9
912.	33.18	3074.	33.9
914.	33.18	3076.	33.9
916.	33.19	3078.	33.9
918.	33.19	3080.	33.9
920.	33.19	3082.	33.9
922.	33.19	3084.	33.9
924.	33.19	3086.	33.9
926.	33.19	3088.	33.92
928.	33.18	3090.	33.91
930.	33.19	3092.	33.45
932.	33.19	3094.	33.68
934.	33.2	3096.	33.78
936.	33.19	3098.	33.89

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
938.	33.19	3100.	33.94
940.	33.2	3102.	33.97
942.	33.19	3104.	33.97
944.	33.2	3106.	33.98
946.	33.2	3108.	33.98
948.	33.19	3110.	33.97
950.	33.19	3112.	33.98
952.	33.2	3114.	33.98
954.	33.2	3116.	33.98
956.	33.19	3118.	33.99
958.	33.19	3120.	33.98
960.	33.2	3122.	34.
962.	33.2	3124.	34.
964.	33.2	3126.	34.
966.	33.2	3128.	33.99
968.	33.2	3130.	33.99
970.	33.21	3132.	33.99
972.	33.2	3134.	34.
974.	33.21	3136.	34.01
976.	33.21	3138.	34.
978.	33.21	3140.	34.
980.	33.21	3142.	34.
982.	33.22	3144.	34.
984.	33.21	3146.	34.
986.	33.21	3148.	34.
988.	33.21	3150.	34.
990.	33.21	3152.	34.
992.	33.2	3154.	34.
994.	33.21	3156.	34.
996.	33.21	3158.	34.01
998.	33.21	3160.	34.
1000.	33.21	3162.	34.
1002.	33.21	3164.	34.01
1004.	33.21	3166.	34.
1006.	33.21	3168.	34.
1008.	33.22	3170.	34.01
1010.	33.22	3172.	33.99
1012.	33.22	3174.	33.99
1014.	33.21	3176.	34.
1016.	32.54	3178.	34.
1018.	32.9	3180.	34.
1020.	33.05	3182.	34.01
1022.	33.12	3184.	34.01
1024.	33.17	3186.	34.01
1026.	33.2	3188.	34.01
1028.	33.22	3190.	34.01
1030.	33.24	3192.	34.01
1032.	33.25	3194.	34.01
1034.	33.26	3196.	34.02
1036.	33.26	3198.	34.01
1038.	33.26	3200.	34.
1040.	33.26	3202.	34.
1042.	33.26	3204.	34.
1044.	33.26	3206.	34.
1046.	33.26	3208.	34.
1048.	33.26	3210.	34.
1050.	33.27	3212.	34.
1052.	33.26	3214.	34.01
1054.	33.27	3216.	34.05
1056.	33.26	3218.	34.06
1058.	33.26	3220.	34.07
1060.	33.26	3222.	34.07
1062.	33.26	3224.	34.08
1064.	33.26	3226.	34.08
1066.	33.26	3228.	34.07
1068.	33.26	3230.	34.08

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1070.	33.25	3232.	34.09
1072.	33.25	3234.	34.09
1074.	33.24	3236.	34.05
1076.	33.23	3238.	34.04
1078.	33.23	3240.	34.02
1080.	33.23	3242.	34.01
1082.	33.26	3244.	34.
1084.	33.26	3246.	34.01
1086.	33.28	3248.	34.
1088.	33.29	3250.	34.
1090.	33.29	3252.	34.
1092.	33.29	3254.	33.99
1094.	33.29	3256.	33.99
1096.	33.29	3258.	33.98
1098.	33.29	3260.	33.98
1100.	33.28	3262.	33.99
1102.	33.29	3264.	33.99
1104.	33.29	3266.	33.99
1106.	33.28	3268.	34.
1108.	33.28	3270.	34.01
1110.	33.27	3272.	34.01
1112.	33.26	3274.	34.01
1114.	33.26	3276.	34.01
1116.	33.27	3278.	34.01
1118.	33.27	3280.	34.
1120.	33.26	3282.	34.
1122.	33.27	3284.	34.
1124.	33.28	3286.	33.99
1126.	33.28	3288.	33.97
1128.	33.28	3290.	33.97
1130.	33.28	3292.	33.97
1132.	33.29	3294.	33.96
1134.	33.29	3296.	33.96
1136.	33.29	3298.	33.96
1138.	33.29	3300.	33.97
1140.	33.29	3302.	33.97
1142.	33.28	3304.	33.97
1144.	33.29	3306.	33.97
1146.	33.29	3308.	33.95
1148.	33.28	3310.	33.95
1150.	33.27	3312.	33.95
1152.	33.28	3314.	33.81
1154.	33.29	3316.	33.76
1156.	33.28	3318.	33.73
1158.	33.28	3320.	33.72
1160.	33.29	3322.	33.71
1162.	33.29	3324.	33.7
1164.	33.28	3326.	33.69
1166.	33.29	3328.	33.7
1168.	33.29	3330.	33.7
1170.	33.29	3332.	33.7
1172.	33.3	3334.	33.7
1174.	33.3	3336.	33.7
1176.	33.29	3338.	33.7
1178.	33.29	3340.	33.7
1180.	33.28	3342.	33.7
1182.	33.28	3344.	33.71
1184.	33.29	3346.	33.74
1186.	33.29	3348.	33.83
1188.	33.29	3350.	33.88
1190.	33.28	3352.	33.9
1192.	33.28	3354.	33.91
1194.	33.29	3356.	33.92
1196.	33.29	3358.	33.93
1198.	33.29	3360.	33.93
1200.	33.31	3362.	33.94

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1202.	33.33	3364.	33.93
1204.	33.34	3366.	33.93
1206.	33.35	3368.	33.95
1208.	33.34	3370.	33.95
1210.	33.33	3372.	33.95
1212.	33.33	3374.	33.95
1214.	33.32	3376.	33.94
1216.	33.32	3378.	33.95
1218.	33.32	3380.	33.94
1220.	33.32	3382.	33.95
1222.	33.31	3384.	33.95
1224.	33.3	3386.	33.95
1226.	33.29	3388.	33.96
1228.	33.28	3390.	33.95
1230.	33.29	3392.	33.95
1232.	33.29	3394.	33.96
1234.	33.31	3396.	33.96
1236.	33.31	3398.	33.96
1238.	33.31	3400.	33.96
1240.	33.31	3402.	33.95
1242.	33.32	3404.	33.96
1244.	33.31	3406.	33.95
1246.	33.32	3408.	33.95
1248.	33.31	3410.	33.95
1250.	33.31	3412.	33.93
1252.	33.32	3414.	33.92
1254.	33.32	3416.	33.92
1256.	33.33	3418.	33.94
1258.	33.33	3420.	33.92
1260.	33.33	3422.	33.92
1262.	33.34	3424.	33.93
1264.	33.34	3426.	33.95
1266.	33.35	3428.	33.97
1268.	33.34	3430.	33.99
1270.	33.33	3432.	33.99
1272.	33.33	3434.	34.01
1274.	33.32	3436.	34.01
1276.	33.33	3438.	34.01
1278.	33.33	3440.	34.01
1280.	33.36	3442.	34.
1282.	33.39	3444.	34.
1284.	33.39	3446.	34.
1286.	33.4	3448.	34.
1288.	33.4	3450.	33.34
1290.	33.38	3452.	33.64
1292.	33.41	3454.	33.78
1294.	33.4	3456.	33.84
1296.	33.39	3458.	33.9
1298.	33.38	3460.	33.93
1300.	33.37	3462.	33.93
1302.	33.36	3464.	33.95
1304.	33.37	3466.	33.94
1306.	33.4	3468.	33.94
1308.	33.4	3470.	33.96
1310.	33.4	3472.	33.95
1312.	33.39	3474.	33.95
1314.	33.4	3476.	33.95
1316.	33.39	3478.	33.95
1318.	33.38	3480.	33.96
1320.	33.38	3482.	33.96
1322.	33.37	3484.	33.96
1324.	33.39	3486.	33.97
1326.	33.38	3488.	33.96
1328.	33.38	3490.	33.97
1330.	33.37	3492.	33.96
1332.	33.36	3494.	33.96

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1334.	33.21	3496.	33.97
1336.	33.16	3498.	33.96
1338.	33.12	3500.	33.95
1340.	33.11	3502.	33.95
1342.	33.1	3504.	33.96
1344.	33.11	3506.	33.95
1346.	33.15	3508.	33.95
1348.	33.23	3510.	33.95
1350.	33.28	3512.	33.95
1352.	33.32	3514.	33.94
1354.	33.33	3516.	33.95
1356.	33.34	3518.	33.95
1358.	33.34	3520.	33.95
1360.	33.34	3522.	33.94
1362.	33.34	3524.	33.95
1364.	33.35	3526.	33.95
1366.	33.36	3528.	33.96
1368.	33.37	3530.	33.96
1370.	33.37	3532.	33.98
1372.	33.36	3534.	33.98
1374.	33.36	3536.	33.98
1376.	33.35	3538.	34.
1378.	33.36	3540.	33.98
1380.	31.92	3542.	33.97
1382.	32.34	3544.	33.97
1384.	32.58	3546.	33.97
1386.	32.68	3548.	33.97
1388.	32.74	3550.	33.96
1390.	32.77	3552.	33.96
1392.	32.79	3554.	33.96
1394.	32.8	3556.	33.96
1396.	32.81	3558.	33.98
1398.	32.82	3560.	33.97
1400.	32.81	3562.	33.97
1402.	32.81	3564.	33.95
1404.	32.81	3566.	33.96
1406.	32.82	3568.	33.95
1408.	32.82	3570.	33.94
1410.	32.83	3572.	33.94
1412.	32.79	3574.	33.93
1414.	32.76	3576.	33.94
1416.	32.76	3578.	33.95
1418.	32.74	3580.	33.95
1420.	32.74	3582.	33.95
1422.	32.74	3584.	33.95
1424.	32.73	3586.	33.95
1426.	32.73	3588.	33.95
1428.	32.74	3590.	33.94
1430.	32.75	3592.	33.93
1432.	32.75	3594.	33.93
1434.	32.76	3596.	33.94
1436.	32.76	3598.	33.93
1438.	32.76	3600.	33.94
1440.	32.77	3602.	33.94
1442.	32.76	3604.	33.95
1444.	32.77	3606.	33.95
1446.	32.77	3608.	33.96
1448.	32.77	3610.	33.97
1450.	32.76	3612.	33.97
1452.	32.77	3614.	33.98
1454.	32.78	3616.	34.01
1456.	32.78	3618.	34.
1458.	32.78	3620.	34.
1460.	32.79	3622.	33.99
1462.	32.78	3624.	33.98
1464.	32.78	3626.	33.98

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1466.	32.77	3628.	33.98
1468.	32.76	3630.	33.98
1470.	32.75	3632.	33.97
1472.	32.75	3634.	33.98
1474.	32.74	3636.	33.99
1476.	32.74	3638.	34.01
1478.	32.74	3640.	34.01
1480.	32.73	3642.	34.
1482.	32.73	3644.	34.
1484.	32.74	3646.	34.
1486.	32.73	3648.	34.01
1488.	32.71	3650.	34.01
1490.	32.73	3652.	34.
1492.	32.74	3654.	33.99
1494.	32.76	3656.	33.98
1496.	32.76	3658.	33.98
1498.	32.76	3660.	33.99
1500.	32.76	3662.	33.96
1502.	32.77	3664.	33.87
1504.	32.77	3666.	33.8
1506.	32.77	3668.	33.77
1508.	32.77	3670.	33.75
1510.	32.77	3672.	33.73
1512.	32.78	3674.	33.73
1514.	32.79	3676.	33.77
1516.	32.78	3678.	33.83
1518.	32.78	3680.	33.88
1520.	32.79	3682.	33.91
1522.	32.78	3684.	33.92
1524.	32.79	3686.	33.95
1526.	32.79	3688.	33.98
1528.	32.79	3690.	33.98
1530.	32.79	3692.	33.97
1532.	32.79	3694.	33.97
1534.	32.79	3696.	33.97
1536.	32.79	3698.	33.96
1538.	32.79	3700.	33.96
1540.	32.79	3702.	33.98
1542.	32.79	3704.	34.
1544.	32.77	3706.	34.01
1546.	32.77	3708.	34.02
1548.	32.75	3710.	34.02
1550.	32.75	3712.	34.02
1552.	32.74	3714.	34.
1554.	32.74	3716.	33.98
1556.	32.73	3718.	33.99
1558.	32.72	3720.	33.97
1560.	32.72	3722.	33.97
1562.	32.71	3724.	33.98
1564.	32.71	3726.	33.95
1566.	32.7	3728.	33.95
1568.	32.71	3730.	33.96
1570.	32.7	3732.	33.97
1572.	32.7	3734.	33.97
1574.	32.7	3736.	33.95
1576.	32.7	3738.	33.98
1578.	32.69	3740.	34.
1580.	32.91	3742.	33.99
1582.	33.06	3744.	33.97
1584.	33.13	3746.	33.98
1586.	33.17	3748.	33.97
1588.	33.21	3750.	33.95
1590.	33.24	3752.	33.96
1592.	33.25	3754.	33.97
1594.	33.25	3756.	33.96
1596.	33.26	3758.	33.95

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1598.	33.26	3760.	33.95
1600.	33.27	3762.	33.94
1602.	33.28	3764.	33.94
1604.	33.29	3766.	33.95
1606.	33.29	3768.	33.95
1608.	33.3	3770.	33.95
1610.	33.29	3772.	33.98
1612.	33.31	3774.	33.98
1614.	33.31	3776.	33.98
1616.	33.32	3778.	33.98
1618.	33.32	3780.	33.99
1620.	33.32	3782.	33.98
1622.	33.33	3784.	33.95
1624.	33.33	3786.	33.95
1626.	33.33	3788.	33.96
1628.	33.32	3790.	33.96
1630.	33.33	3792.	33.97
1632.	33.32	3794.	33.98
1634.	33.31	3796.	34.01
1636.	33.29	3798.	34.
1638.	33.29	3800.	34.
1640.	33.29	3802.	33.99
1642.	33.28	3804.	34.01
1644.	33.28	3806.	33.44
1646.	33.29	3808.	33.76
1648.	33.29	3810.	33.9
1650.	33.29	3812.	33.95
1652.	33.28	3814.	33.99
1654.	33.29	3816.	34.02
1656.	33.29	3818.	34.03
1658.	33.29	3820.	34.05
1660.	33.28	3822.	34.05
1662.	33.28	3824.	34.05
1664.	33.29	3826.	34.06
1666.	33.28	3828.	34.07
1668.	33.29	3830.	34.07
1670.	33.28	3832.	34.06
1672.	33.28	3834.	34.06
1674.	33.27	3836.	34.05
1676.	33.27	3838.	34.06
1678.	33.26	3840.	34.07
1680.	33.27	3842.	34.06
1682.	33.27	3844.	34.05
1684.	33.28	3846.	34.04
1686.	33.28	3848.	34.04
1688.	33.27	3850.	34.03
1690.	33.27	3852.	34.03
1692.	33.27	3854.	34.03
1694.	33.28	3856.	34.03
1696.	33.28	3858.	34.04
1698.	33.28	3860.	34.04
1700.	33.27	3862.	34.05
1702.	33.27	3864.	34.03
1704.	33.26	3866.	34.05
1706.	33.26	3868.	34.06
1708.	33.26	3870.	34.06
1710.	33.26	3872.	34.07
1712.	33.27	3874.	34.05
1714.	33.3	3876.	34.07
1716.	33.32	3878.	34.07
1718.	32.42	3880.	34.05
1720.	32.67	3882.	34.05
1722.	33.	3884.	34.06
1724.	33.17	3886.	34.05
1726.	33.26	3888.	34.04
1728.	33.31	3890.	34.04

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1730.	33.34	3892.	34.04
1732.	33.36	3894.	34.03
1734.	33.34	3896.	34.04
1736.	33.3	3898.	34.04
1738.	33.27	3900.	34.04
1740.	33.31	3902.	34.06
1742.	33.34	3904.	34.07
1744.	33.36	3906.	34.07
1746.	33.37	3908.	34.05
1748.	33.38	3910.	34.04
1750.	33.39	3912.	34.04
1752.	33.39	3914.	34.04
1754.	33.4	3916.	34.04
1756.	33.41	3918.	34.05
1758.	33.41	3920.	34.05
1760.	33.41	3922.	34.04
1762.	33.41	3924.	34.03
1764.	33.42	3926.	34.03
1766.	33.41	3928.	34.04
1768.	33.41	3930.	34.05
1770.	33.41	3932.	34.06
1772.	33.41	3934.	34.06
1774.	33.42	3936.	34.07
1776.	33.41	3938.	34.06
1778.	33.42	3940.	34.06
1780.	33.41	3942.	34.04
1782.	33.42	3944.	34.06
1784.	33.42	3946.	34.07
1786.	33.42	3948.	34.07
1788.	33.41	3950.	34.07
1790.	33.4	3952.	34.05
1792.	33.38	3954.	34.04
1794.	33.39	3956.	34.04
1796.	33.38	3958.	34.03
1798.	33.38	3960.	34.02
1800.	33.38	3962.	34.03
1802.	33.38	3964.	34.02
1804.	33.37	3966.	34.01
1806.	33.37	3968.	34.
1808.	33.37	3970.	34.
1810.	33.37	3972.	33.99
1812.	33.37	3974.	34.01
1814.	33.37	3976.	34.03
1816.	33.37	3978.	34.04
1818.	33.38	3980.	34.04
1820.	33.38	3982.	34.04
1822.	33.37	3984.	34.04
1824.	33.37	3986.	34.03
1826.	33.38	3988.	34.02
1828.	33.37	3990.	34.02
1830.	33.38	3992.	34.02
1832.	33.38	3994.	34.02
1834.	33.38	3996.	34.01
1836.	33.38	3998.	34.04
1838.	33.37	4000.	34.04
1840.	33.35	4002.	34.04
1842.	33.37	4004.	34.02
1844.	33.35	4006.	34.03
1846.	33.35	4008.	34.03
1848.	33.36	4010.	34.04
1850.	33.36	4012.	34.04
1852.	33.35	4014.	34.05
1854.	33.35	4016.	34.04
1856.	33.35	4018.	34.03
1858.	33.35	4020.	34.01
1860.	33.35	4022.	34.02

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1862.	33.33	4024.	34.03
1864.	33.34	4026.	34.02
1866.	33.33	4028.	34.01
1868.	33.33	4030.	34.
1870.	33.33	4032.	34.
1872.	33.33	4034.	34.
1874.	33.35	4036.	34.01
1876.	33.34	4038.	34.01
1878.	33.34	4040.	34.
1880.	33.34	4042.	33.99
1882.	33.34	4044.	33.99
1884.	33.34	4046.	33.99
1886.	33.34	4048.	34.01
1888.	33.34	4050.	34.02
1890.	33.34	4052.	34.06
1892.	33.34	4054.	34.09
1894.	33.34	4056.	34.08
1896.	33.32	4058.	34.09
1898.	33.3	4060.	34.11
1900.	33.33	4062.	34.12
1902.	33.34	4064.	34.11
1904.	33.36	4066.	34.11
1906.	33.35	4068.	34.11
1908.	33.36	4070.	34.1
1910.	33.37	4072.	34.09
1912.	33.37	4074.	34.08
1914.	33.36	4076.	34.1
1916.	33.38	4078.	34.11
1918.	33.38	4080.	34.12
1920.	33.37	4082.	34.12
1922.	33.38	4084.	34.11
1924.	33.37	4086.	34.13
1926.	33.38	4088.	34.12
1928.	33.37	4090.	34.12
1930.	33.36	4092.	34.1
1932.	33.37	4094.	34.09
1934.	33.37	4096.	34.07
1936.	33.35	4098.	34.07
1938.	33.36	4100.	34.1
1940.	33.38	4102.	34.11
1942.	33.38	4104.	34.12
1944.	33.35	4106.	34.13
1946.	33.37	4108.	34.12
1948.	33.36	4110.	34.11
1950.	33.37	4112.	34.07
1952.	33.36	4114.	34.05
1954.	33.38	4116.	34.04
1956.	33.37	4118.	34.03
1958.	33.37	4120.	34.
1960.	33.36	4122.	34.
1962.	33.35	4124.	33.95
1964.	33.35	4126.	33.89
1966.	33.34	4128.	33.86
1968.	33.35	4130.	33.83
1970.	33.35	4132.	33.81
1972.	33.35	4134.	33.82
1974.	33.34	4136.	33.8
1976.	33.33	4138.	33.8
1978.	33.34	4140.	33.83
1980.	33.35	4142.	33.85
1982.	33.35	4144.	33.95
1984.	33.36	4146.	34.01
1986.	33.37	4148.	34.05
1988.	33.37	4150.	34.1
1990.	33.37	4152.	34.09
1992.	33.37	4154.	34.09

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1994.	33.37	4156.	34.11
1996.	33.39	4158.	34.14
1998.	33.38	4160.	34.14
2000.	33.39	4162.	34.14
2002.	33.39	4164.	34.12
2004.	33.38	4166.	34.15
2006.	33.38	4168.	34.16
2008.	33.39	4170.	34.15
2010.	32.74	4172.	34.12
2012.	33.11	4174.	34.15
2014.	33.26	4176.	33.16
2016.	33.33	4178.	33.43
2018.	33.35	4180.	33.52
2020.	33.38	4182.	33.54
2022.	33.39	4184.	33.57
2024.	33.41	4186.	33.57
2026.	33.42	4188.	33.57
2028.	33.42	4190.	33.56
2030.	33.42	4192.	33.56
2032.	33.42	4194.	33.56
2034.	33.43	4196.	33.54
2036.	33.42	4198.	33.53
2038.	33.42	4200.	33.53
2040.	33.42	4202.	33.52
2042.	33.43	4204.	33.52
2044.	33.43	4206.	33.51
2046.	33.42	4208.	33.5
2048.	33.42	4210.	33.49
2050.	33.43	4212.	33.49
2052.	33.42	4214.	33.48
2054.	33.43	4216.	33.49
2056.	33.43	4218.	33.49
2058.	33.42	4220.	33.5
2060.	33.43	4222.	33.48
2062.	33.43	4224.	33.48
2064.	33.44	4226.	33.48
2066.	33.43	4228.	33.47
2068.	33.44	4230.	33.47
2070.	33.44	4232.	33.48
2072.	33.44	4234.	33.47
2074.	33.44	4236.	33.47
2076.	33.45	4238.	33.47
2078.	33.45	4240.	33.47
2080.	33.45	4242.	33.47
2082.	33.44	4244.	33.46
2084.	33.44	4246.	33.47
2086.	33.46	4248.	33.47
2088.	33.47	4250.	33.47
2090.	33.47	4252.	33.47
2092.	33.49	4254.	33.47
2094.	33.49	4256.	33.46
2096.	33.49	4258.	33.46
2098.	33.49	4260.	33.46
2100.	33.48	4262.	33.46
2102.	33.48	4264.	33.46
2104.	33.48	4266.	33.45
2106.	33.48	4268.	33.46
2108.	33.47	4270.	33.46
2110.	33.46	4272.	33.46
2112.	33.46	4274.	33.45
2114.	33.46	4276.	33.46
2116.	33.46	4278.	33.46
2118.	33.46	4280.	33.46
2120.	33.45	4282.	33.46
2122.	33.46	4284.	33.46
2124.	33.46	4286.	33.46

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
2126.	33.47	4288.	33.46
2128.	33.45	4290.	33.47
2130.	33.46	4292.	33.46
2132.	33.45	4294.	33.46
2134.	33.45	4296.	33.46
2136.	33.43	4298.	33.45
2138.	33.44	4300.	33.45
2140.	33.4	4302.	33.44
2142.	33.4	4304.	33.44
2144.	33.39	4306.	33.46
2146.	33.39	4308.	33.47
2148.	33.39	4310.	33.48
2150.	33.39	4312.	33.48
2152.	33.39	4314.	33.49
2154.	33.39	4316.	33.49
2156.	33.4	4318.	33.48
2158.	33.39	4320.	33.31
2160.	33.39		

Observation Well No. 2: MW14-05D

X Location: 3038280.59 ft
Y Location: 685216.49 ft

Radial distance from MW14-03B: 1346.169293 ft

Partially Penetrating Well
Depth to Top of Screen: 17.5 ft
Depth to Bottom of Screen: 19.5 ft

No. of Observations: 861

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
5.	-0.007218	2160.	0.3494
10.	-0.0009843	2165.	0.3524
15.	-0.004265	2170.	0.355
20.	0.0009843	2175.	0.3537
25.	0.003281	2180.	0.3507
30.	-0.005577	2185.	0.3533
35.	0.002297	2190.	0.3524
40.	0.003281	2195.	0.3514
45.	0.007218	2200.	0.3527
50.	0.004921	2205.	0.354
55.	-0.0003281	2210.	0.3576
60.	0.004921	2215.	0.3579
65.	0.007546	2220.	0.3612
70.	0.007874	2225.	0.3632
75.	0.005906	2230.	0.3586
80.	0.02067	2235.	0.3576
85.	0.01345	2240.	0.357
90.	0.02493	2245.	0.3573
95.	0.01673	2250.	0.3579
100.	0.02559	2255.	0.3553
105.	0.03084	2260.	0.3583
110.	0.03248	2265.	0.3593
115.	0.0269	2270.	0.3619
120.	0.02297	2275.	0.3596
125.	0.03051	2280.	0.3609
130.	0.03478	2285.	0.3583
135.	0.0351	2290.	0.3593
140.	0.03871	2295.	0.3576
145.	0.04035	2300.	0.3596
150.	0.0351	2305.	0.3629
155.	0.03182	2310.	0.3615
160.	0.03871	2315.	0.3678

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
165.	0.04035	2320.	0.3655
170.	0.04003	2325.	0.3622
175.	0.04396	2330.	0.3609
180.	0.03871	2335.	0.3612
185.	0.04429	2340.	0.3629
190.	0.05151	2345.	0.3596
195.	0.04888	2350.	0.3661
200.	0.05446	2355.	0.3609
205.	0.05545	2360.	0.3675
210.	0.05446	2365.	0.3596
215.	0.06037	2370.	0.354
220.	0.05807	2375.	0.3543
225.	0.0561	2380.	0.3533
230.	0.06004	2385.	0.3625
235.	0.06168	2390.	0.3589
240.	0.06562	2395.	0.3589
245.	0.07349	2400.	0.3625
250.	0.07087	2405.	0.3638
255.	0.07087	2410.	0.3629
260.	0.07546	2415.	0.3609
265.	0.08399	2420.	0.3599
270.	0.07776	2425.	0.3589
275.	0.09121	2430.	0.3576
280.	0.06168	2435.	0.354
285.	0.08366	2440.	0.3576
290.	0.09088	2445.	0.3602
295.	0.08891	2450.	0.3609
300.	0.09482	2455.	0.357
305.	0.08793	2460.	0.3579
310.	0.09449	2465.	0.3599
315.	0.09777	2470.	0.3566
320.	0.09547	2475.	0.3579
325.	0.1004	2480.	0.357
330.	0.1063	2485.	0.3589
335.	0.1056	2490.	0.3645
340.	0.1073	2495.	0.3625
345.	0.1204	2500.	0.3635
350.	0.1129	2505.	0.3648
355.	0.1109	2510.	0.3612
360.	0.1191	2515.	0.3586
365.	0.1161	2520.	0.3593
370.	0.1171	2525.	0.355
375.	0.1155	2530.	0.352
380.	0.1161	2535.	0.3527
385.	0.1214	2540.	0.352
390.	0.1191	2545.	0.3507
395.	0.123	2550.	0.3507
400.	0.1171	2555.	0.3481
405.	0.1178	2560.	0.3471
410.	0.123	2565.	0.3415
415.	0.1188	2570.	0.3399
420.	0.1207	2575.	0.3428
425.	0.1237	2580.	0.3432
430.	0.1257	2585.	0.3428
435.	0.1257	2590.	0.3392
440.	0.1283	2595.	0.3373
445.	0.1296	2600.	0.333
450.	0.1257	2605.	0.3363
455.	0.1319	2610.	0.3379
460.	0.1312	2615.	0.3356
465.	0.1319	2620.	0.3353
470.	0.123	2625.	0.3317
475.	0.1325	2630.	0.3291
480.	0.1332	2635.	0.3323
485.	0.1365	2640.	0.331
490.	0.1332	2645.	0.3363

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
495.	0.1401	2650.	0.3386
500.	0.1385	2655.	0.334
505.	0.1398	2660.	0.3353
510.	0.1447	2665.	0.3363
515.	0.1385	2670.	0.3399
520.	0.1417	2675.	0.3399
525.	0.1424	2680.	0.3406
530.	0.1434	2685.	0.3435
535.	0.1421	2690.	0.3428
540.	0.1375	2695.	0.3415
545.	0.1401	2700.	0.3435
550.	0.1434	2705.	0.3448
555.	0.1457	2710.	0.3527
560.	0.1424	2715.	0.3491
565.	0.1368	2720.	0.3471
570.	0.1388	2725.	0.3488
575.	0.1463	2730.	0.3471
580.	0.145	2735.	0.3455
585.	0.146	2740.	0.3432
590.	0.1522	2745.	0.3412
595.	0.143	2750.	0.3422
600.	0.1414	2755.	0.3435
605.	0.1467	2760.	0.3402
610.	0.1483	2765.	0.3396
615.	0.1493	2770.	0.3353
620.	0.1499	2775.	0.3425
625.	0.147	2780.	0.3386
630.	0.1499	2785.	0.3386
635.	0.1529	2790.	0.3376
640.	0.147	2795.	0.2812
645.	0.144	2800.	0.4101
650.	0.1535	2805.	0.4206
655.	0.1512	2810.	0.415
660.	0.1519	2815.	0.4167
665.	0.1512	2820.	0.4144
670.	0.1509	2825.	0.415
675.	0.145	2830.	0.4177
680.	0.1476	2835.	0.4203
685.	0.1499	2840.	0.4157
690.	0.1522	2845.	0.4193
695.	0.1463	2850.	0.4147
700.	0.1526	2855.	0.4236
705.	0.1539	2860.	0.4219
710.	0.1463	2865.	0.4206
715.	0.1486	2870.	0.4183
720.	0.1496	2875.	0.4137
725.	0.1532	2880.	0.4114
730.	0.1535	2885.	0.4127
735.	0.1503	2890.	0.416
740.	0.1535	2895.	0.4124
745.	0.1509	2900.	0.4117
750.	0.1545	2905.	0.4154
755.	0.1568	2910.	0.415
760.	0.1457	2915.	0.4154
765.	0.1519	2920.	0.4127
770.	0.1522	2925.	0.4137
775.	0.1516	2930.	0.4167
780.	0.1467	2935.	0.4137
785.	0.1473	2940.	0.416
790.	0.1545	2945.	0.4196
795.	0.1535	2950.	0.4249
800.	0.1516	2955.	0.4203
805.	0.1565	2960.	0.4229
810.	0.1585	2965.	0.4213
815.	0.1512	2970.	0.4272
820.	0.1509	2975.	0.4249

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
825.	0.1486	2980.	0.4281
830.	0.1486	2985.	0.4278
835.	0.1499	2990.	0.4295
840.	0.1496	2995.	0.4318
845.	0.1447	3000.	0.4301
850.	0.1522	3005.	0.4367
855.	0.1522	3010.	0.4298
860.	0.1453	3015.	0.4334
865.	0.1437	3020.	0.4324
870.	0.1398	3025.	0.4367
875.	0.1427	3030.	0.4341
880.	0.144	3035.	0.4331
885.	0.1434	3040.	0.4367
890.	0.1404	3045.	0.4324
895.	0.146	3050.	0.4373
900.	0.1381	3055.	0.4321
905.	0.1388	3060.	0.4337
910.	0.1463	3065.	0.4383
915.	0.1447	3070.	0.4321
920.	0.1473	3075.	0.4324
925.	0.149	3080.	0.4357
930.	0.1375	3085.	0.4383
935.	0.1444	3090.	0.4364
940.	0.1381	3095.	0.4386
945.	0.1473	3100.	0.4396
950.	0.1407	3105.	0.4436
955.	0.1457	3110.	0.439
960.	0.1424	3115.	0.4472
965.	0.1339	3120.	0.4432
970.	0.1348	3125.	0.4419
975.	0.1437	3130.	0.4446
980.	0.1381	3135.	0.4455
985.	0.1325	3140.	0.4442
990.	0.1342	3145.	0.4442
995.	0.1368	3150.	0.4426
1000.	0.1339	3155.	0.4485
1005.	0.1352	3160.	0.4495
1010.	0.1342	3165.	0.4442
1015.	0.1365	3170.	0.4508
1020.	0.1394	3175.	0.4485
1025.	0.1388	3180.	0.4547
1030.	0.1421	3185.	0.4505
1035.	0.1316	3190.	0.4508
1040.	0.1375	3195.	0.4518
1045.	0.1378	3200.	0.4485
1050.	0.1293	3205.	0.4482
1055.	0.1335	3210.	0.4505
1060.	0.1322	3215.	0.4446
1065.	0.1352	3220.	0.4472
1070.	0.1306	3225.	0.4498
1075.	0.1339	3230.	0.4541
1080.	0.1306	3235.	0.4528
1085.	0.1355	3240.	0.4511
1090.	0.1329	3245.	0.4537
1095.	0.1302	3250.	0.4587
1100.	0.1316	3255.	0.4567
1105.	0.1306	3260.	0.457
1110.	0.1394	3265.	0.4603
1115.	0.1266	3270.	0.4649
1120.	0.1316	3275.	0.4626
1125.	0.1289	3280.	0.4642
1130.	0.1227	3285.	0.4616
1135.	0.1257	3290.	0.4633
1140.	0.1332	3295.	0.4646
1145.	0.1319	3300.	0.4633
1150.	0.1339	3305.	0.4669

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1155.	0.1332	3310.	0.4665
1160.	0.1332	3315.	0.4665
1165.	0.1322	3320.	0.4652
1170.	0.1342	3325.	0.4636
1175.	0.1355	3330.	0.4633
1180.	0.1424	3335.	0.4682
1185.	0.1362	3340.	0.4685
1190.	0.126	3345.	0.4672
1195.	0.1309	3350.	0.4718
1200.	0.1322	3355.	0.4685
1205.	0.1322	3360.	0.4754
1210.	0.1342	3365.	0.4698
1215.	0.1335	3370.	0.4698
1220.	0.1453	3375.	0.4718
1225.	0.1581	3380.	0.4692
1230.	0.1496	3385.	0.4672
1235.	0.146	3390.	0.4656
1240.	0.1319	3395.	0.4688
1245.	0.1476	3400.	0.4708
1250.	0.144	3405.	0.4688
1255.	0.1319	3410.	0.4698
1260.	0.1391	3415.	0.4715
1265.	0.1401	3420.	0.4682
1270.	0.1342	3425.	0.4695
1275.	0.1493	3430.	0.4728
1280.	0.1345	3435.	0.4678
1285.	0.1424	3440.	0.4678
1290.	0.144	3445.	0.4708
1295.	0.1453	3450.	0.4678
1300.	0.1306	3455.	0.4688
1305.	0.1391	3460.	0.4701
1310.	0.1444	3465.	0.4701
1315.	0.1526	3470.	0.4701
1320.	0.149	3475.	0.4705
1325.	0.1549	3480.	0.4678
1330.	0.1572	3485.	0.4656
1335.	0.1611	3490.	0.4708
1340.	0.1634	3495.	0.4718
1345.	0.1631	3500.	0.4708
1350.	0.169	3505.	0.4669
1355.	0.1621	3510.	0.4692
1360.	0.166	3515.	0.4701
1365.	0.1683	3520.	0.4692
1370.	0.1657	3525.	0.4678
1375.	0.1706	3530.	0.4698
1380.	0.1624	3535.	0.4692
1385.	0.1699	3540.	0.4718
1390.	0.1719	3545.	0.4662
1395.	0.1719	3550.	0.4708
1400.	0.1742	3555.	0.4685
1405.	0.1821	3560.	0.4685
1410.	0.1765	3565.	0.4701
1415.	0.1834	3570.	0.4678
1420.	0.1814	3575.	0.4688
1425.	0.1886	3580.	0.4708
1430.	0.19	3585.	0.4701
1435.	0.1837	3590.	0.4629
1440.	0.186	3595.	0.4682
1445.	0.1949	3600.	0.4721
1450.	0.1975	3605.	0.4698
1455.	0.1952	3610.	0.4708
1460.	0.1939	3615.	0.4698
1465.	0.1959	3620.	0.4721
1470.	0.2024	3625.	0.4711
1475.	0.1965	3630.	0.4715
1480.	0.1909	3635.	0.4718

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1485.	0.1985	3640.	0.4705
1490.	0.1939	3645.	0.4721
1495.	0.1965	3650.	0.4711
1500.	0.1936	3655.	0.4685
1505.	0.1965	3660.	0.4678
1510.	0.2031	3665.	0.4728
1515.	0.208	3670.	0.4672
1520.	0.2014	3675.	0.4682
1525.	0.208	3680.	0.4672
1530.	0.1978	3685.	0.4705
1535.	0.1988	3690.	0.4675
1540.	0.1985	3695.	0.4724
1545.	0.2159	3700.	0.4678
1550.	0.2064	3705.	0.4711
1555.	0.2106	3710.	0.4665
1560.	0.2083	3715.	0.4685
1565.	0.2103	3720.	0.4675
1570.	0.2185	3725.	0.4669
1575.	0.2103	3730.	0.4629
1580.	0.2205	3735.	0.4672
1585.	0.2057	3740.	0.4692
1590.	0.2261	3745.	0.4695
1595.	0.2451	3750.	0.4659
1600.	0.2277	3755.	0.4675
1605.	0.2421	3760.	0.4688
1610.	0.2215	3765.	0.4672
1615.	0.2274	3770.	0.4678
1620.	0.2313	3775.	0.4698
1625.	0.252	3780.	0.4662
1630.	0.2434	3785.	0.4669
1635.	0.2352	3790.	0.4705
1640.	0.2546	3795.	0.4652
1645.	0.248	3800.	0.4721
1650.	0.2467	3805.	0.4682
1655.	0.2566	3810.	0.4662
1660.	0.2592	3815.	0.4662
1665.	0.2592	3820.	0.4675
1670.	0.2789	3825.	0.4678
1675.	0.2851	3830.	0.4649
1680.	0.2638	3835.	0.4678
1685.	0.273	3840.	0.4695
1690.	0.2789	3845.	0.4659
1695.	0.2713	3850.	0.4685
1700.	0.2746	3855.	0.4662
1705.	0.2575	3860.	0.4705
1710.	0.2054	3865.	0.4695
1715.	0.2041	3870.	0.4701
1720.	0.1542	3875.	0.4672
1725.	0.2484	3880.	0.4688
1730.	0.228	3885.	0.4669
1735.	0.2999	3890.	0.4652
1740.	0.3087	3895.	0.461
1745.	0.29	3900.	0.4649
1750.	0.2631	3905.	0.4656
1755.	0.3087	3910.	0.4662
1760.	0.3015	3915.	0.4688
1765.	0.2992	3920.	0.4642
1770.	0.2972	3925.	0.4688
1775.	0.2972	3930.	0.4669
1780.	0.2812	3935.	0.4616
1785.	0.2943	3940.	0.4646
1790.	0.2917	3945.	0.4616
1795.	0.3009	3950.	0.4675
1800.	0.3022	3955.	0.4652
1805.	0.3015	3960.	0.4656
1810.	0.3009	3965.	0.4646

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1815.	0.3031	3970.	0.4662
1820.	0.2936	3975.	0.4652
1825.	0.3018	3980.	0.4587
1830.	0.3002	3985.	0.4587
1835.	0.3002	3990.	0.4593
1840.	0.3005	3995.	0.4629
1845.	0.3018	4000.	0.4626
1850.	0.2959	4005.	0.4613
1855.	0.3038	4010.	0.4629
1860.	0.3002	4015.	0.4629
1865.	0.3009	4020.	0.4669
1870.	0.3091	4025.	0.4652
1875.	0.3064	4030.	0.4672
1880.	0.3061	4035.	0.4639
1885.	0.3123	4040.	0.4659
1890.	0.3199	4045.	0.4636
1895.	0.3222	4050.	0.4636
1900.	0.3209	4055.	0.4646
1905.	0.3173	4060.	0.4626
1910.	0.3291	4065.	0.4616
1915.	0.3271	4070.	0.4623
1920.	0.3278	4075.	0.4675
1925.	0.3304	4080.	0.4665
1930.	0.3235	4085.	0.4672
1935.	0.3225	4090.	0.4642
1940.	0.3314	4095.	0.4669
1945.	0.3274	4100.	0.4744
1950.	0.331	4105.	0.4692
1955.	0.331	4110.	0.4898
1960.	0.333	4115.	0.4888
1965.	0.3379	4120.	0.3238
1970.	0.3314	4125.	0.4662
1975.	0.3356	4130.	0.479
1980.	0.3386	4135.	0.48
1985.	0.3366	4140.	0.4856
1990.	0.3376	4145.	0.4839
1995.	0.3428	4150.	0.4865
2000.	0.334	4155.	0.4879
2005.	0.3366	4160.	0.4862
2010.	0.3383	4165.	0.4928
2015.	0.3392	4170.	0.4934
2020.	0.3383	4175.	0.4941
2025.	0.335	4180.	0.5
2030.	0.3346	4185.	0.497
2035.	0.3402	4190.	0.4974
2040.	0.335	4195.	0.5089
2045.	0.3373	4200.	0.5075
2050.	0.3438	4205.	0.5072
2055.	0.3409	4210.	0.5085
2060.	0.3419	4215.	0.5131
2065.	0.3461	4220.	0.5118
2070.	0.3451	4235.	0.6237
2075.	0.3409	4240.	0.6306
2080.	0.3458	4245.	0.6316
2085.	0.3478	4250.	0.6296
2090.	0.3438	4255.	0.6306
2095.	0.3468	4260.	0.6257
2100.	0.3458	4265.	0.6293
2105.	0.3451	4270.	0.6237
2110.	0.3468	4275.	0.6276
2115.	0.3465	4280.	0.6253
2120.	0.3455	4285.	0.6293
2125.	0.3497	4290.	0.6345
2130.	0.3445	4295.	0.6289
2135.	0.3497	4300.	0.6316
2140.	0.3488	4305.	0.6329

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
2145.	0.3438	4310.	0.6322
2150.	0.3497	4315.	0.6329
2155.	0.3527		

SOLUTION

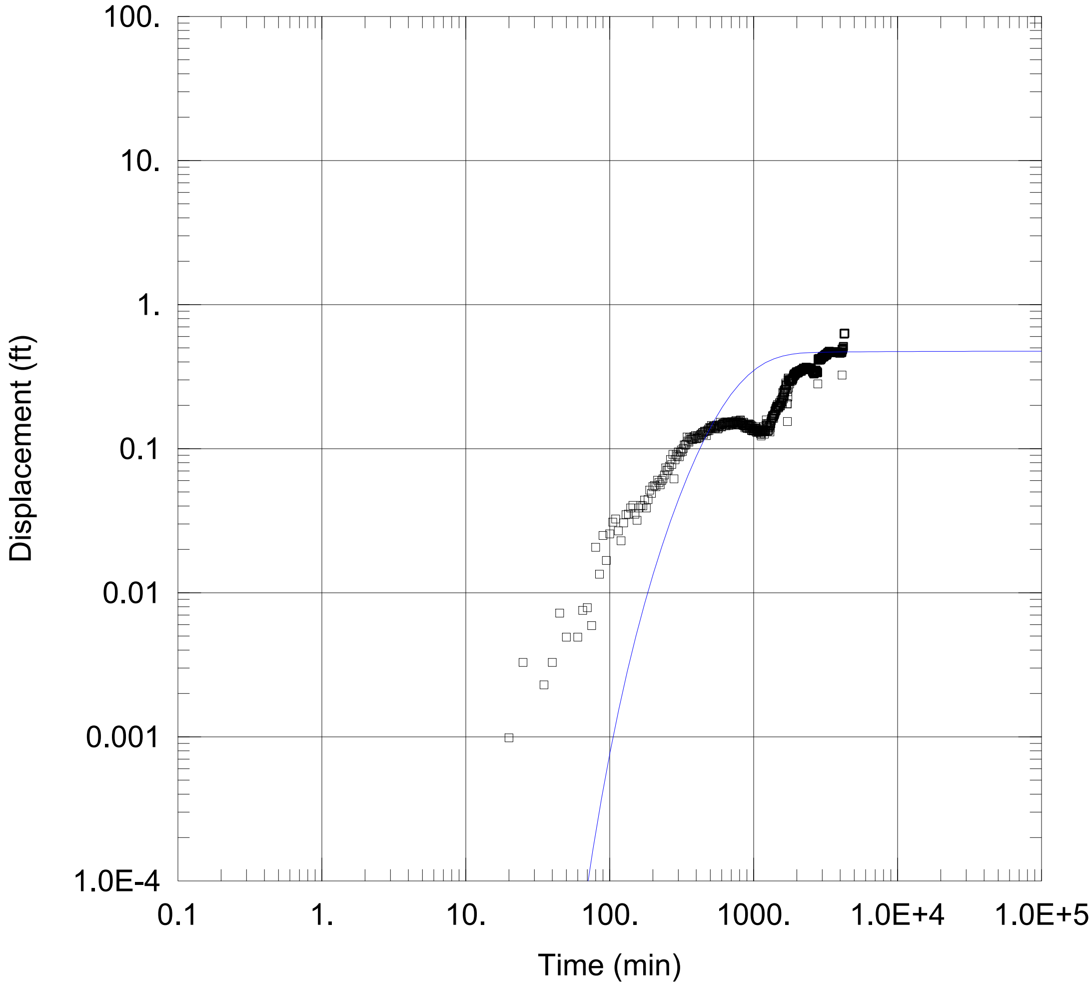
Pumping Test
Aquifer Model: Leaky
Solution Method: Hantush

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	0.004603	cm^2/sec
S	2.346E-7	
1/B'	0.003317	ft^{-1}
ß'/r	0.002588	ft^{-1}
1/B"	5.715E-5	ft^{-1}
ß"/r	5.715E-5	ft^{-1}

K = T/b = 2.157E-6 cm/sec
Ss = S/b = 3.352E-9 1/ft
K'/b' = 3.271E-9 min^{-1}
K' = 2.077E-8 cm/sec
K"/b" = 9.708E-13 min^{-1}
K" = 6.165E-12 cm/sec



WELL TEST ANALYSIS

Data Set: C:\...\Pumping Test_2020-07-23_MW14-05D.aqt
Date: 07/29/20 Time: 10:04:11

PROJECT INFORMATION

Company: Golder Associates, Inc.
Client: Crossroads
Location: ME
Test Well: MW14-03B
Test Date: 7/7/2020

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
MW14-03B	3039420.818	684500.912

Observation Wells

Well Name	X (ft)	Y (ft)
□ MW14-05D	3038280.59	685216.49

SOLUTION

Aquifer Model: Leaky

Solution Method: Hantush

T = 0.004603 cm^2/sec
1/B' = 0.003317 ft^{-1}
1/B" = 5.715E-5 ft^{-1}

S = 2.346E-7
ß'/r = 0.002588 ft^{-1}
ß"/r = 5.715E-5 ft^{-1}

Data Set: C:\Users\BCampelia\Desktop\Crossroads Pumping Test Files\2020-07-10 Files\2020-07-26 Updated File
Date: 07/26/20
Time: 10:44:41

PROJECT INFORMATION

Company: Golder Associates, Inc.
Client: Crossroads
Location: ME
Test Date: 7/7/2020
Test Well: MW14-03B

AQUIFER DATA

Saturated Thickness: 70. ft
Anisotropy Ratio (Kz/Kr): 1.
Aquitard Thickness (b'): 12.5 ft
Aquitard Thickness (b"): 12.5 ft

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: MW14-03B

X Location: 3039420.818 ft
Y Location: 684500.912 ft

Casing Radius: 0. ft
Well Radius: 0.1875 ft

Partially Penetrating Well
Depth to Top of Screen: 28. ft
Depth to Bottom of Screen: 51. ft

No. of pumping periods: 1

Pumping Period Data

Time (min)	Rate (gal/min)
0.	1.

OBSERVATION WELL DATA

No. of observation wells: 2

Observation Well No. 1: MW14-03B

X Location: 3039420.818 ft
Y Location: 684500.912 ft

Radial distance from MW14-03B: 0. ft

Partially Penetrating Well
Depth to Top of Screen: 28. ft
Depth to Bottom of Screen: 51. ft

No. of Observations: 2161

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1.	0.	2162.	33.39
2.	3.285	2164.	33.38
4.	11.85	2166.	33.39
6.	15.12	2168.	33.39
8.	17.6	2170.	33.4
10.	19.46	2172.	33.4
12.	20.88	2174.	33.4

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
14.	21.99	2176.	33.39
16.	23.15	2178.	33.4
18.	24.09	2180.	33.4
20.	24.8	2182.	33.4
22.	25.31	2184.	33.41
24.	26.01	2186.	33.4
26.	26.58	2188.	33.41
28.	26.97	2190.	33.41
30.	27.4	2192.	33.4
32.	27.77	2194.	33.41
34.	28.03	2196.	33.4
36.	28.18	2198.	33.4
38.	28.49	2200.	33.4
40.	28.83	2202.	33.4
42.	29.09	2204.	33.41
44.	29.28	2206.	33.41
46.	29.48	2208.	33.41
48.	29.61	2210.	33.4
50.	29.72	2212.	33.41
52.	29.8	2214.	33.4
54.	29.86	2216.	33.4
56.	29.91	2218.	33.4
58.	29.97	2220.	33.4
60.	29.98	2222.	33.4
62.	30.04	2224.	33.4
64.	30.07	2226.	33.4
66.	30.11	2228.	33.4
68.	30.15	2230.	33.39
70.	30.18	2232.	33.4
72.	30.21	2234.	33.39
74.	30.32	2236.	33.38
76.	30.53	2238.	33.39
78.	30.65	2240.	33.39
80.	30.72	2242.	33.4
82.	30.77	2244.	33.4
84.	30.83	2246.	33.41
86.	30.84	2248.	33.4
88.	30.88	2250.	33.41
90.	30.97	2252.	33.39
92.	31.01	2254.	33.39
94.	31.03	2256.	33.4
96.	31.06	2258.	33.38
98.	31.09	2260.	33.39
100.	31.1	2262.	33.4
102.	31.18	2264.	33.39
104.	31.41	2266.	33.4
106.	31.53	2268.	33.4
108.	31.62	2270.	33.4
110.	31.67	2272.	33.41
112.	31.72	2274.	33.41
114.	31.77	2276.	33.39
116.	31.81	2278.	33.26
118.	31.75	2280.	33.21
120.	31.82	2282.	33.17
122.	31.87	2284.	33.18
124.	31.9	2286.	33.18
126.	31.95	2288.	33.17
128.	31.98	2290.	33.16
130.	32.	2292.	33.16
132.	32.03	2294.	33.16
134.	32.04	2296.	33.17
136.	32.01	2298.	33.16
138.	32.07	2300.	33.17
140.	32.1	2302.	33.17
142.	32.13	2304.	33.17
144.	32.18	2306.	33.18

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
146.	32.22	2308.	33.18
148.	32.25	2310.	33.19
150.	32.27	2312.	33.21
152.	32.26	2314.	33.28
154.	32.27	2316.	33.33
156.	32.27	2318.	33.35
158.	32.28	2320.	33.36
160.	32.32	2322.	33.38
162.	32.34	2324.	33.38
164.	32.36	2326.	33.39
166.	32.36	2328.	33.39
168.	32.35	2330.	33.4
170.	32.34	2332.	33.39
172.	32.34	2334.	33.39
174.	32.29	2336.	33.39
176.	32.28	2338.	33.39
178.	32.33	2340.	33.4
180.	32.35	2342.	33.4
182.	32.4	2344.	33.4
184.	32.42	2346.	33.4
186.	32.43	2348.	33.38
188.	32.43	2350.	33.39
190.	32.49	2352.	33.4
192.	32.33	2354.	33.4
194.	32.4	2356.	33.4
196.	32.44	2358.	33.41
198.	32.46	2360.	33.4
200.	32.49	2362.	33.41
202.	32.52	2364.	33.4
204.	32.46	2366.	33.41
206.	32.43	2368.	33.4
208.	32.5	2370.	33.4
210.	32.53	2372.	33.4
212.	32.61	2374.	33.4
214.	32.64	2376.	33.4
216.	32.65	2378.	33.4
218.	32.66	2380.	33.4
220.	32.67	2382.	33.38
222.	32.67	2384.	33.39
224.	32.7	2386.	33.4
226.	32.74	2388.	33.41
228.	32.77	2390.	33.41
230.	32.78	2392.	33.41
232.	32.78	2394.	33.4
234.	32.77	2396.	33.41
236.	32.77	2398.	33.42
238.	32.77	2400.	33.42
240.	32.75	2402.	33.41
242.	32.74	2404.	33.41
244.	32.73	2406.	33.4
246.	32.73	2408.	33.39
248.	32.73	2410.	33.4
250.	32.73	2412.	33.39
252.	32.74	2414.	33.38
254.	32.79	2416.	33.38
256.	32.82	2418.	33.37
258.	32.83	2420.	33.37
260.	32.84	2422.	32.7
262.	32.86	2424.	33.09
264.	32.87	2426.	33.24
266.	32.87	2428.	33.33
268.	32.85	2430.	33.37
270.	32.84	2432.	33.39
272.	32.83	2434.	33.39
274.	32.81	2436.	33.4
276.	32.82	2438.	33.4

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
278.	32.83	2440.	33.4
280.	32.83	2442.	33.4
282.	32.82	2444.	33.41
284.	32.68	2446.	33.41
286.	32.64	2448.	33.41
288.	32.67	2450.	33.41
290.	32.75	2452.	33.41
292.	32.78	2454.	33.41
294.	32.79	2456.	33.41
296.	32.81	2458.	33.41
298.	32.8	2460.	33.41
300.	30.7	2462.	33.39
302.	31.85	2464.	33.4
304.	32.17	2466.	33.41
306.	32.25	2468.	33.41
308.	32.27	2470.	33.41
310.	32.27	2472.	33.41
312.	32.27	2474.	33.4
314.	32.34	2476.	33.4
316.	32.48	2478.	33.41
318.	32.58	2480.	33.4
320.	32.63	2482.	33.41
322.	32.63	2484.	33.41
324.	32.61	2486.	33.4
326.	32.68	2488.	33.41
328.	32.68	2490.	33.41
330.	32.69	2492.	33.41
332.	32.72	2494.	33.41
334.	32.71	2496.	33.41
336.	32.69	2498.	33.41
338.	32.73	2500.	33.41
340.	32.7	2502.	33.4
342.	32.73	2504.	33.41
344.	32.76	2506.	33.41
346.	32.76	2508.	33.41
348.	32.64	2510.	33.4
350.	32.58	2512.	33.41
352.	32.66	2514.	33.41
354.	32.73	2516.	33.41
356.	32.74	2518.	33.41
358.	32.77	2520.	33.4
360.	32.77	2522.	33.4
362.	32.79	2524.	33.41
364.	32.83	2526.	33.41
366.	32.83	2528.	33.42
368.	32.77	2530.	33.42
370.	32.75	2532.	33.41
372.	32.73	2534.	33.42
374.	32.7	2536.	33.42
376.	32.72	2538.	33.42
378.	32.73	2540.	33.42
380.	32.74	2542.	33.42
382.	32.76	2544.	33.41
384.	32.8	2546.	33.42
386.	32.81	2548.	33.42
388.	32.82	2550.	33.42
390.	32.84	2552.	33.42
392.	32.84	2554.	33.43
394.	32.83	2556.	33.43
396.	32.81	2558.	33.43
398.	32.8	2560.	33.43
400.	32.77	2562.	33.43
402.	32.76	2564.	33.43
404.	32.79	2566.	33.43
406.	32.82	2568.	33.43
408.	32.84	2570.	33.43

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
410.	32.89	2572.	33.43
412.	32.91	2574.	33.44
414.	32.91	2576.	33.43
416.	32.91	2578.	33.43
418.	32.91	2580.	33.43
420.	32.89	2582.	33.43
422.	32.86	2584.	33.42
424.	32.86	2586.	33.41
426.	32.85	2588.	33.4
428.	32.83	2590.	33.4
430.	32.82	2592.	33.41
432.	32.82	2594.	33.41
434.	32.81	2596.	33.4
436.	32.82	2598.	33.41
438.	32.82	2600.	33.41
440.	32.8	2602.	33.41
442.	32.81	2604.	33.47
444.	32.8	2606.	33.49
446.	32.81	2608.	33.51
448.	32.81	2610.	33.51
450.	32.81	2612.	33.52
452.	32.8	2614.	33.52
454.	32.8	2616.	33.52
456.	32.8	2618.	33.53
458.	32.79	2620.	33.53
460.	32.79	2622.	33.53
462.	32.78	2624.	33.53
464.	32.77	2626.	33.53
466.	32.77	2628.	33.53
468.	32.77	2630.	33.53
470.	32.77	2632.	33.53
472.	32.78	2634.	33.53
474.	32.77	2636.	33.54
476.	32.77	2638.	33.53
478.	32.72	2640.	33.54
480.	32.7	2642.	33.54
482.	32.7	2644.	33.53
484.	32.69	2646.	33.53
486.	32.69	2648.	33.54
488.	32.68	2650.	33.54
490.	32.69	2652.	33.54
492.	32.68	2654.	33.54
494.	32.68	2656.	33.53
496.	32.68	2658.	33.54
498.	32.73	2660.	33.54
500.	32.82	2662.	33.54
502.	32.84	2664.	33.54
504.	32.91	2666.	33.54
506.	32.93	2668.	33.54
508.	32.98	2670.	33.53
510.	33.02	2672.	33.53
512.	33.04	2674.	33.53
514.	33.06	2676.	33.54
516.	33.07	2678.	33.54
518.	33.08	2680.	33.54
520.	33.08	2682.	33.54
522.	33.09	2684.	33.54
524.	33.09	2686.	33.54
526.	33.09	2688.	33.54
528.	33.09	2690.	33.53
530.	33.1	2692.	33.54
532.	33.09	2694.	33.53
534.	33.1	2696.	33.51
536.	33.1	2698.	33.5
538.	33.1	2700.	33.5
540.	33.09	2702.	33.5

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
542.	33.09	2704.	33.49
544.	33.08	2706.	33.49
546.	33.09	2708.	33.47
548.	33.08	2710.	33.47
550.	33.08	2712.	33.47
552.	33.09	2714.	33.47
554.	33.09	2716.	33.47
556.	33.1	2718.	33.47
558.	33.1	2720.	33.47
560.	33.12	2722.	33.47
562.	33.12	2724.	33.47
564.	33.13	2726.	33.47
566.	33.12	2728.	33.48
568.	33.1	2730.	33.49
570.	33.12	2732.	33.48
572.	33.12	2734.	32.42
574.	33.15	2736.	32.97
576.	33.19	2738.	33.21
578.	33.21	2740.	33.33
580.	33.22	2742.	33.4
582.	33.22	2744.	33.44
584.	33.23	2746.	33.46
586.	33.23	2748.	33.49
588.	33.23	2750.	33.5
590.	33.23	2752.	33.51
592.	33.23	2754.	33.53
594.	33.23	2756.	33.54
596.	33.23	2758.	33.54
598.	33.23	2760.	33.55
600.	33.24	2762.	33.56
602.	33.25	2764.	33.56
604.	33.25	2766.	33.56
606.	33.25	2768.	33.55
608.	33.26	2770.	33.54
610.	33.25	2772.	33.55
612.	33.25	2774.	33.54
614.	33.25	2776.	33.56
616.	33.26	2778.	33.56
618.	33.24	2780.	33.57
620.	33.24	2782.	33.56
622.	33.23	2784.	33.53
624.	33.22	2786.	33.52
626.	33.22	2788.	33.5
628.	33.22	2790.	33.49
630.	33.22	2792.	33.49
632.	33.22	2794.	33.5
634.	33.21	2796.	33.49
636.	33.23	2798.	33.48
638.	33.22	2800.	33.48
640.	33.21	2802.	33.47
642.	33.21	2804.	33.47
644.	33.21	2806.	33.46
646.	33.21	2808.	33.47
648.	33.2	2810.	33.47
650.	33.2	2812.	33.46
652.	33.2	2814.	33.46
654.	31.68	2816.	33.44
656.	32.43	2818.	33.45
658.	32.73	2820.	33.44
660.	32.88	2822.	33.45
662.	32.94	2824.	33.46
664.	32.98	2826.	33.46
666.	33.	2828.	33.46
668.	33.02	2830.	33.47
670.	33.04	2832.	33.46
672.	33.04	2834.	33.46

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
674.	33.04	2836.	33.47
676.	33.04	2838.	33.45
678.	33.03	2840.	33.45
680.	33.03	2842.	33.45
682.	33.03	2844.	33.44
684.	33.03	2846.	33.45
686.	33.02	2848.	33.46
688.	33.02	2850.	33.46
690.	33.03	2852.	33.47
692.	33.05	2854.	33.47
694.	33.06	2856.	33.47
696.	33.06	2858.	33.45
698.	33.07	2860.	33.46
700.	33.06	2862.	33.47
702.	33.07	2864.	33.47
704.	33.06	2866.	33.47
706.	33.07	2868.	33.47
708.	33.07	2870.	33.45
710.	33.07	2872.	33.45
712.	33.06	2874.	33.46
714.	33.05	2876.	33.47
716.	33.05	2878.	33.49
718.	33.05	2880.	33.5
720.	33.04	2882.	33.51
722.	33.05	2884.	33.52
724.	33.04	2886.	33.52
726.	33.05	2888.	33.52
728.	33.04	2890.	33.5
730.	33.05	2892.	33.5
732.	33.04	2894.	33.51
734.	33.04	2896.	33.5
736.	33.05	2898.	33.49
738.	33.04	2900.	33.47
740.	33.05	2902.	33.46
742.	33.05	2904.	33.46
744.	33.05	2906.	33.44
746.	33.05	2908.	33.45
748.	33.06	2910.	33.44
750.	33.06	2912.	33.44
752.	33.06	2914.	33.44
754.	33.06	2916.	33.44
756.	33.08	2918.	33.44
758.	33.09	2920.	33.43
760.	33.1	2922.	33.44
762.	33.1	2924.	33.42
764.	33.11	2926.	33.43
766.	33.11	2928.	33.42
768.	33.11	2930.	33.43
770.	33.12	2932.	33.42
772.	33.11	2934.	33.42
774.	33.11	2936.	33.42
776.	33.11	2938.	33.43
778.	33.12	2940.	33.43
780.	33.14	2942.	33.43
782.	33.14	2944.	33.42
784.	33.14	2946.	33.41
786.	33.14	2948.	33.42
788.	33.15	2950.	33.42
790.	33.15	2952.	33.43
792.	33.14	2954.	33.32
794.	33.15	2956.	33.27
796.	33.15	2958.	33.21
798.	33.15	2960.	33.39
800.	33.16	2962.	33.55
802.	33.16	2964.	33.64
804.	33.17	2966.	33.71

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
806.	33.16	2968.	33.75
808.	33.16	2970.	33.81
810.	33.17	2972.	33.91
812.	33.17	2974.	33.96
814.	33.17	2976.	34.01
816.	33.17	2978.	34.03
818.	33.17	2980.	34.03
820.	33.17	2982.	34.04
822.	33.17	2984.	34.05
824.	33.17	2986.	34.06
826.	33.17	2988.	34.08
828.	33.17	2990.	34.08
830.	33.17	2992.	34.08
832.	33.16	2994.	34.09
834.	33.17	2996.	34.07
836.	33.17	2998.	34.07
838.	33.17	3000.	34.07
840.	33.17	3002.	34.02
842.	33.17	3004.	33.95
844.	33.17	3006.	33.91
846.	33.16	3008.	33.89
848.	33.15	3010.	33.89
850.	33.15	3012.	33.9
852.	33.15	3014.	33.9
854.	33.16	3016.	33.91
856.	33.16	3018.	33.89
858.	33.16	3020.	33.9
860.	33.16	3022.	33.89
862.	33.15	3024.	33.9
864.	33.15	3026.	33.89
866.	33.16	3028.	33.89
868.	33.16	3030.	33.9
870.	33.15	3032.	33.89
872.	33.15	3034.	33.89
874.	33.16	3036.	33.91
876.	33.16	3038.	33.9
878.	33.16	3040.	33.89
880.	33.16	3042.	33.9
882.	33.16	3044.	33.89
884.	33.16	3046.	33.89
886.	33.16	3048.	33.88
888.	33.16	3050.	33.89
890.	33.17	3052.	33.9
892.	33.17	3054.	33.89
894.	33.17	3056.	33.89
896.	33.17	3058.	33.89
898.	33.17	3060.	33.89
900.	33.17	3062.	33.88
902.	33.17	3064.	33.89
904.	33.17	3066.	33.89
906.	33.18	3068.	33.9
908.	33.16	3070.	33.89
910.	33.17	3072.	33.9
912.	33.18	3074.	33.9
914.	33.18	3076.	33.9
916.	33.19	3078.	33.9
918.	33.19	3080.	33.9
920.	33.19	3082.	33.9
922.	33.19	3084.	33.9
924.	33.19	3086.	33.9
926.	33.19	3088.	33.92
928.	33.18	3090.	33.91
930.	33.19	3092.	33.45
932.	33.19	3094.	33.68
934.	33.2	3096.	33.78
936.	33.19	3098.	33.89

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
938.	33.19	3100.	33.94
940.	33.2	3102.	33.97
942.	33.19	3104.	33.97
944.	33.2	3106.	33.98
946.	33.2	3108.	33.98
948.	33.19	3110.	33.97
950.	33.19	3112.	33.98
952.	33.2	3114.	33.98
954.	33.2	3116.	33.98
956.	33.19	3118.	33.99
958.	33.19	3120.	33.98
960.	33.2	3122.	34.
962.	33.2	3124.	34.
964.	33.2	3126.	34.
966.	33.2	3128.	33.99
968.	33.2	3130.	33.99
970.	33.21	3132.	33.99
972.	33.2	3134.	34.
974.	33.21	3136.	34.01
976.	33.21	3138.	34.
978.	33.21	3140.	34.
980.	33.21	3142.	34.
982.	33.22	3144.	34.
984.	33.21	3146.	34.
986.	33.21	3148.	34.
988.	33.21	3150.	34.
990.	33.21	3152.	34.
992.	33.2	3154.	34.
994.	33.21	3156.	34.
996.	33.21	3158.	34.01
998.	33.21	3160.	34.
1000.	33.21	3162.	34.
1002.	33.21	3164.	34.01
1004.	33.21	3166.	34.
1006.	33.21	3168.	34.
1008.	33.22	3170.	34.01
1010.	33.22	3172.	33.99
1012.	33.22	3174.	33.99
1014.	33.21	3176.	34.
1016.	32.54	3178.	34.
1018.	32.9	3180.	34.
1020.	33.05	3182.	34.01
1022.	33.12	3184.	34.01
1024.	33.17	3186.	34.01
1026.	33.2	3188.	34.01
1028.	33.22	3190.	34.01
1030.	33.24	3192.	34.01
1032.	33.25	3194.	34.01
1034.	33.26	3196.	34.02
1036.	33.26	3198.	34.01
1038.	33.26	3200.	34.
1040.	33.26	3202.	34.
1042.	33.26	3204.	34.
1044.	33.26	3206.	34.
1046.	33.26	3208.	34.
1048.	33.26	3210.	34.
1050.	33.27	3212.	34.
1052.	33.26	3214.	34.01
1054.	33.27	3216.	34.05
1056.	33.26	3218.	34.06
1058.	33.26	3220.	34.07
1060.	33.26	3222.	34.07
1062.	33.26	3224.	34.08
1064.	33.26	3226.	34.08
1066.	33.26	3228.	34.07
1068.	33.26	3230.	34.08

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1070.	33.25	3232.	34.09
1072.	33.25	3234.	34.09
1074.	33.24	3236.	34.05
1076.	33.23	3238.	34.04
1078.	33.23	3240.	34.02
1080.	33.23	3242.	34.01
1082.	33.26	3244.	34.
1084.	33.26	3246.	34.01
1086.	33.28	3248.	34.
1088.	33.29	3250.	34.
1090.	33.29	3252.	34.
1092.	33.29	3254.	33.99
1094.	33.29	3256.	33.99
1096.	33.29	3258.	33.98
1098.	33.29	3260.	33.98
1100.	33.28	3262.	33.99
1102.	33.29	3264.	33.99
1104.	33.29	3266.	33.99
1106.	33.28	3268.	34.
1108.	33.28	3270.	34.01
1110.	33.27	3272.	34.01
1112.	33.26	3274.	34.01
1114.	33.26	3276.	34.01
1116.	33.27	3278.	34.01
1118.	33.27	3280.	34.
1120.	33.26	3282.	34.
1122.	33.27	3284.	34.
1124.	33.28	3286.	33.99
1126.	33.28	3288.	33.97
1128.	33.28	3290.	33.97
1130.	33.28	3292.	33.97
1132.	33.29	3294.	33.96
1134.	33.29	3296.	33.96
1136.	33.29	3298.	33.96
1138.	33.29	3300.	33.97
1140.	33.29	3302.	33.97
1142.	33.28	3304.	33.97
1144.	33.29	3306.	33.97
1146.	33.29	3308.	33.95
1148.	33.28	3310.	33.95
1150.	33.27	3312.	33.95
1152.	33.28	3314.	33.81
1154.	33.29	3316.	33.76
1156.	33.28	3318.	33.73
1158.	33.28	3320.	33.72
1160.	33.29	3322.	33.71
1162.	33.29	3324.	33.7
1164.	33.28	3326.	33.69
1166.	33.29	3328.	33.7
1168.	33.29	3330.	33.7
1170.	33.29	3332.	33.7
1172.	33.3	3334.	33.7
1174.	33.3	3336.	33.7
1176.	33.29	3338.	33.7
1178.	33.29	3340.	33.7
1180.	33.28	3342.	33.7
1182.	33.28	3344.	33.71
1184.	33.29	3346.	33.74
1186.	33.29	3348.	33.83
1188.	33.29	3350.	33.88
1190.	33.28	3352.	33.9
1192.	33.28	3354.	33.91
1194.	33.29	3356.	33.92
1196.	33.29	3358.	33.93
1198.	33.29	3360.	33.93
1200.	33.31	3362.	33.94

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1202.	33.33	3364.	33.93
1204.	33.34	3366.	33.93
1206.	33.35	3368.	33.95
1208.	33.34	3370.	33.95
1210.	33.33	3372.	33.95
1212.	33.33	3374.	33.95
1214.	33.32	3376.	33.94
1216.	33.32	3378.	33.95
1218.	33.32	3380.	33.94
1220.	33.32	3382.	33.95
1222.	33.31	3384.	33.95
1224.	33.3	3386.	33.95
1226.	33.29	3388.	33.96
1228.	33.28	3390.	33.95
1230.	33.29	3392.	33.95
1232.	33.29	3394.	33.96
1234.	33.31	3396.	33.96
1236.	33.31	3398.	33.96
1238.	33.31	3400.	33.96
1240.	33.31	3402.	33.95
1242.	33.32	3404.	33.96
1244.	33.31	3406.	33.95
1246.	33.32	3408.	33.95
1248.	33.31	3410.	33.95
1250.	33.31	3412.	33.93
1252.	33.32	3414.	33.92
1254.	33.32	3416.	33.92
1256.	33.33	3418.	33.94
1258.	33.33	3420.	33.92
1260.	33.33	3422.	33.92
1262.	33.34	3424.	33.93
1264.	33.34	3426.	33.95
1266.	33.35	3428.	33.97
1268.	33.34	3430.	33.99
1270.	33.33	3432.	33.99
1272.	33.33	3434.	34.01
1274.	33.32	3436.	34.01
1276.	33.33	3438.	34.01
1278.	33.33	3440.	34.01
1280.	33.36	3442.	34.
1282.	33.39	3444.	34.
1284.	33.39	3446.	34.
1286.	33.4	3448.	34.
1288.	33.4	3450.	33.34
1290.	33.38	3452.	33.64
1292.	33.41	3454.	33.78
1294.	33.4	3456.	33.84
1296.	33.39	3458.	33.9
1298.	33.38	3460.	33.93
1300.	33.37	3462.	33.93
1302.	33.36	3464.	33.95
1304.	33.37	3466.	33.94
1306.	33.4	3468.	33.94
1308.	33.4	3470.	33.96
1310.	33.4	3472.	33.95
1312.	33.39	3474.	33.95
1314.	33.4	3476.	33.95
1316.	33.39	3478.	33.95
1318.	33.38	3480.	33.96
1320.	33.38	3482.	33.96
1322.	33.37	3484.	33.96
1324.	33.39	3486.	33.97
1326.	33.38	3488.	33.96
1328.	33.38	3490.	33.97
1330.	33.37	3492.	33.96
1332.	33.36	3494.	33.96

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1334.	33.21	3496.	33.97
1336.	33.16	3498.	33.96
1338.	33.12	3500.	33.95
1340.	33.11	3502.	33.95
1342.	33.1	3504.	33.96
1344.	33.11	3506.	33.95
1346.	33.15	3508.	33.95
1348.	33.23	3510.	33.95
1350.	33.28	3512.	33.95
1352.	33.32	3514.	33.94
1354.	33.33	3516.	33.95
1356.	33.34	3518.	33.95
1358.	33.34	3520.	33.95
1360.	33.34	3522.	33.94
1362.	33.34	3524.	33.95
1364.	33.35	3526.	33.95
1366.	33.36	3528.	33.96
1368.	33.37	3530.	33.96
1370.	33.37	3532.	33.98
1372.	33.36	3534.	33.98
1374.	33.36	3536.	33.98
1376.	33.35	3538.	34.
1378.	33.36	3540.	33.98
1380.	31.92	3542.	33.97
1382.	32.34	3544.	33.97
1384.	32.58	3546.	33.97
1386.	32.68	3548.	33.97
1388.	32.74	3550.	33.96
1390.	32.77	3552.	33.96
1392.	32.79	3554.	33.96
1394.	32.8	3556.	33.96
1396.	32.81	3558.	33.98
1398.	32.82	3560.	33.97
1400.	32.81	3562.	33.97
1402.	32.81	3564.	33.95
1404.	32.81	3566.	33.96
1406.	32.82	3568.	33.95
1408.	32.82	3570.	33.94
1410.	32.83	3572.	33.94
1412.	32.79	3574.	33.93
1414.	32.76	3576.	33.94
1416.	32.76	3578.	33.95
1418.	32.74	3580.	33.95
1420.	32.74	3582.	33.95
1422.	32.74	3584.	33.95
1424.	32.73	3586.	33.95
1426.	32.73	3588.	33.95
1428.	32.74	3590.	33.94
1430.	32.75	3592.	33.93
1432.	32.75	3594.	33.93
1434.	32.76	3596.	33.94
1436.	32.76	3598.	33.93
1438.	32.76	3600.	33.94
1440.	32.77	3602.	33.94
1442.	32.76	3604.	33.95
1444.	32.77	3606.	33.95
1446.	32.77	3608.	33.96
1448.	32.77	3610.	33.97
1450.	32.76	3612.	33.97
1452.	32.77	3614.	33.98
1454.	32.78	3616.	34.01
1456.	32.78	3618.	34.
1458.	32.78	3620.	34.
1460.	32.79	3622.	33.99
1462.	32.78	3624.	33.98
1464.	32.78	3626.	33.98

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1466.	32.77	3628.	33.98
1468.	32.76	3630.	33.98
1470.	32.75	3632.	33.97
1472.	32.75	3634.	33.98
1474.	32.74	3636.	33.99
1476.	32.74	3638.	34.01
1478.	32.74	3640.	34.01
1480.	32.73	3642.	34.
1482.	32.73	3644.	34.
1484.	32.74	3646.	34.
1486.	32.73	3648.	34.01
1488.	32.71	3650.	34.01
1490.	32.73	3652.	34.
1492.	32.74	3654.	33.99
1494.	32.76	3656.	33.98
1496.	32.76	3658.	33.98
1498.	32.76	3660.	33.99
1500.	32.76	3662.	33.96
1502.	32.77	3664.	33.87
1504.	32.77	3666.	33.8
1506.	32.77	3668.	33.77
1508.	32.77	3670.	33.75
1510.	32.77	3672.	33.73
1512.	32.78	3674.	33.73
1514.	32.79	3676.	33.77
1516.	32.78	3678.	33.83
1518.	32.78	3680.	33.88
1520.	32.79	3682.	33.91
1522.	32.78	3684.	33.92
1524.	32.79	3686.	33.95
1526.	32.79	3688.	33.98
1528.	32.79	3690.	33.98
1530.	32.79	3692.	33.97
1532.	32.79	3694.	33.97
1534.	32.79	3696.	33.97
1536.	32.79	3698.	33.96
1538.	32.79	3700.	33.96
1540.	32.79	3702.	33.98
1542.	32.79	3704.	34.
1544.	32.77	3706.	34.01
1546.	32.77	3708.	34.02
1548.	32.75	3710.	34.02
1550.	32.75	3712.	34.02
1552.	32.74	3714.	34.
1554.	32.74	3716.	33.98
1556.	32.73	3718.	33.99
1558.	32.72	3720.	33.97
1560.	32.72	3722.	33.97
1562.	32.71	3724.	33.98
1564.	32.71	3726.	33.95
1566.	32.7	3728.	33.95
1568.	32.71	3730.	33.96
1570.	32.7	3732.	33.97
1572.	32.7	3734.	33.97
1574.	32.7	3736.	33.95
1576.	32.7	3738.	33.98
1578.	32.69	3740.	34.
1580.	32.91	3742.	33.99
1582.	33.06	3744.	33.97
1584.	33.13	3746.	33.98
1586.	33.17	3748.	33.97
1588.	33.21	3750.	33.95
1590.	33.24	3752.	33.96
1592.	33.25	3754.	33.97
1594.	33.25	3756.	33.96
1596.	33.26	3758.	33.95

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1598.	33.26	3760.	33.95
1600.	33.27	3762.	33.94
1602.	33.28	3764.	33.94
1604.	33.29	3766.	33.95
1606.	33.29	3768.	33.95
1608.	33.3	3770.	33.95
1610.	33.29	3772.	33.98
1612.	33.31	3774.	33.98
1614.	33.31	3776.	33.98
1616.	33.32	3778.	33.98
1618.	33.32	3780.	33.99
1620.	33.32	3782.	33.98
1622.	33.33	3784.	33.95
1624.	33.33	3786.	33.95
1626.	33.33	3788.	33.96
1628.	33.32	3790.	33.96
1630.	33.33	3792.	33.97
1632.	33.32	3794.	33.98
1634.	33.31	3796.	34.01
1636.	33.29	3798.	34.
1638.	33.29	3800.	34.
1640.	33.29	3802.	33.99
1642.	33.28	3804.	34.01
1644.	33.28	3806.	33.44
1646.	33.29	3808.	33.76
1648.	33.29	3810.	33.9
1650.	33.29	3812.	33.95
1652.	33.28	3814.	33.99
1654.	33.29	3816.	34.02
1656.	33.29	3818.	34.03
1658.	33.29	3820.	34.05
1660.	33.28	3822.	34.05
1662.	33.28	3824.	34.05
1664.	33.29	3826.	34.06
1666.	33.28	3828.	34.07
1668.	33.29	3830.	34.07
1670.	33.28	3832.	34.06
1672.	33.28	3834.	34.06
1674.	33.27	3836.	34.05
1676.	33.27	3838.	34.06
1678.	33.26	3840.	34.07
1680.	33.27	3842.	34.06
1682.	33.27	3844.	34.05
1684.	33.28	3846.	34.04
1686.	33.28	3848.	34.04
1688.	33.27	3850.	34.03
1690.	33.27	3852.	34.03
1692.	33.27	3854.	34.03
1694.	33.28	3856.	34.03
1696.	33.28	3858.	34.04
1698.	33.28	3860.	34.04
1700.	33.27	3862.	34.05
1702.	33.27	3864.	34.03
1704.	33.26	3866.	34.05
1706.	33.26	3868.	34.06
1708.	33.26	3870.	34.06
1710.	33.26	3872.	34.07
1712.	33.27	3874.	34.05
1714.	33.3	3876.	34.07
1716.	33.32	3878.	34.07
1718.	32.42	3880.	34.05
1720.	32.67	3882.	34.05
1722.	33.	3884.	34.06
1724.	33.17	3886.	34.05
1726.	33.26	3888.	34.04
1728.	33.31	3890.	34.04

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1730.	33.34	3892.	34.04
1732.	33.36	3894.	34.03
1734.	33.34	3896.	34.04
1736.	33.3	3898.	34.04
1738.	33.27	3900.	34.04
1740.	33.31	3902.	34.06
1742.	33.34	3904.	34.07
1744.	33.36	3906.	34.07
1746.	33.37	3908.	34.05
1748.	33.38	3910.	34.04
1750.	33.39	3912.	34.04
1752.	33.39	3914.	34.04
1754.	33.4	3916.	34.04
1756.	33.41	3918.	34.05
1758.	33.41	3920.	34.05
1760.	33.41	3922.	34.04
1762.	33.41	3924.	34.03
1764.	33.42	3926.	34.03
1766.	33.41	3928.	34.04
1768.	33.41	3930.	34.05
1770.	33.41	3932.	34.06
1772.	33.41	3934.	34.06
1774.	33.42	3936.	34.07
1776.	33.41	3938.	34.06
1778.	33.42	3940.	34.06
1780.	33.41	3942.	34.04
1782.	33.42	3944.	34.06
1784.	33.42	3946.	34.07
1786.	33.42	3948.	34.07
1788.	33.41	3950.	34.07
1790.	33.4	3952.	34.05
1792.	33.38	3954.	34.04
1794.	33.39	3956.	34.04
1796.	33.38	3958.	34.03
1798.	33.38	3960.	34.02
1800.	33.38	3962.	34.03
1802.	33.38	3964.	34.02
1804.	33.37	3966.	34.01
1806.	33.37	3968.	34.
1808.	33.37	3970.	34.
1810.	33.37	3972.	33.99
1812.	33.37	3974.	34.01
1814.	33.37	3976.	34.03
1816.	33.37	3978.	34.04
1818.	33.38	3980.	34.04
1820.	33.38	3982.	34.04
1822.	33.37	3984.	34.04
1824.	33.37	3986.	34.03
1826.	33.38	3988.	34.02
1828.	33.37	3990.	34.02
1830.	33.38	3992.	34.02
1832.	33.38	3994.	34.02
1834.	33.38	3996.	34.01
1836.	33.38	3998.	34.04
1838.	33.37	4000.	34.04
1840.	33.35	4002.	34.04
1842.	33.37	4004.	34.02
1844.	33.35	4006.	34.03
1846.	33.35	4008.	34.03
1848.	33.36	4010.	34.04
1850.	33.36	4012.	34.04
1852.	33.35	4014.	34.05
1854.	33.35	4016.	34.04
1856.	33.35	4018.	34.03
1858.	33.35	4020.	34.01
1860.	33.35	4022.	34.02

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1862.	33.33	4024.	34.03
1864.	33.34	4026.	34.02
1866.	33.33	4028.	34.01
1868.	33.33	4030.	34.
1870.	33.33	4032.	34.
1872.	33.33	4034.	34.
1874.	33.35	4036.	34.01
1876.	33.34	4038.	34.01
1878.	33.34	4040.	34.
1880.	33.34	4042.	33.99
1882.	33.34	4044.	33.99
1884.	33.34	4046.	33.99
1886.	33.34	4048.	34.01
1888.	33.34	4050.	34.02
1890.	33.34	4052.	34.06
1892.	33.34	4054.	34.09
1894.	33.34	4056.	34.08
1896.	33.32	4058.	34.09
1898.	33.3	4060.	34.11
1900.	33.33	4062.	34.12
1902.	33.34	4064.	34.11
1904.	33.36	4066.	34.11
1906.	33.35	4068.	34.11
1908.	33.36	4070.	34.1
1910.	33.37	4072.	34.09
1912.	33.37	4074.	34.08
1914.	33.36	4076.	34.1
1916.	33.38	4078.	34.11
1918.	33.38	4080.	34.12
1920.	33.37	4082.	34.12
1922.	33.38	4084.	34.11
1924.	33.37	4086.	34.13
1926.	33.38	4088.	34.12
1928.	33.37	4090.	34.12
1930.	33.36	4092.	34.1
1932.	33.37	4094.	34.09
1934.	33.37	4096.	34.07
1936.	33.35	4098.	34.07
1938.	33.36	4100.	34.1
1940.	33.38	4102.	34.11
1942.	33.38	4104.	34.12
1944.	33.35	4106.	34.13
1946.	33.37	4108.	34.12
1948.	33.36	4110.	34.11
1950.	33.37	4112.	34.07
1952.	33.36	4114.	34.05
1954.	33.38	4116.	34.04
1956.	33.37	4118.	34.03
1958.	33.37	4120.	34.
1960.	33.36	4122.	34.
1962.	33.35	4124.	33.95
1964.	33.35	4126.	33.89
1966.	33.34	4128.	33.86
1968.	33.35	4130.	33.83
1970.	33.35	4132.	33.81
1972.	33.35	4134.	33.82
1974.	33.34	4136.	33.8
1976.	33.33	4138.	33.8
1978.	33.34	4140.	33.83
1980.	33.35	4142.	33.85
1982.	33.35	4144.	33.95
1984.	33.36	4146.	34.01
1986.	33.37	4148.	34.05
1988.	33.37	4150.	34.1
1990.	33.37	4152.	34.09
1992.	33.37	4154.	34.09

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1994.	33.37	4156.	34.11
1996.	33.39	4158.	34.14
1998.	33.38	4160.	34.14
2000.	33.39	4162.	34.14
2002.	33.39	4164.	34.12
2004.	33.38	4166.	34.15
2006.	33.38	4168.	34.16
2008.	33.39	4170.	34.15
2010.	32.74	4172.	34.12
2012.	33.11	4174.	34.15
2014.	33.26	4176.	33.16
2016.	33.33	4178.	33.43
2018.	33.35	4180.	33.52
2020.	33.38	4182.	33.54
2022.	33.39	4184.	33.57
2024.	33.41	4186.	33.57
2026.	33.42	4188.	33.57
2028.	33.42	4190.	33.56
2030.	33.42	4192.	33.56
2032.	33.42	4194.	33.56
2034.	33.43	4196.	33.54
2036.	33.42	4198.	33.53
2038.	33.42	4200.	33.53
2040.	33.42	4202.	33.52
2042.	33.43	4204.	33.52
2044.	33.43	4206.	33.51
2046.	33.42	4208.	33.5
2048.	33.42	4210.	33.49
2050.	33.43	4212.	33.49
2052.	33.42	4214.	33.48
2054.	33.43	4216.	33.49
2056.	33.43	4218.	33.49
2058.	33.42	4220.	33.5
2060.	33.43	4222.	33.48
2062.	33.43	4224.	33.48
2064.	33.44	4226.	33.48
2066.	33.43	4228.	33.47
2068.	33.44	4230.	33.47
2070.	33.44	4232.	33.48
2072.	33.44	4234.	33.47
2074.	33.44	4236.	33.47
2076.	33.45	4238.	33.47
2078.	33.45	4240.	33.47
2080.	33.45	4242.	33.47
2082.	33.44	4244.	33.46
2084.	33.44	4246.	33.47
2086.	33.46	4248.	33.47
2088.	33.47	4250.	33.47
2090.	33.47	4252.	33.47
2092.	33.49	4254.	33.47
2094.	33.49	4256.	33.46
2096.	33.49	4258.	33.46
2098.	33.49	4260.	33.46
2100.	33.48	4262.	33.46
2102.	33.48	4264.	33.46
2104.	33.48	4266.	33.45
2106.	33.48	4268.	33.46
2108.	33.47	4270.	33.46
2110.	33.46	4272.	33.46
2112.	33.46	4274.	33.45
2114.	33.46	4276.	33.46
2116.	33.46	4278.	33.46
2118.	33.46	4280.	33.46
2120.	33.45	4282.	33.46
2122.	33.46	4284.	33.46
2124.	33.46	4286.	33.46

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
2126.	33.47	4288.	33.46
2128.	33.45	4290.	33.47
2130.	33.46	4292.	33.46
2132.	33.45	4294.	33.46
2134.	33.45	4296.	33.46
2136.	33.43	4298.	33.45
2138.	33.44	4300.	33.45
2140.	33.4	4302.	33.44
2142.	33.4	4304.	33.44
2144.	33.39	4306.	33.46
2146.	33.39	4308.	33.47
2148.	33.39	4310.	33.48
2150.	33.39	4312.	33.48
2152.	33.39	4314.	33.49
2154.	33.39	4316.	33.49
2156.	33.4	4318.	33.48
2158.	33.39	4320.	33.31
2160.	33.39		

Observation Well No. 2: PZ-23D

X Location: 3039399.222 ft
Y Location: 684529.203 ft

Radial distance from MW14-03B: 35.59168298 ft

Partially Penetrating Well
Depth to Top of Screen: 1.8 ft
Depth to Bottom of Screen: 5.5 ft

No. of Observations: 2159

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
2.	-0.001988	2162.	3.273
4.	2.36E-5	2164.	3.271
6.	0.009035	2166.	3.271
8.	0.02605	2168.	3.271
10.	0.05306	2170.	3.273
12.	0.08807	2172.	3.273
14.	0.1301	2174.	3.271
16.	0.1761	2176.	3.273
18.	0.2251	2178.	3.271
20.	0.2781	2180.	3.273
22.	0.3321	2182.	3.273
24.	0.3871	2184.	3.273
26.	0.4432	2186.	3.276
28.	0.4962	2188.	3.276
30.	0.5522	2190.	3.273
32.	0.6082	2192.	3.276
34.	0.6592	2194.	3.276
36.	0.7102	2196.	3.276
38.	0.7612	2198.	3.276
40.	0.8052	2200.	3.278
42.	0.8532	2202.	3.276
44.	0.8973	2204.	3.278
46.	0.9393	2206.	3.279
48.	0.9343	2208.	3.279
50.	1.02	2210.	3.279
52.	1.06	2212.	3.279
54.	1.099	2214.	3.279
56.	1.131	2216.	3.279
58.	1.169	2218.	3.279
60.	1.199	2220.	3.279
62.	1.231	2222.	3.281
64.	1.259	2224.	3.279

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
66.	1.289	2226.	3.281
68.	1.301	2228.	3.279
70.	1.345	2230.	3.281
72.	1.37	2232.	3.281
74.	1.393	2234.	3.281
76.	1.417	2236.	3.281
78.	1.44	2238.	3.281
80.	1.461	2240.	3.281
82.	1.482	2242.	3.281
84.	1.502	2244.	3.281
86.	1.522	2246.	3.284
88.	1.543	2248.	3.281
90.	1.561	2250.	3.284
92.	1.578	2252.	3.281
94.	1.594	2254.	3.284
96.	1.615	2256.	3.281
98.	1.631	2258.	3.284
100.	1.645	2260.	3.284
102.	1.661	2262.	3.286
104.	1.675	2264.	3.286
106.	1.689	2266.	3.286
108.	1.705	2268.	3.286
110.	1.719	2270.	3.286
112.	1.733	2272.	3.286
114.	1.747	2274.	3.286
116.	1.761	2276.	3.286
118.	1.775	2278.	3.288
120.	1.786	2280.	3.286
122.	1.8	2282.	3.288
124.	1.814	2284.	3.286
126.	1.826	2286.	3.286
128.	1.837	2288.	3.288
130.	1.851	2290.	3.286
132.	1.86	2292.	3.286
134.	1.872	2294.	3.288
136.	1.881	2296.	3.286
138.	1.895	2298.	3.286
140.	1.905	2300.	3.286
142.	1.916	2302.	3.286
144.	1.928	2304.	3.286
146.	1.935	2306.	3.286
148.	1.944	2308.	3.286
150.	1.956	2310.	3.286
152.	1.965	2312.	3.286
154.	1.972	2314.	3.286
156.	1.983	2316.	3.286
158.	1.993	2318.	3.284
160.	2.	2320.	3.284
162.	2.009	2322.	3.284
164.	2.016	2324.	3.284
166.	2.027	2326.	3.284
168.	2.034	2328.	3.286
170.	2.041	2330.	3.284
172.	2.051	2332.	3.288
174.	2.058	2334.	3.286
176.	2.064	2336.	3.286
178.	2.074	2338.	3.288
180.	2.083	2340.	3.286
182.	2.09	2342.	3.288
184.	2.095	2344.	3.288
186.	2.102	2346.	3.288
188.	2.109	2348.	3.291
190.	2.115	2350.	3.291
192.	2.122	2352.	3.291
194.	2.127	2354.	3.291
196.	2.136	2356.	3.291

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
198.	2.141	2358.	3.293
200.	2.148	2360.	3.291
202.	2.153	2362.	3.293
204.	2.157	2364.	3.293
206.	2.164	2366.	3.291
208.	2.173	2368.	3.293
210.	2.176	2370.	3.293
212.	2.183	2372.	3.293
214.	2.187	2374.	3.295
216.	2.194	2376.	3.293
218.	2.199	2378.	3.296
220.	2.204	2380.	3.296
222.	2.213	2382.	3.296
224.	2.218	2384.	3.299
226.	2.222	2386.	3.299
228.	2.229	2388.	3.299
230.	2.234	2390.	3.296
232.	2.238	2392.	3.296
234.	2.245	2394.	3.299
236.	2.252	2396.	3.299
238.	2.257	2398.	3.299
240.	2.262	2400.	3.299
242.	2.266	2402.	3.299
244.	2.271	2404.	3.299
246.	2.275	2406.	3.299
248.	2.282	2408.	3.299
250.	2.287	2410.	3.299
252.	2.289	2412.	3.299
254.	2.297	2414.	3.301
256.	2.3	2416.	3.299
258.	2.304	2418.	3.299
260.	2.309	2420.	3.299
262.	2.314	2422.	3.299
264.	2.318	2424.	3.301
266.	2.323	2426.	3.301
268.	2.327	2428.	3.299
270.	2.332	2430.	3.301
272.	2.337	2432.	3.299
274.	2.339	2434.	3.299
276.	2.346	2436.	3.301
278.	2.348	2438.	3.301
280.	2.353	2440.	3.301
282.	2.355	2442.	3.301
284.	2.362	2444.	3.301
286.	2.367	2446.	3.301
288.	2.369	2448.	3.301
290.	2.369	2450.	3.301
292.	2.374	2452.	3.301
294.	2.378	2454.	3.303
296.	2.381	2456.	3.303
298.	2.383	2458.	3.303
300.	2.385	2460.	3.303
302.	2.39	2462.	3.301
304.	2.392	2464.	3.303
306.	2.395	2466.	3.305
308.	2.397	2468.	3.303
310.	2.399	2470.	3.305
312.	2.402	2472.	3.303
314.	2.404	2474.	3.308
316.	2.406	2476.	3.305
318.	2.409	2478.	3.305
320.	2.413	2480.	3.308
322.	2.416	2482.	3.308
324.	2.418	2484.	3.308
326.	2.423	2486.	3.308
328.	2.427	2488.	3.308

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
330.	2.427	2490.	3.31
332.	2.432	2492.	3.31
334.	2.436	2494.	3.308
336.	2.439	2496.	3.308
338.	2.441	2498.	3.308
340.	2.446	2500.	3.31
342.	2.45	2502.	3.31
344.	2.453	2504.	3.31
346.	2.455	2506.	3.31
348.	2.457	2508.	3.31
350.	2.462	2510.	3.31
352.	2.464	2512.	3.31
354.	2.469	2514.	3.308
356.	2.471	2516.	3.31
358.	2.474	2518.	3.31
360.	2.478	2520.	3.31
362.	2.48	2522.	3.31
364.	2.483	2524.	3.31
366.	2.485	2526.	3.31
368.	2.49	2528.	3.31
370.	2.492	2530.	3.312
372.	2.497	2532.	3.312
374.	2.501	2534.	3.312
376.	2.504	2536.	3.312
378.	2.506	2538.	3.312
380.	2.508	2540.	3.312
382.	2.511	2542.	3.312
384.	2.515	2544.	3.312
386.	2.52	2546.	3.313
388.	2.522	2548.	3.316
390.	2.525	2550.	3.316
392.	2.525	2552.	3.316
394.	2.532	2554.	3.316
396.	2.534	2556.	3.313
398.	2.536	2558.	3.316
400.	2.538	2560.	3.316
402.	2.541	2562.	3.316
404.	2.545	2564.	3.316
406.	2.548	2566.	3.318
408.	2.55	2568.	3.318
410.	2.555	2570.	3.318
412.	2.557	2572.	3.318
414.	2.559	2574.	3.32
416.	2.562	2576.	3.318
418.	2.564	2578.	3.318
420.	2.566	2580.	3.318
422.	2.569	2582.	3.318
424.	2.574	2584.	3.318
426.	2.577	2586.	3.318
428.	2.581	2588.	3.318
430.	2.581	2590.	3.318
432.	2.586	2592.	3.318
434.	2.588	2594.	3.318
436.	2.59	2596.	3.318
438.	2.59	2598.	3.316
440.	2.593	2600.	3.318
442.	2.597	2602.	3.318
444.	2.597	2604.	3.318
446.	2.6	2606.	3.32
448.	2.604	2608.	3.32
450.	2.607	2610.	3.32
452.	2.609	2612.	3.32
454.	2.611	2614.	3.318
456.	2.614	2616.	3.32
458.	2.614	2618.	3.32
460.	2.616	2620.	3.32

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
462.	2.621	2622.	3.32
464.	2.621	2624.	3.32
466.	2.625	2626.	3.32
468.	2.625	2628.	3.323
470.	2.628	2630.	3.323
472.	2.63	2632.	3.323
474.	2.635	2634.	3.323
476.	2.635	2636.	3.325
478.	2.635	2638.	3.323
480.	2.639	2640.	3.325
482.	2.641	2642.	3.325
484.	2.641	2644.	3.325
486.	2.646	2646.	3.325
488.	2.646	2648.	3.327
490.	2.648	2650.	3.327
492.	2.651	2652.	3.327
494.	2.651	2654.	3.33
496.	2.655	2656.	3.327
498.	2.655	2658.	3.327
500.	2.658	2660.	3.33
502.	2.66	2662.	3.33
504.	2.66	2664.	3.33
506.	2.662	2666.	3.33
508.	2.665	2668.	3.33
510.	2.667	2670.	3.332
512.	2.672	2672.	3.332
514.	2.672	2674.	3.332
516.	2.674	2676.	3.332
518.	2.676	2678.	3.332
520.	2.681	2680.	3.332
522.	2.683	2682.	3.332
524.	2.686	2684.	3.334
526.	2.688	2686.	3.334
528.	2.69	2688.	3.334
530.	2.692	2690.	3.334
532.	2.695	2692.	3.334
534.	2.699	2694.	3.334
536.	2.699	2696.	3.337
538.	2.702	2698.	3.337
540.	2.704	2700.	3.337
542.	2.709	2702.	3.337
544.	2.711	2704.	3.337
546.	2.713	2706.	3.337
548.	2.716	2708.	3.339
550.	2.718	2710.	3.339
552.	2.72	2712.	3.337
554.	2.723	2714.	3.339
556.	2.723	2716.	3.338
558.	2.727	2718.	3.34
560.	2.727	2720.	3.338
562.	2.732	2722.	3.338
564.	2.732	2724.	3.34
566.	2.734	2726.	3.338
568.	2.737	2728.	3.338
570.	2.739	2730.	3.338
572.	2.741	2732.	3.338
574.	2.743	2734.	3.338
576.	2.746	2736.	3.34
578.	2.748	2738.	3.34
580.	2.748	2740.	3.34
582.	2.75	2742.	3.338
584.	2.753	2744.	3.335
586.	2.755	2746.	3.335
588.	2.757	2748.	3.338
590.	2.76	2750.	3.338
592.	2.762	2752.	3.338

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
594.	2.765	2754.	3.338
596.	2.765	2756.	3.338
598.	2.768	2758.	3.338
600.	2.77	2760.	3.34
602.	2.772	2762.	3.34
604.	2.775	2764.	3.34
606.	2.777	2766.	3.34
608.	2.779	2768.	3.34
610.	2.782	2770.	3.34
612.	2.782	2772.	3.342
614.	2.784	2774.	3.342
616.	2.786	2776.	3.345
618.	2.789	2778.	3.342
620.	2.791	2780.	3.342
622.	2.791	2782.	3.345
624.	2.793	2784.	3.345
626.	2.795	2786.	3.345
628.	2.795	2788.	3.347
630.	2.8	2790.	3.347
632.	2.798	2792.	3.347
634.	2.802	2794.	3.347
636.	2.802	2796.	3.347
638.	2.805	2798.	3.347
640.	2.807	2800.	3.349
642.	2.807	2802.	3.349
644.	2.809	2804.	3.349
646.	2.812	2806.	3.349
648.	2.812	2808.	3.352
650.	2.814	2810.	3.352
652.	2.814	2812.	3.352
654.	2.816	2814.	3.352
656.	2.819	2816.	3.354
658.	2.819	2818.	3.352
660.	2.819	2820.	3.354
662.	2.819	2822.	3.352
664.	2.819	2824.	3.354
666.	2.821	2826.	3.326
668.	2.821	2828.	3.356
670.	2.821	2830.	3.354
672.	2.821	2832.	3.354
674.	2.823	2834.	3.354
676.	2.826	2836.	3.354
678.	2.826	2838.	3.354
680.	2.828	2840.	3.354
682.	2.83	2842.	3.354
684.	2.83	2844.	3.356
686.	2.833	2846.	3.354
688.	2.833	2848.	3.356
690.	2.835	2850.	3.356
692.	2.835	2852.	3.356
694.	2.837	2854.	3.356
696.	2.84	2856.	3.356
698.	2.84	2858.	3.359
700.	2.84	2860.	3.356
702.	2.842	2862.	3.356
704.	2.844	2864.	3.356
706.	2.844	2866.	3.356
708.	2.846	2868.	3.356
710.	2.849	2870.	3.356
712.	2.849	2872.	3.356
714.	2.851	2874.	3.359
716.	2.851	2876.	3.359
718.	2.853	2878.	3.359
720.	2.853	2880.	3.359
722.	2.856	2882.	3.359
724.	2.856	2884.	3.36

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
726.	2.858	2886.	3.36
728.	2.858	2888.	3.362
730.	2.86	2890.	3.362
732.	2.863	2892.	3.362
734.	2.863	2894.	3.362
736.	2.865	2896.	3.362
738.	2.865	2898.	3.362
740.	2.865	2900.	3.362
742.	2.867	2902.	3.364
744.	2.867	2904.	3.364
746.	2.87	2906.	3.364
748.	2.872	2908.	3.364
750.	2.87	2910.	3.364
752.	2.874	2912.	3.364
754.	2.874	2914.	3.364
756.	2.877	2916.	3.364
758.	2.877	2918.	3.364
760.	2.877	2920.	3.364
762.	2.879	2922.	3.364
764.	2.882	2924.	3.364
766.	2.882	2926.	3.364
768.	2.882	2928.	3.364
770.	2.885	2930.	3.364
772.	2.885	2932.	3.364
774.	2.889	2934.	3.364
776.	2.889	2936.	3.366
778.	2.892	2938.	3.364
780.	2.892	2940.	3.366
782.	2.894	2942.	3.366
784.	2.894	2944.	3.366
786.	2.896	2946.	3.366
788.	2.896	2948.	3.366
790.	2.898	2950.	3.364
792.	2.898	2952.	3.366
794.	2.901	2954.	3.364
796.	2.901	2956.	3.364
798.	2.903	2958.	3.364
800.	2.903	2960.	3.364
802.	2.905	2962.	3.366
804.	2.905	2964.	3.364
806.	2.908	2966.	3.366
808.	2.908	2968.	3.366
810.	2.908	2970.	3.366
812.	2.91	2972.	3.369
814.	2.912	2974.	3.366
816.	2.912	2976.	3.369
818.	2.912	2978.	3.369
820.	2.915	2980.	3.371
822.	2.915	2982.	3.373
824.	2.917	2984.	3.373
826.	2.917	2986.	3.376
828.	2.919	2988.	3.376
830.	2.919	2990.	3.378
832.	2.922	2992.	3.378
834.	2.924	2994.	3.378
836.	2.922	2996.	3.38
838.	2.924	2998.	3.38
840.	2.926	3000.	3.383
842.	2.926	3002.	3.383
844.	2.926	3004.	3.383
846.	2.929	3006.	3.387
848.	2.929	3008.	3.387
850.	2.931	3010.	3.387
852.	2.933	3012.	3.387
854.	2.933	3014.	3.39
856.	2.933	3016.	3.39

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
858.	2.933	3018.	3.387
860.	2.936	3020.	3.39
862.	2.936	3022.	3.39
864.	2.936	3024.	3.39
866.	2.938	3026.	3.392
868.	2.94	3028.	3.39
870.	2.94	3030.	3.39
872.	2.94	3032.	3.39
874.	2.943	3034.	3.39
876.	2.943	3036.	3.392
878.	2.945	3038.	3.392
880.	2.945	3040.	3.392
882.	2.945	3042.	3.39
884.	2.945	3044.	3.392
886.	2.947	3046.	3.39
888.	2.947	3048.	3.392
890.	2.947	3050.	3.392
892.	2.95	3052.	3.392
894.	2.952	3054.	3.393
896.	2.95	3056.	3.393
898.	2.952	3058.	3.395
900.	2.952	3060.	3.395
902.	2.954	3062.	3.395
904.	2.954	3064.	3.393
906.	2.956	3066.	3.395
908.	2.956	3068.	3.393
910.	2.959	3070.	3.395
912.	2.959	3072.	3.395
914.	2.959	3074.	3.395
916.	2.959	3076.	3.395
918.	2.961	3078.	3.395
920.	2.961	3080.	3.395
922.	2.961	3082.	3.395
924.	2.963	3084.	3.395
926.	2.966	3086.	3.395
928.	2.966	3088.	3.395
930.	2.966	3090.	3.395
932.	2.966	3092.	3.395
934.	2.969	3094.	3.395
936.	2.969	3096.	3.395
938.	2.969	3098.	3.393
940.	2.971	3100.	3.393
942.	2.974	3102.	3.395
944.	2.974	3104.	3.393
946.	2.974	3106.	3.393
948.	2.976	3108.	3.395
950.	2.974	3110.	3.395
952.	2.976	3112.	3.398
954.	2.976	3114.	3.398
956.	2.978	3116.	3.395
958.	2.978	3118.	3.398
960.	2.981	3120.	3.395
962.	2.978	3122.	3.398
964.	2.981	3124.	3.398
966.	2.983	3126.	3.398
968.	2.983	3128.	3.4
970.	2.985	3130.	3.398
972.	2.985	3132.	3.4
974.	2.985	3134.	3.4
976.	2.985	3136.	3.395
978.	2.988	3138.	3.398
980.	2.988	3140.	3.398
982.	2.988	3142.	3.4
984.	2.99	3144.	3.4
986.	2.99	3146.	3.4
988.	2.99	3148.	3.4

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
990.	2.992	3150.	3.402
992.	2.992	3152.	3.402
994.	2.995	3154.	3.402
996.	2.995	3156.	3.402
998.	2.995	3158.	3.402
1000.	2.997	3160.	3.405
1002.	2.997	3162.	3.402
1004.	2.999	3164.	3.402
1006.	2.999	3166.	3.402
1008.	3.002	3168.	3.405
1010.	3.002	3170.	3.405
1012.	3.002	3172.	3.405
1014.	3.004	3174.	3.405
1016.	3.004	3176.	3.405
1018.	3.004	3178.	3.402
1020.	3.004	3180.	3.405
1022.	3.004	3182.	3.405
1024.	3.004	3184.	3.405
1026.	3.006	3186.	3.405
1028.	3.006	3188.	3.405
1030.	3.006	3190.	3.405
1032.	3.006	3192.	3.405
1034.	3.006	3194.	3.402
1036.	3.008	3196.	3.405
1038.	3.011	3198.	3.405
1040.	3.008	3200.	3.405
1042.	3.011	3202.	3.402
1044.	3.011	3204.	3.405
1046.	3.011	3206.	3.405
1048.	3.013	3208.	3.405
1050.	3.013	3210.	3.405
1052.	3.015	3212.	3.402
1054.	3.018	3214.	3.405
1056.	3.018	3216.	3.407
1058.	3.018	3218.	3.407
1060.	3.02	3220.	3.407
1062.	3.02	3222.	3.407
1064.	3.02	3224.	3.41
1066.	3.022	3226.	3.408
1068.	3.022	3228.	3.41
1070.	3.025	3230.	3.41
1072.	3.025	3232.	3.41
1074.	3.027	3234.	3.41
1076.	3.027	3236.	3.413
1078.	3.027	3238.	3.41
1080.	3.027	3240.	3.41
1082.	3.027	3242.	3.413
1084.	3.029	3244.	3.41
1086.	3.029	3246.	3.413
1088.	3.032	3248.	3.413
1090.	3.032	3250.	3.413
1092.	3.032	3252.	3.413
1094.	3.034	3254.	3.413
1096.	3.036	3256.	3.413
1098.	3.036	3258.	3.415
1100.	3.036	3260.	3.413
1102.	3.036	3262.	3.413
1104.	3.04	3264.	3.415
1106.	3.04	3266.	3.415
1108.	3.042	3268.	3.415
1110.	3.042	3270.	3.415
1112.	3.042	3272.	3.415
1114.	3.042	3274.	3.415
1116.	3.044	3276.	3.415
1118.	3.044	3278.	3.415
1120.	3.047	3280.	3.417

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1122.	3.047	3282.	3.415
1124.	3.047	3284.	3.417
1126.	3.049	3286.	3.417
1128.	3.049	3288.	3.417
1130.	3.049	3290.	3.417
1132.	3.051	3292.	3.417
1134.	3.054	3294.	3.417
1136.	3.051	3296.	3.419
1138.	3.054	3298.	3.417
1140.	3.054	3300.	3.419
1142.	3.056	3302.	3.417
1144.	3.056	3304.	3.417
1146.	3.056	3306.	3.417
1148.	3.058	3308.	3.417
1150.	3.058	3310.	3.417
1152.	3.058	3312.	3.417
1154.	3.058	3314.	3.419
1156.	3.058	3316.	3.419
1158.	3.06	3318.	3.419
1160.	3.06	3320.	3.419
1162.	3.06	3322.	3.419
1164.	3.06	3324.	3.419
1166.	3.063	3326.	3.417
1168.	3.065	3328.	3.417
1170.	3.065	3330.	3.419
1172.	3.065	3332.	3.417
1174.	3.065	3334.	3.417
1176.	3.067	3336.	3.417
1178.	3.067	3338.	3.417
1180.	3.067	3340.	3.417
1182.	3.07	3342.	3.415
1184.	3.07	3344.	3.415
1186.	3.07	3346.	3.415
1188.	3.07	3348.	3.415
1190.	3.072	3350.	3.415
1192.	3.072	3352.	3.413
1194.	3.074	3354.	3.413
1196.	3.074	3356.	3.415
1198.	3.074	3358.	3.415
1200.	3.079	3360.	3.417
1202.	3.079	3362.	3.415
1204.	3.079	3364.	3.417
1206.	3.079	3366.	3.415
1208.	3.079	3368.	3.417
1210.	3.081	3370.	3.417
1212.	3.084	3372.	3.417
1214.	3.084	3374.	3.417
1216.	3.084	3376.	3.419
1218.	3.086	3378.	3.419
1220.	3.086	3380.	3.422
1222.	3.086	3382.	3.422
1224.	3.088	3384.	3.419
1226.	3.088	3386.	3.422
1228.	3.086	3388.	3.419
1230.	3.088	3390.	3.422
1232.	3.088	3392.	3.422
1234.	3.088	3394.	3.425
1236.	3.091	3396.	3.42
1238.	3.086	3398.	3.425
1240.	3.091	3400.	3.423
1242.	3.091	3402.	3.425
1244.	3.091	3404.	3.425
1246.	3.093	3406.	3.425
1248.	3.093	3408.	3.427
1250.	3.093	3410.	3.427
1252.	3.093	3412.	3.425

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1254.	3.093	3414.	3.425
1256.	3.095	3416.	3.427
1258.	3.095	3418.	3.427
1260.	3.095	3420.	3.427
1262.	3.095	3422.	3.427
1264.	3.1	3424.	3.43
1266.	3.098	3426.	3.427
1268.	3.098	3428.	3.427
1270.	3.1	3430.	3.427
1272.	3.1	3432.	3.43
1274.	3.101	3434.	3.43
1276.	3.101	3436.	3.43
1278.	3.103	3438.	3.43
1280.	3.103	3440.	3.432
1282.	3.106	3442.	3.432
1284.	3.106	3444.	3.432
1286.	3.103	3446.	3.432
1288.	3.106	3448.	3.434
1290.	3.108	3450.	3.432
1292.	3.108	3452.	3.432
1294.	3.108	3454.	3.432
1296.	3.108	3456.	3.432
1298.	3.11	3458.	3.432
1300.	3.11	3460.	3.432
1302.	3.11	3462.	3.43
1304.	3.112	3464.	3.432
1306.	3.115	3466.	3.43
1308.	3.115	3468.	3.432
1310.	3.115	3470.	3.432
1312.	3.117	3472.	3.432
1314.	3.117	3474.	3.432
1316.	3.117	3476.	3.432
1318.	3.119	3478.	3.432
1320.	3.119	3480.	3.434
1322.	3.119	3482.	3.432
1324.	3.119	3484.	3.434
1326.	3.122	3486.	3.434
1328.	3.122	3488.	3.434
1330.	3.124	3490.	3.434
1332.	3.124	3492.	3.437
1334.	3.122	3494.	3.437
1336.	3.124	3496.	3.439
1338.	3.126	3498.	3.437
1340.	3.126	3500.	3.437
1342.	3.124	3502.	3.437
1344.	3.126	3504.	3.437
1346.	3.124	3506.	3.437
1348.	3.124	3508.	3.439
1350.	3.124	3510.	3.439
1352.	3.124	3512.	3.439
1354.	3.129	3514.	3.439
1356.	3.126	3516.	3.441
1358.	3.126	3518.	3.441
1360.	3.126	3520.	3.441
1362.	3.129	3522.	3.441
1364.	3.129	3524.	3.444
1366.	3.129	3526.	3.441
1368.	3.129	3528.	3.444
1370.	3.131	3530.	3.444
1372.	3.131	3532.	3.444
1374.	3.131	3534.	3.444
1376.	3.133	3536.	3.441
1378.	3.133	3538.	3.444
1380.	3.136	3540.	3.444
1382.	3.133	3542.	3.444
1384.	3.133	3544.	3.444

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1386.	3.131	3546.	3.446
1388.	3.131	3548.	3.446
1390.	3.131	3550.	3.446
1392.	3.129	3552.	3.446
1394.	3.129	3554.	3.446
1396.	3.129	3556.	3.446
1398.	3.126	3558.	3.446
1400.	3.126	3560.	3.446
1402.	3.126	3562.	3.446
1404.	3.124	3564.	3.446
1406.	3.124	3566.	3.449
1408.	3.124	3568.	3.447
1410.	3.126	3570.	3.447
1412.	3.126	3572.	3.449
1414.	3.124	3574.	3.449
1416.	3.129	3576.	3.447
1418.	3.126	3578.	3.449
1420.	3.126	3580.	3.449
1422.	3.124	3582.	3.449
1424.	3.126	3584.	3.452
1426.	3.126	3586.	3.449
1428.	3.126	3588.	3.452
1430.	3.126	3590.	3.449
1432.	3.126	3592.	3.452
1434.	3.124	3594.	3.452
1436.	3.126	3596.	3.452
1438.	3.126	3598.	3.452
1440.	3.126	3600.	3.452
1442.	3.127	3602.	3.452
1444.	3.127	3604.	3.454
1446.	3.127	3606.	3.449
1448.	3.127	3608.	3.452
1450.	3.127	3610.	3.452
1452.	3.127	3612.	3.454
1454.	3.127	3614.	3.454
1456.	3.127	3616.	3.454
1458.	3.127	3618.	3.454
1460.	3.127	3620.	3.454
1462.	3.127	3622.	3.456
1464.	3.13	3624.	3.456
1466.	3.127	3626.	3.454
1468.	3.13	3628.	3.454
1470.	3.127	3630.	3.454
1472.	3.13	3632.	3.456
1474.	3.13	3634.	3.456
1476.	3.13	3636.	3.452
1478.	3.13	3638.	3.456
1480.	3.13	3640.	3.456
1482.	3.13	3642.	3.456
1484.	3.132	3644.	3.459
1486.	3.13	3646.	3.459
1488.	3.127	3648.	3.459
1490.	3.13	3650.	3.459
1492.	3.13	3652.	3.461
1494.	3.132	3654.	3.459
1496.	3.132	3656.	3.459
1498.	3.132	3658.	3.459
1500.	3.132	3660.	3.461
1502.	3.132	3662.	3.461
1504.	3.163	3664.	3.461
1506.	3.165	3666.	3.459
1508.	3.167	3668.	3.459
1510.	3.165	3670.	3.461
1512.	3.167	3672.	3.461
1514.	3.167	3674.	3.459
1516.	3.167	3676.	3.461

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1518.	3.165	3678.	3.461
1520.	3.167	3680.	3.461
1522.	3.165	3682.	3.461
1524.	3.167	3684.	3.459
1526.	3.165	3686.	3.459
1528.	3.168	3688.	3.459
1530.	3.168	3690.	3.459
1532.	3.168	3692.	3.459
1534.	3.168	3694.	3.461
1536.	3.168	3696.	3.459
1538.	3.171	3698.	3.459
1540.	3.171	3700.	3.461
1542.	3.171	3702.	3.461
1544.	3.171	3704.	3.463
1546.	3.171	3706.	3.461
1548.	3.171	3708.	3.463
1550.	3.171	3710.	3.463
1552.	3.171	3712.	3.463
1554.	3.171	3714.	3.463
1556.	3.171	3716.	3.463
1558.	3.173	3718.	3.463
1560.	3.171	3720.	3.463
1562.	3.171	3722.	3.463
1564.	3.173	3724.	3.466
1566.	3.173	3726.	3.461
1568.	3.173	3728.	3.466
1570.	3.173	3730.	3.466
1572.	3.171	3732.	3.466
1574.	3.171	3734.	3.466
1576.	3.173	3736.	3.467
1578.	3.173	3738.	3.467
1580.	3.173	3740.	3.469
1582.	3.173	3742.	3.467
1584.	3.173	3744.	3.464
1586.	3.173	3746.	3.469
1588.	3.175	3748.	3.469
1590.	3.175	3750.	3.469
1592.	3.178	3752.	3.469
1594.	3.178	3754.	3.469
1596.	3.178	3756.	3.469
1598.	3.178	3758.	3.469
1600.	3.18	3760.	3.469
1602.	3.175	3762.	3.469
1604.	3.178	3764.	3.469
1606.	3.178	3766.	3.471
1608.	3.18	3768.	3.469
1610.	3.178	3770.	3.469
1612.	3.175	3772.	3.469
1614.	3.168	3774.	3.469
1616.	3.164	3776.	3.471
1618.	3.161	3778.	3.471
1620.	3.157	3780.	3.469
1622.	3.15	3782.	3.471
1624.	3.145	3784.	3.469
1626.	3.131	3786.	3.469
1628.	3.147	3788.	3.471
1630.	3.147	3790.	3.471
1632.	3.198	3792.	3.471
1634.	3.198	3794.	3.469
1636.	3.198	3796.	3.471
1638.	3.201	3798.	3.471
1640.	3.201	3800.	3.471
1642.	3.201	3802.	3.471
1644.	3.201	3804.	3.469
1646.	3.201	3806.	3.471
1648.	3.203	3808.	3.471

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1650.	3.203	3810.	3.471
1652.	3.205	3812.	3.471
1654.	3.203	3814.	3.471
1656.	3.203	3816.	3.471
1658.	3.201	3818.	3.471
1660.	3.198	3820.	3.473
1662.	3.196	3822.	3.471
1664.	3.196	3824.	3.469
1666.	3.194	3826.	3.471
1668.	3.194	3828.	3.473
1670.	3.192	3830.	3.473
1672.	3.189	3832.	3.471
1674.	3.189	3834.	3.473
1676.	3.187	3836.	3.471
1678.	3.185	3838.	3.476
1680.	3.185	3840.	3.473
1682.	3.185	3842.	3.473
1684.	3.182	3844.	3.473
1686.	3.182	3846.	3.476
1688.	3.18	3848.	3.476
1690.	3.18	3850.	3.476
1692.	3.178	3852.	3.476
1694.	3.18	3854.	3.476
1696.	3.178	3856.	3.478
1698.	3.179	3858.	3.478
1700.	3.176	3860.	3.478
1702.	3.176	3862.	3.478
1704.	3.176	3864.	3.478
1706.	3.176	3866.	3.48
1708.	3.176	3868.	3.478
1710.	3.176	3870.	3.48
1712.	3.179	3872.	3.478
1714.	3.179	3874.	3.478
1716.	3.179	3876.	3.478
1718.	3.181	3878.	3.48
1720.	3.186	3880.	3.48
1722.	3.19	3882.	3.478
1724.	3.19	3884.	3.48
1726.	3.188	3886.	3.48
1728.	3.186	3888.	3.48
1730.	3.188	3890.	3.48
1732.	3.193	3892.	3.48
1734.	3.19	3894.	3.48
1736.	3.188	3896.	3.48
1738.	3.188	3898.	3.48
1740.	3.188	3900.	3.48
1742.	3.183	3902.	3.48
1744.	3.183	3904.	3.481
1746.	3.186	3906.	3.481
1748.	3.186	3908.	3.484
1750.	3.188	3910.	3.484
1752.	3.188	3912.	3.481
1754.	3.193	3914.	3.486
1756.	3.19	3916.	3.486
1758.	3.193	3918.	3.486
1760.	3.19	3920.	3.486
1762.	3.19	3922.	3.486
1764.	3.193	3924.	3.486
1766.	3.193	3926.	3.486
1768.	3.193	3928.	3.486
1770.	3.193	3930.	3.484
1772.	3.193	3932.	3.484
1774.	3.195	3934.	3.484
1776.	3.195	3936.	3.484
1778.	3.197	3938.	3.486
1780.	3.197	3940.	3.484

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1782.	3.195	3942.	3.484
1784.	3.197	3944.	3.486
1786.	3.199	3946.	3.486
1788.	3.199	3948.	3.486
1790.	3.199	3950.	3.486
1792.	3.202	3952.	3.486
1794.	3.202	3954.	3.486
1796.	3.204	3956.	3.488
1798.	3.202	3958.	3.488
1800.	3.202	3960.	3.488
1802.	3.202	3962.	3.488
1804.	3.204	3964.	3.488
1806.	3.202	3966.	3.488
1808.	3.204	3968.	3.486
1810.	3.202	3970.	3.486
1812.	3.206	3972.	3.488
1814.	3.204	3974.	3.486
1816.	3.204	3976.	3.488
1818.	3.204	3978.	3.486
1820.	3.204	3980.	3.488
1822.	3.206	3982.	3.488
1824.	3.206	3984.	3.488
1826.	3.206	3986.	3.488
1828.	3.206	3988.	3.488
1830.	3.206	3990.	3.488
1832.	3.206	3992.	3.488
1834.	3.206	3994.	3.488
1836.	3.206	3996.	3.488
1838.	3.206	3998.	3.488
1840.	3.206	4000.	3.488
1842.	3.206	4002.	3.488
1844.	3.209	4004.	3.488
1846.	3.209	4006.	3.491
1848.	3.209	4008.	3.491
1850.	3.209	4010.	3.491
1852.	3.211	4012.	3.491
1854.	3.211	4014.	3.491
1856.	3.209	4016.	3.488
1858.	3.209	4018.	3.491
1860.	3.211	4020.	3.488
1862.	3.211	4022.	3.491
1864.	3.213	4024.	3.491
1866.	3.213	4026.	3.488
1868.	3.214	4028.	3.491
1870.	3.214	4030.	3.488
1872.	3.214	4032.	3.491
1874.	3.214	4034.	3.491
1876.	3.214	4036.	3.488
1878.	3.217	4038.	3.491
1880.	3.217	4040.	3.491
1882.	3.217	4042.	3.491
1884.	3.217	4044.	3.491
1886.	3.217	4046.	3.491
1888.	3.219	4048.	3.491
1890.	3.219	4050.	3.488
1892.	3.219	4052.	3.491
1894.	3.217	4054.	3.493
1896.	3.217	4056.	3.491
1898.	3.221	4058.	3.491
1900.	3.219	4060.	3.491
1902.	3.219	4062.	3.491
1904.	3.219	4064.	3.493
1906.	3.221	4066.	3.493
1908.	3.221	4068.	3.493
1910.	3.221	4070.	3.493
1912.	3.224	4072.	3.494

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1914.	3.221	4074.	3.494
1916.	3.224	4076.	3.494
1918.	3.221	4078.	3.496
1920.	3.221	4080.	3.494
1922.	3.224	4082.	3.494
1924.	3.224	4084.	3.496
1926.	3.224	4086.	3.494
1928.	3.224	4088.	3.496
1930.	3.224	4090.	3.496
1932.	3.226	4092.	3.496
1934.	3.226	4094.	3.499
1936.	3.226	4096.	3.496
1938.	3.228	4098.	3.499
1940.	3.228	4100.	3.499
1942.	3.228	4102.	3.499
1944.	3.228	4104.	3.499
1946.	3.228	4106.	3.499
1948.	3.231	4108.	3.499
1950.	3.231	4110.	3.499
1952.	3.231	4112.	3.499
1954.	3.231	4114.	3.499
1956.	3.233	4116.	3.499
1958.	3.231	4118.	3.499
1960.	3.233	4120.	3.499
1962.	3.233	4122.	3.499
1964.	3.233	4124.	3.501
1966.	3.233	4126.	3.501
1968.	3.233	4128.	3.499
1970.	3.233	4130.	3.499
1972.	3.233	4132.	3.499
1974.	3.235	4134.	3.499
1976.	3.235	4136.	3.499
1978.	3.235	4138.	3.499
1980.	3.235	4140.	3.499
1982.	3.235	4142.	3.499
1984.	3.235	4144.	3.499
1986.	3.235	4146.	3.499
1988.	3.235	4148.	3.496
1990.	3.238	4150.	3.499
1992.	3.238	4152.	3.499
1994.	3.238	4154.	3.499
1996.	3.238	4156.	3.499
1998.	3.238	4158.	3.499
2000.	3.238	4160.	3.499
2002.	3.24	4162.	3.499
2004.	3.24	4164.	3.501
2006.	3.24	4166.	3.501
2008.	3.24	4168.	3.501
2010.	3.24	4170.	3.501
2012.	3.24	4172.	3.501
2014.	3.242	4174.	3.501
2016.	3.24	4176.	3.503
2018.	3.24	4178.	3.503
2020.	3.24	4180.	3.503
2022.	3.242	4182.	3.503
2024.	3.242	4184.	3.499
2026.	3.242	4186.	3.501
2028.	3.242	4188.	3.501
2030.	3.242	4190.	3.499
2032.	3.245	4192.	3.496
2034.	3.245	4194.	3.496
2036.	3.245	4196.	3.496
2038.	3.246	4198.	3.494
2040.	3.246	4200.	3.494
2042.	3.246	4202.	3.492
2044.	3.248	4204.	3.492

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
2046.	3.25	4206.	3.492
2048.	3.25	4208.	3.492
2050.	3.25	4210.	3.492
2052.	3.25	4212.	3.492
2054.	3.252	4214.	3.489
2056.	3.252	4216.	3.489
2058.	3.252	4218.	3.489
2060.	3.252	4220.	3.489
2062.	3.255	4222.	3.489
2064.	3.255	4224.	3.487
2066.	3.255	4226.	3.489
2068.	3.255	4228.	3.489
2070.	3.255	4230.	3.485
2072.	3.255	4232.	3.487
2074.	3.255	4234.	3.485
2076.	3.257	4236.	3.487
2078.	3.257	4238.	3.487
2080.	3.257	4240.	3.485
2082.	3.257	4242.	3.486
2084.	3.259	4244.	3.486
2086.	3.259	4246.	3.483
2088.	3.259	4248.	3.483
2090.	3.259	4250.	3.483
2092.	3.259	4252.	3.483
2094.	3.259	4254.	3.483
2096.	3.259	4256.	3.483
2098.	3.262	4258.	3.483
2100.	3.259	4260.	3.483
2102.	3.264	4262.	3.483
2104.	3.262	4264.	3.486
2106.	3.264	4266.	3.483
2108.	3.264	4268.	3.483
2110.	3.264	4270.	3.483
2112.	3.264	4272.	3.483
2114.	3.264	4274.	3.481
2116.	3.264	4276.	3.483
2118.	3.264	4278.	3.483
2120.	3.264	4280.	3.483
2122.	3.266	4282.	3.483
2124.	3.266	4284.	3.483
2126.	3.266	4286.	3.481
2128.	3.266	4288.	3.481
2130.	3.269	4290.	3.483
2132.	3.269	4292.	3.483
2134.	3.269	4294.	3.481
2136.	3.269	4296.	3.481
2138.	3.266	4298.	3.481
2140.	3.266	4300.	3.483
2142.	3.269	4302.	3.483
2144.	3.269	4304.	3.483
2146.	3.271	4306.	3.481
2148.	3.269	4308.	3.481
2150.	3.271	4310.	3.481
2152.	3.271	4312.	3.481
2154.	3.271	4314.	3.481
2156.	3.271	4316.	3.481
2158.	3.271	4318.	3.481
2160.	3.271		

SOLUTION

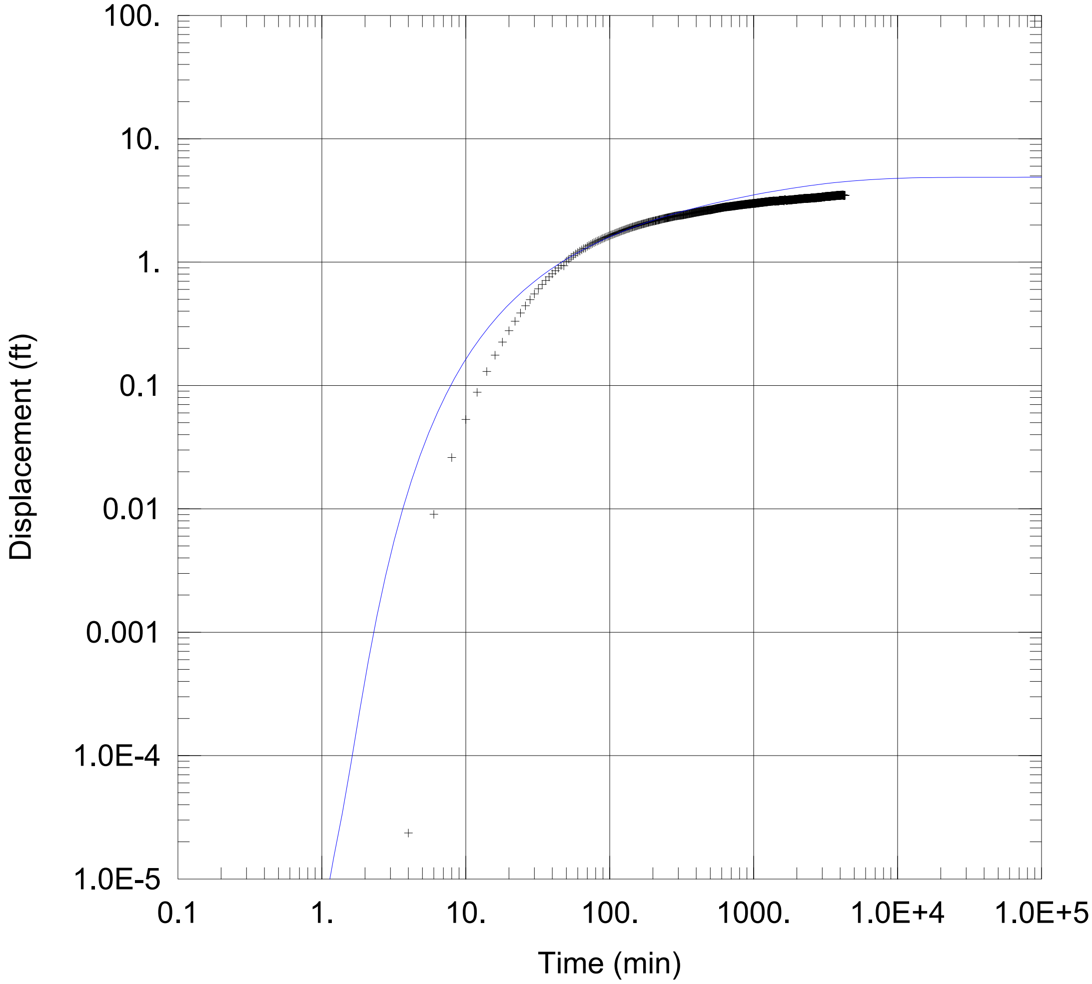
Pumping Test
Aquifer Model: Leaky
Solution Method: Hantush

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	0.1554	cm^2/sec
S	0.0003694	
1/B'	0.003182	ft^{-1}
ß'/r	0.001	ft^{-1}
1/B"	5.715E-5	ft^{-1}
ß"/r	5.715E-5	ft^{-1}

K = T/b = 7.282E-5 cm/sec
Ss = S/b = 5.277E-6 1/ft
K'/b' = 1.016E-7 min^{-1}
K' = 6.452E-7 cm/sec
K"/b" = 3.277E-11 min^{-1}
K" = 2.081E-10 cm/sec



WELL TEST ANALYSIS

Data Set: C:\...\Pumping Test_2020-07-26_PZ-23D_Hantush.aqt
Date: 07/29/20 Time: 10:11:53

PROJECT INFORMATION

Company: Golder Associates, Inc.
Client: Crossroads
Location: ME
Test Well: MW14-03B
Test Date: 7/7/2020

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
MW14-03B	3039420.818	684500.912

Observation Wells

Well Name	X (ft)	Y (ft)
+ PZ-23D	3039399.222	684529.203

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush

T = 0.1554 cm^2/sec
$1/B'$ = 0.003182 ft^{-1}
$1/B''$ = 5.715E-5 ft^{-1}
S = 0.0003694
β'/r = 0.001 ft^{-1}
β''/r = 5.715E-5 ft^{-1}

Data Set: C:\Users\BCampelia\Desktop\Crossroads Pumping Test Files\2020-07-10 Files\2020-07-26 Updated File
Date: 07/26/20
Time: 10:38:13

PROJECT INFORMATION

Company: Golder Associates, Inc.
Client: Crossroads
Location: ME
Test Date: 7/7/2020
Test Well: MW14-03B

AQUIFER DATA

Saturated Thickness: 70. ft
Anisotropy Ratio (Kz/Kr): 1.
Aquitard Thickness (b'): 12.5 ft
Aquitard Thickness (b"): 12.5 ft

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: MW14-03B

X Location: 3039420.818 ft
Y Location: 684500.912 ft

Casing Radius: 0. ft
Well Radius: 0.1875 ft

Partially Penetrating Well
Depth to Top of Screen: 28. ft
Depth to Bottom of Screen: 51. ft

No. of pumping periods: 1

Pumping Period Data

Time (min)	Rate (gal/min)
0.	1.

OBSERVATION WELL DATA

No. of observation wells: 2

Observation Well No. 1: MW14-03B

X Location: 3039420.818 ft
Y Location: 684500.912 ft

Radial distance from MW14-03B: 0. ft

Partially Penetrating Well
Depth to Top of Screen: 28. ft
Depth to Bottom of Screen: 51. ft

No. of Observations: 2161

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1.	0.	2162.	33.39
2.	3.285	2164.	33.38
4.	11.85	2166.	33.39
6.	15.12	2168.	33.39
8.	17.6	2170.	33.4
10.	19.46	2172.	33.4
12.	20.88	2174.	33.4

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
14.	21.99	2176.	33.39
16.	23.15	2178.	33.4
18.	24.09	2180.	33.4
20.	24.8	2182.	33.4
22.	25.31	2184.	33.41
24.	26.01	2186.	33.4
26.	26.58	2188.	33.41
28.	26.97	2190.	33.41
30.	27.4	2192.	33.4
32.	27.77	2194.	33.41
34.	28.03	2196.	33.4
36.	28.18	2198.	33.4
38.	28.49	2200.	33.4
40.	28.83	2202.	33.4
42.	29.09	2204.	33.41
44.	29.28	2206.	33.41
46.	29.48	2208.	33.41
48.	29.61	2210.	33.4
50.	29.72	2212.	33.41
52.	29.8	2214.	33.4
54.	29.86	2216.	33.4
56.	29.91	2218.	33.4
58.	29.97	2220.	33.4
60.	29.98	2222.	33.4
62.	30.04	2224.	33.4
64.	30.07	2226.	33.4
66.	30.11	2228.	33.4
68.	30.15	2230.	33.39
70.	30.18	2232.	33.4
72.	30.21	2234.	33.39
74.	30.32	2236.	33.38
76.	30.53	2238.	33.39
78.	30.65	2240.	33.39
80.	30.72	2242.	33.4
82.	30.77	2244.	33.4
84.	30.83	2246.	33.41
86.	30.84	2248.	33.4
88.	30.88	2250.	33.41
90.	30.97	2252.	33.39
92.	31.01	2254.	33.39
94.	31.03	2256.	33.4
96.	31.06	2258.	33.38
98.	31.09	2260.	33.39
100.	31.1	2262.	33.4
102.	31.18	2264.	33.39
104.	31.41	2266.	33.4
106.	31.53	2268.	33.4
108.	31.62	2270.	33.4
110.	31.67	2272.	33.41
112.	31.72	2274.	33.41
114.	31.77	2276.	33.39
116.	31.81	2278.	33.26
118.	31.75	2280.	33.21
120.	31.82	2282.	33.17
122.	31.87	2284.	33.18
124.	31.9	2286.	33.18
126.	31.95	2288.	33.17
128.	31.98	2290.	33.16
130.	32.	2292.	33.16
132.	32.03	2294.	33.16
134.	32.04	2296.	33.17
136.	32.01	2298.	33.16
138.	32.07	2300.	33.17
140.	32.1	2302.	33.17
142.	32.13	2304.	33.17
144.	32.18	2306.	33.18

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
146.	32.22	2308.	33.18
148.	32.25	2310.	33.19
150.	32.27	2312.	33.21
152.	32.26	2314.	33.28
154.	32.27	2316.	33.33
156.	32.27	2318.	33.35
158.	32.28	2320.	33.36
160.	32.32	2322.	33.38
162.	32.34	2324.	33.38
164.	32.36	2326.	33.39
166.	32.36	2328.	33.39
168.	32.35	2330.	33.4
170.	32.34	2332.	33.39
172.	32.34	2334.	33.39
174.	32.29	2336.	33.39
176.	32.28	2338.	33.39
178.	32.33	2340.	33.4
180.	32.35	2342.	33.4
182.	32.4	2344.	33.4
184.	32.42	2346.	33.4
186.	32.43	2348.	33.38
188.	32.43	2350.	33.39
190.	32.49	2352.	33.4
192.	32.33	2354.	33.4
194.	32.4	2356.	33.4
196.	32.44	2358.	33.41
198.	32.46	2360.	33.4
200.	32.49	2362.	33.41
202.	32.52	2364.	33.4
204.	32.46	2366.	33.41
206.	32.43	2368.	33.4
208.	32.5	2370.	33.4
210.	32.53	2372.	33.4
212.	32.61	2374.	33.4
214.	32.64	2376.	33.4
216.	32.65	2378.	33.4
218.	32.66	2380.	33.4
220.	32.67	2382.	33.38
222.	32.67	2384.	33.39
224.	32.7	2386.	33.4
226.	32.74	2388.	33.41
228.	32.77	2390.	33.41
230.	32.78	2392.	33.41
232.	32.78	2394.	33.4
234.	32.77	2396.	33.41
236.	32.77	2398.	33.42
238.	32.77	2400.	33.42
240.	32.75	2402.	33.41
242.	32.74	2404.	33.41
244.	32.73	2406.	33.4
246.	32.73	2408.	33.39
248.	32.73	2410.	33.4
250.	32.73	2412.	33.39
252.	32.74	2414.	33.38
254.	32.79	2416.	33.38
256.	32.82	2418.	33.37
258.	32.83	2420.	33.37
260.	32.84	2422.	32.7
262.	32.86	2424.	33.09
264.	32.87	2426.	33.24
266.	32.87	2428.	33.33
268.	32.85	2430.	33.37
270.	32.84	2432.	33.39
272.	32.83	2434.	33.39
274.	32.81	2436.	33.4
276.	32.82	2438.	33.4

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
278.	32.83	2440.	33.4
280.	32.83	2442.	33.4
282.	32.82	2444.	33.41
284.	32.68	2446.	33.41
286.	32.64	2448.	33.41
288.	32.67	2450.	33.41
290.	32.75	2452.	33.41
292.	32.78	2454.	33.41
294.	32.79	2456.	33.41
296.	32.81	2458.	33.41
298.	32.8	2460.	33.41
300.	30.7	2462.	33.39
302.	31.85	2464.	33.4
304.	32.17	2466.	33.41
306.	32.25	2468.	33.41
308.	32.27	2470.	33.41
310.	32.27	2472.	33.41
312.	32.27	2474.	33.4
314.	32.34	2476.	33.4
316.	32.48	2478.	33.41
318.	32.58	2480.	33.4
320.	32.63	2482.	33.41
322.	32.63	2484.	33.41
324.	32.61	2486.	33.4
326.	32.68	2488.	33.41
328.	32.68	2490.	33.41
330.	32.69	2492.	33.41
332.	32.72	2494.	33.41
334.	32.71	2496.	33.41
336.	32.69	2498.	33.41
338.	32.73	2500.	33.41
340.	32.7	2502.	33.4
342.	32.73	2504.	33.41
344.	32.76	2506.	33.41
346.	32.76	2508.	33.41
348.	32.64	2510.	33.4
350.	32.58	2512.	33.41
352.	32.66	2514.	33.41
354.	32.73	2516.	33.41
356.	32.74	2518.	33.41
358.	32.77	2520.	33.4
360.	32.77	2522.	33.4
362.	32.79	2524.	33.41
364.	32.83	2526.	33.41
366.	32.83	2528.	33.42
368.	32.77	2530.	33.42
370.	32.75	2532.	33.41
372.	32.73	2534.	33.42
374.	32.7	2536.	33.42
376.	32.72	2538.	33.42
378.	32.73	2540.	33.42
380.	32.74	2542.	33.42
382.	32.76	2544.	33.41
384.	32.8	2546.	33.42
386.	32.81	2548.	33.42
388.	32.82	2550.	33.42
390.	32.84	2552.	33.42
392.	32.84	2554.	33.43
394.	32.83	2556.	33.43
396.	32.81	2558.	33.43
398.	32.8	2560.	33.43
400.	32.77	2562.	33.43
402.	32.76	2564.	33.43
404.	32.79	2566.	33.43
406.	32.82	2568.	33.43
408.	32.84	2570.	33.43

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
410.	32.89	2572.	33.43
412.	32.91	2574.	33.44
414.	32.91	2576.	33.43
416.	32.91	2578.	33.43
418.	32.91	2580.	33.43
420.	32.89	2582.	33.43
422.	32.86	2584.	33.42
424.	32.86	2586.	33.41
426.	32.85	2588.	33.4
428.	32.83	2590.	33.4
430.	32.82	2592.	33.41
432.	32.82	2594.	33.41
434.	32.81	2596.	33.4
436.	32.82	2598.	33.41
438.	32.82	2600.	33.41
440.	32.8	2602.	33.41
442.	32.81	2604.	33.47
444.	32.8	2606.	33.49
446.	32.81	2608.	33.51
448.	32.81	2610.	33.51
450.	32.81	2612.	33.52
452.	32.8	2614.	33.52
454.	32.8	2616.	33.52
456.	32.8	2618.	33.53
458.	32.79	2620.	33.53
460.	32.79	2622.	33.53
462.	32.78	2624.	33.53
464.	32.77	2626.	33.53
466.	32.77	2628.	33.53
468.	32.77	2630.	33.53
470.	32.77	2632.	33.53
472.	32.78	2634.	33.53
474.	32.77	2636.	33.54
476.	32.77	2638.	33.53
478.	32.72	2640.	33.54
480.	32.7	2642.	33.54
482.	32.7	2644.	33.53
484.	32.69	2646.	33.53
486.	32.69	2648.	33.54
488.	32.68	2650.	33.54
490.	32.69	2652.	33.54
492.	32.68	2654.	33.54
494.	32.68	2656.	33.53
496.	32.68	2658.	33.54
498.	32.73	2660.	33.54
500.	32.82	2662.	33.54
502.	32.84	2664.	33.54
504.	32.91	2666.	33.54
506.	32.93	2668.	33.54
508.	32.98	2670.	33.53
510.	33.02	2672.	33.53
512.	33.04	2674.	33.53
514.	33.06	2676.	33.54
516.	33.07	2678.	33.54
518.	33.08	2680.	33.54
520.	33.08	2682.	33.54
522.	33.09	2684.	33.54
524.	33.09	2686.	33.54
526.	33.09	2688.	33.54
528.	33.09	2690.	33.53
530.	33.1	2692.	33.54
532.	33.09	2694.	33.53
534.	33.1	2696.	33.51
536.	33.1	2698.	33.5
538.	33.1	2700.	33.5
540.	33.09	2702.	33.5

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
542.	33.09	2704.	33.49
544.	33.08	2706.	33.49
546.	33.09	2708.	33.47
548.	33.08	2710.	33.47
550.	33.08	2712.	33.47
552.	33.09	2714.	33.47
554.	33.09	2716.	33.47
556.	33.1	2718.	33.47
558.	33.1	2720.	33.47
560.	33.12	2722.	33.47
562.	33.12	2724.	33.47
564.	33.13	2726.	33.47
566.	33.12	2728.	33.48
568.	33.1	2730.	33.49
570.	33.12	2732.	33.48
572.	33.12	2734.	32.42
574.	33.15	2736.	32.97
576.	33.19	2738.	33.21
578.	33.21	2740.	33.33
580.	33.22	2742.	33.4
582.	33.22	2744.	33.44
584.	33.23	2746.	33.46
586.	33.23	2748.	33.49
588.	33.23	2750.	33.5
590.	33.23	2752.	33.51
592.	33.23	2754.	33.53
594.	33.23	2756.	33.54
596.	33.23	2758.	33.54
598.	33.23	2760.	33.55
600.	33.24	2762.	33.56
602.	33.25	2764.	33.56
604.	33.25	2766.	33.56
606.	33.25	2768.	33.55
608.	33.26	2770.	33.54
610.	33.25	2772.	33.55
612.	33.25	2774.	33.54
614.	33.25	2776.	33.56
616.	33.26	2778.	33.56
618.	33.24	2780.	33.57
620.	33.24	2782.	33.56
622.	33.23	2784.	33.53
624.	33.22	2786.	33.52
626.	33.22	2788.	33.5
628.	33.22	2790.	33.49
630.	33.22	2792.	33.49
632.	33.22	2794.	33.5
634.	33.21	2796.	33.49
636.	33.23	2798.	33.48
638.	33.22	2800.	33.48
640.	33.21	2802.	33.47
642.	33.21	2804.	33.47
644.	33.21	2806.	33.46
646.	33.21	2808.	33.47
648.	33.2	2810.	33.47
650.	33.2	2812.	33.46
652.	33.2	2814.	33.46
654.	31.68	2816.	33.44
656.	32.43	2818.	33.45
658.	32.73	2820.	33.44
660.	32.88	2822.	33.45
662.	32.94	2824.	33.46
664.	32.98	2826.	33.46
666.	33.	2828.	33.46
668.	33.02	2830.	33.47
670.	33.04	2832.	33.46
672.	33.04	2834.	33.46

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
674.	33.04	2836.	33.47
676.	33.04	2838.	33.45
678.	33.03	2840.	33.45
680.	33.03	2842.	33.45
682.	33.03	2844.	33.44
684.	33.03	2846.	33.45
686.	33.02	2848.	33.46
688.	33.02	2850.	33.46
690.	33.03	2852.	33.47
692.	33.05	2854.	33.47
694.	33.06	2856.	33.47
696.	33.06	2858.	33.45
698.	33.07	2860.	33.46
700.	33.06	2862.	33.47
702.	33.07	2864.	33.47
704.	33.06	2866.	33.47
706.	33.07	2868.	33.47
708.	33.07	2870.	33.45
710.	33.07	2872.	33.45
712.	33.06	2874.	33.46
714.	33.05	2876.	33.47
716.	33.05	2878.	33.49
718.	33.05	2880.	33.5
720.	33.04	2882.	33.51
722.	33.05	2884.	33.52
724.	33.04	2886.	33.52
726.	33.05	2888.	33.52
728.	33.04	2890.	33.5
730.	33.05	2892.	33.5
732.	33.04	2894.	33.51
734.	33.04	2896.	33.5
736.	33.05	2898.	33.49
738.	33.04	2900.	33.47
740.	33.05	2902.	33.46
742.	33.05	2904.	33.46
744.	33.05	2906.	33.44
746.	33.05	2908.	33.45
748.	33.06	2910.	33.44
750.	33.06	2912.	33.44
752.	33.06	2914.	33.44
754.	33.06	2916.	33.44
756.	33.08	2918.	33.44
758.	33.09	2920.	33.43
760.	33.1	2922.	33.44
762.	33.1	2924.	33.42
764.	33.11	2926.	33.43
766.	33.11	2928.	33.42
768.	33.11	2930.	33.43
770.	33.12	2932.	33.42
772.	33.11	2934.	33.42
774.	33.11	2936.	33.42
776.	33.11	2938.	33.43
778.	33.12	2940.	33.43
780.	33.14	2942.	33.43
782.	33.14	2944.	33.42
784.	33.14	2946.	33.41
786.	33.14	2948.	33.42
788.	33.15	2950.	33.42
790.	33.15	2952.	33.43
792.	33.14	2954.	33.32
794.	33.15	2956.	33.27
796.	33.15	2958.	33.21
798.	33.15	2960.	33.39
800.	33.16	2962.	33.55
802.	33.16	2964.	33.64
804.	33.17	2966.	33.71

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
806.	33.16	2968.	33.75
808.	33.16	2970.	33.81
810.	33.17	2972.	33.91
812.	33.17	2974.	33.96
814.	33.17	2976.	34.01
816.	33.17	2978.	34.03
818.	33.17	2980.	34.03
820.	33.17	2982.	34.04
822.	33.17	2984.	34.05
824.	33.17	2986.	34.06
826.	33.17	2988.	34.08
828.	33.17	2990.	34.08
830.	33.17	2992.	34.08
832.	33.16	2994.	34.09
834.	33.17	2996.	34.07
836.	33.17	2998.	34.07
838.	33.17	3000.	34.07
840.	33.17	3002.	34.02
842.	33.17	3004.	33.95
844.	33.17	3006.	33.91
846.	33.16	3008.	33.89
848.	33.15	3010.	33.89
850.	33.15	3012.	33.9
852.	33.15	3014.	33.9
854.	33.16	3016.	33.91
856.	33.16	3018.	33.89
858.	33.16	3020.	33.9
860.	33.16	3022.	33.89
862.	33.15	3024.	33.9
864.	33.15	3026.	33.89
866.	33.16	3028.	33.89
868.	33.16	3030.	33.9
870.	33.15	3032.	33.89
872.	33.15	3034.	33.89
874.	33.16	3036.	33.91
876.	33.16	3038.	33.9
878.	33.16	3040.	33.89
880.	33.16	3042.	33.9
882.	33.16	3044.	33.89
884.	33.16	3046.	33.89
886.	33.16	3048.	33.88
888.	33.16	3050.	33.89
890.	33.17	3052.	33.9
892.	33.17	3054.	33.89
894.	33.17	3056.	33.89
896.	33.17	3058.	33.89
898.	33.17	3060.	33.89
900.	33.17	3062.	33.88
902.	33.17	3064.	33.89
904.	33.17	3066.	33.89
906.	33.18	3068.	33.9
908.	33.16	3070.	33.89
910.	33.17	3072.	33.9
912.	33.18	3074.	33.9
914.	33.18	3076.	33.9
916.	33.19	3078.	33.9
918.	33.19	3080.	33.9
920.	33.19	3082.	33.9
922.	33.19	3084.	33.9
924.	33.19	3086.	33.9
926.	33.19	3088.	33.92
928.	33.18	3090.	33.91
930.	33.19	3092.	33.45
932.	33.19	3094.	33.68
934.	33.2	3096.	33.78
936.	33.19	3098.	33.89

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
938.	33.19	3100.	33.94
940.	33.2	3102.	33.97
942.	33.19	3104.	33.97
944.	33.2	3106.	33.98
946.	33.2	3108.	33.98
948.	33.19	3110.	33.97
950.	33.19	3112.	33.98
952.	33.2	3114.	33.98
954.	33.2	3116.	33.98
956.	33.19	3118.	33.99
958.	33.19	3120.	33.98
960.	33.2	3122.	34.
962.	33.2	3124.	34.
964.	33.2	3126.	34.
966.	33.2	3128.	33.99
968.	33.2	3130.	33.99
970.	33.21	3132.	33.99
972.	33.2	3134.	34.
974.	33.21	3136.	34.01
976.	33.21	3138.	34.
978.	33.21	3140.	34.
980.	33.21	3142.	34.
982.	33.22	3144.	34.
984.	33.21	3146.	34.
986.	33.21	3148.	34.
988.	33.21	3150.	34.
990.	33.21	3152.	34.
992.	33.2	3154.	34.
994.	33.21	3156.	34.
996.	33.21	3158.	34.01
998.	33.21	3160.	34.
1000.	33.21	3162.	34.
1002.	33.21	3164.	34.01
1004.	33.21	3166.	34.
1006.	33.21	3168.	34.
1008.	33.22	3170.	34.01
1010.	33.22	3172.	33.99
1012.	33.22	3174.	33.99
1014.	33.21	3176.	34.
1016.	32.54	3178.	34.
1018.	32.9	3180.	34.
1020.	33.05	3182.	34.01
1022.	33.12	3184.	34.01
1024.	33.17	3186.	34.01
1026.	33.2	3188.	34.01
1028.	33.22	3190.	34.01
1030.	33.24	3192.	34.01
1032.	33.25	3194.	34.01
1034.	33.26	3196.	34.02
1036.	33.26	3198.	34.01
1038.	33.26	3200.	34.
1040.	33.26	3202.	34.
1042.	33.26	3204.	34.
1044.	33.26	3206.	34.
1046.	33.26	3208.	34.
1048.	33.26	3210.	34.
1050.	33.27	3212.	34.
1052.	33.26	3214.	34.01
1054.	33.27	3216.	34.05
1056.	33.26	3218.	34.06
1058.	33.26	3220.	34.07
1060.	33.26	3222.	34.07
1062.	33.26	3224.	34.08
1064.	33.26	3226.	34.08
1066.	33.26	3228.	34.07
1068.	33.26	3230.	34.08

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1070.	33.25	3232.	34.09
1072.	33.25	3234.	34.09
1074.	33.24	3236.	34.05
1076.	33.23	3238.	34.04
1078.	33.23	3240.	34.02
1080.	33.23	3242.	34.01
1082.	33.26	3244.	34.
1084.	33.26	3246.	34.01
1086.	33.28	3248.	34.
1088.	33.29	3250.	34.
1090.	33.29	3252.	34.
1092.	33.29	3254.	33.99
1094.	33.29	3256.	33.99
1096.	33.29	3258.	33.98
1098.	33.29	3260.	33.98
1100.	33.28	3262.	33.99
1102.	33.29	3264.	33.99
1104.	33.29	3266.	33.99
1106.	33.28	3268.	34.
1108.	33.28	3270.	34.01
1110.	33.27	3272.	34.01
1112.	33.26	3274.	34.01
1114.	33.26	3276.	34.01
1116.	33.27	3278.	34.01
1118.	33.27	3280.	34.
1120.	33.26	3282.	34.
1122.	33.27	3284.	34.
1124.	33.28	3286.	33.99
1126.	33.28	3288.	33.97
1128.	33.28	3290.	33.97
1130.	33.28	3292.	33.97
1132.	33.29	3294.	33.96
1134.	33.29	3296.	33.96
1136.	33.29	3298.	33.96
1138.	33.29	3300.	33.97
1140.	33.29	3302.	33.97
1142.	33.28	3304.	33.97
1144.	33.29	3306.	33.97
1146.	33.29	3308.	33.95
1148.	33.28	3310.	33.95
1150.	33.27	3312.	33.95
1152.	33.28	3314.	33.81
1154.	33.29	3316.	33.76
1156.	33.28	3318.	33.73
1158.	33.28	3320.	33.72
1160.	33.29	3322.	33.71
1162.	33.29	3324.	33.7
1164.	33.28	3326.	33.69
1166.	33.29	3328.	33.7
1168.	33.29	3330.	33.7
1170.	33.29	3332.	33.7
1172.	33.3	3334.	33.7
1174.	33.3	3336.	33.7
1176.	33.29	3338.	33.7
1178.	33.29	3340.	33.7
1180.	33.28	3342.	33.7
1182.	33.28	3344.	33.71
1184.	33.29	3346.	33.74
1186.	33.29	3348.	33.83
1188.	33.29	3350.	33.88
1190.	33.28	3352.	33.9
1192.	33.28	3354.	33.91
1194.	33.29	3356.	33.92
1196.	33.29	3358.	33.93
1198.	33.29	3360.	33.93
1200.	33.31	3362.	33.94

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1202.	33.33	3364.	33.93
1204.	33.34	3366.	33.93
1206.	33.35	3368.	33.95
1208.	33.34	3370.	33.95
1210.	33.33	3372.	33.95
1212.	33.33	3374.	33.95
1214.	33.32	3376.	33.94
1216.	33.32	3378.	33.95
1218.	33.32	3380.	33.94
1220.	33.32	3382.	33.95
1222.	33.31	3384.	33.95
1224.	33.3	3386.	33.95
1226.	33.29	3388.	33.96
1228.	33.28	3390.	33.95
1230.	33.29	3392.	33.95
1232.	33.29	3394.	33.96
1234.	33.31	3396.	33.96
1236.	33.31	3398.	33.96
1238.	33.31	3400.	33.96
1240.	33.31	3402.	33.95
1242.	33.32	3404.	33.96
1244.	33.31	3406.	33.95
1246.	33.32	3408.	33.95
1248.	33.31	3410.	33.95
1250.	33.31	3412.	33.93
1252.	33.32	3414.	33.92
1254.	33.32	3416.	33.92
1256.	33.33	3418.	33.94
1258.	33.33	3420.	33.92
1260.	33.33	3422.	33.92
1262.	33.34	3424.	33.93
1264.	33.34	3426.	33.95
1266.	33.35	3428.	33.97
1268.	33.34	3430.	33.99
1270.	33.33	3432.	33.99
1272.	33.33	3434.	34.01
1274.	33.32	3436.	34.01
1276.	33.33	3438.	34.01
1278.	33.33	3440.	34.01
1280.	33.36	3442.	34.
1282.	33.39	3444.	34.
1284.	33.39	3446.	34.
1286.	33.4	3448.	34.
1288.	33.4	3450.	33.34
1290.	33.38	3452.	33.64
1292.	33.41	3454.	33.78
1294.	33.4	3456.	33.84
1296.	33.39	3458.	33.9
1298.	33.38	3460.	33.93
1300.	33.37	3462.	33.93
1302.	33.36	3464.	33.95
1304.	33.37	3466.	33.94
1306.	33.4	3468.	33.94
1308.	33.4	3470.	33.96
1310.	33.4	3472.	33.95
1312.	33.39	3474.	33.95
1314.	33.4	3476.	33.95
1316.	33.39	3478.	33.95
1318.	33.38	3480.	33.96
1320.	33.38	3482.	33.96
1322.	33.37	3484.	33.96
1324.	33.39	3486.	33.97
1326.	33.38	3488.	33.96
1328.	33.38	3490.	33.97
1330.	33.37	3492.	33.96
1332.	33.36	3494.	33.96

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1334.	33.21	3496.	33.97
1336.	33.16	3498.	33.96
1338.	33.12	3500.	33.95
1340.	33.11	3502.	33.95
1342.	33.1	3504.	33.96
1344.	33.11	3506.	33.95
1346.	33.15	3508.	33.95
1348.	33.23	3510.	33.95
1350.	33.28	3512.	33.95
1352.	33.32	3514.	33.94
1354.	33.33	3516.	33.95
1356.	33.34	3518.	33.95
1358.	33.34	3520.	33.95
1360.	33.34	3522.	33.94
1362.	33.34	3524.	33.95
1364.	33.35	3526.	33.95
1366.	33.36	3528.	33.96
1368.	33.37	3530.	33.96
1370.	33.37	3532.	33.98
1372.	33.36	3534.	33.98
1374.	33.36	3536.	33.98
1376.	33.35	3538.	34.
1378.	33.36	3540.	33.98
1380.	31.92	3542.	33.97
1382.	32.34	3544.	33.97
1384.	32.58	3546.	33.97
1386.	32.68	3548.	33.97
1388.	32.74	3550.	33.96
1390.	32.77	3552.	33.96
1392.	32.79	3554.	33.96
1394.	32.8	3556.	33.96
1396.	32.81	3558.	33.98
1398.	32.82	3560.	33.97
1400.	32.81	3562.	33.97
1402.	32.81	3564.	33.95
1404.	32.81	3566.	33.96
1406.	32.82	3568.	33.95
1408.	32.82	3570.	33.94
1410.	32.83	3572.	33.94
1412.	32.79	3574.	33.93
1414.	32.76	3576.	33.94
1416.	32.76	3578.	33.95
1418.	32.74	3580.	33.95
1420.	32.74	3582.	33.95
1422.	32.74	3584.	33.95
1424.	32.73	3586.	33.95
1426.	32.73	3588.	33.95
1428.	32.74	3590.	33.94
1430.	32.75	3592.	33.93
1432.	32.75	3594.	33.93
1434.	32.76	3596.	33.94
1436.	32.76	3598.	33.93
1438.	32.76	3600.	33.94
1440.	32.77	3602.	33.94
1442.	32.76	3604.	33.95
1444.	32.77	3606.	33.95
1446.	32.77	3608.	33.96
1448.	32.77	3610.	33.97
1450.	32.76	3612.	33.97
1452.	32.77	3614.	33.98
1454.	32.78	3616.	34.01
1456.	32.78	3618.	34.
1458.	32.78	3620.	34.
1460.	32.79	3622.	33.99
1462.	32.78	3624.	33.98
1464.	32.78	3626.	33.98

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1466.	32.77	3628.	33.98
1468.	32.76	3630.	33.98
1470.	32.75	3632.	33.97
1472.	32.75	3634.	33.98
1474.	32.74	3636.	33.99
1476.	32.74	3638.	34.01
1478.	32.74	3640.	34.01
1480.	32.73	3642.	34.
1482.	32.73	3644.	34.
1484.	32.74	3646.	34.
1486.	32.73	3648.	34.01
1488.	32.71	3650.	34.01
1490.	32.73	3652.	34.
1492.	32.74	3654.	33.99
1494.	32.76	3656.	33.98
1496.	32.76	3658.	33.98
1498.	32.76	3660.	33.99
1500.	32.76	3662.	33.96
1502.	32.77	3664.	33.87
1504.	32.77	3666.	33.8
1506.	32.77	3668.	33.77
1508.	32.77	3670.	33.75
1510.	32.77	3672.	33.73
1512.	32.78	3674.	33.73
1514.	32.79	3676.	33.77
1516.	32.78	3678.	33.83
1518.	32.78	3680.	33.88
1520.	32.79	3682.	33.91
1522.	32.78	3684.	33.92
1524.	32.79	3686.	33.95
1526.	32.79	3688.	33.98
1528.	32.79	3690.	33.98
1530.	32.79	3692.	33.97
1532.	32.79	3694.	33.97
1534.	32.79	3696.	33.97
1536.	32.79	3698.	33.96
1538.	32.79	3700.	33.96
1540.	32.79	3702.	33.98
1542.	32.79	3704.	34.
1544.	32.77	3706.	34.01
1546.	32.77	3708.	34.02
1548.	32.75	3710.	34.02
1550.	32.75	3712.	34.02
1552.	32.74	3714.	34.
1554.	32.74	3716.	33.98
1556.	32.73	3718.	33.99
1558.	32.72	3720.	33.97
1560.	32.72	3722.	33.97
1562.	32.71	3724.	33.98
1564.	32.71	3726.	33.95
1566.	32.7	3728.	33.95
1568.	32.71	3730.	33.96
1570.	32.7	3732.	33.97
1572.	32.7	3734.	33.97
1574.	32.7	3736.	33.95
1576.	32.7	3738.	33.98
1578.	32.69	3740.	34.
1580.	32.91	3742.	33.99
1582.	33.06	3744.	33.97
1584.	33.13	3746.	33.98
1586.	33.17	3748.	33.97
1588.	33.21	3750.	33.95
1590.	33.24	3752.	33.96
1592.	33.25	3754.	33.97
1594.	33.25	3756.	33.96
1596.	33.26	3758.	33.95

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1598.	33.26	3760.	33.95
1600.	33.27	3762.	33.94
1602.	33.28	3764.	33.94
1604.	33.29	3766.	33.95
1606.	33.29	3768.	33.95
1608.	33.3	3770.	33.95
1610.	33.29	3772.	33.98
1612.	33.31	3774.	33.98
1614.	33.31	3776.	33.98
1616.	33.32	3778.	33.98
1618.	33.32	3780.	33.99
1620.	33.32	3782.	33.98
1622.	33.33	3784.	33.95
1624.	33.33	3786.	33.95
1626.	33.33	3788.	33.96
1628.	33.32	3790.	33.96
1630.	33.33	3792.	33.97
1632.	33.32	3794.	33.98
1634.	33.31	3796.	34.01
1636.	33.29	3798.	34.
1638.	33.29	3800.	34.
1640.	33.29	3802.	33.99
1642.	33.28	3804.	34.01
1644.	33.28	3806.	33.44
1646.	33.29	3808.	33.76
1648.	33.29	3810.	33.9
1650.	33.29	3812.	33.95
1652.	33.28	3814.	33.99
1654.	33.29	3816.	34.02
1656.	33.29	3818.	34.03
1658.	33.29	3820.	34.05
1660.	33.28	3822.	34.05
1662.	33.28	3824.	34.05
1664.	33.29	3826.	34.06
1666.	33.28	3828.	34.07
1668.	33.29	3830.	34.07
1670.	33.28	3832.	34.06
1672.	33.28	3834.	34.06
1674.	33.27	3836.	34.05
1676.	33.27	3838.	34.06
1678.	33.26	3840.	34.07
1680.	33.27	3842.	34.06
1682.	33.27	3844.	34.05
1684.	33.28	3846.	34.04
1686.	33.28	3848.	34.04
1688.	33.27	3850.	34.03
1690.	33.27	3852.	34.03
1692.	33.27	3854.	34.03
1694.	33.28	3856.	34.03
1696.	33.28	3858.	34.04
1698.	33.28	3860.	34.04
1700.	33.27	3862.	34.05
1702.	33.27	3864.	34.03
1704.	33.26	3866.	34.05
1706.	33.26	3868.	34.06
1708.	33.26	3870.	34.06
1710.	33.26	3872.	34.07
1712.	33.27	3874.	34.05
1714.	33.3	3876.	34.07
1716.	33.32	3878.	34.07
1718.	32.42	3880.	34.05
1720.	32.67	3882.	34.05
1722.	33.	3884.	34.06
1724.	33.17	3886.	34.05
1726.	33.26	3888.	34.04
1728.	33.31	3890.	34.04

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1730.	33.34	3892.	34.04
1732.	33.36	3894.	34.03
1734.	33.34	3896.	34.04
1736.	33.3	3898.	34.04
1738.	33.27	3900.	34.04
1740.	33.31	3902.	34.06
1742.	33.34	3904.	34.07
1744.	33.36	3906.	34.07
1746.	33.37	3908.	34.05
1748.	33.38	3910.	34.04
1750.	33.39	3912.	34.04
1752.	33.39	3914.	34.04
1754.	33.4	3916.	34.04
1756.	33.41	3918.	34.05
1758.	33.41	3920.	34.05
1760.	33.41	3922.	34.04
1762.	33.41	3924.	34.03
1764.	33.42	3926.	34.03
1766.	33.41	3928.	34.04
1768.	33.41	3930.	34.05
1770.	33.41	3932.	34.06
1772.	33.41	3934.	34.06
1774.	33.42	3936.	34.07
1776.	33.41	3938.	34.06
1778.	33.42	3940.	34.06
1780.	33.41	3942.	34.04
1782.	33.42	3944.	34.06
1784.	33.42	3946.	34.07
1786.	33.42	3948.	34.07
1788.	33.41	3950.	34.07
1790.	33.4	3952.	34.05
1792.	33.38	3954.	34.04
1794.	33.39	3956.	34.04
1796.	33.38	3958.	34.03
1798.	33.38	3960.	34.02
1800.	33.38	3962.	34.03
1802.	33.38	3964.	34.02
1804.	33.37	3966.	34.01
1806.	33.37	3968.	34.
1808.	33.37	3970.	34.
1810.	33.37	3972.	33.99
1812.	33.37	3974.	34.01
1814.	33.37	3976.	34.03
1816.	33.37	3978.	34.04
1818.	33.38	3980.	34.04
1820.	33.38	3982.	34.04
1822.	33.37	3984.	34.04
1824.	33.37	3986.	34.03
1826.	33.38	3988.	34.02
1828.	33.37	3990.	34.02
1830.	33.38	3992.	34.02
1832.	33.38	3994.	34.02
1834.	33.38	3996.	34.01
1836.	33.38	3998.	34.04
1838.	33.37	4000.	34.04
1840.	33.35	4002.	34.04
1842.	33.37	4004.	34.02
1844.	33.35	4006.	34.03
1846.	33.35	4008.	34.03
1848.	33.36	4010.	34.04
1850.	33.36	4012.	34.04
1852.	33.35	4014.	34.05
1854.	33.35	4016.	34.04
1856.	33.35	4018.	34.03
1858.	33.35	4020.	34.01
1860.	33.35	4022.	34.02

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1862.	33.33	4024.	34.03
1864.	33.34	4026.	34.02
1866.	33.33	4028.	34.01
1868.	33.33	4030.	34.
1870.	33.33	4032.	34.
1872.	33.33	4034.	34.
1874.	33.35	4036.	34.01
1876.	33.34	4038.	34.01
1878.	33.34	4040.	34.
1880.	33.34	4042.	33.99
1882.	33.34	4044.	33.99
1884.	33.34	4046.	33.99
1886.	33.34	4048.	34.01
1888.	33.34	4050.	34.02
1890.	33.34	4052.	34.06
1892.	33.34	4054.	34.09
1894.	33.34	4056.	34.08
1896.	33.32	4058.	34.09
1898.	33.3	4060.	34.11
1900.	33.33	4062.	34.12
1902.	33.34	4064.	34.11
1904.	33.36	4066.	34.11
1906.	33.35	4068.	34.11
1908.	33.36	4070.	34.1
1910.	33.37	4072.	34.09
1912.	33.37	4074.	34.08
1914.	33.36	4076.	34.1
1916.	33.38	4078.	34.11
1918.	33.38	4080.	34.12
1920.	33.37	4082.	34.12
1922.	33.38	4084.	34.11
1924.	33.37	4086.	34.13
1926.	33.38	4088.	34.12
1928.	33.37	4090.	34.12
1930.	33.36	4092.	34.1
1932.	33.37	4094.	34.09
1934.	33.37	4096.	34.07
1936.	33.35	4098.	34.07
1938.	33.36	4100.	34.1
1940.	33.38	4102.	34.11
1942.	33.38	4104.	34.12
1944.	33.35	4106.	34.13
1946.	33.37	4108.	34.12
1948.	33.36	4110.	34.11
1950.	33.37	4112.	34.07
1952.	33.36	4114.	34.05
1954.	33.38	4116.	34.04
1956.	33.37	4118.	34.03
1958.	33.37	4120.	34.
1960.	33.36	4122.	34.
1962.	33.35	4124.	33.95
1964.	33.35	4126.	33.89
1966.	33.34	4128.	33.86
1968.	33.35	4130.	33.83
1970.	33.35	4132.	33.81
1972.	33.35	4134.	33.82
1974.	33.34	4136.	33.8
1976.	33.33	4138.	33.8
1978.	33.34	4140.	33.83
1980.	33.35	4142.	33.85
1982.	33.35	4144.	33.95
1984.	33.36	4146.	34.01
1986.	33.37	4148.	34.05
1988.	33.37	4150.	34.1
1990.	33.37	4152.	34.09
1992.	33.37	4154.	34.09

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1994.	33.37	4156.	34.11
1996.	33.39	4158.	34.14
1998.	33.38	4160.	34.14
2000.	33.39	4162.	34.14
2002.	33.39	4164.	34.12
2004.	33.38	4166.	34.15
2006.	33.38	4168.	34.16
2008.	33.39	4170.	34.15
2010.	32.74	4172.	34.12
2012.	33.11	4174.	34.15
2014.	33.26	4176.	33.16
2016.	33.33	4178.	33.43
2018.	33.35	4180.	33.52
2020.	33.38	4182.	33.54
2022.	33.39	4184.	33.57
2024.	33.41	4186.	33.57
2026.	33.42	4188.	33.57
2028.	33.42	4190.	33.56
2030.	33.42	4192.	33.56
2032.	33.42	4194.	33.56
2034.	33.43	4196.	33.54
2036.	33.42	4198.	33.53
2038.	33.42	4200.	33.53
2040.	33.42	4202.	33.52
2042.	33.43	4204.	33.52
2044.	33.43	4206.	33.51
2046.	33.42	4208.	33.5
2048.	33.42	4210.	33.49
2050.	33.43	4212.	33.49
2052.	33.42	4214.	33.48
2054.	33.43	4216.	33.49
2056.	33.43	4218.	33.49
2058.	33.42	4220.	33.5
2060.	33.43	4222.	33.48
2062.	33.43	4224.	33.48
2064.	33.44	4226.	33.48
2066.	33.43	4228.	33.47
2068.	33.44	4230.	33.47
2070.	33.44	4232.	33.48
2072.	33.44	4234.	33.47
2074.	33.44	4236.	33.47
2076.	33.45	4238.	33.47
2078.	33.45	4240.	33.47
2080.	33.45	4242.	33.47
2082.	33.44	4244.	33.46
2084.	33.44	4246.	33.47
2086.	33.46	4248.	33.47
2088.	33.47	4250.	33.47
2090.	33.47	4252.	33.47
2092.	33.49	4254.	33.47
2094.	33.49	4256.	33.46
2096.	33.49	4258.	33.46
2098.	33.49	4260.	33.46
2100.	33.48	4262.	33.46
2102.	33.48	4264.	33.46
2104.	33.48	4266.	33.45
2106.	33.48	4268.	33.46
2108.	33.47	4270.	33.46
2110.	33.46	4272.	33.46
2112.	33.46	4274.	33.45
2114.	33.46	4276.	33.46
2116.	33.46	4278.	33.46
2118.	33.46	4280.	33.46
2120.	33.45	4282.	33.46
2122.	33.46	4284.	33.46
2124.	33.46	4286.	33.46

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
2126.	33.47	4288.	33.46
2128.	33.45	4290.	33.47
2130.	33.46	4292.	33.46
2132.	33.45	4294.	33.46
2134.	33.45	4296.	33.46
2136.	33.43	4298.	33.45
2138.	33.44	4300.	33.45
2140.	33.4	4302.	33.44
2142.	33.4	4304.	33.44
2144.	33.39	4306.	33.46
2146.	33.39	4308.	33.47
2148.	33.39	4310.	33.48
2150.	33.39	4312.	33.48
2152.	33.39	4314.	33.49
2154.	33.39	4316.	33.49
2156.	33.4	4318.	33.48
2158.	33.39	4320.	33.31
2160.	33.39		

Observation Well No. 2: PZ-13D

X Location: 3040275.6 ft
Y Location: 684339.16 ft

Radial distance from MW14-03B: 869.9517096 ft

Partially Penetrating Well
Depth to Top of Screen: 8. ft
Depth to Bottom of Screen: 15. ft

No. of Observations: 761

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
5.	-0.002297	2170.	0.2496
10.	0.002953	2175.	0.2476
15.	-0.002953	2180.	0.2459
20.	0.004593	2185.	0.2479
25.	0.004921	2190.	0.2479
30.	-0.003937	2195.	0.2463
35.	0.001969	2200.	0.2499
40.	0.00164	2205.	0.2489
45.	0.003609	2210.	0.2548
50.	0.001969	2215.	0.2545
55.	-0.003609	2220.	0.2587
60.	0.007874	2225.	0.2604
65.	0.003609	2230.	0.2561
70.	0.00853	2235.	0.2564
75.	-0.001969	2240.	0.2561
80.	0.01444	2245.	0.2564
85.	0.002953	2250.	0.2581
90.	0.01148	2255.	0.2548
95.	0.002953	2260.	0.2581
100.	0.01115	2265.	0.2604
105.	0.01444	2270.	0.263
110.	0.01673	2275.	0.2601
115.	0.009186	2280.	0.262
120.	0.003281	2285.	0.2601
125.	0.0105	2290.	0.2558
130.	0.01181	2295.	0.2578
135.	0.01083	2300.	0.2623
140.	0.01411	2305.	0.265
145.	0.01444	2310.	0.264
150.	0.00689	2315.	0.2689
155.	0.001969	2320.	0.2679
160.	0.0105	2325.	0.2633

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
165.	0.008202	2330.	0.2633
170.	0.005249	2335.	0.2643
175.	0.01017	2340.	0.2656
180.	0.0006562	2345.	0.265
185.	0.007546	2350.	0.2706
190.	0.005249	2355.	0.264
195.	0.01115	2360.	0.2715
200.	0.01476	2365.	0.2653
205.	0.0128	2370.	0.2597
210.	0.005577	2375.	0.2597
215.	0.01903	2380.	0.2594
220.	0.01115	2385.	0.2692
225.	0.007546	2390.	0.2646
230.	0.01247	2395.	0.264
235.	0.01312	2400.	0.2673
240.	0.01509	2405.	0.2689
245.	0.01969	2410.	0.2663
250.	0.01673	2415.	0.2646
255.	0.01575	2420.	0.2656
260.	0.01969	2425.	0.2643
265.	0.02625	2430.	0.264
270.	0.021	2435.	0.2594
275.	0.02822	2440.	0.2633
280.	0.00689	2445.	0.264
285.	0.02165	2450.	0.2653
290.	0.02986	2455.	0.2617
295.	0.02789	2460.	0.2623
300.	0.03215	2465.	0.2643
305.	0.02395	2470.	0.2607
310.	0.03018	2475.	0.2617
315.	0.03445	2480.	0.2587
320.	0.03117	2485.	0.2604
325.	0.0351	2490.	0.2663
330.	0.03904	2495.	0.2633
335.	0.0374	2500.	0.2663
340.	0.03871	2505.	0.2673
345.	0.05217	2510.	0.2646
350.	0.04429	2515.	0.2597
355.	0.04528	2520.	0.2627
360.	0.05348	2525.	0.2574
365.	0.0479	2530.	0.2538
370.	0.05085	2535.	0.2568
375.	0.05151	2540.	0.2558
380.	0.0479	2545.	0.2538
385.	0.05577	2550.	0.2541
390.	0.05217	2555.	0.2652
395.	0.05479	2790.	0.2852
400.	0.05479	2800.	0.3089
405.	0.05512	2805.	0.3162
410.	0.05807	2810.	0.3089
415.	0.05512	2815.	0.3102
420.	0.05676	2820.	0.3073
425.	0.06102	2825.	0.3086
430.	0.06201	2830.	0.3116
435.	0.06299	2835.	0.3142
440.	0.06562	2840.	0.3089
445.	0.06726	2845.	0.3135
450.	0.06332	2850.	0.308
455.	0.06791	2855.	0.3188
460.	0.07152	2860.	0.3135
465.	0.07349	2865.	0.3145
470.	0.06299	2870.	0.3139
475.	0.07448	2875.	0.3109
480.	0.07415	2880.	0.3096
485.	0.07907	2885.	0.3119
490.	0.07677	2890.	0.3155

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
495.	0.08465	2895.	0.3119
500.	0.08104	2900.	0.3139
505.	0.08366	2905.	0.3158
510.	0.09088	2910.	0.3162
515.	0.08465	2915.	0.3185
520.	0.0876	2920.	0.3152
525.	0.09055	2925.	0.3148
530.	0.09219	2930.	0.3207
535.	0.0935	2935.	0.3139
540.	0.08924	2940.	0.3191
545.	0.09186	2945.	0.3214
550.	0.09744	2950.	0.3234
555.	0.1004	2955.	0.3175
560.	0.0981	2960.	0.3191
565.	0.09383	2965.	0.3175
570.	0.09482	2970.	0.3214
575.	0.103	2975.	0.3188
580.	0.1017	2980.	0.3211
585.	0.1043	2985.	0.3217
590.	0.1125	2990.	0.3234
595.	0.1033	2995.	0.3247
600.	0.1017	3000.	0.3204
605.	0.1102	3005.	0.3276
610.	0.1132	3010.	0.3204
615.	0.1138	3015.	0.324
620.	0.1155	3020.	0.324
625.	0.1138	3025.	0.3276
630.	0.1178	3030.	0.3247
635.	0.1224	3035.	0.3286
640.	0.1171	3040.	0.3286
645.	0.1152	3045.	0.3211
650.	0.1263	3050.	0.3247
655.	0.125	3055.	0.3211
660.	0.1257	3060.	0.324
665.	0.1286	3065.	0.3253
670.	0.128	3070.	0.3188
675.	0.1237	3075.	0.3191
680.	0.128	3080.	0.3207
685.	0.1306	3085.	0.3217
690.	0.1332	3090.	0.3178
695.	0.1293	3095.	0.3207
700.	0.1381	3100.	0.3198
705.	0.1388	3105.	0.3214
710.	0.1342	3110.	0.3171
715.	0.1362	3115.	0.3247
720.	0.1385	3120.	0.3211
725.	0.1427	3125.	0.3188
730.	0.1421	3130.	0.3198
735.	0.1411	3135.	0.3198
740.	0.1453	3140.	0.3178
745.	0.1444	3145.	0.3168
750.	0.1483	3150.	0.3135
755.	0.1526	3155.	0.3191
760.	0.1411	3160.	0.3178
765.	0.148	3165.	0.3129
770.	0.1509	3170.	0.3178
775.	0.1493	3175.	0.3155
780.	0.1476	3180.	0.3207
785.	0.1473	3185.	0.3168
790.	0.1539	3190.	0.3142
795.	0.1542	3195.	0.3155
800.	0.1535	3200.	0.3109
805.	0.1585	3205.	0.3139
810.	0.1627	3210.	0.3155
815.	0.1555	3215.	0.308
820.	0.1578	3220.	0.308

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
825.	0.1558	3225.	0.3112
830.	0.1572	3230.	0.3145
835.	0.1588	3235.	0.3125
840.	0.1581	3240.	0.3099
845.	0.1555	3245.	0.3102
850.	0.1644	3250.	0.3152
855.	0.164	3255.	0.3119
860.	0.1581	3260.	0.3119
865.	0.1565	3265.	0.3125
870.	0.1555	3270.	0.3171
875.	0.1578	3275.	0.3155
880.	0.1604	3280.	0.3139
885.	0.1588	3285.	0.3142
890.	0.1575	3290.	0.3162
895.	0.165	3295.	0.3148
900.	0.1552	3300.	0.3142
905.	0.1562	3305.	0.3168
910.	0.164	3310.	0.3162
915.	0.1634	3315.	0.3168
920.	0.1654	3320.	0.3139
925.	0.166	3325.	0.3122
930.	0.1565	3330.	0.3125
935.	0.1634	3335.	0.3152
940.	0.1581	3340.	0.3178
945.	0.1683	3345.	0.3148
950.	0.1601	3350.	0.3207
955.	0.1663	3355.	0.3185
960.	0.1647	3360.	0.3234
965.	0.1575	3365.	0.3191
970.	0.1594	3370.	0.3188
975.	0.1673	3375.	0.3237
980.	0.1637	3380.	0.3201
985.	0.1591	3385.	0.3171
990.	0.1598	3390.	0.3188
995.	0.1621	3395.	0.3227
1000.	0.1594	3400.	0.3247
1005.	0.1601	3405.	0.3214
1010.	0.1594	3410.	0.3244
1015.	0.1627	3415.	0.3276
1020.	0.1657	3420.	0.3247
1025.	0.166	3425.	0.326
1030.	0.1693	3430.	0.3296
1035.	0.1568	3435.	0.327
1040.	0.164	3440.	0.3267
1045.	0.1654	3445.	0.3309
1050.	0.1562	3450.	0.329
1055.	0.1608	3455.	0.3322
1060.	0.1614	3460.	0.3319
1065.	0.1614	3465.	0.3322
1070.	0.1575	3470.	0.3345
1075.	0.1611	3475.	0.3352
1080.	0.1585	3480.	0.3342
1085.	0.1637	3485.	0.3332
1090.	0.1594	3490.	0.3385
1095.	0.1591	3495.	0.3411
1100.	0.1614	3500.	0.3388
1105.	0.1594	3505.	0.3368
1110.	0.167	3510.	0.3414
1115.	0.1552	3515.	0.3427
1120.	0.1617	3520.	0.3424
1125.	0.1575	3525.	0.344
1130.	0.1542	3530.	0.3447
1135.	0.1539	3535.	0.3457
1140.	0.165	3540.	0.3493
1145.	0.1637	3545.	0.3434
1150.	0.1657	3550.	0.3503

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1155.	0.1634	3555.	0.347
1160.	0.164	3560.	0.3503
1165.	0.1647	3565.	0.3516
1170.	0.1654	3570.	0.3516
1175.	0.1677	3575.	0.3516
1180.	0.1742	3580.	0.3568
1185.	0.1686	3585.	0.3568
1190.	0.1601	3590.	0.3506
1195.	0.165	3595.	0.3572
1200.	0.165	3600.	0.3604
1205.	0.167	3605.	0.3601
1210.	0.1677	3610.	0.3611
1215.	0.1663	3615.	0.3614
1220.	0.1778	3620.	0.3641
1225.	0.1896	3625.	0.3641
1230.	0.1821	3630.	0.3647
1235.	0.1795	3635.	0.3667
1240.	0.1667	3640.	0.3677
1245.	0.1837	3645.	0.3696
1250.	0.1785	3650.	0.369
1255.	0.1686	3655.	0.3686
1260.	0.1755	3660.	0.368
1265.	0.1772	3665.	0.3736
1270.	0.1703	3670.	0.37
1275.	0.1857	3675.	0.3709
1280.	0.168	3680.	0.3716
1285.	0.1772	3685.	0.3755
1290.	0.1785	3690.	0.3719
1295.	0.1801	3695.	0.3795
1300.	0.1637	3700.	0.3752
1305.	0.1739	3705.	0.3785
1310.	0.1765	3710.	0.3742
1315.	0.1821	3715.	0.3778
1320.	0.1755	3720.	0.3782
1325.	0.1814	3725.	0.3782
1330.	0.1821	3730.	0.3746
1335.	0.1841	3735.	0.3782
1340.	0.1867	3740.	0.3818
1345.	0.1847	3745.	0.3801
1350.	0.1883	3750.	0.3791
1355.	0.1831	3755.	0.3801
1360.	0.1854	3760.	0.3814
1365.	0.1877	3765.	0.3847
1370.	0.1857	3770.	0.3841
1375.	0.188	3775.	0.3851
1380.	0.1791	3780.	0.3814
1385.	0.1877	3785.	0.3831
1390.	0.1867	3790.	0.3854
1395.	0.1873	3795.	0.3795
1400.	0.19	3800.	0.3893
1405.	0.1955	3805.	0.3831
1410.	0.1903	3810.	0.3834
1415.	0.1955	3815.	0.3837
1420.	0.1955	3820.	0.3854
1425.	0.2021	3825.	0.387
1430.	0.2034	3830.	0.3831
1435.	0.1965	3835.	0.3864
1440.	0.1995	3840.	0.3873
1445.	0.208	3845.	0.3834
1450.	0.2106	3850.	0.3867
1455.	0.2073	3855.	0.3847
1460.	0.2041	3860.	0.3887
1465.	0.209	3865.	0.388
1470.	0.2133	3870.	0.389
1475.	0.208	3875.	0.386
1480.	0.2044	3880.	0.388

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1485.	0.2103	3885.	0.3847
1490.	0.206	3890.	0.3864
1495.	0.2096	3895.	0.3828
1500.	0.2047	3900.	0.3854
1505.	0.2077	3905.	0.3837
1510.	0.2136	3910.	0.3857
1515.	0.2175	3915.	0.3873
1520.	0.2119	3920.	0.3821
1525.	0.2159	3925.	0.3864
1530.	0.2044	3930.	0.386
1535.	0.207	3935.	0.3808
1540.	0.2047	3940.	0.3837
1545.	0.2228	3945.	0.3798
1550.	0.211	3950.	0.3844
1555.	0.2142	3955.	0.3818
1560.	0.2106	3960.	0.3824
1565.	0.2133	3965.	0.3811
1570.	0.2052	3970.	0.3844
1835.	0.1852	3975.	0.3841
1840.	0.1905	3980.	0.3778
1845.	0.1885	3985.	0.3778
1850.	0.1816	3990.	0.3762
1855.	0.1898	3995.	0.3805
1860.	0.1849	4000.	0.3801
1865.	0.1862	4005.	0.3788
1870.	0.1921	4010.	0.3798
1875.	0.1875	4015.	0.3808
1880.	0.1866	4020.	0.3844
1885.	0.1918	4025.	0.3821
1890.	0.1977	4030.	0.3834
1895.	0.199	4035.	0.3801
1900.	0.198	4040.	0.3841
1905.	0.1925	4045.	0.3801
1910.	0.2059	4050.	0.3788
1915.	0.2036	4055.	0.3811
1920.	0.2023	4060.	0.3788
1925.	0.2049	4065.	0.3782
1930.	0.1994	4070.	0.3791
1935.	0.1987	4075.	0.3844
1940.	0.2072	4080.	0.3808
1945.	0.2023	4085.	0.3811
1950.	0.2066	4090.	0.3782
1955.	0.2066	4095.	0.3801
1960.	0.2089	4100.	0.3864
1965.	0.2135	4105.	0.3814
1970.	0.2069	4110.	0.3949
1975.	0.2125	4115.	0.3929
1980.	0.2151	4120.	0.2404
1985.	0.2144	4140.	0.3252
1990.	0.2148	4145.	0.3236
1995.	0.222	4150.	0.3246
2000.	0.2125	4155.	0.3252
2005.	0.2161	4160.	0.3213
2010.	0.2181	4165.	0.3292
2015.	0.2194	4170.	0.3282
2020.	0.219	4175.	0.3272
2025.	0.2167	4180.	0.3321
2030.	0.2167	4185.	0.3266
2035.	0.223	4190.	0.3266
2040.	0.2171	4195.	0.3351
2045.	0.2204	4200.	0.3312
2050.	0.2269	4205.	0.3308
2055.	0.2246	4210.	0.3295
2060.	0.221	4215.	0.3338
2065.	0.2312	4220.	0.3318
2070.	0.2292	4225.	0.3348

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
2075.	0.2266	4230.	0.3325
2080.	0.2302	4235.	0.3321
2085.	0.2325	4240.	0.3377
2090.	0.2299	4245.	0.3371
2095.	0.2341	4250.	0.3361
2100.	0.2322	4255.	0.3364
2105.	0.2338	4260.	0.3374
2110.	0.2377	4265.	0.3394
2115.	0.2374	4270.	0.3357
2120.	0.2354	4275.	0.3403
2125.	0.2394	4280.	0.3394
2130.	0.2341	4285.	0.342
2135.	0.2427	4290.	0.3479
2140.	0.2407	4295.	0.3423
2145.	0.2371	4300.	0.3462
2150.	0.2417	4305.	0.3439
2155.	0.2456	4310.	0.3466
2160.	0.2423	4315.	0.3453
2165.	0.2473		

SOLUTION

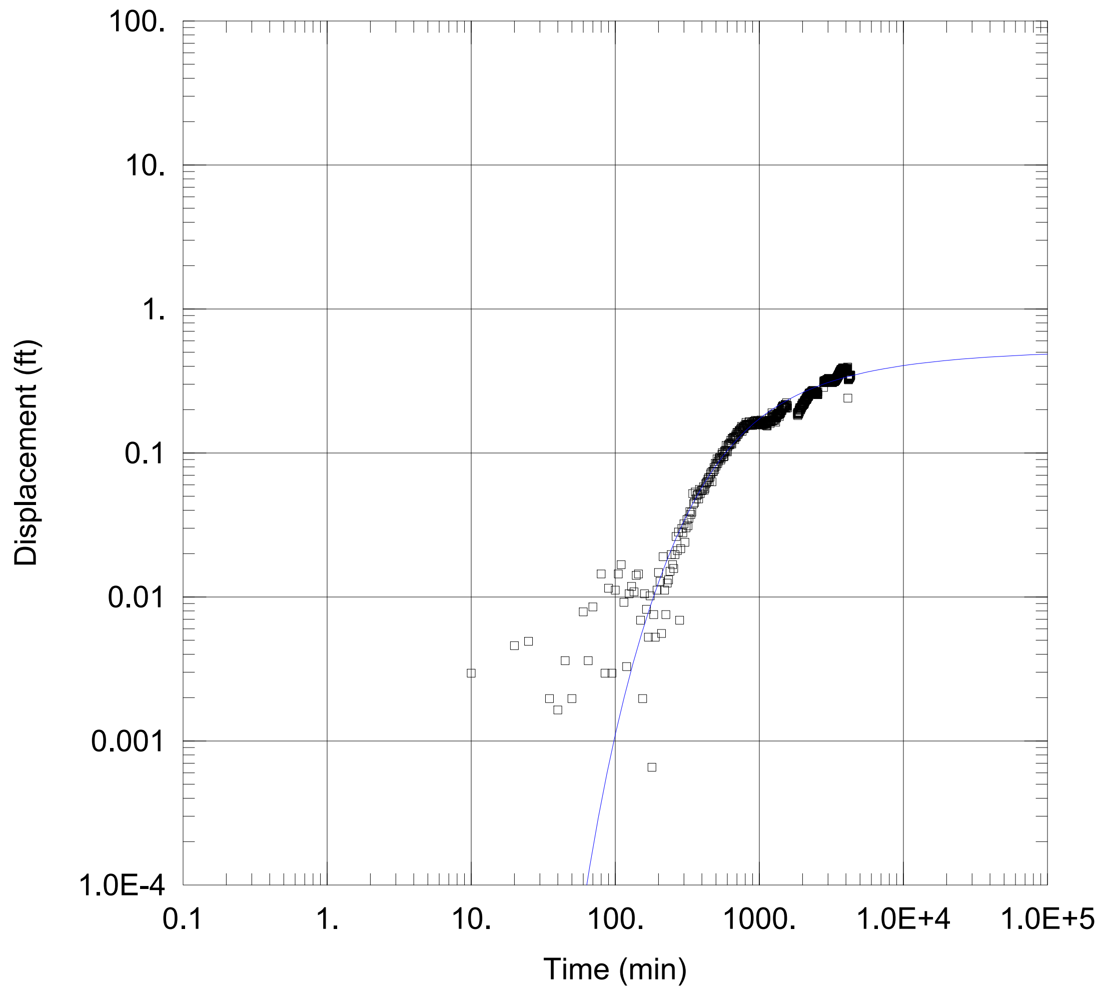
Pumping Test
Aquifer Model: Leaky
Solution Method: Hantush

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	0.0228	cm^2/sec
S	2.455E-6	
1/B'	0.003407	ft^{-1}
ß'/r	0.001226	ft^{-1}
1/B"	5.715E-5	ft^{-1}
ß"/r	0.001687	ft^{-1}

K = T/b = 1.069E-5 cm/sec
Ss = S/b = 3.507E-8 1/ft
K'/b' = 1.709E-8 min^{-1}
K' = 1.085E-7 cm/sec
K"/b" = 4.809E-12 min^{-1}
K" = 3.054E-11 cm/sec



WELL TEST ANALYSIS

Data Set: C:\...\Pumping Test_2020-07-23_PZ-13D_Hantush.aqt
Date: 07/29/20 Time: 10:06:18

PROJECT INFORMATION

Company: Golder Associates, Inc.
Client: Crossroads
Location: ME
Test Well: MW14-03B
Test Date: 7/7/2020

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
MW14-03B	3039420.818	684500.912

Observation Wells

Well Name	X (ft)	Y (ft)
□ PZ-13D	3040275.6	684339.16

SOLUTION

Aquifer Model: Leaky

Solution Method: Hantush

T = 0.0228 cm^2/sec
1/B' = 0.003407 ft^{-1}
1/B" = 5.715E-5 ft^{-1}

S = 2.455E-6
ß'/r = 0.001226 ft^{-1}
ß"/r = 0.001687 ft^{-1}

Data Set: C:\Users\BCampelia\Desktop\Crossroads Pumping Test Files\2020-07-10 Files\2020-07-26 Updated File
Date: 07/29/20
Time: 09:36:33

PROJECT INFORMATION

Company: Golder Associates, Inc.
Client: Crossroads
Location: ME
Test Date: 7/7/2020
Test Well: MW14-03B

AQUIFER DATA

Saturated Thickness: 71. ft
Anisotropy Ratio (Kz/Kr): 1.
Aquitard Thickness (b'): 12.5 ft
Aquitard Thickness (b"): 12.5 ft

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: MW14-03B

X Location: 3039420.818 ft
Y Location: 684500.912 ft

Casing Radius: 0. ft
Well Radius: 0.1875 ft

Partially Penetrating Well
Depth to Top of Screen: 28. ft
Depth to Bottom of Screen: 51. ft

No. of pumping periods: 1

Pumping Period Data

Time (min)	Rate (gal/min)
0.	1.

OBSERVATION WELL DATA

No. of observation wells: 2

Observation Well No. 1: MW14-03B

X Location: 3039420.818 ft
Y Location: 684500.912 ft

Radial distance from MW14-03B: 0. ft

Partially Penetrating Well
Depth to Top of Screen: 28. ft
Depth to Bottom of Screen: 51. ft

No. of Observations: 2161

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1.	0.	2162.	33.39
2.	3.285	2164.	33.38
4.	11.85	2166.	33.39
6.	15.12	2168.	33.39
8.	17.6	2170.	33.4
10.	19.46	2172.	33.4
12.	20.88	2174.	33.4

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
14.	21.99	2176.	33.39
16.	23.15	2178.	33.4
18.	24.09	2180.	33.4
20.	24.8	2182.	33.4
22.	25.31	2184.	33.41
24.	26.01	2186.	33.4
26.	26.58	2188.	33.41
28.	26.97	2190.	33.41
30.	27.4	2192.	33.4
32.	27.77	2194.	33.41
34.	28.03	2196.	33.4
36.	28.18	2198.	33.4
38.	28.49	2200.	33.4
40.	28.83	2202.	33.4
42.	29.09	2204.	33.41
44.	29.28	2206.	33.41
46.	29.48	2208.	33.41
48.	29.61	2210.	33.4
50.	29.72	2212.	33.41
52.	29.8	2214.	33.4
54.	29.86	2216.	33.4
56.	29.91	2218.	33.4
58.	29.97	2220.	33.4
60.	29.98	2222.	33.4
62.	30.04	2224.	33.4
64.	30.07	2226.	33.4
66.	30.11	2228.	33.4
68.	30.15	2230.	33.39
70.	30.18	2232.	33.4
72.	30.21	2234.	33.39
74.	30.32	2236.	33.38
76.	30.53	2238.	33.39
78.	30.65	2240.	33.39
80.	30.72	2242.	33.4
82.	30.77	2244.	33.4
84.	30.83	2246.	33.41
86.	30.84	2248.	33.4
88.	30.88	2250.	33.41
90.	30.97	2252.	33.39
92.	31.01	2254.	33.39
94.	31.03	2256.	33.4
96.	31.06	2258.	33.38
98.	31.09	2260.	33.39
100.	31.1	2262.	33.4
102.	31.18	2264.	33.39
104.	31.41	2266.	33.4
106.	31.53	2268.	33.4
108.	31.62	2270.	33.4
110.	31.67	2272.	33.41
112.	31.72	2274.	33.41
114.	31.77	2276.	33.39
116.	31.81	2278.	33.26
118.	31.75	2280.	33.21
120.	31.82	2282.	33.17
122.	31.87	2284.	33.18
124.	31.9	2286.	33.18
126.	31.95	2288.	33.17
128.	31.98	2290.	33.16
130.	32.	2292.	33.16
132.	32.03	2294.	33.16
134.	32.04	2296.	33.17
136.	32.01	2298.	33.16
138.	32.07	2300.	33.17
140.	32.1	2302.	33.17
142.	32.13	2304.	33.17
144.	32.18	2306.	33.18

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
146.	32.22	2308.	33.18
148.	32.25	2310.	33.19
150.	32.27	2312.	33.21
152.	32.26	2314.	33.28
154.	32.27	2316.	33.33
156.	32.27	2318.	33.35
158.	32.28	2320.	33.36
160.	32.32	2322.	33.38
162.	32.34	2324.	33.38
164.	32.36	2326.	33.39
166.	32.36	2328.	33.39
168.	32.35	2330.	33.4
170.	32.34	2332.	33.39
172.	32.34	2334.	33.39
174.	32.29	2336.	33.39
176.	32.28	2338.	33.39
178.	32.33	2340.	33.4
180.	32.35	2342.	33.4
182.	32.4	2344.	33.4
184.	32.42	2346.	33.4
186.	32.43	2348.	33.38
188.	32.43	2350.	33.39
190.	32.49	2352.	33.4
192.	32.33	2354.	33.4
194.	32.4	2356.	33.4
196.	32.44	2358.	33.41
198.	32.46	2360.	33.4
200.	32.49	2362.	33.41
202.	32.52	2364.	33.4
204.	32.46	2366.	33.41
206.	32.43	2368.	33.4
208.	32.5	2370.	33.4
210.	32.53	2372.	33.4
212.	32.61	2374.	33.4
214.	32.64	2376.	33.4
216.	32.65	2378.	33.4
218.	32.66	2380.	33.4
220.	32.67	2382.	33.38
222.	32.67	2384.	33.39
224.	32.7	2386.	33.4
226.	32.74	2388.	33.41
228.	32.77	2390.	33.41
230.	32.78	2392.	33.41
232.	32.78	2394.	33.4
234.	32.77	2396.	33.41
236.	32.77	2398.	33.42
238.	32.77	2400.	33.42
240.	32.75	2402.	33.41
242.	32.74	2404.	33.41
244.	32.73	2406.	33.4
246.	32.73	2408.	33.39
248.	32.73	2410.	33.4
250.	32.73	2412.	33.39
252.	32.74	2414.	33.38
254.	32.79	2416.	33.38
256.	32.82	2418.	33.37
258.	32.83	2420.	33.37
260.	32.84	2422.	32.7
262.	32.86	2424.	33.09
264.	32.87	2426.	33.24
266.	32.87	2428.	33.33
268.	32.85	2430.	33.37
270.	32.84	2432.	33.39
272.	32.83	2434.	33.39
274.	32.81	2436.	33.4
276.	32.82	2438.	33.4

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
278.	32.83	2440.	33.4
280.	32.83	2442.	33.4
282.	32.82	2444.	33.41
284.	32.68	2446.	33.41
286.	32.64	2448.	33.41
288.	32.67	2450.	33.41
290.	32.75	2452.	33.41
292.	32.78	2454.	33.41
294.	32.79	2456.	33.41
296.	32.81	2458.	33.41
298.	32.8	2460.	33.41
300.	30.7	2462.	33.39
302.	31.85	2464.	33.4
304.	32.17	2466.	33.41
306.	32.25	2468.	33.41
308.	32.27	2470.	33.41
310.	32.27	2472.	33.41
312.	32.27	2474.	33.4
314.	32.34	2476.	33.4
316.	32.48	2478.	33.41
318.	32.58	2480.	33.4
320.	32.63	2482.	33.41
322.	32.63	2484.	33.41
324.	32.61	2486.	33.4
326.	32.68	2488.	33.41
328.	32.68	2490.	33.41
330.	32.69	2492.	33.41
332.	32.72	2494.	33.41
334.	32.71	2496.	33.41
336.	32.69	2498.	33.41
338.	32.73	2500.	33.41
340.	32.7	2502.	33.4
342.	32.73	2504.	33.41
344.	32.76	2506.	33.41
346.	32.76	2508.	33.41
348.	32.64	2510.	33.4
350.	32.58	2512.	33.41
352.	32.66	2514.	33.41
354.	32.73	2516.	33.41
356.	32.74	2518.	33.41
358.	32.77	2520.	33.4
360.	32.77	2522.	33.4
362.	32.79	2524.	33.41
364.	32.83	2526.	33.41
366.	32.83	2528.	33.42
368.	32.77	2530.	33.42
370.	32.75	2532.	33.41
372.	32.73	2534.	33.42
374.	32.7	2536.	33.42
376.	32.72	2538.	33.42
378.	32.73	2540.	33.42
380.	32.74	2542.	33.42
382.	32.76	2544.	33.41
384.	32.8	2546.	33.42
386.	32.81	2548.	33.42
388.	32.82	2550.	33.42
390.	32.84	2552.	33.42
392.	32.84	2554.	33.43
394.	32.83	2556.	33.43
396.	32.81	2558.	33.43
398.	32.8	2560.	33.43
400.	32.77	2562.	33.43
402.	32.76	2564.	33.43
404.	32.79	2566.	33.43
406.	32.82	2568.	33.43
408.	32.84	2570.	33.43

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
410.	32.89	2572.	33.43
412.	32.91	2574.	33.44
414.	32.91	2576.	33.43
416.	32.91	2578.	33.43
418.	32.91	2580.	33.43
420.	32.89	2582.	33.43
422.	32.86	2584.	33.42
424.	32.86	2586.	33.41
426.	32.85	2588.	33.4
428.	32.83	2590.	33.4
430.	32.82	2592.	33.41
432.	32.82	2594.	33.41
434.	32.81	2596.	33.4
436.	32.82	2598.	33.41
438.	32.82	2600.	33.41
440.	32.8	2602.	33.41
442.	32.81	2604.	33.47
444.	32.8	2606.	33.49
446.	32.81	2608.	33.51
448.	32.81	2610.	33.51
450.	32.81	2612.	33.52
452.	32.8	2614.	33.52
454.	32.8	2616.	33.52
456.	32.8	2618.	33.53
458.	32.79	2620.	33.53
460.	32.79	2622.	33.53
462.	32.78	2624.	33.53
464.	32.77	2626.	33.53
466.	32.77	2628.	33.53
468.	32.77	2630.	33.53
470.	32.77	2632.	33.53
472.	32.78	2634.	33.53
474.	32.77	2636.	33.54
476.	32.77	2638.	33.53
478.	32.72	2640.	33.54
480.	32.7	2642.	33.54
482.	32.7	2644.	33.53
484.	32.69	2646.	33.53
486.	32.69	2648.	33.54
488.	32.68	2650.	33.54
490.	32.69	2652.	33.54
492.	32.68	2654.	33.54
494.	32.68	2656.	33.53
496.	32.68	2658.	33.54
498.	32.73	2660.	33.54
500.	32.82	2662.	33.54
502.	32.84	2664.	33.54
504.	32.91	2666.	33.54
506.	32.93	2668.	33.54
508.	32.98	2670.	33.53
510.	33.02	2672.	33.53
512.	33.04	2674.	33.53
514.	33.06	2676.	33.54
516.	33.07	2678.	33.54
518.	33.08	2680.	33.54
520.	33.08	2682.	33.54
522.	33.09	2684.	33.54
524.	33.09	2686.	33.54
526.	33.09	2688.	33.54
528.	33.09	2690.	33.53
530.	33.1	2692.	33.54
532.	33.09	2694.	33.53
534.	33.1	2696.	33.51
536.	33.1	2698.	33.5
538.	33.1	2700.	33.5
540.	33.09	2702.	33.5

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
542.	33.09	2704.	33.49
544.	33.08	2706.	33.49
546.	33.09	2708.	33.47
548.	33.08	2710.	33.47
550.	33.08	2712.	33.47
552.	33.09	2714.	33.47
554.	33.09	2716.	33.47
556.	33.1	2718.	33.47
558.	33.1	2720.	33.47
560.	33.12	2722.	33.47
562.	33.12	2724.	33.47
564.	33.13	2726.	33.47
566.	33.12	2728.	33.48
568.	33.1	2730.	33.49
570.	33.12	2732.	33.48
572.	33.12	2734.	32.42
574.	33.15	2736.	32.97
576.	33.19	2738.	33.21
578.	33.21	2740.	33.33
580.	33.22	2742.	33.4
582.	33.22	2744.	33.44
584.	33.23	2746.	33.46
586.	33.23	2748.	33.49
588.	33.23	2750.	33.5
590.	33.23	2752.	33.51
592.	33.23	2754.	33.53
594.	33.23	2756.	33.54
596.	33.23	2758.	33.54
598.	33.23	2760.	33.55
600.	33.24	2762.	33.56
602.	33.25	2764.	33.56
604.	33.25	2766.	33.56
606.	33.25	2768.	33.55
608.	33.26	2770.	33.54
610.	33.25	2772.	33.55
612.	33.25	2774.	33.54
614.	33.25	2776.	33.56
616.	33.26	2778.	33.56
618.	33.24	2780.	33.57
620.	33.24	2782.	33.56
622.	33.23	2784.	33.53
624.	33.22	2786.	33.52
626.	33.22	2788.	33.5
628.	33.22	2790.	33.49
630.	33.22	2792.	33.49
632.	33.22	2794.	33.5
634.	33.21	2796.	33.49
636.	33.23	2798.	33.48
638.	33.22	2800.	33.48
640.	33.21	2802.	33.47
642.	33.21	2804.	33.47
644.	33.21	2806.	33.46
646.	33.21	2808.	33.47
648.	33.2	2810.	33.47
650.	33.2	2812.	33.46
652.	33.2	2814.	33.46
654.	31.68	2816.	33.44
656.	32.43	2818.	33.45
658.	32.73	2820.	33.44
660.	32.88	2822.	33.45
662.	32.94	2824.	33.46
664.	32.98	2826.	33.46
666.	33.	2828.	33.46
668.	33.02	2830.	33.47
670.	33.04	2832.	33.46
672.	33.04	2834.	33.46

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
674.	33.04	2836.	33.47
676.	33.04	2838.	33.45
678.	33.03	2840.	33.45
680.	33.03	2842.	33.45
682.	33.03	2844.	33.44
684.	33.03	2846.	33.45
686.	33.02	2848.	33.46
688.	33.02	2850.	33.46
690.	33.03	2852.	33.47
692.	33.05	2854.	33.47
694.	33.06	2856.	33.47
696.	33.06	2858.	33.45
698.	33.07	2860.	33.46
700.	33.06	2862.	33.47
702.	33.07	2864.	33.47
704.	33.06	2866.	33.47
706.	33.07	2868.	33.47
708.	33.07	2870.	33.45
710.	33.07	2872.	33.45
712.	33.06	2874.	33.46
714.	33.05	2876.	33.47
716.	33.05	2878.	33.49
718.	33.05	2880.	33.5
720.	33.04	2882.	33.51
722.	33.05	2884.	33.52
724.	33.04	2886.	33.52
726.	33.05	2888.	33.52
728.	33.04	2890.	33.5
730.	33.05	2892.	33.5
732.	33.04	2894.	33.51
734.	33.04	2896.	33.5
736.	33.05	2898.	33.49
738.	33.04	2900.	33.47
740.	33.05	2902.	33.46
742.	33.05	2904.	33.46
744.	33.05	2906.	33.44
746.	33.05	2908.	33.45
748.	33.06	2910.	33.44
750.	33.06	2912.	33.44
752.	33.06	2914.	33.44
754.	33.06	2916.	33.44
756.	33.08	2918.	33.44
758.	33.09	2920.	33.43
760.	33.1	2922.	33.44
762.	33.1	2924.	33.42
764.	33.11	2926.	33.43
766.	33.11	2928.	33.42
768.	33.11	2930.	33.43
770.	33.12	2932.	33.42
772.	33.11	2934.	33.42
774.	33.11	2936.	33.42
776.	33.11	2938.	33.43
778.	33.12	2940.	33.43
780.	33.14	2942.	33.43
782.	33.14	2944.	33.42
784.	33.14	2946.	33.41
786.	33.14	2948.	33.42
788.	33.15	2950.	33.42
790.	33.15	2952.	33.43
792.	33.14	2954.	33.32
794.	33.15	2956.	33.27
796.	33.15	2958.	33.21
798.	33.15	2960.	33.39
800.	33.16	2962.	33.55
802.	33.16	2964.	33.64
804.	33.17	2966.	33.71

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
806.	33.16	2968.	33.75
808.	33.16	2970.	33.81
810.	33.17	2972.	33.91
812.	33.17	2974.	33.96
814.	33.17	2976.	34.01
816.	33.17	2978.	34.03
818.	33.17	2980.	34.03
820.	33.17	2982.	34.04
822.	33.17	2984.	34.05
824.	33.17	2986.	34.06
826.	33.17	2988.	34.08
828.	33.17	2990.	34.08
830.	33.17	2992.	34.08
832.	33.16	2994.	34.09
834.	33.17	2996.	34.07
836.	33.17	2998.	34.07
838.	33.17	3000.	34.07
840.	33.17	3002.	34.02
842.	33.17	3004.	33.95
844.	33.17	3006.	33.91
846.	33.16	3008.	33.89
848.	33.15	3010.	33.89
850.	33.15	3012.	33.9
852.	33.15	3014.	33.9
854.	33.16	3016.	33.91
856.	33.16	3018.	33.89
858.	33.16	3020.	33.9
860.	33.16	3022.	33.89
862.	33.15	3024.	33.9
864.	33.15	3026.	33.89
866.	33.16	3028.	33.89
868.	33.16	3030.	33.9
870.	33.15	3032.	33.89
872.	33.15	3034.	33.89
874.	33.16	3036.	33.91
876.	33.16	3038.	33.9
878.	33.16	3040.	33.89
880.	33.16	3042.	33.9
882.	33.16	3044.	33.89
884.	33.16	3046.	33.89
886.	33.16	3048.	33.88
888.	33.16	3050.	33.89
890.	33.17	3052.	33.9
892.	33.17	3054.	33.89
894.	33.17	3056.	33.89
896.	33.17	3058.	33.89
898.	33.17	3060.	33.89
900.	33.17	3062.	33.88
902.	33.17	3064.	33.89
904.	33.17	3066.	33.89
906.	33.18	3068.	33.9
908.	33.16	3070.	33.89
910.	33.17	3072.	33.9
912.	33.18	3074.	33.9
914.	33.18	3076.	33.9
916.	33.19	3078.	33.9
918.	33.19	3080.	33.9
920.	33.19	3082.	33.9
922.	33.19	3084.	33.9
924.	33.19	3086.	33.9
926.	33.19	3088.	33.92
928.	33.18	3090.	33.91
930.	33.19	3092.	33.45
932.	33.19	3094.	33.68
934.	33.2	3096.	33.78
936.	33.19	3098.	33.89

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
938.	33.19	3100.	33.94
940.	33.2	3102.	33.97
942.	33.19	3104.	33.97
944.	33.2	3106.	33.98
946.	33.2	3108.	33.98
948.	33.19	3110.	33.97
950.	33.19	3112.	33.98
952.	33.2	3114.	33.98
954.	33.2	3116.	33.98
956.	33.19	3118.	33.99
958.	33.19	3120.	33.98
960.	33.2	3122.	34.
962.	33.2	3124.	34.
964.	33.2	3126.	34.
966.	33.2	3128.	33.99
968.	33.2	3130.	33.99
970.	33.21	3132.	33.99
972.	33.2	3134.	34.
974.	33.21	3136.	34.01
976.	33.21	3138.	34.
978.	33.21	3140.	34.
980.	33.21	3142.	34.
982.	33.22	3144.	34.
984.	33.21	3146.	34.
986.	33.21	3148.	34.
988.	33.21	3150.	34.
990.	33.21	3152.	34.
992.	33.2	3154.	34.
994.	33.21	3156.	34.
996.	33.21	3158.	34.01
998.	33.21	3160.	34.
1000.	33.21	3162.	34.
1002.	33.21	3164.	34.01
1004.	33.21	3166.	34.
1006.	33.21	3168.	34.
1008.	33.22	3170.	34.01
1010.	33.22	3172.	33.99
1012.	33.22	3174.	33.99
1014.	33.21	3176.	34.
1016.	32.54	3178.	34.
1018.	32.9	3180.	34.
1020.	33.05	3182.	34.01
1022.	33.12	3184.	34.01
1024.	33.17	3186.	34.01
1026.	33.2	3188.	34.01
1028.	33.22	3190.	34.01
1030.	33.24	3192.	34.01
1032.	33.25	3194.	34.01
1034.	33.26	3196.	34.02
1036.	33.26	3198.	34.01
1038.	33.26	3200.	34.
1040.	33.26	3202.	34.
1042.	33.26	3204.	34.
1044.	33.26	3206.	34.
1046.	33.26	3208.	34.
1048.	33.26	3210.	34.
1050.	33.27	3212.	34.
1052.	33.26	3214.	34.01
1054.	33.27	3216.	34.05
1056.	33.26	3218.	34.06
1058.	33.26	3220.	34.07
1060.	33.26	3222.	34.07
1062.	33.26	3224.	34.08
1064.	33.26	3226.	34.08
1066.	33.26	3228.	34.07
1068.	33.26	3230.	34.08

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1070.	33.25	3232.	34.09
1072.	33.25	3234.	34.09
1074.	33.24	3236.	34.05
1076.	33.23	3238.	34.04
1078.	33.23	3240.	34.02
1080.	33.23	3242.	34.01
1082.	33.26	3244.	34.
1084.	33.26	3246.	34.01
1086.	33.28	3248.	34.
1088.	33.29	3250.	34.
1090.	33.29	3252.	34.
1092.	33.29	3254.	33.99
1094.	33.29	3256.	33.99
1096.	33.29	3258.	33.98
1098.	33.29	3260.	33.98
1100.	33.28	3262.	33.99
1102.	33.29	3264.	33.99
1104.	33.29	3266.	33.99
1106.	33.28	3268.	34.
1108.	33.28	3270.	34.01
1110.	33.27	3272.	34.01
1112.	33.26	3274.	34.01
1114.	33.26	3276.	34.01
1116.	33.27	3278.	34.01
1118.	33.27	3280.	34.
1120.	33.26	3282.	34.
1122.	33.27	3284.	34.
1124.	33.28	3286.	33.99
1126.	33.28	3288.	33.97
1128.	33.28	3290.	33.97
1130.	33.28	3292.	33.97
1132.	33.29	3294.	33.96
1134.	33.29	3296.	33.96
1136.	33.29	3298.	33.96
1138.	33.29	3300.	33.97
1140.	33.29	3302.	33.97
1142.	33.28	3304.	33.97
1144.	33.29	3306.	33.97
1146.	33.29	3308.	33.95
1148.	33.28	3310.	33.95
1150.	33.27	3312.	33.95
1152.	33.28	3314.	33.81
1154.	33.29	3316.	33.76
1156.	33.28	3318.	33.73
1158.	33.28	3320.	33.72
1160.	33.29	3322.	33.71
1162.	33.29	3324.	33.7
1164.	33.28	3326.	33.69
1166.	33.29	3328.	33.7
1168.	33.29	3330.	33.7
1170.	33.29	3332.	33.7
1172.	33.3	3334.	33.7
1174.	33.3	3336.	33.7
1176.	33.29	3338.	33.7
1178.	33.29	3340.	33.7
1180.	33.28	3342.	33.7
1182.	33.28	3344.	33.71
1184.	33.29	3346.	33.74
1186.	33.29	3348.	33.83
1188.	33.29	3350.	33.88
1190.	33.28	3352.	33.9
1192.	33.28	3354.	33.91
1194.	33.29	3356.	33.92
1196.	33.29	3358.	33.93
1198.	33.29	3360.	33.93
1200.	33.31	3362.	33.94

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1202.	33.33	3364.	33.93
1204.	33.34	3366.	33.93
1206.	33.35	3368.	33.95
1208.	33.34	3370.	33.95
1210.	33.33	3372.	33.95
1212.	33.33	3374.	33.95
1214.	33.32	3376.	33.94
1216.	33.32	3378.	33.95
1218.	33.32	3380.	33.94
1220.	33.32	3382.	33.95
1222.	33.31	3384.	33.95
1224.	33.3	3386.	33.95
1226.	33.29	3388.	33.96
1228.	33.28	3390.	33.95
1230.	33.29	3392.	33.95
1232.	33.29	3394.	33.96
1234.	33.31	3396.	33.96
1236.	33.31	3398.	33.96
1238.	33.31	3400.	33.96
1240.	33.31	3402.	33.95
1242.	33.32	3404.	33.96
1244.	33.31	3406.	33.95
1246.	33.32	3408.	33.95
1248.	33.31	3410.	33.95
1250.	33.31	3412.	33.93
1252.	33.32	3414.	33.92
1254.	33.32	3416.	33.92
1256.	33.33	3418.	33.94
1258.	33.33	3420.	33.92
1260.	33.33	3422.	33.92
1262.	33.34	3424.	33.93
1264.	33.34	3426.	33.95
1266.	33.35	3428.	33.97
1268.	33.34	3430.	33.99
1270.	33.33	3432.	33.99
1272.	33.33	3434.	34.01
1274.	33.32	3436.	34.01
1276.	33.33	3438.	34.01
1278.	33.33	3440.	34.01
1280.	33.36	3442.	34.
1282.	33.39	3444.	34.
1284.	33.39	3446.	34.
1286.	33.4	3448.	34.
1288.	33.4	3450.	33.34
1290.	33.38	3452.	33.64
1292.	33.41	3454.	33.78
1294.	33.4	3456.	33.84
1296.	33.39	3458.	33.9
1298.	33.38	3460.	33.93
1300.	33.37	3462.	33.93
1302.	33.36	3464.	33.95
1304.	33.37	3466.	33.94
1306.	33.4	3468.	33.94
1308.	33.4	3470.	33.96
1310.	33.4	3472.	33.95
1312.	33.39	3474.	33.95
1314.	33.4	3476.	33.95
1316.	33.39	3478.	33.95
1318.	33.38	3480.	33.96
1320.	33.38	3482.	33.96
1322.	33.37	3484.	33.96
1324.	33.39	3486.	33.97
1326.	33.38	3488.	33.96
1328.	33.38	3490.	33.97
1330.	33.37	3492.	33.96
1332.	33.36	3494.	33.96

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1334.	33.21	3496.	33.97
1336.	33.16	3498.	33.96
1338.	33.12	3500.	33.95
1340.	33.11	3502.	33.95
1342.	33.1	3504.	33.96
1344.	33.11	3506.	33.95
1346.	33.15	3508.	33.95
1348.	33.23	3510.	33.95
1350.	33.28	3512.	33.95
1352.	33.32	3514.	33.94
1354.	33.33	3516.	33.95
1356.	33.34	3518.	33.95
1358.	33.34	3520.	33.95
1360.	33.34	3522.	33.94
1362.	33.34	3524.	33.95
1364.	33.35	3526.	33.95
1366.	33.36	3528.	33.96
1368.	33.37	3530.	33.96
1370.	33.37	3532.	33.98
1372.	33.36	3534.	33.98
1374.	33.36	3536.	33.98
1376.	33.35	3538.	34.
1378.	33.36	3540.	33.98
1380.	31.92	3542.	33.97
1382.	32.34	3544.	33.97
1384.	32.58	3546.	33.97
1386.	32.68	3548.	33.97
1388.	32.74	3550.	33.96
1390.	32.77	3552.	33.96
1392.	32.79	3554.	33.96
1394.	32.8	3556.	33.96
1396.	32.81	3558.	33.98
1398.	32.82	3560.	33.97
1400.	32.81	3562.	33.97
1402.	32.81	3564.	33.95
1404.	32.81	3566.	33.96
1406.	32.82	3568.	33.95
1408.	32.82	3570.	33.94
1410.	32.83	3572.	33.94
1412.	32.79	3574.	33.93
1414.	32.76	3576.	33.94
1416.	32.76	3578.	33.95
1418.	32.74	3580.	33.95
1420.	32.74	3582.	33.95
1422.	32.74	3584.	33.95
1424.	32.73	3586.	33.95
1426.	32.73	3588.	33.95
1428.	32.74	3590.	33.94
1430.	32.75	3592.	33.93
1432.	32.75	3594.	33.93
1434.	32.76	3596.	33.94
1436.	32.76	3598.	33.93
1438.	32.76	3600.	33.94
1440.	32.77	3602.	33.94
1442.	32.76	3604.	33.95
1444.	32.77	3606.	33.95
1446.	32.77	3608.	33.96
1448.	32.77	3610.	33.97
1450.	32.76	3612.	33.97
1452.	32.77	3614.	33.98
1454.	32.78	3616.	34.01
1456.	32.78	3618.	34.
1458.	32.78	3620.	34.
1460.	32.79	3622.	33.99
1462.	32.78	3624.	33.98
1464.	32.78	3626.	33.98

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1466.	32.77	3628.	33.98
1468.	32.76	3630.	33.98
1470.	32.75	3632.	33.97
1472.	32.75	3634.	33.98
1474.	32.74	3636.	33.99
1476.	32.74	3638.	34.01
1478.	32.74	3640.	34.01
1480.	32.73	3642.	34.
1482.	32.73	3644.	34.
1484.	32.74	3646.	34.
1486.	32.73	3648.	34.01
1488.	32.71	3650.	34.01
1490.	32.73	3652.	34.
1492.	32.74	3654.	33.99
1494.	32.76	3656.	33.98
1496.	32.76	3658.	33.98
1498.	32.76	3660.	33.99
1500.	32.76	3662.	33.96
1502.	32.77	3664.	33.87
1504.	32.77	3666.	33.8
1506.	32.77	3668.	33.77
1508.	32.77	3670.	33.75
1510.	32.77	3672.	33.73
1512.	32.78	3674.	33.73
1514.	32.79	3676.	33.77
1516.	32.78	3678.	33.83
1518.	32.78	3680.	33.88
1520.	32.79	3682.	33.91
1522.	32.78	3684.	33.92
1524.	32.79	3686.	33.95
1526.	32.79	3688.	33.98
1528.	32.79	3690.	33.98
1530.	32.79	3692.	33.97
1532.	32.79	3694.	33.97
1534.	32.79	3696.	33.97
1536.	32.79	3698.	33.96
1538.	32.79	3700.	33.96
1540.	32.79	3702.	33.98
1542.	32.79	3704.	34.
1544.	32.77	3706.	34.01
1546.	32.77	3708.	34.02
1548.	32.75	3710.	34.02
1550.	32.75	3712.	34.02
1552.	32.74	3714.	34.
1554.	32.74	3716.	33.98
1556.	32.73	3718.	33.99
1558.	32.72	3720.	33.97
1560.	32.72	3722.	33.97
1562.	32.71	3724.	33.98
1564.	32.71	3726.	33.95
1566.	32.7	3728.	33.95
1568.	32.71	3730.	33.96
1570.	32.7	3732.	33.97
1572.	32.7	3734.	33.97
1574.	32.7	3736.	33.95
1576.	32.7	3738.	33.98
1578.	32.69	3740.	34.
1580.	32.91	3742.	33.99
1582.	33.06	3744.	33.97
1584.	33.13	3746.	33.98
1586.	33.17	3748.	33.97
1588.	33.21	3750.	33.95
1590.	33.24	3752.	33.96
1592.	33.25	3754.	33.97
1594.	33.25	3756.	33.96
1596.	33.26	3758.	33.95

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1598.	33.26	3760.	33.95
1600.	33.27	3762.	33.94
1602.	33.28	3764.	33.94
1604.	33.29	3766.	33.95
1606.	33.29	3768.	33.95
1608.	33.3	3770.	33.95
1610.	33.29	3772.	33.98
1612.	33.31	3774.	33.98
1614.	33.31	3776.	33.98
1616.	33.32	3778.	33.98
1618.	33.32	3780.	33.99
1620.	33.32	3782.	33.98
1622.	33.33	3784.	33.95
1624.	33.33	3786.	33.95
1626.	33.33	3788.	33.96
1628.	33.32	3790.	33.96
1630.	33.33	3792.	33.97
1632.	33.32	3794.	33.98
1634.	33.31	3796.	34.01
1636.	33.29	3798.	34.
1638.	33.29	3800.	34.
1640.	33.29	3802.	33.99
1642.	33.28	3804.	34.01
1644.	33.28	3806.	33.44
1646.	33.29	3808.	33.76
1648.	33.29	3810.	33.9
1650.	33.29	3812.	33.95
1652.	33.28	3814.	33.99
1654.	33.29	3816.	34.02
1656.	33.29	3818.	34.03
1658.	33.29	3820.	34.05
1660.	33.28	3822.	34.05
1662.	33.28	3824.	34.05
1664.	33.29	3826.	34.06
1666.	33.28	3828.	34.07
1668.	33.29	3830.	34.07
1670.	33.28	3832.	34.06
1672.	33.28	3834.	34.06
1674.	33.27	3836.	34.05
1676.	33.27	3838.	34.06
1678.	33.26	3840.	34.07
1680.	33.27	3842.	34.06
1682.	33.27	3844.	34.05
1684.	33.28	3846.	34.04
1686.	33.28	3848.	34.04
1688.	33.27	3850.	34.03
1690.	33.27	3852.	34.03
1692.	33.27	3854.	34.03
1694.	33.28	3856.	34.03
1696.	33.28	3858.	34.04
1698.	33.28	3860.	34.04
1700.	33.27	3862.	34.05
1702.	33.27	3864.	34.03
1704.	33.26	3866.	34.05
1706.	33.26	3868.	34.06
1708.	33.26	3870.	34.06
1710.	33.26	3872.	34.07
1712.	33.27	3874.	34.05
1714.	33.3	3876.	34.07
1716.	33.32	3878.	34.07
1718.	32.42	3880.	34.05
1720.	32.67	3882.	34.05
1722.	33.	3884.	34.06
1724.	33.17	3886.	34.05
1726.	33.26	3888.	34.04
1728.	33.31	3890.	34.04

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1730.	33.34	3892.	34.04
1732.	33.36	3894.	34.03
1734.	33.34	3896.	34.04
1736.	33.3	3898.	34.04
1738.	33.27	3900.	34.04
1740.	33.31	3902.	34.06
1742.	33.34	3904.	34.07
1744.	33.36	3906.	34.07
1746.	33.37	3908.	34.05
1748.	33.38	3910.	34.04
1750.	33.39	3912.	34.04
1752.	33.39	3914.	34.04
1754.	33.4	3916.	34.04
1756.	33.41	3918.	34.05
1758.	33.41	3920.	34.05
1760.	33.41	3922.	34.04
1762.	33.41	3924.	34.03
1764.	33.42	3926.	34.03
1766.	33.41	3928.	34.04
1768.	33.41	3930.	34.05
1770.	33.41	3932.	34.06
1772.	33.41	3934.	34.06
1774.	33.42	3936.	34.07
1776.	33.41	3938.	34.06
1778.	33.42	3940.	34.06
1780.	33.41	3942.	34.04
1782.	33.42	3944.	34.06
1784.	33.42	3946.	34.07
1786.	33.42	3948.	34.07
1788.	33.41	3950.	34.07
1790.	33.4	3952.	34.05
1792.	33.38	3954.	34.04
1794.	33.39	3956.	34.04
1796.	33.38	3958.	34.03
1798.	33.38	3960.	34.02
1800.	33.38	3962.	34.03
1802.	33.38	3964.	34.02
1804.	33.37	3966.	34.01
1806.	33.37	3968.	34.
1808.	33.37	3970.	34.
1810.	33.37	3972.	33.99
1812.	33.37	3974.	34.01
1814.	33.37	3976.	34.03
1816.	33.37	3978.	34.04
1818.	33.38	3980.	34.04
1820.	33.38	3982.	34.04
1822.	33.37	3984.	34.04
1824.	33.37	3986.	34.03
1826.	33.38	3988.	34.02
1828.	33.37	3990.	34.02
1830.	33.38	3992.	34.02
1832.	33.38	3994.	34.02
1834.	33.38	3996.	34.01
1836.	33.38	3998.	34.04
1838.	33.37	4000.	34.04
1840.	33.35	4002.	34.04
1842.	33.37	4004.	34.02
1844.	33.35	4006.	34.03
1846.	33.35	4008.	34.03
1848.	33.36	4010.	34.04
1850.	33.36	4012.	34.04
1852.	33.35	4014.	34.05
1854.	33.35	4016.	34.04
1856.	33.35	4018.	34.03
1858.	33.35	4020.	34.01
1860.	33.35	4022.	34.02

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1862.	33.33	4024.	34.03
1864.	33.34	4026.	34.02
1866.	33.33	4028.	34.01
1868.	33.33	4030.	34.
1870.	33.33	4032.	34.
1872.	33.33	4034.	34.
1874.	33.35	4036.	34.01
1876.	33.34	4038.	34.01
1878.	33.34	4040.	34.
1880.	33.34	4042.	33.99
1882.	33.34	4044.	33.99
1884.	33.34	4046.	33.99
1886.	33.34	4048.	34.01
1888.	33.34	4050.	34.02
1890.	33.34	4052.	34.06
1892.	33.34	4054.	34.09
1894.	33.34	4056.	34.08
1896.	33.32	4058.	34.09
1898.	33.3	4060.	34.11
1900.	33.33	4062.	34.12
1902.	33.34	4064.	34.11
1904.	33.36	4066.	34.11
1906.	33.35	4068.	34.11
1908.	33.36	4070.	34.1
1910.	33.37	4072.	34.09
1912.	33.37	4074.	34.08
1914.	33.36	4076.	34.1
1916.	33.38	4078.	34.11
1918.	33.38	4080.	34.12
1920.	33.37	4082.	34.12
1922.	33.38	4084.	34.11
1924.	33.37	4086.	34.13
1926.	33.38	4088.	34.12
1928.	33.37	4090.	34.12
1930.	33.36	4092.	34.1
1932.	33.37	4094.	34.09
1934.	33.37	4096.	34.07
1936.	33.35	4098.	34.07
1938.	33.36	4100.	34.1
1940.	33.38	4102.	34.11
1942.	33.38	4104.	34.12
1944.	33.35	4106.	34.13
1946.	33.37	4108.	34.12
1948.	33.36	4110.	34.11
1950.	33.37	4112.	34.07
1952.	33.36	4114.	34.05
1954.	33.38	4116.	34.04
1956.	33.37	4118.	34.03
1958.	33.37	4120.	34.
1960.	33.36	4122.	34.
1962.	33.35	4124.	33.95
1964.	33.35	4126.	33.89
1966.	33.34	4128.	33.86
1968.	33.35	4130.	33.83
1970.	33.35	4132.	33.81
1972.	33.35	4134.	33.82
1974.	33.34	4136.	33.8
1976.	33.33	4138.	33.8
1978.	33.34	4140.	33.83
1980.	33.35	4142.	33.85
1982.	33.35	4144.	33.95
1984.	33.36	4146.	34.01
1986.	33.37	4148.	34.05
1988.	33.37	4150.	34.1
1990.	33.37	4152.	34.09
1992.	33.37	4154.	34.09

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1994.	33.37	4156.	34.11
1996.	33.39	4158.	34.14
1998.	33.38	4160.	34.14
2000.	33.39	4162.	34.14
2002.	33.39	4164.	34.12
2004.	33.38	4166.	34.15
2006.	33.38	4168.	34.16
2008.	33.39	4170.	34.15
2010.	32.74	4172.	34.12
2012.	33.11	4174.	34.15
2014.	33.26	4176.	33.16
2016.	33.33	4178.	33.43
2018.	33.35	4180.	33.52
2020.	33.38	4182.	33.54
2022.	33.39	4184.	33.57
2024.	33.41	4186.	33.57
2026.	33.42	4188.	33.57
2028.	33.42	4190.	33.56
2030.	33.42	4192.	33.56
2032.	33.42	4194.	33.56
2034.	33.43	4196.	33.54
2036.	33.42	4198.	33.53
2038.	33.42	4200.	33.53
2040.	33.42	4202.	33.52
2042.	33.43	4204.	33.52
2044.	33.43	4206.	33.51
2046.	33.42	4208.	33.5
2048.	33.42	4210.	33.49
2050.	33.43	4212.	33.49
2052.	33.42	4214.	33.48
2054.	33.43	4216.	33.49
2056.	33.43	4218.	33.49
2058.	33.42	4220.	33.5
2060.	33.43	4222.	33.48
2062.	33.43	4224.	33.48
2064.	33.44	4226.	33.48
2066.	33.43	4228.	33.47
2068.	33.44	4230.	33.47
2070.	33.44	4232.	33.48
2072.	33.44	4234.	33.47
2074.	33.44	4236.	33.47
2076.	33.45	4238.	33.47
2078.	33.45	4240.	33.47
2080.	33.45	4242.	33.47
2082.	33.44	4244.	33.46
2084.	33.44	4246.	33.47
2086.	33.46	4248.	33.47
2088.	33.47	4250.	33.47
2090.	33.47	4252.	33.47
2092.	33.49	4254.	33.47
2094.	33.49	4256.	33.46
2096.	33.49	4258.	33.46
2098.	33.49	4260.	33.46
2100.	33.48	4262.	33.46
2102.	33.48	4264.	33.46
2104.	33.48	4266.	33.45
2106.	33.48	4268.	33.46
2108.	33.47	4270.	33.46
2110.	33.46	4272.	33.46
2112.	33.46	4274.	33.45
2114.	33.46	4276.	33.46
2116.	33.46	4278.	33.46
2118.	33.46	4280.	33.46
2120.	33.45	4282.	33.46
2122.	33.46	4284.	33.46
2124.	33.46	4286.	33.46

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
2126.	33.47	4288.	33.46
2128.	33.45	4290.	33.47
2130.	33.46	4292.	33.46
2132.	33.45	4294.	33.46
2134.	33.45	4296.	33.46
2136.	33.43	4298.	33.45
2138.	33.44	4300.	33.45
2140.	33.4	4302.	33.44
2142.	33.4	4304.	33.44
2144.	33.39	4306.	33.46
2146.	33.39	4308.	33.47
2148.	33.39	4310.	33.48
2150.	33.39	4312.	33.48
2152.	33.39	4314.	33.49
2154.	33.39	4316.	33.49
2156.	33.4	4318.	33.48
2158.	33.39	4320.	33.31
2160.	33.39		

Observation Well No. 2: MW14-02B

X Location: 3040253.37 ft
Y Location: 684684.47 ft

Radial distance from MW14-03B: 852.5469911 ft

Partially Penetrating Well
Depth to Top of Screen: 47.2 ft
Depth to Bottom of Screen: 70.8 ft

No. of Observations: 798

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
5.	-0.001312	2030.	0.2024
10.	0.001312	2035.	0.2037
15.	-0.001312	2040.	0.2028
20.	0.004593	2045.	0.2034
25.	0.005249	2050.	0.207
30.	-0.002625	2055.	0.2051
35.	0.004921	2060.	0.2067
40.	0.005906	2065.	0.209
45.	0.004921	2070.	0.208
50.	0.006562	2075.	0.2067
55.	0.00164	2080.	0.209
60.	0.009514	2085.	0.2106
65.	0.007546	2090.	0.2093
70.	0.01115	2095.	0.2116
75.	0.005906	2100.	0.2119
80.	0.01575	2105.	0.2129
85.	0.01181	2110.	0.2123
90.	0.01706	2115.	0.2152
95.	0.008858	2120.	0.2152
100.	0.01509	2125.	0.2159
105.	0.02001	2130.	0.2133
110.	0.01804	2135.	0.2185
115.	0.01148	2140.	0.2175
120.	0.01312	2145.	0.2152
125.	0.01706	2150.	0.2188
130.	0.01608	2155.	0.2208
135.	0.01903	2160.	0.2205
140.	0.01903	2165.	0.2224
145.	0.01804	2170.	0.2244
150.	0.01247	2175.	0.2244
155.	0.0105	2180.	0.2234
160.	0.01476	2185.	0.2257

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
165.	0.01411	2190.	0.2238
170.	0.01247	2195.	0.2231
175.	0.01411	2200.	0.2241
180.	0.01017	2205.	0.2251
185.	0.0128	2210.	0.2297
190.	0.01312	2215.	0.2297
195.	0.01378	2220.	0.23
200.	0.01476	2225.	0.2323
205.	0.0003281	2230.	0.2313
210.	-0.006234	2235.	0.2303
215.	0.0006562	2240.	0.231
220.	-0.004265	2245.	0.2323
225.	-0.005249	2250.	0.2329
230.	-0.001969	2255.	0.2316
235.	-0.001312	2260.	0.2349
240.	-0.0009843	2265.	0.2346
245.	0.0006562	2270.	0.2375
250.	-0.0003281	2275.	0.2379
255.	-0.003281	2280.	0.2375
260.	0.003937	2285.	0.2375
265.	0.008202	2290.	0.2375
270.	-0.0003281	2295.	0.2359
275.	0.008202	2300.	0.2395
280.	-0.0128	2305.	0.2392
285.	0.003609	2310.	0.2379
290.	0.008202	2315.	0.2418
295.	0.006562	2320.	0.2415
300.	0.009514	2325.	0.2398
305.	0.004265	2330.	0.2388
310.	0.009514	2335.	0.2392
315.	0.01083	2340.	0.2415
320.	0.008858	2345.	0.2402
325.	0.009186	2350.	0.2438
330.	0.01345	2355.	0.2408
335.	0.01181	2360.	0.2457
340.	0.01017	2365.	0.2418
345.	0.021	2370.	0.2392
350.	0.01247	2375.	0.2382
355.	0.01476	2380.	0.2375
360.	0.01903	2385.	0.2428
365.	0.01575	2390.	0.2418
370.	0.01312	2395.	0.2421
375.	0.01476	2400.	0.2441
380.	0.01378	2405.	0.2438
385.	0.01608	2410.	0.2421
390.	0.01378	2415.	0.2411
395.	0.01673	2420.	0.2431
400.	0.01345	2425.	0.2405
405.	0.01411	2430.	0.2425
410.	0.01476	2435.	0.2379
415.	0.0128	2440.	0.2411
420.	0.01476	2445.	0.2411
425.	0.01509	2450.	0.2428
430.	0.01476	2455.	0.2385
435.	0.01542	2460.	0.2408
440.	0.01837	2465.	0.2392
445.	0.01608	2470.	0.2375
450.	0.01312	2475.	0.2395
455.	0.01772	2480.	0.2369
460.	0.01837	2485.	0.2379
465.	0.01804	2490.	0.2398
470.	0.01148	2495.	0.2398
475.	0.02001	2500.	0.2398
480.	0.02034	2505.	0.2398
485.	0.02165	2800.	0.2769
490.	0.02001	2805.	0.2844

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
495.	0.02297	2810.	0.2802
500.	0.02231	2815.	0.2792
505.	0.02362	2820.	0.2795
510.	0.02592	2825.	0.2785
515.	0.02329	2830.	0.2802
520.	0.0269	2835.	0.2812
525.	0.02789	2840.	0.2802
530.	0.0269	2845.	0.2825
535.	0.03084	2850.	0.2799
540.	0.02526	2855.	0.2861
545.	0.0292	2860.	0.2841
550.	0.0315	2865.	0.2851
555.	0.03314	2870.	0.2838
560.	0.03215	2875.	0.2858
565.	0.02854	2880.	0.2831
570.	0.03051	2885.	0.2854
575.	0.03543	2890.	0.2841
580.	0.03445	2895.	0.2861
585.	0.03576	2900.	0.2871
590.	0.04134	2905.	0.29
595.	0.03642	2910.	0.2897
600.	0.0374	2915.	0.292
605.	0.04134	2920.	0.2894
610.	0.0374	2925.	0.292
615.	0.03871	2930.	0.2936
620.	0.03937	2935.	0.2923
625.	0.03839	2940.	0.2953
630.	0.04068	2945.	0.2963
635.	0.04528	2950.	0.2989
640.	0.04101	2955.	0.2963
645.	0.0397	2960.	0.2956
650.	0.04659	2965.	0.2959
655.	0.04593	2970.	0.2992
660.	0.04724	2975.	0.2979
665.	0.04888	2980.	0.2989
670.	0.05052	2985.	0.2995
675.	0.04888	2990.	0.2999
680.	0.04921	2995.	0.3009
685.	0.05184	3000.	0.2995
690.	0.05479	3005.	0.3018
695.	0.05184	3010.	0.2999
700.	0.05643	3015.	0.3048
705.	0.0584	3020.	0.3038
710.	0.05545	3025.	0.3064
715.	0.05643	3030.	0.3058
720.	0.05741	3035.	0.3061
725.	0.06168	3040.	0.3054
730.	0.06102	3045.	0.3041
735.	0.05971	3050.	0.3061
740.	0.0643	3055.	0.3035
745.	0.0643	3060.	0.3051
750.	0.06791	3065.	0.3064
755.	0.06923	3070.	0.3018
760.	0.06463	3075.	0.3022
765.	0.0689	3080.	0.3051
770.	0.0689	3085.	0.3045
775.	0.06988	3090.	0.3031
780.	0.06923	3095.	0.3041
785.	0.06955	3100.	0.3051
790.	0.07415	3105.	0.3058
795.	0.07415	3110.	0.3045
800.	0.07448	3115.	0.3081
805.	0.07808	3120.	0.3058
810.	0.07972	3125.	0.3018
815.	0.0771	3130.	0.3048
820.	0.07841	3135.	0.3038

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
825.	0.07776	3140.	0.3031
830.	0.07841	3145.	0.3028
835.	0.07972	3150.	0.3012
840.	0.08136	3155.	0.3064
845.	0.0771	3160.	0.3041
850.	0.08202	3165.	0.3012
855.	0.08366	3170.	0.3061
860.	0.08169	3175.	0.3009
865.	0.08268	3180.	0.3061
870.	0.07972	3185.	0.3028
875.	0.08235	3190.	0.3022
880.	0.08005	3195.	0.3038
885.	0.08136	3200.	0.3009
890.	0.08104	3205.	0.3018
895.	0.08432	3210.	0.3009
900.	0.08038	3215.	0.2982
905.	0.08104	3220.	0.2986
910.	0.08465	3225.	0.2992
915.	0.08694	3230.	0.3018
920.	0.08858	3235.	0.2986
925.	0.08858	3240.	0.2966
930.	0.08169	3245.	0.2992
935.	0.08563	3250.	0.3009
940.	0.08432	3255.	0.2989
945.	0.08924	3260.	0.2972
950.	0.0876	3265.	0.2989
955.	0.08957	3270.	0.3015
960.	0.08793	3275.	0.3005
965.	0.0853	3280.	0.3005
970.	0.0876	3285.	0.2966
975.	0.0899	3290.	0.2946
980.	0.08825	3295.	0.2966
985.	0.08694	3300.	0.2982
990.	0.08727	3305.	0.2979
995.	0.0876	3310.	0.2995
1000.	0.08629	3315.	0.2992
1005.	0.08924	3320.	0.2966
1010.	0.08793	3325.	0.2953
1015.	0.08825	3330.	0.294
1020.	0.08924	3335.	0.2976
1025.	0.09121	3340.	0.2972
1030.	0.09252	3345.	0.2959
1035.	0.08727	3350.	0.2995
1040.	0.09154	3355.	0.2982
1045.	0.09121	3360.	0.3009
1050.	0.0876	3365.	0.2972
1055.	0.0899	3370.	0.2986
1060.	0.08924	3375.	0.2995
1065.	0.09186	3380.	0.2986
1070.	0.08924	3385.	0.2963
1075.	0.0899	3390.	0.2979
1080.	0.08858	3395.	0.2992
1085.	0.09055	3400.	0.3012
1090.	0.09219	3405.	0.2995
1095.	0.09088	3410.	0.2995
1100.	0.08957	3415.	0.3018
1105.	0.08924	3420.	0.3009
1110.	0.09514	3425.	0.3018
1115.	0.08924	3430.	0.3028
1120.	0.09022	3435.	0.3022
1125.	0.09088	3440.	0.3009
1130.	0.08497	3445.	0.3035
1135.	0.08563	3450.	0.3015
1140.	0.09154	3455.	0.3041
1145.	0.08858	3460.	0.3061
1150.	0.09154	3465.	0.3045

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1155.	0.09219	3470.	0.3061
1160.	0.09219	3475.	0.3041
1165.	0.09055	3480.	0.3061
1170.	0.09252	3485.	0.3022
1175.	0.09383	3490.	0.3071
1180.	0.09875	3495.	0.3091
1185.	0.09514	3500.	0.3097
1190.	0.09022	3505.	0.3081
1195.	0.09285	3510.	0.3104
1200.	0.0958	3515.	0.3104
1205.	0.09449	3520.	0.3104
1210.	0.09613	3525.	0.3094
1215.	0.09482	3530.	0.3068
1220.	0.1011	3535.	0.3097
1225.	0.1112	3540.	0.3087
1230.	0.107	3545.	0.3097
1235.	0.1053	3550.	0.312
1240.	0.1007	3555.	0.312
1245.	0.1096	3560.	0.313
1250.	0.1083	3565.	0.3127
1255.	0.1011	3570.	0.3136
1260.	0.1053	3575.	0.3127
1265.	0.1053	3580.	0.3163
1270.	0.1017	3585.	0.3153
1275.	0.1089	3590.	0.314
1280.	0.1007	3595.	0.3166
1285.	0.1073	3600.	0.3196
1290.	0.1102	3605.	0.3189
1295.	0.1102	3610.	0.3209
1300.	0.1014	3615.	0.3222
1305.	0.1083	3620.	0.3215
1310.	0.1099	3625.	0.3232
1315.	0.1106	3630.	0.3251
1320.	0.1089	3635.	0.3258
1325.	0.1138	3640.	0.3261
1330.	0.1165	3645.	0.3274
1335.	0.1165	3650.	0.3264
1340.	0.1178	3655.	0.3268
1345.	0.1171	3660.	0.3274
1350.	0.1224	3665.	0.3314
1355.	0.1181	3670.	0.3297
1360.	0.1201	3675.	0.331
1365.	0.1204	3680.	0.332
1370.	0.1204	3685.	0.334
1375.	0.1204	3690.	0.3317
1380.	0.1168	3695.	0.3369
1385.	0.1214	3700.	0.334
1390.	0.1214	3705.	0.336
1395.	0.122	3710.	0.3343
1400.	0.124	3715.	0.3363
1405.	0.1309	3720.	0.3366
1410.	0.1283	3725.	0.3383
1415.	0.1325	3730.	0.3353
1420.	0.1342	3735.	0.3409
1425.	0.1375	3740.	0.3392
1430.	0.1407	3745.	0.3406
1435.	0.1378	3750.	0.3399
1440.	0.1398	3755.	0.3402
1445.	0.1427	3760.	0.3412
1450.	0.1467	3765.	0.3422
1455.	0.1457	3770.	0.3415
1460.	0.145	3775.	0.3451
1465.	0.147	3780.	0.3428
1470.	0.1526	3785.	0.3432
1475.	0.1503	3790.	0.3471
1480.	0.146	3795.	0.3428

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1485.	0.1516	3800.	0.3474
1490.	0.1496	3805.	0.3468
1495.	0.1526	3810.	0.3451
1500.	0.1493	3815.	0.3461
1505.	0.1529	3820.	0.3468
1510.	0.1565	3825.	0.3481
1515.	0.1598	3830.	0.3448
1520.	0.1572	3835.	0.3468
1525.	0.1601	3840.	0.3484
1530.	0.1535	3845.	0.3468
1535.	0.1535	3850.	0.3474
1540.	0.1535	3855.	0.3481
1545.	0.1621	3860.	0.3491
1550.	0.1585	3865.	0.3494
1555.	0.1608	3870.	0.3494
1560.	0.1608	3875.	0.3497
1565.	0.1617	3880.	0.3494
1570.	0.1686	3885.	0.3488
1575.	0.1657	3890.	0.3497
1580.	0.1706	3895.	0.3471
1585.	0.1588	3900.	0.3491
1590.	0.1706	3905.	0.3501
1595.	0.1831	3910.	0.3501
1600.	0.1732	3915.	0.353
1605.	0.1821	3920.	0.3501
1610.	0.1713	3925.	0.3517
1615.	0.1739	3930.	0.3514
1620.	0.1742	3935.	0.3478
1625.	0.1834	3940.	0.3494
1630.	0.1795	3945.	0.3474
1635.	0.1752	3950.	0.3504
1640.	0.1841	3955.	0.3504
1645.	0.1824	3960.	0.3494
1650.	0.1775	3965.	0.3484
1655.	0.1821	3970.	0.351
1660.	0.1837	3975.	0.3514
1665.	0.1864	3980.	0.3468
1670.	0.2001	3985.	0.3458
1675.	0.2051	3990.	0.3465
1680.	0.1932	3995.	0.3481
1685.	0.1978	4000.	0.3488
1690.	0.2051	4005.	0.3474
1695.	0.2031	4010.	0.3488
1700.	0.2073	4015.	0.3488
1735.	0.207	4020.	0.3504
1740.	0.2028	4025.	0.3504
1745.	0.1946	4030.	0.352
1750.	0.1762	4035.	0.3504
1755.	0.1991	4040.	0.3494
1760.	0.1946	4045.	0.3494
1765.	0.1923	4050.	0.3494
1770.	0.1942	4055.	0.3478
1775.	0.1906	4060.	0.3481
1780.	0.1837	4065.	0.3465
1785.	0.187	4070.	0.3488
1790.	0.1873	4075.	0.3504
1795.	0.1909	4080.	0.3494
1800.	0.1929	4085.	0.3494
1805.	0.1906	4090.	0.3481
1810.	0.1906	4095.	0.3481
1815.	0.1919	4100.	0.3517
1820.	0.1854	4105.	0.3501
1825.	0.1903	4110.	0.3599
1830.	0.189	4115.	0.3442
1835.	0.1873	4125.	0.3484
1840.	0.1886	4130.	0.3579

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1845.	0.1873	4135.	0.3563
1850.	0.1824	4140.	0.3579
1855.	0.1867	4145.	0.3538
1860.	0.1854	4150.	0.3538
1865.	0.1841	4155.	0.3538
1870.	0.1877	4160.	0.3538
1875.	0.1844	4165.	0.3587
1880.	0.1837	4170.	0.3702
1885.	0.1864	4175.	0.3698
1890.	0.1896	4180.	0.3705
1895.	0.1903	4185.	0.3662
1900.	0.1903	4190.	0.3669
1905.	0.1857	4195.	0.3741
1910.	0.1926	4200.	0.3698
1915.	0.1932	4205.	0.3698
1920.	0.1923	4210.	0.3689
1925.	0.1936	4215.	0.3721
1930.	0.1893	4220.	0.3689
1935.	0.1896	4225.	0.3695
1940.	0.1949	4230.	0.3702
1945.	0.1919	4235.	0.3682
1950.	0.1942	4240.	0.3721
1955.	0.1936	4245.	0.3718
1960.	0.1939	4250.	0.3731
1965.	0.1988	4255.	0.3718
1970.	0.1946	4260.	0.3708
1975.	0.1965	4265.	0.3731
1980.	0.2005	4270.	0.3715
1985.	0.1985	4275.	0.3715
1990.	0.1985	4280.	0.3708
1995.	0.2021	4285.	0.3751
2000.	0.1969	4290.	0.3797
2005.	0.2005	4295.	0.3761
2010.	0.2021	4300.	0.3748
2015.	0.2021	4305.	0.3764
2020.	0.2028	4310.	0.3764
2025.	0.1991	4315.	0.3767

SOLUTION

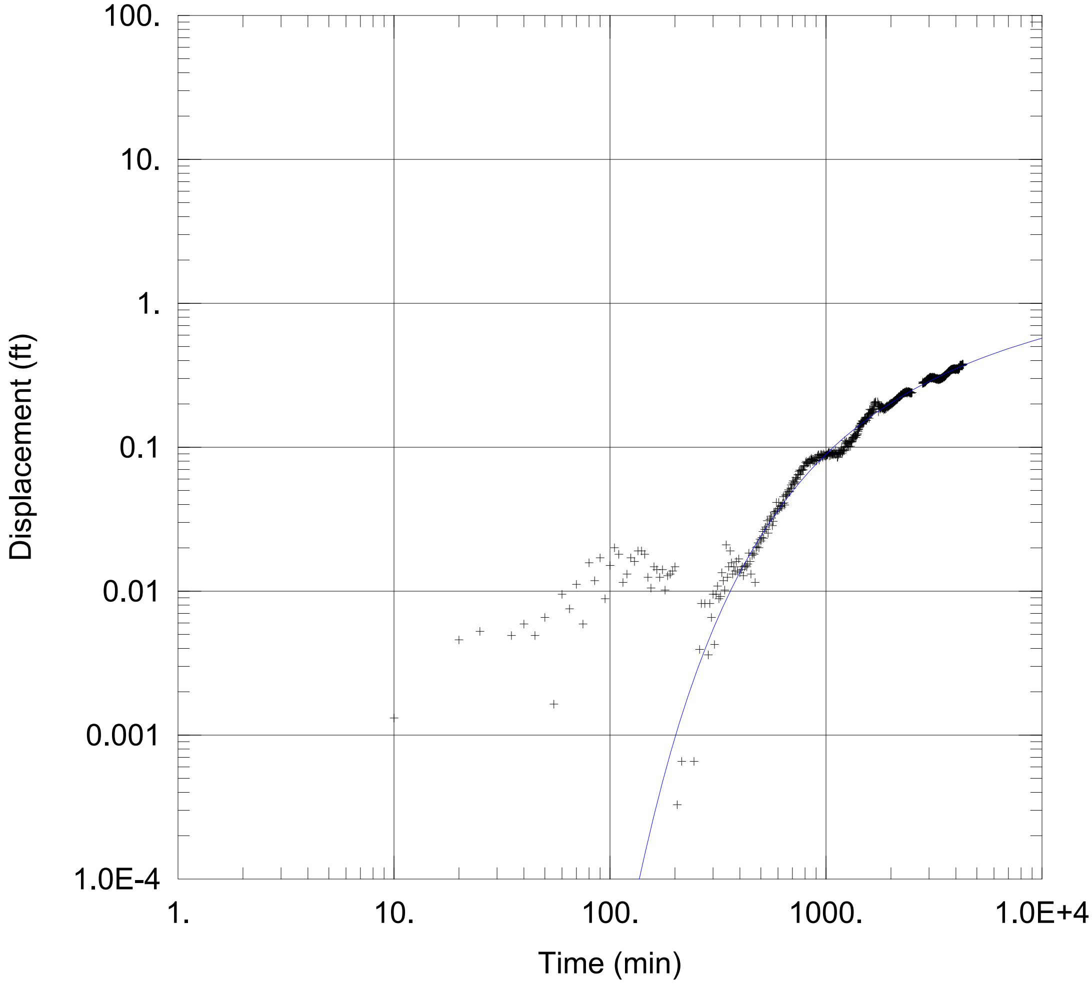
Pumping Test
Aquifer Model: Leaky
Solution Method: Hantush

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	0.3977	cm^2/sec
S	0.0001175	
1/B'	0.0003137	ft^{-1}
ß'/r	0.000106	ft^{-1}
1/B"	5.715E-5	ft^{-1}
ß"/r	5.715E-5	ft^{-1}

K = T/b = 0.0001838 cm/sec
Ss = S/b = 1.655E-6 1/ft
K'/b' = 2.527E-9 min^{-1}
K' = 1.605E-8 cm/sec
K"/b" = 8.388E-11 min^{-1}
K" = 5.327E-10 cm/sec



WELL TEST ANALYSIS

Data Set: C:\...\Pumping Test_2020-07-27_MW14-02B.aqt
Date: 07/29/20 Time: 10:10:13

PROJECT INFORMATION

Company: Golder Associates, Inc.
Client: Crossroads
Location: ME
Test Well: MW14-03B
Test Date: 7/7/2020

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
MW14-03B	3039420.818	684500.912

Observation Wells

Well Name	X (ft)	Y (ft)
+ MW14-02B	3040253.37	684684.47

SOLUTION

Aquifer Model: Leaky Solution Method: Hantush

T = 0.3977 cm^2/sec S = 0.0001175
1/B' = 0.0003137 ft^{-1} ß'/r = 0.000106 ft^{-1}
1/B" = 5.715E-5 ft^{-1} ß"/r = 5.715E-5 ft^{-1}

Data Set: C:\Users\BCampelia\Desktop\Crossroads Pumping Test Files\2020-07-10 Files\2020-07-26 Updated File
Date: 07/27/20
Time: 16:44:13

PROJECT INFORMATION

Company: Golder Associates, Inc.
Client: Crossroads
Location: ME
Test Date: 7/7/2020
Test Well: MW14-03B

AQUIFER DATA

Saturated Thickness: 71. ft
Anisotropy Ratio (Kz/Kr): 1.
Aquitard Thickness (b'): 12.5 ft
Aquitard Thickness (b"): 12.5 ft

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: MW14-03B

X Location: 3039420.818 ft
Y Location: 684500.912 ft

Casing Radius: 0. ft
Well Radius: 0.1875 ft

Partially Penetrating Well
Depth to Top of Screen: 28. ft
Depth to Bottom of Screen: 51. ft

No. of pumping periods: 1

Pumping Period Data

Time (min)	Rate (gal/min)
0.	1.

OBSERVATION WELL DATA

No. of observation wells: 2

Observation Well No. 1: MW14-03B

X Location: 3039420.818 ft
Y Location: 684500.912 ft

Radial distance from MW14-03B: 0. ft

Partially Penetrating Well
Depth to Top of Screen: 28. ft
Depth to Bottom of Screen: 51. ft

No. of Observations: 2161

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1.	0.	2162.	33.39
2.	3.285	2164.	33.38
4.	11.85	2166.	33.39
6.	15.12	2168.	33.39
8.	17.6	2170.	33.4
10.	19.46	2172.	33.4
12.	20.88	2174.	33.4

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
14.	21.99	2176.	33.39
16.	23.15	2178.	33.4
18.	24.09	2180.	33.4
20.	24.8	2182.	33.4
22.	25.31	2184.	33.41
24.	26.01	2186.	33.4
26.	26.58	2188.	33.41
28.	26.97	2190.	33.41
30.	27.4	2192.	33.4
32.	27.77	2194.	33.41
34.	28.03	2196.	33.4
36.	28.18	2198.	33.4
38.	28.49	2200.	33.4
40.	28.83	2202.	33.4
42.	29.09	2204.	33.41
44.	29.28	2206.	33.41
46.	29.48	2208.	33.41
48.	29.61	2210.	33.4
50.	29.72	2212.	33.41
52.	29.8	2214.	33.4
54.	29.86	2216.	33.4
56.	29.91	2218.	33.4
58.	29.97	2220.	33.4
60.	29.98	2222.	33.4
62.	30.04	2224.	33.4
64.	30.07	2226.	33.4
66.	30.11	2228.	33.4
68.	30.15	2230.	33.39
70.	30.18	2232.	33.4
72.	30.21	2234.	33.39
74.	30.32	2236.	33.38
76.	30.53	2238.	33.39
78.	30.65	2240.	33.39
80.	30.72	2242.	33.4
82.	30.77	2244.	33.4
84.	30.83	2246.	33.41
86.	30.84	2248.	33.4
88.	30.88	2250.	33.41
90.	30.97	2252.	33.39
92.	31.01	2254.	33.39
94.	31.03	2256.	33.4
96.	31.06	2258.	33.38
98.	31.09	2260.	33.39
100.	31.1	2262.	33.4
102.	31.18	2264.	33.39
104.	31.41	2266.	33.4
106.	31.53	2268.	33.4
108.	31.62	2270.	33.4
110.	31.67	2272.	33.41
112.	31.72	2274.	33.41
114.	31.77	2276.	33.39
116.	31.81	2278.	33.26
118.	31.75	2280.	33.21
120.	31.82	2282.	33.17
122.	31.87	2284.	33.18
124.	31.9	2286.	33.18
126.	31.95	2288.	33.17
128.	31.98	2290.	33.16
130.	32.	2292.	33.16
132.	32.03	2294.	33.16
134.	32.04	2296.	33.17
136.	32.01	2298.	33.16
138.	32.07	2300.	33.17
140.	32.1	2302.	33.17
142.	32.13	2304.	33.17
144.	32.18	2306.	33.18

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
146.	32.22	2308.	33.18
148.	32.25	2310.	33.19
150.	32.27	2312.	33.21
152.	32.26	2314.	33.28
154.	32.27	2316.	33.33
156.	32.27	2318.	33.35
158.	32.28	2320.	33.36
160.	32.32	2322.	33.38
162.	32.34	2324.	33.38
164.	32.36	2326.	33.39
166.	32.36	2328.	33.39
168.	32.35	2330.	33.4
170.	32.34	2332.	33.39
172.	32.34	2334.	33.39
174.	32.29	2336.	33.39
176.	32.28	2338.	33.39
178.	32.33	2340.	33.4
180.	32.35	2342.	33.4
182.	32.4	2344.	33.4
184.	32.42	2346.	33.4
186.	32.43	2348.	33.38
188.	32.43	2350.	33.39
190.	32.49	2352.	33.4
192.	32.33	2354.	33.4
194.	32.4	2356.	33.4
196.	32.44	2358.	33.41
198.	32.46	2360.	33.4
200.	32.49	2362.	33.41
202.	32.52	2364.	33.4
204.	32.46	2366.	33.41
206.	32.43	2368.	33.4
208.	32.5	2370.	33.4
210.	32.53	2372.	33.4
212.	32.61	2374.	33.4
214.	32.64	2376.	33.4
216.	32.65	2378.	33.4
218.	32.66	2380.	33.4
220.	32.67	2382.	33.38
222.	32.67	2384.	33.39
224.	32.7	2386.	33.4
226.	32.74	2388.	33.41
228.	32.77	2390.	33.41
230.	32.78	2392.	33.41
232.	32.78	2394.	33.4
234.	32.77	2396.	33.41
236.	32.77	2398.	33.42
238.	32.77	2400.	33.42
240.	32.75	2402.	33.41
242.	32.74	2404.	33.41
244.	32.73	2406.	33.4
246.	32.73	2408.	33.39
248.	32.73	2410.	33.4
250.	32.73	2412.	33.39
252.	32.74	2414.	33.38
254.	32.79	2416.	33.38
256.	32.82	2418.	33.37
258.	32.83	2420.	33.37
260.	32.84	2422.	32.7
262.	32.86	2424.	33.09
264.	32.87	2426.	33.24
266.	32.87	2428.	33.33
268.	32.85	2430.	33.37
270.	32.84	2432.	33.39
272.	32.83	2434.	33.39
274.	32.81	2436.	33.4
276.	32.82	2438.	33.4

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
278.	32.83	2440.	33.4
280.	32.83	2442.	33.4
282.	32.82	2444.	33.41
284.	32.68	2446.	33.41
286.	32.64	2448.	33.41
288.	32.67	2450.	33.41
290.	32.75	2452.	33.41
292.	32.78	2454.	33.41
294.	32.79	2456.	33.41
296.	32.81	2458.	33.41
298.	32.8	2460.	33.41
300.	30.7	2462.	33.39
302.	31.85	2464.	33.4
304.	32.17	2466.	33.41
306.	32.25	2468.	33.41
308.	32.27	2470.	33.41
310.	32.27	2472.	33.41
312.	32.27	2474.	33.4
314.	32.34	2476.	33.4
316.	32.48	2478.	33.41
318.	32.58	2480.	33.4
320.	32.63	2482.	33.41
322.	32.63	2484.	33.41
324.	32.61	2486.	33.4
326.	32.68	2488.	33.41
328.	32.68	2490.	33.41
330.	32.69	2492.	33.41
332.	32.72	2494.	33.41
334.	32.71	2496.	33.41
336.	32.69	2498.	33.41
338.	32.73	2500.	33.41
340.	32.7	2502.	33.4
342.	32.73	2504.	33.41
344.	32.76	2506.	33.41
346.	32.76	2508.	33.41
348.	32.64	2510.	33.4
350.	32.58	2512.	33.41
352.	32.66	2514.	33.41
354.	32.73	2516.	33.41
356.	32.74	2518.	33.41
358.	32.77	2520.	33.4
360.	32.77	2522.	33.4
362.	32.79	2524.	33.41
364.	32.83	2526.	33.41
366.	32.83	2528.	33.42
368.	32.77	2530.	33.42
370.	32.75	2532.	33.41
372.	32.73	2534.	33.42
374.	32.7	2536.	33.42
376.	32.72	2538.	33.42
378.	32.73	2540.	33.42
380.	32.74	2542.	33.42
382.	32.76	2544.	33.41
384.	32.8	2546.	33.42
386.	32.81	2548.	33.42
388.	32.82	2550.	33.42
390.	32.84	2552.	33.42
392.	32.84	2554.	33.43
394.	32.83	2556.	33.43
396.	32.81	2558.	33.43
398.	32.8	2560.	33.43
400.	32.77	2562.	33.43
402.	32.76	2564.	33.43
404.	32.79	2566.	33.43
406.	32.82	2568.	33.43
408.	32.84	2570.	33.43

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
410.	32.89	2572.	33.43
412.	32.91	2574.	33.44
414.	32.91	2576.	33.43
416.	32.91	2578.	33.43
418.	32.91	2580.	33.43
420.	32.89	2582.	33.43
422.	32.86	2584.	33.42
424.	32.86	2586.	33.41
426.	32.85	2588.	33.4
428.	32.83	2590.	33.4
430.	32.82	2592.	33.41
432.	32.82	2594.	33.41
434.	32.81	2596.	33.4
436.	32.82	2598.	33.41
438.	32.82	2600.	33.41
440.	32.8	2602.	33.41
442.	32.81	2604.	33.47
444.	32.8	2606.	33.49
446.	32.81	2608.	33.51
448.	32.81	2610.	33.51
450.	32.81	2612.	33.52
452.	32.8	2614.	33.52
454.	32.8	2616.	33.52
456.	32.8	2618.	33.53
458.	32.79	2620.	33.53
460.	32.79	2622.	33.53
462.	32.78	2624.	33.53
464.	32.77	2626.	33.53
466.	32.77	2628.	33.53
468.	32.77	2630.	33.53
470.	32.77	2632.	33.53
472.	32.78	2634.	33.53
474.	32.77	2636.	33.54
476.	32.77	2638.	33.53
478.	32.72	2640.	33.54
480.	32.7	2642.	33.54
482.	32.7	2644.	33.53
484.	32.69	2646.	33.53
486.	32.69	2648.	33.54
488.	32.68	2650.	33.54
490.	32.69	2652.	33.54
492.	32.68	2654.	33.54
494.	32.68	2656.	33.53
496.	32.68	2658.	33.54
498.	32.73	2660.	33.54
500.	32.82	2662.	33.54
502.	32.84	2664.	33.54
504.	32.91	2666.	33.54
506.	32.93	2668.	33.54
508.	32.98	2670.	33.53
510.	33.02	2672.	33.53
512.	33.04	2674.	33.53
514.	33.06	2676.	33.54
516.	33.07	2678.	33.54
518.	33.08	2680.	33.54
520.	33.08	2682.	33.54
522.	33.09	2684.	33.54
524.	33.09	2686.	33.54
526.	33.09	2688.	33.54
528.	33.09	2690.	33.53
530.	33.1	2692.	33.54
532.	33.09	2694.	33.53
534.	33.1	2696.	33.51
536.	33.1	2698.	33.5
538.	33.1	2700.	33.5
540.	33.09	2702.	33.5

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
542.	33.09	2704.	33.49
544.	33.08	2706.	33.49
546.	33.09	2708.	33.47
548.	33.08	2710.	33.47
550.	33.08	2712.	33.47
552.	33.09	2714.	33.47
554.	33.09	2716.	33.47
556.	33.1	2718.	33.47
558.	33.1	2720.	33.47
560.	33.12	2722.	33.47
562.	33.12	2724.	33.47
564.	33.13	2726.	33.47
566.	33.12	2728.	33.48
568.	33.1	2730.	33.49
570.	33.12	2732.	33.48
572.	33.12	2734.	32.42
574.	33.15	2736.	32.97
576.	33.19	2738.	33.21
578.	33.21	2740.	33.33
580.	33.22	2742.	33.4
582.	33.22	2744.	33.44
584.	33.23	2746.	33.46
586.	33.23	2748.	33.49
588.	33.23	2750.	33.5
590.	33.23	2752.	33.51
592.	33.23	2754.	33.53
594.	33.23	2756.	33.54
596.	33.23	2758.	33.54
598.	33.23	2760.	33.55
600.	33.24	2762.	33.56
602.	33.25	2764.	33.56
604.	33.25	2766.	33.56
606.	33.25	2768.	33.55
608.	33.26	2770.	33.54
610.	33.25	2772.	33.55
612.	33.25	2774.	33.54
614.	33.25	2776.	33.56
616.	33.26	2778.	33.56
618.	33.24	2780.	33.57
620.	33.24	2782.	33.56
622.	33.23	2784.	33.53
624.	33.22	2786.	33.52
626.	33.22	2788.	33.5
628.	33.22	2790.	33.49
630.	33.22	2792.	33.49
632.	33.22	2794.	33.5
634.	33.21	2796.	33.49
636.	33.23	2798.	33.48
638.	33.22	2800.	33.48
640.	33.21	2802.	33.47
642.	33.21	2804.	33.47
644.	33.21	2806.	33.46
646.	33.21	2808.	33.47
648.	33.2	2810.	33.47
650.	33.2	2812.	33.46
652.	33.2	2814.	33.46
654.	31.68	2816.	33.44
656.	32.43	2818.	33.45
658.	32.73	2820.	33.44
660.	32.88	2822.	33.45
662.	32.94	2824.	33.46
664.	32.98	2826.	33.46
666.	33.	2828.	33.46
668.	33.02	2830.	33.47
670.	33.04	2832.	33.46
672.	33.04	2834.	33.46

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
674.	33.04	2836.	33.47
676.	33.04	2838.	33.45
678.	33.03	2840.	33.45
680.	33.03	2842.	33.45
682.	33.03	2844.	33.44
684.	33.03	2846.	33.45
686.	33.02	2848.	33.46
688.	33.02	2850.	33.46
690.	33.03	2852.	33.47
692.	33.05	2854.	33.47
694.	33.06	2856.	33.47
696.	33.06	2858.	33.45
698.	33.07	2860.	33.46
700.	33.06	2862.	33.47
702.	33.07	2864.	33.47
704.	33.06	2866.	33.47
706.	33.07	2868.	33.47
708.	33.07	2870.	33.45
710.	33.07	2872.	33.45
712.	33.06	2874.	33.46
714.	33.05	2876.	33.47
716.	33.05	2878.	33.49
718.	33.05	2880.	33.5
720.	33.04	2882.	33.51
722.	33.05	2884.	33.52
724.	33.04	2886.	33.52
726.	33.05	2888.	33.52
728.	33.04	2890.	33.5
730.	33.05	2892.	33.5
732.	33.04	2894.	33.51
734.	33.04	2896.	33.5
736.	33.05	2898.	33.49
738.	33.04	2900.	33.47
740.	33.05	2902.	33.46
742.	33.05	2904.	33.46
744.	33.05	2906.	33.44
746.	33.05	2908.	33.45
748.	33.06	2910.	33.44
750.	33.06	2912.	33.44
752.	33.06	2914.	33.44
754.	33.06	2916.	33.44
756.	33.08	2918.	33.44
758.	33.09	2920.	33.43
760.	33.1	2922.	33.44
762.	33.1	2924.	33.42
764.	33.11	2926.	33.43
766.	33.11	2928.	33.42
768.	33.11	2930.	33.43
770.	33.12	2932.	33.42
772.	33.11	2934.	33.42
774.	33.11	2936.	33.42
776.	33.11	2938.	33.43
778.	33.12	2940.	33.43
780.	33.14	2942.	33.43
782.	33.14	2944.	33.42
784.	33.14	2946.	33.41
786.	33.14	2948.	33.42
788.	33.15	2950.	33.42
790.	33.15	2952.	33.43
792.	33.14	2954.	33.32
794.	33.15	2956.	33.27
796.	33.15	2958.	33.21
798.	33.15	2960.	33.39
800.	33.16	2962.	33.55
802.	33.16	2964.	33.64
804.	33.17	2966.	33.71

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
806.	33.16	2968.	33.75
808.	33.16	2970.	33.81
810.	33.17	2972.	33.91
812.	33.17	2974.	33.96
814.	33.17	2976.	34.01
816.	33.17	2978.	34.03
818.	33.17	2980.	34.03
820.	33.17	2982.	34.04
822.	33.17	2984.	34.05
824.	33.17	2986.	34.06
826.	33.17	2988.	34.08
828.	33.17	2990.	34.08
830.	33.17	2992.	34.08
832.	33.16	2994.	34.09
834.	33.17	2996.	34.07
836.	33.17	2998.	34.07
838.	33.17	3000.	34.07
840.	33.17	3002.	34.02
842.	33.17	3004.	33.95
844.	33.17	3006.	33.91
846.	33.16	3008.	33.89
848.	33.15	3010.	33.89
850.	33.15	3012.	33.9
852.	33.15	3014.	33.9
854.	33.16	3016.	33.91
856.	33.16	3018.	33.89
858.	33.16	3020.	33.9
860.	33.16	3022.	33.89
862.	33.15	3024.	33.9
864.	33.15	3026.	33.89
866.	33.16	3028.	33.89
868.	33.16	3030.	33.9
870.	33.15	3032.	33.89
872.	33.15	3034.	33.89
874.	33.16	3036.	33.91
876.	33.16	3038.	33.9
878.	33.16	3040.	33.89
880.	33.16	3042.	33.9
882.	33.16	3044.	33.89
884.	33.16	3046.	33.89
886.	33.16	3048.	33.88
888.	33.16	3050.	33.89
890.	33.17	3052.	33.9
892.	33.17	3054.	33.89
894.	33.17	3056.	33.89
896.	33.17	3058.	33.89
898.	33.17	3060.	33.89
900.	33.17	3062.	33.88
902.	33.17	3064.	33.89
904.	33.17	3066.	33.89
906.	33.18	3068.	33.9
908.	33.16	3070.	33.89
910.	33.17	3072.	33.9
912.	33.18	3074.	33.9
914.	33.18	3076.	33.9
916.	33.19	3078.	33.9
918.	33.19	3080.	33.9
920.	33.19	3082.	33.9
922.	33.19	3084.	33.9
924.	33.19	3086.	33.9
926.	33.19	3088.	33.92
928.	33.18	3090.	33.91
930.	33.19	3092.	33.45
932.	33.19	3094.	33.68
934.	33.2	3096.	33.78
936.	33.19	3098.	33.89

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
938.	33.19	3100.	33.94
940.	33.2	3102.	33.97
942.	33.19	3104.	33.97
944.	33.2	3106.	33.98
946.	33.2	3108.	33.98
948.	33.19	3110.	33.97
950.	33.19	3112.	33.98
952.	33.2	3114.	33.98
954.	33.2	3116.	33.98
956.	33.19	3118.	33.99
958.	33.19	3120.	33.98
960.	33.2	3122.	34.
962.	33.2	3124.	34.
964.	33.2	3126.	34.
966.	33.2	3128.	33.99
968.	33.2	3130.	33.99
970.	33.21	3132.	33.99
972.	33.2	3134.	34.
974.	33.21	3136.	34.01
976.	33.21	3138.	34.
978.	33.21	3140.	34.
980.	33.21	3142.	34.
982.	33.22	3144.	34.
984.	33.21	3146.	34.
986.	33.21	3148.	34.
988.	33.21	3150.	34.
990.	33.21	3152.	34.
992.	33.2	3154.	34.
994.	33.21	3156.	34.
996.	33.21	3158.	34.01
998.	33.21	3160.	34.
1000.	33.21	3162.	34.
1002.	33.21	3164.	34.01
1004.	33.21	3166.	34.
1006.	33.21	3168.	34.
1008.	33.22	3170.	34.01
1010.	33.22	3172.	33.99
1012.	33.22	3174.	33.99
1014.	33.21	3176.	34.
1016.	32.54	3178.	34.
1018.	32.9	3180.	34.
1020.	33.05	3182.	34.01
1022.	33.12	3184.	34.01
1024.	33.17	3186.	34.01
1026.	33.2	3188.	34.01
1028.	33.22	3190.	34.01
1030.	33.24	3192.	34.01
1032.	33.25	3194.	34.01
1034.	33.26	3196.	34.02
1036.	33.26	3198.	34.01
1038.	33.26	3200.	34.
1040.	33.26	3202.	34.
1042.	33.26	3204.	34.
1044.	33.26	3206.	34.
1046.	33.26	3208.	34.
1048.	33.26	3210.	34.
1050.	33.27	3212.	34.
1052.	33.26	3214.	34.01
1054.	33.27	3216.	34.05
1056.	33.26	3218.	34.06
1058.	33.26	3220.	34.07
1060.	33.26	3222.	34.07
1062.	33.26	3224.	34.08
1064.	33.26	3226.	34.08
1066.	33.26	3228.	34.07
1068.	33.26	3230.	34.08

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1070.	33.25	3232.	34.09
1072.	33.25	3234.	34.09
1074.	33.24	3236.	34.05
1076.	33.23	3238.	34.04
1078.	33.23	3240.	34.02
1080.	33.23	3242.	34.01
1082.	33.26	3244.	34.
1084.	33.26	3246.	34.01
1086.	33.28	3248.	34.
1088.	33.29	3250.	34.
1090.	33.29	3252.	34.
1092.	33.29	3254.	33.99
1094.	33.29	3256.	33.99
1096.	33.29	3258.	33.98
1098.	33.29	3260.	33.98
1100.	33.28	3262.	33.99
1102.	33.29	3264.	33.99
1104.	33.29	3266.	33.99
1106.	33.28	3268.	34.
1108.	33.28	3270.	34.01
1110.	33.27	3272.	34.01
1112.	33.26	3274.	34.01
1114.	33.26	3276.	34.01
1116.	33.27	3278.	34.01
1118.	33.27	3280.	34.
1120.	33.26	3282.	34.
1122.	33.27	3284.	34.
1124.	33.28	3286.	33.99
1126.	33.28	3288.	33.97
1128.	33.28	3290.	33.97
1130.	33.28	3292.	33.97
1132.	33.29	3294.	33.96
1134.	33.29	3296.	33.96
1136.	33.29	3298.	33.96
1138.	33.29	3300.	33.97
1140.	33.29	3302.	33.97
1142.	33.28	3304.	33.97
1144.	33.29	3306.	33.97
1146.	33.29	3308.	33.95
1148.	33.28	3310.	33.95
1150.	33.27	3312.	33.95
1152.	33.28	3314.	33.81
1154.	33.29	3316.	33.76
1156.	33.28	3318.	33.73
1158.	33.28	3320.	33.72
1160.	33.29	3322.	33.71
1162.	33.29	3324.	33.7
1164.	33.28	3326.	33.69
1166.	33.29	3328.	33.7
1168.	33.29	3330.	33.7
1170.	33.29	3332.	33.7
1172.	33.3	3334.	33.7
1174.	33.3	3336.	33.7
1176.	33.29	3338.	33.7
1178.	33.29	3340.	33.7
1180.	33.28	3342.	33.7
1182.	33.28	3344.	33.71
1184.	33.29	3346.	33.74
1186.	33.29	3348.	33.83
1188.	33.29	3350.	33.88
1190.	33.28	3352.	33.9
1192.	33.28	3354.	33.91
1194.	33.29	3356.	33.92
1196.	33.29	3358.	33.93
1198.	33.29	3360.	33.93
1200.	33.31	3362.	33.94

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1202.	33.33	3364.	33.93
1204.	33.34	3366.	33.93
1206.	33.35	3368.	33.95
1208.	33.34	3370.	33.95
1210.	33.33	3372.	33.95
1212.	33.33	3374.	33.95
1214.	33.32	3376.	33.94
1216.	33.32	3378.	33.95
1218.	33.32	3380.	33.94
1220.	33.32	3382.	33.95
1222.	33.31	3384.	33.95
1224.	33.3	3386.	33.95
1226.	33.29	3388.	33.96
1228.	33.28	3390.	33.95
1230.	33.29	3392.	33.95
1232.	33.29	3394.	33.96
1234.	33.31	3396.	33.96
1236.	33.31	3398.	33.96
1238.	33.31	3400.	33.96
1240.	33.31	3402.	33.95
1242.	33.32	3404.	33.96
1244.	33.31	3406.	33.95
1246.	33.32	3408.	33.95
1248.	33.31	3410.	33.95
1250.	33.31	3412.	33.93
1252.	33.32	3414.	33.92
1254.	33.32	3416.	33.92
1256.	33.33	3418.	33.94
1258.	33.33	3420.	33.92
1260.	33.33	3422.	33.92
1262.	33.34	3424.	33.93
1264.	33.34	3426.	33.95
1266.	33.35	3428.	33.97
1268.	33.34	3430.	33.99
1270.	33.33	3432.	33.99
1272.	33.33	3434.	34.01
1274.	33.32	3436.	34.01
1276.	33.33	3438.	34.01
1278.	33.33	3440.	34.01
1280.	33.36	3442.	34.
1282.	33.39	3444.	34.
1284.	33.39	3446.	34.
1286.	33.4	3448.	34.
1288.	33.4	3450.	33.34
1290.	33.38	3452.	33.64
1292.	33.41	3454.	33.78
1294.	33.4	3456.	33.84
1296.	33.39	3458.	33.9
1298.	33.38	3460.	33.93
1300.	33.37	3462.	33.93
1302.	33.36	3464.	33.95
1304.	33.37	3466.	33.94
1306.	33.4	3468.	33.94
1308.	33.4	3470.	33.96
1310.	33.4	3472.	33.95
1312.	33.39	3474.	33.95
1314.	33.4	3476.	33.95
1316.	33.39	3478.	33.95
1318.	33.38	3480.	33.96
1320.	33.38	3482.	33.96
1322.	33.37	3484.	33.96
1324.	33.39	3486.	33.97
1326.	33.38	3488.	33.96
1328.	33.38	3490.	33.97
1330.	33.37	3492.	33.96
1332.	33.36	3494.	33.96

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1334.	33.21	3496.	33.97
1336.	33.16	3498.	33.96
1338.	33.12	3500.	33.95
1340.	33.11	3502.	33.95
1342.	33.1	3504.	33.96
1344.	33.11	3506.	33.95
1346.	33.15	3508.	33.95
1348.	33.23	3510.	33.95
1350.	33.28	3512.	33.95
1352.	33.32	3514.	33.94
1354.	33.33	3516.	33.95
1356.	33.34	3518.	33.95
1358.	33.34	3520.	33.95
1360.	33.34	3522.	33.94
1362.	33.34	3524.	33.95
1364.	33.35	3526.	33.95
1366.	33.36	3528.	33.96
1368.	33.37	3530.	33.96
1370.	33.37	3532.	33.98
1372.	33.36	3534.	33.98
1374.	33.36	3536.	33.98
1376.	33.35	3538.	34.
1378.	33.36	3540.	33.98
1380.	31.92	3542.	33.97
1382.	32.34	3544.	33.97
1384.	32.58	3546.	33.97
1386.	32.68	3548.	33.97
1388.	32.74	3550.	33.96
1390.	32.77	3552.	33.96
1392.	32.79	3554.	33.96
1394.	32.8	3556.	33.96
1396.	32.81	3558.	33.98
1398.	32.82	3560.	33.97
1400.	32.81	3562.	33.97
1402.	32.81	3564.	33.95
1404.	32.81	3566.	33.96
1406.	32.82	3568.	33.95
1408.	32.82	3570.	33.94
1410.	32.83	3572.	33.94
1412.	32.79	3574.	33.93
1414.	32.76	3576.	33.94
1416.	32.76	3578.	33.95
1418.	32.74	3580.	33.95
1420.	32.74	3582.	33.95
1422.	32.74	3584.	33.95
1424.	32.73	3586.	33.95
1426.	32.73	3588.	33.95
1428.	32.74	3590.	33.94
1430.	32.75	3592.	33.93
1432.	32.75	3594.	33.93
1434.	32.76	3596.	33.94
1436.	32.76	3598.	33.93
1438.	32.76	3600.	33.94
1440.	32.77	3602.	33.94
1442.	32.76	3604.	33.95
1444.	32.77	3606.	33.95
1446.	32.77	3608.	33.96
1448.	32.77	3610.	33.97
1450.	32.76	3612.	33.97
1452.	32.77	3614.	33.98
1454.	32.78	3616.	34.01
1456.	32.78	3618.	34.
1458.	32.78	3620.	34.
1460.	32.79	3622.	33.99
1462.	32.78	3624.	33.98
1464.	32.78	3626.	33.98

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1466.	32.77	3628.	33.98
1468.	32.76	3630.	33.98
1470.	32.75	3632.	33.97
1472.	32.75	3634.	33.98
1474.	32.74	3636.	33.99
1476.	32.74	3638.	34.01
1478.	32.74	3640.	34.01
1480.	32.73	3642.	34.
1482.	32.73	3644.	34.
1484.	32.74	3646.	34.
1486.	32.73	3648.	34.01
1488.	32.71	3650.	34.01
1490.	32.73	3652.	34.
1492.	32.74	3654.	33.99
1494.	32.76	3656.	33.98
1496.	32.76	3658.	33.98
1498.	32.76	3660.	33.99
1500.	32.76	3662.	33.96
1502.	32.77	3664.	33.87
1504.	32.77	3666.	33.8
1506.	32.77	3668.	33.77
1508.	32.77	3670.	33.75
1510.	32.77	3672.	33.73
1512.	32.78	3674.	33.73
1514.	32.79	3676.	33.77
1516.	32.78	3678.	33.83
1518.	32.78	3680.	33.88
1520.	32.79	3682.	33.91
1522.	32.78	3684.	33.92
1524.	32.79	3686.	33.95
1526.	32.79	3688.	33.98
1528.	32.79	3690.	33.98
1530.	32.79	3692.	33.97
1532.	32.79	3694.	33.97
1534.	32.79	3696.	33.97
1536.	32.79	3698.	33.96
1538.	32.79	3700.	33.96
1540.	32.79	3702.	33.98
1542.	32.79	3704.	34.
1544.	32.77	3706.	34.01
1546.	32.77	3708.	34.02
1548.	32.75	3710.	34.02
1550.	32.75	3712.	34.02
1552.	32.74	3714.	34.
1554.	32.74	3716.	33.98
1556.	32.73	3718.	33.99
1558.	32.72	3720.	33.97
1560.	32.72	3722.	33.97
1562.	32.71	3724.	33.98
1564.	32.71	3726.	33.95
1566.	32.7	3728.	33.95
1568.	32.71	3730.	33.96
1570.	32.7	3732.	33.97
1572.	32.7	3734.	33.97
1574.	32.7	3736.	33.95
1576.	32.7	3738.	33.98
1578.	32.69	3740.	34.
1580.	32.91	3742.	33.99
1582.	33.06	3744.	33.97
1584.	33.13	3746.	33.98
1586.	33.17	3748.	33.97
1588.	33.21	3750.	33.95
1590.	33.24	3752.	33.96
1592.	33.25	3754.	33.97
1594.	33.25	3756.	33.96
1596.	33.26	3758.	33.95

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1598.	33.26	3760.	33.95
1600.	33.27	3762.	33.94
1602.	33.28	3764.	33.94
1604.	33.29	3766.	33.95
1606.	33.29	3768.	33.95
1608.	33.3	3770.	33.95
1610.	33.29	3772.	33.98
1612.	33.31	3774.	33.98
1614.	33.31	3776.	33.98
1616.	33.32	3778.	33.98
1618.	33.32	3780.	33.99
1620.	33.32	3782.	33.98
1622.	33.33	3784.	33.95
1624.	33.33	3786.	33.95
1626.	33.33	3788.	33.96
1628.	33.32	3790.	33.96
1630.	33.33	3792.	33.97
1632.	33.32	3794.	33.98
1634.	33.31	3796.	34.01
1636.	33.29	3798.	34.
1638.	33.29	3800.	34.
1640.	33.29	3802.	33.99
1642.	33.28	3804.	34.01
1644.	33.28	3806.	33.44
1646.	33.29	3808.	33.76
1648.	33.29	3810.	33.9
1650.	33.29	3812.	33.95
1652.	33.28	3814.	33.99
1654.	33.29	3816.	34.02
1656.	33.29	3818.	34.03
1658.	33.29	3820.	34.05
1660.	33.28	3822.	34.05
1662.	33.28	3824.	34.05
1664.	33.29	3826.	34.06
1666.	33.28	3828.	34.07
1668.	33.29	3830.	34.07
1670.	33.28	3832.	34.06
1672.	33.28	3834.	34.06
1674.	33.27	3836.	34.05
1676.	33.27	3838.	34.06
1678.	33.26	3840.	34.07
1680.	33.27	3842.	34.06
1682.	33.27	3844.	34.05
1684.	33.28	3846.	34.04
1686.	33.28	3848.	34.04
1688.	33.27	3850.	34.03
1690.	33.27	3852.	34.03
1692.	33.27	3854.	34.03
1694.	33.28	3856.	34.03
1696.	33.28	3858.	34.04
1698.	33.28	3860.	34.04
1700.	33.27	3862.	34.05
1702.	33.27	3864.	34.03
1704.	33.26	3866.	34.05
1706.	33.26	3868.	34.06
1708.	33.26	3870.	34.06
1710.	33.26	3872.	34.07
1712.	33.27	3874.	34.05
1714.	33.3	3876.	34.07
1716.	33.32	3878.	34.07
1718.	32.42	3880.	34.05
1720.	32.67	3882.	34.05
1722.	33.	3884.	34.06
1724.	33.17	3886.	34.05
1726.	33.26	3888.	34.04
1728.	33.31	3890.	34.04

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1730.	33.34	3892.	34.04
1732.	33.36	3894.	34.03
1734.	33.34	3896.	34.04
1736.	33.3	3898.	34.04
1738.	33.27	3900.	34.04
1740.	33.31	3902.	34.06
1742.	33.34	3904.	34.07
1744.	33.36	3906.	34.07
1746.	33.37	3908.	34.05
1748.	33.38	3910.	34.04
1750.	33.39	3912.	34.04
1752.	33.39	3914.	34.04
1754.	33.4	3916.	34.04
1756.	33.41	3918.	34.05
1758.	33.41	3920.	34.05
1760.	33.41	3922.	34.04
1762.	33.41	3924.	34.03
1764.	33.42	3926.	34.03
1766.	33.41	3928.	34.04
1768.	33.41	3930.	34.05
1770.	33.41	3932.	34.06
1772.	33.41	3934.	34.06
1774.	33.42	3936.	34.07
1776.	33.41	3938.	34.06
1778.	33.42	3940.	34.06
1780.	33.41	3942.	34.04
1782.	33.42	3944.	34.06
1784.	33.42	3946.	34.07
1786.	33.42	3948.	34.07
1788.	33.41	3950.	34.07
1790.	33.4	3952.	34.05
1792.	33.38	3954.	34.04
1794.	33.39	3956.	34.04
1796.	33.38	3958.	34.03
1798.	33.38	3960.	34.02
1800.	33.38	3962.	34.03
1802.	33.38	3964.	34.02
1804.	33.37	3966.	34.01
1806.	33.37	3968.	34.
1808.	33.37	3970.	34.
1810.	33.37	3972.	33.99
1812.	33.37	3974.	34.01
1814.	33.37	3976.	34.03
1816.	33.37	3978.	34.04
1818.	33.38	3980.	34.04
1820.	33.38	3982.	34.04
1822.	33.37	3984.	34.04
1824.	33.37	3986.	34.03
1826.	33.38	3988.	34.02
1828.	33.37	3990.	34.02
1830.	33.38	3992.	34.02
1832.	33.38	3994.	34.02
1834.	33.38	3996.	34.01
1836.	33.38	3998.	34.04
1838.	33.37	4000.	34.04
1840.	33.35	4002.	34.04
1842.	33.37	4004.	34.02
1844.	33.35	4006.	34.03
1846.	33.35	4008.	34.03
1848.	33.36	4010.	34.04
1850.	33.36	4012.	34.04
1852.	33.35	4014.	34.05
1854.	33.35	4016.	34.04
1856.	33.35	4018.	34.03
1858.	33.35	4020.	34.01
1860.	33.35	4022.	34.02

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1862.	33.33	4024.	34.03
1864.	33.34	4026.	34.02
1866.	33.33	4028.	34.01
1868.	33.33	4030.	34.
1870.	33.33	4032.	34.
1872.	33.33	4034.	34.
1874.	33.35	4036.	34.01
1876.	33.34	4038.	34.01
1878.	33.34	4040.	34.
1880.	33.34	4042.	33.99
1882.	33.34	4044.	33.99
1884.	33.34	4046.	33.99
1886.	33.34	4048.	34.01
1888.	33.34	4050.	34.02
1890.	33.34	4052.	34.06
1892.	33.34	4054.	34.09
1894.	33.34	4056.	34.08
1896.	33.32	4058.	34.09
1898.	33.3	4060.	34.11
1900.	33.33	4062.	34.12
1902.	33.34	4064.	34.11
1904.	33.36	4066.	34.11
1906.	33.35	4068.	34.11
1908.	33.36	4070.	34.1
1910.	33.37	4072.	34.09
1912.	33.37	4074.	34.08
1914.	33.36	4076.	34.1
1916.	33.38	4078.	34.11
1918.	33.38	4080.	34.12
1920.	33.37	4082.	34.12
1922.	33.38	4084.	34.11
1924.	33.37	4086.	34.13
1926.	33.38	4088.	34.12
1928.	33.37	4090.	34.12
1930.	33.36	4092.	34.1
1932.	33.37	4094.	34.09
1934.	33.37	4096.	34.07
1936.	33.35	4098.	34.07
1938.	33.36	4100.	34.1
1940.	33.38	4102.	34.11
1942.	33.38	4104.	34.12
1944.	33.35	4106.	34.13
1946.	33.37	4108.	34.12
1948.	33.36	4110.	34.11
1950.	33.37	4112.	34.07
1952.	33.36	4114.	34.05
1954.	33.38	4116.	34.04
1956.	33.37	4118.	34.03
1958.	33.37	4120.	34.
1960.	33.36	4122.	34.
1962.	33.35	4124.	33.95
1964.	33.35	4126.	33.89
1966.	33.34	4128.	33.86
1968.	33.35	4130.	33.83
1970.	33.35	4132.	33.81
1972.	33.35	4134.	33.82
1974.	33.34	4136.	33.8
1976.	33.33	4138.	33.8
1978.	33.34	4140.	33.83
1980.	33.35	4142.	33.85
1982.	33.35	4144.	33.95
1984.	33.36	4146.	34.01
1986.	33.37	4148.	34.05
1988.	33.37	4150.	34.1
1990.	33.37	4152.	34.09
1992.	33.37	4154.	34.09

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1994.	33.37	4156.	34.11
1996.	33.39	4158.	34.14
1998.	33.38	4160.	34.14
2000.	33.39	4162.	34.14
2002.	33.39	4164.	34.12
2004.	33.38	4166.	34.15
2006.	33.38	4168.	34.16
2008.	33.39	4170.	34.15
2010.	32.74	4172.	34.12
2012.	33.11	4174.	34.15
2014.	33.26	4176.	33.16
2016.	33.33	4178.	33.43
2018.	33.35	4180.	33.52
2020.	33.38	4182.	33.54
2022.	33.39	4184.	33.57
2024.	33.41	4186.	33.57
2026.	33.42	4188.	33.57
2028.	33.42	4190.	33.56
2030.	33.42	4192.	33.56
2032.	33.42	4194.	33.56
2034.	33.43	4196.	33.54
2036.	33.42	4198.	33.53
2038.	33.42	4200.	33.53
2040.	33.42	4202.	33.52
2042.	33.43	4204.	33.52
2044.	33.43	4206.	33.51
2046.	33.42	4208.	33.5
2048.	33.42	4210.	33.49
2050.	33.43	4212.	33.49
2052.	33.42	4214.	33.48
2054.	33.43	4216.	33.49
2056.	33.43	4218.	33.49
2058.	33.42	4220.	33.5
2060.	33.43	4222.	33.48
2062.	33.43	4224.	33.48
2064.	33.44	4226.	33.48
2066.	33.43	4228.	33.47
2068.	33.44	4230.	33.47
2070.	33.44	4232.	33.48
2072.	33.44	4234.	33.47
2074.	33.44	4236.	33.47
2076.	33.45	4238.	33.47
2078.	33.45	4240.	33.47
2080.	33.45	4242.	33.47
2082.	33.44	4244.	33.46
2084.	33.44	4246.	33.47
2086.	33.46	4248.	33.47
2088.	33.47	4250.	33.47
2090.	33.47	4252.	33.47
2092.	33.49	4254.	33.47
2094.	33.49	4256.	33.46
2096.	33.49	4258.	33.46
2098.	33.49	4260.	33.46
2100.	33.48	4262.	33.46
2102.	33.48	4264.	33.46
2104.	33.48	4266.	33.45
2106.	33.48	4268.	33.46
2108.	33.47	4270.	33.46
2110.	33.46	4272.	33.46
2112.	33.46	4274.	33.45
2114.	33.46	4276.	33.46
2116.	33.46	4278.	33.46
2118.	33.46	4280.	33.46
2120.	33.45	4282.	33.46
2122.	33.46	4284.	33.46
2124.	33.46	4286.	33.46

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
2126.	33.47	4288.	33.46
2128.	33.45	4290.	33.47
2130.	33.46	4292.	33.46
2132.	33.45	4294.	33.46
2134.	33.45	4296.	33.46
2136.	33.43	4298.	33.45
2138.	33.44	4300.	33.45
2140.	33.4	4302.	33.44
2142.	33.4	4304.	33.44
2144.	33.39	4306.	33.46
2146.	33.39	4308.	33.47
2148.	33.39	4310.	33.48
2150.	33.39	4312.	33.48
2152.	33.39	4314.	33.49
2154.	33.39	4316.	33.49
2156.	33.4	4318.	33.48
2158.	33.39	4320.	33.31
2160.	33.39		

Observation Well No. 2: MW14-04B

X Location: 3038831.31 ft
Y Location: 684708.26 ft

Radial distance from MW14-03B: 624.9102937 ft

Partially Penetrating Well
Depth to Top of Screen: 29. ft
Depth to Bottom of Screen: 53. ft

No. of Observations: 744

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
5.	-0.003281	2130.	0.2356
10.	0.003281	2135.	0.2474
15.	-0.004593	2140.	0.2448
20.	0.007218	2145.	0.2392
25.	0.005906	2150.	0.2441
30.	-0.003609	2155.	0.25
35.	0.003937	2160.	0.2457
40.	0.003937	2165.	0.2497
45.	0.007218	2170.	0.2562
50.	0.0009843	2175.	0.2516
55.	-0.001969	2180.	0.2493
60.	0.006562	2185.	0.2526
65.	0.004265	2190.	0.2516
70.	0.009843	2195.	0.25
75.	-0.00164	2200.	0.2539
80.	0.01804	2205.	0.2546
85.	0.004921	2210.	0.2589
90.	0.01378	2215.	0.2579
95.	0.006562	2220.	0.2648
100.	0.01148	2225.	0.2667
105.	0.02034	2230.	0.2608
110.	0.01936	2235.	0.2621
115.	0.0105	2240.	0.2585
120.	0.005249	2245.	0.2615
125.	0.008858	2250.	0.2615
130.	0.01345	2255.	0.2575
135.	0.01345	2260.	0.2595
140.	0.01608	2265.	0.2654
145.	0.01608	2270.	0.2707
150.	0.004921	2275.	0.2608
155.	-0.0009843	2280.	0.2661
160.	-0.003281	2285.	0.2635

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
165.	-0.001969	2290.	0.2651
170.	-0.006234	2295.	0.2625
175.	-0.003937	2300.	0.2625
180.	-0.01444	2305.	0.268
185.	-0.007874	2310.	0.2684
190.	-0.00164	2315.	0.274
195.	-0.006562	2320.	0.273
200.	-0.002297	2325.	0.2677
205.	-0.005906	2330.	0.2657
210.	-0.01148	2335.	0.2677
215.	0.001312	2340.	0.269
220.	-0.007874	2345.	0.2661
225.	-0.01444	2350.	0.2733
230.	-0.01115	2355.	0.2684
235.	-0.01181	2360.	0.2759
240.	-0.007874	2365.	0.2644
245.	-0.004593	2370.	0.2569
250.	-0.006234	2375.	0.2562
255.	-0.01148	2380.	0.2559
260.	-0.004921	2385.	0.2707
265.	0.001312	2390.	0.2618
270.	-0.009843	2395.	0.2638
275.	0.007218	2400.	0.2664
280.	-0.03084	2405.	0.2687
285.	-0.01017	2410.	0.2654
290.	0.001312	2415.	0.2635
295.	-0.004593	2420.	0.2605
300.	-0.003609	2425.	0.2612
305.	-0.01148	2430.	0.2575
310.	-0.007546	2435.	0.2516
315.	-0.002297	2440.	0.2605
320.	-0.009186	2445.	0.2566
325.	-0.007218	2450.	0.2575
330.	-0.002297	2455.	0.2546
335.	-0.005249	2460.	0.253
340.	-0.0009843	2465.	0.2543
345.	0.01083	2470.	0.2516
350.	0.0006562	2475.	0.2503
355.	0.00164	2480.	0.2464
360.	0.008202	2485.	0.2487
365.	0.002953	2490.	0.2559
370.	0.005249	2495.	0.2539
375.	0.0009843	2500.	0.2556
380.	-0.002297	2505.	0.2579
385.	0.009843	2510.	0.252
390.	0.001969	2515.	0.248
395.	0.009186	2520.	0.2493
400.	0.0009843	2525.	0.2454
405.	0.00164	2530.	0.241
410.	0.004265	2770.	0.271
415.	-0.002297	2800.	0.2969
420.	0.	2805.	0.3119
425.	0.006234	2810.	0.3024
430.	0.007874	2815.	0.3044
435.	0.005577	2820.	0.3001
440.	0.009843	2825.	0.3041
445.	0.01017	2830.	0.3103
450.	0.00689	2835.	0.3126
455.	0.0128	2840.	0.3077
460.	0.01083	2845.	0.3156
465.	0.01608	2850.	0.3087
470.	0.0006562	2855.	0.3224
475.	0.01575	2860.	0.3188
480.	0.01575	2865.	0.3188
485.	0.01969	2870.	0.3192
490.	0.01509	2875.	0.3152

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
495.	0.02461	2880.	0.3133
500.	0.02231	2885.	0.3142
505.	0.02493	2890.	0.3228
510.	0.03281	2895.	0.3159
515.	0.02854	2900.	0.3205
520.	0.02854	2905.	0.3238
525.	0.03412	2910.	0.3241
530.	0.03609	2915.	0.3264
535.	0.0374	2920.	0.3251
540.	0.03117	2925.	0.3231
545.	0.03248	2930.	0.3313
550.	0.04298	2935.	0.3247
555.	0.04692	2940.	0.329
560.	0.04232	2945.	0.3352
565.	0.03478	2950.	0.3365
570.	0.04035	2955.	0.3303
575.	0.04987	2960.	0.3303
580.	0.04724	2965.	0.329
585.	0.05118	2970.	0.3365
590.	0.06299	2975.	0.3329
595.	0.05118	2980.	0.3339
600.	0.04987	2985.	0.3365
605.	0.05577	2990.	0.3333
610.	0.06266	2995.	0.3411
615.	0.05971	3000.	0.3326
620.	0.06332	3005.	0.3431
625.	0.06168	3010.	0.3343
630.	0.06955	3015.	0.3402
635.	0.07283	3020.	0.3418
640.	0.06726	3025.	0.3448
645.	0.06529	3030.	0.3431
650.	0.0771	3035.	0.3428
655.	0.07907	3040.	0.3438
660.	0.07808	3045.	0.3392
665.	0.08268	3050.	0.3438
670.	0.08071	3055.	0.3352
675.	0.07316	3060.	0.3415
680.	0.08038	3065.	0.3405
685.	0.08465	3070.	0.3339
690.	0.08465	3075.	0.3336
695.	0.08136	3080.	0.3346
700.	0.09383	3085.	0.3392
705.	0.09252	3090.	0.3303
710.	0.0853	3095.	0.3343
715.	0.08924	3100.	0.3339
720.	0.0899	3105.	0.3369
725.	0.09514	3110.	0.3287
730.	0.09744	3115.	0.3408
735.	0.09416	3120.	0.3313
740.	0.09941	3125.	0.332
745.	0.09547	3130.	0.3336
750.	0.1043	3135.	0.3297
755.	0.1093	3140.	0.327
760.	0.09449	3145.	0.3228
765.	0.1033	3150.	0.3231
770.	0.1053	3155.	0.3293
775.	0.1027	3160.	0.3257
780.	0.1001	3165.	0.3201
785.	0.0981	3170.	0.3254
790.	0.1112	3175.	0.3218
795.	0.1076	3180.	0.3267
800.	0.1083	3185.	0.3211
805.	0.1145	3190.	0.3211
810.	0.1194	3195.	0.3201
815.	0.1083	3200.	0.3146
820.	0.1112	3205.	0.3136

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
825.	0.1106	3210.	0.3175
830.	0.1135	3215.	0.3044
835.	0.1155	3220.	0.3041
840.	0.1135	3225.	0.307
845.	0.1089	3230.	0.3087
850.	0.1191	3235.	0.3073
855.	0.1234	3240.	0.3037
860.	0.1119	3245.	0.3024
865.	0.1102	3250.	0.3073
870.	0.1073	3255.	0.3034
875.	0.1093	3260.	0.2962
880.	0.1155	3265.	0.3014
885.	0.1096	3270.	0.307
890.	0.107	3275.	0.3047
895.	0.1194	3280.	0.3057
900.	0.104	3285.	0.2972
905.	0.1056	3290.	0.3034
910.	0.1155	3295.	0.3014
915.	0.1122	3300.	0.2988
920.	0.1168	3305.	0.3024
925.	0.1194	3310.	0.3021
930.	0.105	3315.	0.3031
935.	0.1148	3320.	0.2975
940.	0.1056	3325.	0.2946
945.	0.1201	3330.	0.2942
950.	0.1102	3335.	0.2998
955.	0.1171	3340.	0.3005
960.	0.1148	3345.	0.2975
965.	0.1033	3350.	0.3067
970.	0.106	3355.	0.3014
975.	0.1171	3360.	0.3083
980.	0.1122	3365.	0.3024
985.	0.1033	3370.	0.3001
990.	0.1056	3375.	0.3054
995.	0.1073	3380.	0.3014
1000.	0.1033	3385.	0.2995
1005.	0.1033	3390.	0.2988
1010.	0.1033	3395.	0.3024
1015.	0.1073	3400.	0.3031
1020.	0.1135	3405.	0.3031
1025.	0.1129	3410.	0.3028
1030.	0.1175	3415.	0.3054
1035.	0.09941	3420.	0.3037
1040.	0.1122	3425.	0.308
1045.	0.1148	3430.	0.3093
1050.	0.09974	3435.	0.3031
1055.	0.1076	3440.	0.306
1060.	0.1112	3445.	0.3103
1065.	0.1086	3450.	0.3067
1070.	0.1043	3455.	0.3113
1075.	0.1093	3460.	0.3113
1080.	0.1056	3465.	0.3103
1085.	0.1155	3470.	0.3106
1090.	0.1073	3475.	0.3156
1095.	0.1093	3480.	0.3103
1100.	0.1152	3485.	0.3096
1105.	0.1102	3490.	0.3172
1110.	0.1211	3495.	0.3198
1115.	0.1073	3500.	0.3175
1120.	0.1175	3505.	0.3113
1125.	0.1089	3510.	0.3215
1130.	0.107	3515.	0.3211
1135.	0.1063	3520.	0.3215
1140.	0.1178	3525.	0.3185
1145.	0.1194	3530.	0.3234
1150.	0.1181	3535.	0.3241

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1155.	0.1191	3540.	0.3274
1160.	0.1207	3545.	0.3201
1165.	0.1184	3550.	0.3283
1170.	0.1234	3555.	0.3241
1175.	0.126	3560.	0.3283
1180.	0.1348	3565.	0.3277
1185.	0.1289	3570.	0.328
1190.	0.1178	3575.	0.3306
1195.	0.123	3580.	0.3343
1200.	0.124	3585.	0.3329
1205.	0.1263	3590.	0.3247
1210.	0.1276	3595.	0.3329
1215.	0.124	3600.	0.3379
1220.	0.1457	3605.	0.3375
1225.	0.1627	3610.	0.3379
1230.	0.1516	3615.	0.3375
1235.	0.1503	3620.	0.3402
1240.	0.1342	3625.	0.3388
1245.	0.1558	3630.	0.3411
1250.	0.1499	3635.	0.3428
1255.	0.1407	3640.	0.3434
1260.	0.148	3645.	0.3474
1265.	0.147	3650.	0.3444
1270.	0.146	3655.	0.3438
1275.	0.1594	3660.	0.3444
1280.	0.1424	3665.	0.3503
1285.	0.1529	3670.	0.3454
1290.	0.1549	3675.	0.3464
1295.	0.1552	3680.	0.3451
1300.	0.1368	3685.	0.3513
1305.	0.1486	3690.	0.3461
1310.	0.1506	3695.	0.3569
1315.	0.1601	3700.	0.349
1320.	0.1542	3705.	0.3549
1325.	0.1604	3710.	0.3487
1330.	0.1621	3715.	0.3533
1335.	0.1693	3720.	0.3533
1340.	0.1706	3725.	0.351
1345.	0.1703	3730.	0.3477
1350.	0.1729	3735.	0.35
1355.	0.1667	3740.	0.3539
1360.	0.1713	3745.	0.3523
1365.	0.1709	3750.	0.352
1370.	0.1719	3755.	0.3539
1375.	0.1778	3760.	0.3546
1380.	0.1621	3765.	0.3539
1385.	0.1729	3770.	0.3572
1390.	0.1759	3775.	0.3556
1395.	0.1762	3780.	0.353
1400.	0.1798	3785.	0.3552
1405.	0.1857	3790.	0.3582
1410.	0.1821	3795.	0.3526
1415.	0.1877	3800.	0.3618
1420.	0.186	3805.	0.3543
1425.	0.1939	3810.	0.3546
1430.	0.1982	3815.	0.3526
1435.	0.1877	3820.	0.3549
1440.	0.19	3825.	0.3536
1445.	0.2041	3830.	0.3497
1450.	0.208	3835.	0.3539
1455.	0.2001	3840.	0.3549
1460.	0.2014	3845.	0.352
1465.	0.2077	3850.	0.3559
1470.	0.2126	3855.	0.3503
1475.	0.2051	3860.	0.3572
1480.	0.2028	3865.	0.3569

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1485.	0.21	3870.	0.3569
1490.	0.2041	3875.	0.3526
1495.	0.2096	3880.	0.3572
1500.	0.2011	3885.	0.3523
1505.	0.2057	3890.	0.3539
1510.	0.2152	3895.	0.3474
1515.	0.2188	3900.	0.3513
1520.	0.2119	3905.	0.3516
1525.	0.2172	3910.	0.3533
1530.	0.2018	3915.	0.3556
1535.	0.2054	3920.	0.3497
1540.	0.2031	3925.	0.3566
1545.	0.2254	3930.	0.3543
1550.	0.231	3935.	0.349
1820.	0.201	3940.	0.3503
1825.	0.1969	3945.	0.348
1830.	0.1932	3950.	0.3533
1835.	0.1903	3955.	0.351
1840.	0.1919	3960.	0.3526
1845.	0.1896	3965.	0.35
1850.	0.1811	3970.	0.3546
1855.	0.1877	3975.	0.353
1860.	0.1798	3980.	0.3457
1865.	0.1801	3985.	0.3448
1870.	0.1867	3990.	0.3441
1875.	0.1808	3995.	0.351
1880.	0.1765	4035.	0.351
1885.	0.1837	4070.	0.351
1890.	0.1942	4075.	0.3592
1895.	0.1969	4080.	0.3533
1900.	0.1893	4085.	0.3559
1905.	0.1811	4090.	0.347
1910.	0.2005	4095.	0.3523
1915.	0.1972	4100.	0.3595
1920.	0.1972	4105.	0.3536
1925.	0.1991	4110.	0.3769
1930.	0.1896	4115.	0.3812
1935.	0.1916	4125.	0.3408
1940.	0.1998	4130.	0.3559
1945.	0.1939	4135.	0.3523
1950.	0.1982	4140.	0.3579
1955.	0.1978	4145.	0.3543
1960.	0.2018	4150.	0.3562
1965.	0.2041	4155.	0.3566
1970.	0.1959	4160.	0.3503
1975.	0.207	4165.	0.3589
1980.	0.2073	4170.	0.3572
1985.	0.2057	4175.	0.3572
1990.	0.2083	4180.	0.3625
1995.	0.2165	4185.	0.3543
2000.	0.2064	4190.	0.3572
2005.	0.2103	4195.	0.3684
2010.	0.2152	4200.	0.3644
2015.	0.2139	4205.	0.3612
2020.	0.2136	4210.	0.3615
2025.	0.2119	4215.	0.3671
2030.	0.2103	4220.	0.3638
2035.	0.2201	4225.	0.3671
2040.	0.2087	4230.	0.3631
2045.	0.2175	4235.	0.3631
2050.	0.2257	4240.	0.37
2055.	0.2228	4245.	0.3687
2060.	0.2231	4250.	0.3661
2065.	0.2297	4255.	0.3674
2070.	0.2297	4260.	0.3677
2075.	0.2254	4265.	0.3703

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
2080.	0.2326	4270.	0.3684
2085.	0.2356	4275.	0.3726
2090.	0.231	4280.	0.3707
2095.	0.2372	4285.	0.3753
2100.	0.2362	4290.	0.3844
2105.	0.2359	4295.	0.3723
2110.	0.2402	4300.	0.3802
2115.	0.2385	4305.	0.3822
2120.	0.2362	4310.	0.3795
2125.	0.2408	4315.	0.3799

SOLUTION

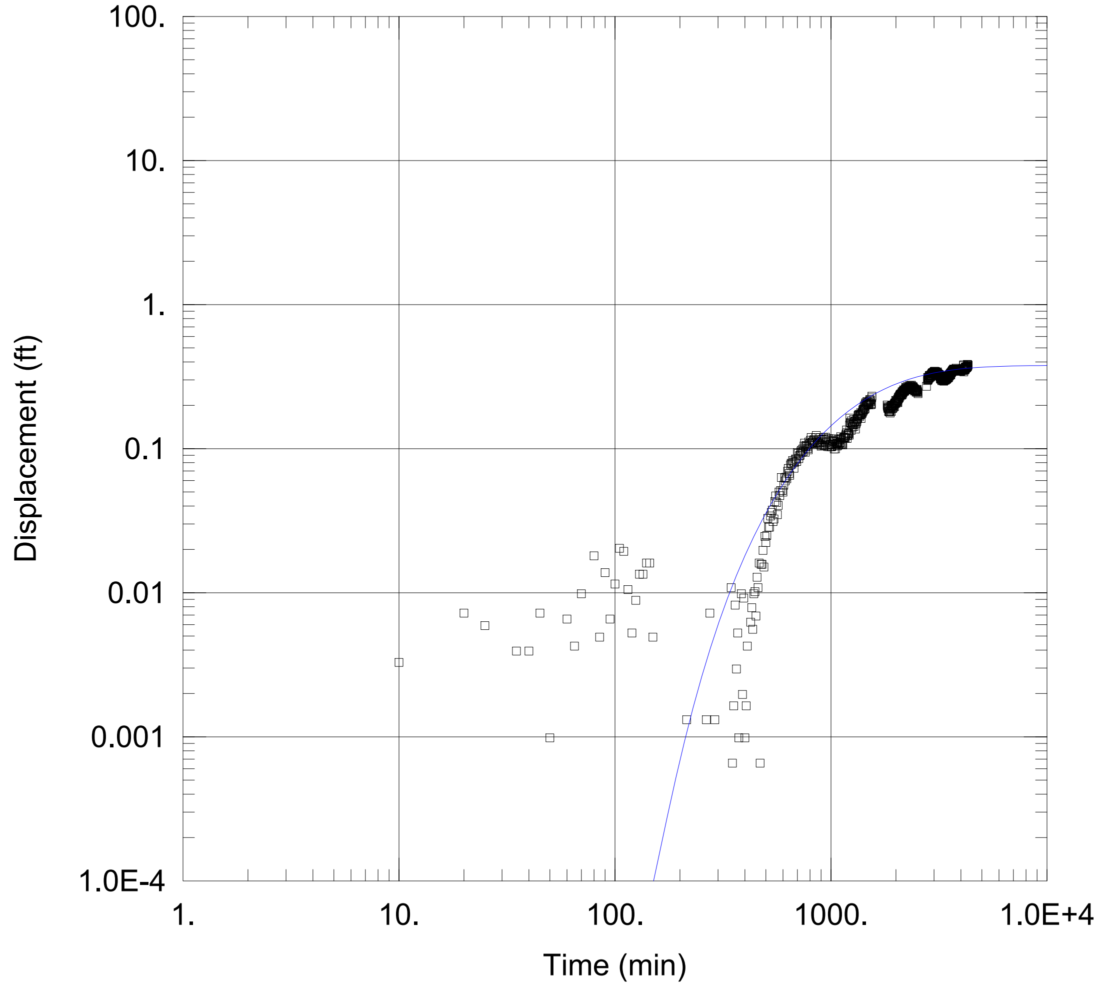
Pumping Test
Aquifer Model: Leaky
Solution Method: Hantush

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	0.1159	cm^2/sec
S	8.469E-5	
1/B'	0.002973	ft^{-1}
ß'/r	5.333E-5	ft^{-1}
1/B"	5.715E-5	ft^{-1}
ß"/r	5.715E-5	ft^{-1}

K = T/b = 5.357E-5 cm/sec
Ss = S/b = 1.193E-6 1/ft
K'/b' = 6.616E-8 min^{-1}
K' = 4.201E-7 cm/sec
K"/b" = 2.445E-11 min^{-1}
K" = 1.553E-10 cm/sec



WELL TEST ANALYSIS

Data Set: C:\...\Pumping Test_2020-07-27_MW14-02B_MW14-04B.aqt
Date: 07/29/20 Time: 10:13:25

PROJECT INFORMATION

Company: Golder Associates, Inc.
Client: Crossroads
Location: ME
Test Well: MW14-03B
Test Date: 7/7/2020

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
MW14-03B	3039420.818	684500.912

Observation Wells

Well Name	X (ft)	Y (ft)
□ MW14-04B	3038831.31	684708.26

SOLUTION

Aquifer Model: Leaky

Solution Method: Hantush

T = 0.1159 cm^2/sec
1/B' = 0.002973 ft^{-1}
1/B" = 5.715E-5 ft^{-1}

S = 8.469E-5
ß'/r = 5.333E-5 ft^{-1}
ß"/r = 5.715E-5 ft^{-1}

APPENDIX E-2

Neuman Witherspoon Pumping Period Data Analysis Files

Data Set: C:\Users\BCampelia\Desktop\Crossroads Pumping Test Files\2020-07-10 Files\2020-07-26 Updated File
Date: 07/26/20
Time: 10:40:23

PROJECT INFORMATION

Company: Golder Associates, Inc.
Client: Crossroads
Location: ME
Test Date: 7/7/2020
Test Well: MW14-03B

AQUIFER DATA

Saturated Thickness: 70. ft
Anisotropy Ratio (Kz/Kr): 1.
Aquitard Thickness (b'): 12.5 ft
Aquitard Thickness (b"): 12.5 ft

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: MW14-03B

X Location: 3039420.818 ft
Y Location: 684500.912 ft

Casing Radius: 0. ft
Well Radius: 0.1875 ft

Partially Penetrating Well
Depth to Top of Screen: 28. ft
Depth to Bottom of Screen: 51. ft

No. of pumping periods: 1

Pumping Period Data

Time (min)	Rate (gal/min)
0.	1.

OBSERVATION WELL DATA

No. of observation wells: 2

Observation Well No. 1: MW14-03D

X Location: 3039425.578 ft
Y Location: 684504.177 ft

Radial distance from MW14-03B: 5.772159475 ft

Partially Penetrating Well
Depth to Top of Screen: 1. ft
Depth to Bottom of Screen: 10. ft

No. of Observations: 2358

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.01	-2.22E-7	1964.	3.119
0.02	-4.44E-7	1966.	3.119
0.03	-6.65E-7	1968.	3.119
0.04	-1.11E-6	1970.	3.122
0.05	-1.33E-6	1972.	3.122
0.06	-1.55E-6	1974.	3.122
0.07	-2.0E-6	1976.	3.122

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.08	-2.22E-6	1978.	3.122
0.09	-0.001002	1980.	3.122
0.1	-0.001003	1982.	3.122
0.11	-0.001003	1984.	3.124
0.12	-0.001003	1986.	3.122
0.13	-0.001004	1988.	3.124
0.14	-0.001004	1990.	3.124
0.15	-0.001004	1992.	3.124
0.16	-0.001004	1994.	3.127
0.17	-0.001004	1996.	3.123
0.18	-0.001005	1998.	3.126
0.19	-0.001005	2000.	3.126
0.2	-0.001005	2002.	3.126
0.21	-0.001006	2004.	3.126
0.22	-0.001006	2006.	3.126
0.23	-0.001006	2008.	3.126
0.24	-0.001006	2010.	3.129
0.25	-0.001007	2012.	3.115
0.26	-0.001007	2014.	3.121
0.27	-0.001007	2016.	3.121
0.28	-0.001008	2018.	3.121
0.29	-0.001008	2020.	3.123
0.3	-0.001008	2022.	3.123
0.31	-0.001008	2024.	3.126
0.32	-0.001009	2026.	3.126
0.33	-0.001009	2028.	3.129
0.34	-0.001009	2030.	3.129
0.35	-0.001009	2032.	3.128
0.36	-0.00101	2034.	3.131
0.37	-0.00101	2036.	3.131
0.38	-0.00101	2038.	3.131
0.39	-0.00101	2040.	3.133
0.4	-0.001011	2042.	3.133
0.41	-0.001011	2044.	3.133
0.42	-0.001011	2046.	3.136
0.43	-0.001012	2048.	3.136
0.44	-0.001012	2050.	3.136
0.45	-0.001012	2052.	3.136
0.46	-0.001012	2054.	3.136
0.47	-0.003012	2056.	3.136
0.48	-0.001013	2058.	3.139
0.49	-0.001013	2060.	3.139
0.5	-0.001013	2062.	3.139
0.51	-0.001014	2064.	3.139
0.52	-0.001014	2066.	3.142
0.53	-0.001014	2068.	3.142
0.54	-0.001014	2070.	3.141
0.55	-0.001015	2072.	3.141
0.56	-0.001015	2074.	3.141
0.57	-0.001015	2076.	3.141
0.58	-0.001016	2078.	3.141
0.59	-0.001016	2080.	3.141
0.6	-0.004016	2082.	3.143
0.61	-0.001016	2084.	3.143
0.62	-0.004017	2086.	3.143
0.63	-0.004017	2088.	3.143
0.64	-0.004017	2090.	3.143
0.65	-0.003017	2092.	3.146
0.66	-0.004018	2094.	3.146
0.67	-0.004018	2096.	3.146
0.68	-0.001018	2098.	3.146
0.69	-0.004018	2100.	3.149
0.7	-0.004019	2102.	3.146
0.71	-0.004019	2104.	3.149
0.72	-0.004019	2106.	3.149
0.73	-0.00402	2108.	3.145

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.74	-0.00402	2110.	3.148
0.75	-0.00402	2112.	3.15
0.76	-0.00402	2114.	3.148
0.77	-0.004021	2116.	3.148
0.78	-0.004021	2118.	3.15
0.79	-0.004021	2120.	3.148
0.8	-0.004021	2122.	3.15
0.81	-0.006022	2124.	3.15
0.82	-0.004022	2126.	3.153
0.83	-0.004022	2128.	3.15
0.84	-0.004022	2130.	3.153
0.85	-0.004023	2132.	3.15
0.86	-0.004023	2134.	3.153
0.87	-0.004023	2136.	3.15
0.88	-0.004023	2138.	3.153
0.89	-0.004024	2140.	3.153
0.9	-0.004024	2142.	3.153
0.91	-0.004024	2144.	3.153
0.92	-0.004024	2146.	3.152
0.93	-0.004025	2148.	3.152
0.94	-0.004025	2150.	3.155
0.95	-0.004025	2152.	3.155
0.96	-0.004026	2154.	3.155
0.97	-0.004026	2156.	3.155
0.98	-0.004026	2158.	3.152
0.99	-0.004026	2160.	3.155
1.	-0.006027	2162.	3.155
1.01	-0.006027	2164.	3.155
1.02	-0.006027	2166.	3.155
1.03	-0.006027	2168.	3.155
1.04	-0.006028	2170.	3.155
1.05	-0.006028	2172.	3.155
1.06	-0.006028	2174.	3.155
1.07	-0.006029	2176.	3.155
1.08	-0.006029	2178.	3.155
1.09	-0.006029	2180.	3.158
1.1	-0.006029	2182.	3.158
1.11	-0.00603	2184.	3.157
1.12	-0.00603	2186.	3.157
1.13	-0.00603	2188.	3.157
1.14	-0.00603	2190.	3.159
1.15	-0.006031	2192.	3.159
1.16	-0.006031	2194.	3.157
1.17	-0.006031	2196.	3.159
1.18	-0.006032	2198.	3.159
1.19	-0.006032	2200.	3.159
1.2	-0.006032	2202.	3.159
1.21	-0.006032	2204.	3.159
1.22	-0.006033	2206.	3.159
1.23	-0.006033	2208.	3.162
1.24	-0.006033	2210.	3.162
1.25	-0.006033	2212.	3.162
1.26	-0.006033	2214.	3.162
1.27	-0.006034	2216.	3.162
1.28	-0.006034	2218.	3.162
1.29	-0.006034	2220.	3.161
1.3	-0.006035	2222.	3.164
1.31	-0.009035	2224.	3.164
1.32	-0.006035	2226.	3.161
1.33	-0.009035	2228.	3.161
1.34	-0.009036	2230.	3.161
1.35	-0.009036	2232.	3.164
1.36	-0.009036	2234.	3.161
1.37	-0.009037	2236.	3.164
1.38	-0.009037	2238.	3.164
1.39	-0.009037	2240.	3.164

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1.4	-0.009037	2242.	3.164
1.41	-0.006037	2244.	3.164
1.42	-0.009038	2246.	3.164
1.43	-0.009038	2248.	3.164
1.44	-0.009038	2250.	3.167
1.45	-0.009039	2252.	3.164
1.46	-0.009039	2254.	3.167
1.47	-0.009039	2256.	3.167
1.48	-0.009039	2258.	3.163
1.49	-0.00904	2260.	3.163
1.5	-0.00904	2262.	3.166
1.51	-0.00904	2264.	3.166
1.52	-0.009041	2266.	3.166
1.53	-0.009041	2268.	3.166
1.54	-0.009041	2270.	3.166
1.55	-0.009041	2272.	3.168
1.56	-0.009041	2274.	3.168
1.57	-0.009042	2276.	3.168
1.58	-0.009042	2278.	3.168
1.59	-0.009042	2280.	3.168
1.6	-0.009043	2282.	3.168
1.61	-0.009043	2284.	3.168
1.62	-0.009043	2286.	3.168
1.63	-0.009043	2288.	3.168
1.64	-0.009044	2290.	3.166
1.65	-0.009044	2292.	3.166
1.66	-0.009044	2294.	3.166
1.67	-0.009045	2296.	3.162
1.68	-0.009045	2298.	3.165
1.69	-0.009045	2300.	3.162
1.7	-0.01205	2302.	3.165
1.71	-0.01205	2304.	3.162
1.72	-0.01205	2306.	3.162
1.73	-0.01205	2308.	3.162
1.74	-0.01205	2310.	3.162
1.75	-0.01205	2312.	3.162
1.76	-0.01205	2314.	3.162
1.77	-0.01205	2316.	3.162
1.78	-0.01205	2318.	3.162
1.79	-0.01205	2320.	3.162
1.8	-0.01205	2322.	3.165
1.81	-0.009048	2324.	3.167
1.82	-0.01205	2326.	3.165
1.83	-0.01205	2328.	3.167
1.84	-0.01205	2330.	3.167
1.85	-0.01205	2332.	3.167
1.86	-0.01205	2334.	3.166
1.87	-0.01205	2336.	3.169
1.88	-0.01205	2338.	3.169
1.89	-0.01205	2340.	3.169
1.9	-0.01205	2342.	3.169
1.91	-0.01205	2344.	3.169
1.92	-0.01205	2346.	3.169
1.93	-0.01505	2348.	3.172
1.94	-0.01505	2350.	3.169
1.95	-0.01205	2352.	3.169
1.96	-0.01205	2354.	3.169
1.97	-0.01205	2356.	3.172
1.98	-0.01205	2358.	3.172
1.99	-0.01205	2360.	3.172
3.98	-0.000106	2362.	3.172
5.98	0.04884	2364.	3.172
7.98	0.1278	2366.	3.172
9.98	0.2177	2368.	3.172
11.98	0.3127	2370.	3.173
13.98	0.3322	2372.	3.173

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
15.98	0.4191	2374.	3.173
17.98	0.5041	2376.	3.173
19.98	0.588	2378.	3.173
21.98	0.665	2380.	3.173
23.98	0.7379	2382.	3.176
25.98	0.8059	2384.	3.176
27.98	0.8718	2386.	3.176
29.98	0.9318	2388.	3.176
31.98	0.9917	2390.	3.176
33.98	1.046	2392.	3.176
35.98	1.095	2394.	3.176
37.98	1.141	2396.	3.176
39.98	1.188	2398.	3.176
41.98	1.228	2400.	3.179
43.98	1.271	2402.	3.176
45.98	1.309	2404.	3.179
47.98	1.348	2406.	3.176
49.98	1.383	2408.	3.178
51.98	1.418	2410.	3.178
53.98	1.451	2412.	3.178
55.98	1.484	2414.	3.178
57.98	1.511	2416.	3.178
59.98	1.538	2418.	3.178
61.98	1.563	2420.	3.175
63.98	1.59	2422.	3.178
65.98	1.441	2424.	3.178
67.98	1.46	2426.	3.175
69.98	1.482	2428.	3.172
71.98	1.501	2430.	3.175
73.98	1.523	2432.	3.173
75.98	1.545	2434.	3.172
77.98	1.561	2436.	3.175
79.98	1.582	2438.	3.178
81.98	1.601	2440.	3.178
83.98	1.62	2442.	3.178
85.98	1.642	2444.	3.181
87.98	1.656	2446.	3.18
89.98	1.672	2448.	3.18
91.98	1.688	2450.	3.18
93.98	1.69	2452.	3.18
95.98	1.711	2454.	3.18
97.98	1.722	2456.	3.18
100.	1.736	2458.	3.18
102.	1.75	2460.	3.18
104.	1.763	2462.	3.182
106.	1.777	2464.	3.18
108.	1.793	2466.	3.182
110.	1.809	2468.	3.182
112.	1.823	2470.	3.182
114.	1.837	2472.	3.182
116.	1.849	2474.	3.185
118.	1.863	2476.	3.185
120.	1.877	2478.	3.185
122.	1.887	2480.	3.185
124.	1.904	2482.	3.185
126.	1.915	2484.	3.187
128.	1.928	2486.	3.184
130.	1.939	2488.	3.184
132.	1.95	2490.	3.187
134.	1.958	2492.	3.187
136.	1.972	2494.	3.187
138.	1.983	2496.	3.187
140.	1.994	2498.	3.187
142.	2.005	2500.	3.187
144.	2.016	2502.	3.189
146.	2.024	2504.	3.187

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
148.	2.032	2506.	3.187
150.	2.043	2508.	3.189
152.	2.054	2510.	3.189
154.	2.061	2512.	3.187
156.	2.072	2514.	3.189
158.	2.08	2516.	3.189
160.	2.088	2518.	3.189
162.	2.099	2520.	3.188
164.	2.107	2522.	3.188
166.	2.115	2524.	3.188
168.	2.126	2526.	3.186
170.	2.132	2528.	3.188
172.	2.14	2530.	3.188
174.	2.145	2532.	3.188
176.	2.156	2534.	3.191
178.	2.162	2536.	3.191
180.	2.17	2538.	3.191
182.	2.175	2540.	3.191
184.	2.183	2542.	3.191
186.	2.192	2544.	3.191
188.	2.2	2546.	3.191
190.	2.208	2548.	3.191
192.	2.212	2550.	3.194
194.	2.218	2552.	3.191
196.	2.226	2554.	3.194
198.	2.232	2556.	3.194
200.	2.237	2558.	3.193
202.	2.245	2560.	3.193
204.	2.251	2562.	3.193
206.	2.259	2564.	3.193
208.	2.267	2566.	3.193
210.	2.27	2568.	3.196
212.	2.278	2570.	3.193
214.	2.283	2572.	3.193
216.	2.289	2574.	3.193
218.	2.294	2576.	3.196
220.	2.302	2578.	3.193
222.	2.308	2580.	3.196
224.	2.316	2582.	3.198
226.	2.321	2584.	3.196
228.	2.327	2586.	3.196
230.	2.331	2588.	3.196
232.	2.337	2590.	3.196
234.	2.342	2592.	3.196
236.	2.35	2594.	3.196
238.	2.359	2596.	3.195
240.	2.361	2598.	3.195
242.	2.369	2600.	3.195
244.	2.372	2602.	3.195
246.	2.378	2604.	3.197
248.	2.38	2606.	3.197
250.	2.389	2608.	3.197
252.	2.391	2610.	3.197
254.	2.394	2612.	3.198
256.	2.402	2614.	3.197
258.	2.405	2616.	3.2
260.	2.41	2618.	3.197
262.	2.416	2620.	3.2
264.	2.421	2622.	3.2
266.	2.423	2624.	3.2
268.	2.431	2626.	3.197
270.	2.434	2628.	3.2
272.	2.439	2630.	3.2
274.	2.445	2632.	3.2
276.	2.447	2634.	3.202
278.	2.453	2636.	3.202

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
280.	2.458	2638.	3.205
282.	2.464	2640.	3.205
284.	2.469	2642.	3.205
286.	2.472	2644.	3.205
288.	2.472	2646.	3.205
290.	2.472	2648.	3.205
292.	2.477	2650.	3.205
294.	2.48	2652.	3.207
296.	2.483	2654.	3.205
298.	2.488	2656.	3.207
300.	2.494	2658.	3.207
302.	2.497	2660.	3.207
304.	2.493	2662.	3.207
306.	2.364	2664.	3.207
308.	2.364	2666.	3.207
310.	2.366	2668.	3.207
312.	2.369	2670.	3.21
314.	2.372	2672.	3.209
316.	2.375	2674.	3.209
318.	2.38	2676.	3.209
320.	2.383	2678.	3.209
322.	2.388	2680.	3.209
324.	2.394	2682.	3.212
326.	2.396	2684.	3.209
328.	2.402	2686.	3.212
330.	2.405	2688.	3.212
332.	2.41	2690.	3.212
334.	2.415	2692.	3.212
336.	2.418	2694.	3.212
338.	2.424	2696.	3.214
340.	2.426	2698.	3.214
342.	2.431	2700.	3.212
344.	2.434	2702.	3.214
346.	2.436	2704.	3.217
348.	2.439	2706.	3.217
350.	2.445	2708.	3.216
352.	2.447	2710.	3.216
354.	2.45	2712.	3.216
356.	2.453	2714.	3.216
358.	2.458	2716.	3.213
360.	2.461	2718.	3.216
362.	2.464	2720.	3.216
364.	2.469	2722.	3.216
366.	2.472	2724.	3.216
368.	2.477	2726.	3.216
370.	2.48	2728.	3.216
372.	2.485	2730.	3.216
374.	2.488	2732.	3.216
376.	2.491	2734.	3.219
378.	2.494	2736.	3.216
380.	2.495	2738.	3.213
382.	2.501	2740.	3.213
384.	2.503	2742.	3.211
386.	2.506	2744.	3.211
388.	2.509	2746.	3.21
390.	2.514	2748.	3.21
392.	2.514	2750.	3.212
394.	2.52	2752.	3.212
396.	2.523	2754.	3.215
398.	2.525	2756.	3.215
400.	2.528	2758.	3.218
402.	2.531	2760.	3.218
404.	2.533	2762.	3.218
406.	2.536	2764.	3.218
408.	2.542	2766.	3.199
410.	2.544	2768.	3.199

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
412.	2.547	2770.	3.199
414.	2.55	2772.	3.199
416.	2.553	2774.	3.201
418.	2.554	2776.	3.201
420.	2.56	2778.	3.201
422.	2.562	2780.	3.204
424.	2.565	2782.	3.204
426.	2.568	2784.	3.203
428.	2.57	2786.	3.203
430.	2.573	2788.	3.203
432.	2.576	2790.	3.203
434.	2.579	2792.	3.203
436.	2.582	2794.	3.206
438.	2.584	2796.	3.206
440.	2.584	2798.	3.206
442.	2.59	2800.	3.206
444.	2.592	2802.	3.206
446.	2.595	2804.	3.206
448.	2.598	2806.	3.209
450.	2.601	2808.	3.206
452.	2.603	2810.	3.209
454.	2.602	2812.	3.209
456.	2.605	2814.	3.209
458.	2.61	2816.	3.209
460.	2.61	2818.	3.209
462.	2.613	2820.	3.209
464.	2.616	2822.	3.205
466.	2.619	2824.	3.21
468.	2.621	2826.	3.21
470.	2.621	2828.	3.208
472.	2.624	2830.	3.208
474.	2.627	2832.	3.21
476.	2.63	2834.	3.21
478.	2.632	2836.	3.21
480.	2.635	2838.	3.21
482.	2.638	2840.	3.213
484.	2.64	2842.	3.21
486.	2.643	2844.	3.21
488.	2.643	2846.	3.21
490.	2.646	2848.	3.21
492.	2.645	2850.	3.213
494.	2.648	2852.	3.213
496.	2.65	2854.	3.213
498.	2.653	2856.	3.213
500.	2.656	2858.	3.213
502.	2.656	2860.	3.212
504.	2.661	2862.	3.212
506.	2.661	2864.	3.212
508.	2.667	2866.	3.212
510.	2.672	2868.	3.212
512.	2.672	2870.	3.212
514.	2.677	2872.	3.212
516.	2.68	2874.	3.212
518.	2.686	2876.	3.212
520.	2.686	2878.	3.212
522.	2.688	2880.	3.212
524.	2.694	2882.	3.215
526.	2.697	2884.	3.215
528.	2.699	2886.	3.217
530.	2.701	2888.	3.215
532.	2.704	2890.	3.215
534.	2.707	2892.	3.217
536.	2.709	2894.	3.217
538.	2.712	2896.	3.216
540.	2.717	2898.	3.219
542.	2.717	2900.	3.219

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
544.	2.72	2902.	3.216
546.	2.723	2904.	3.219
548.	2.726	2906.	3.216
550.	2.728	2908.	3.219
552.	2.728	2910.	3.216
554.	2.731	2912.	3.219
556.	2.734	2914.	3.227
558.	2.736	2916.	3.222
560.	2.737	2918.	3.219
562.	2.742	2920.	3.219
564.	2.742	2922.	3.216
566.	2.745	2924.	3.216
568.	2.746	2926.	3.216
570.	2.749	2928.	3.216
572.	2.752	2930.	3.216
574.	2.647	2932.	3.219
576.	2.649	2934.	3.215
578.	2.649	2936.	3.215
580.	2.652	2938.	3.218
582.	2.655	2940.	3.218
584.	2.66	2942.	3.218
586.	2.66	2944.	3.218
588.	2.666	2946.	3.218
590.	2.666	2948.	3.218
592.	2.668	2950.	3.218
594.	2.671	2952.	3.218
596.	2.671	2954.	3.218
598.	2.674	2956.	3.218
600.	2.677	2958.	3.218
602.	2.679	2960.	3.215
604.	2.682	2962.	3.215
606.	2.681	2964.	3.215
608.	2.684	2966.	3.218
610.	2.686	2968.	3.218
612.	2.686	2970.	3.224
614.	2.692	2972.	3.223
616.	2.692	2974.	3.228
618.	2.695	2976.	3.228
620.	2.697	2978.	3.231
622.	2.7	2980.	3.231
624.	2.7	2982.	3.233
626.	2.703	2984.	3.236
628.	2.703	2986.	3.239
630.	2.706	2988.	3.239
632.	2.708	2990.	3.242
634.	2.708	2992.	3.244
636.	2.711	2994.	3.244
638.	2.714	2996.	3.244
640.	2.714	2998.	3.247
642.	2.715	3000.	3.247
644.	2.718	3002.	3.247
646.	2.718	3004.	3.25
648.	2.721	3006.	3.25
650.	2.724	3008.	3.25
652.	2.724	3010.	3.252
654.	2.729	3012.	3.249
656.	2.726	3014.	3.249
658.	2.721	3016.	3.249
660.	2.721	3018.	3.249
662.	2.721	3020.	3.249
664.	2.721	3022.	3.249
666.	2.721	3024.	3.249
668.	2.724	3026.	3.249
670.	2.726	3028.	3.249
672.	2.726	3030.	3.249
674.	2.729	3032.	3.249

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
676.	2.732	3034.	3.246
678.	2.735	3036.	3.249
680.	2.734	3038.	3.249
682.	2.736	3040.	3.249
684.	2.736	3042.	3.249
686.	2.739	3044.	3.249
688.	2.742	3046.	3.248
690.	2.744	3048.	3.248
692.	2.744	3050.	3.248
694.	2.747	3052.	3.248
696.	2.75	3054.	3.248
698.	2.75	3056.	3.248
700.	2.753	3058.	3.248
702.	2.752	3060.	3.251
704.	2.755	3062.	3.251
706.	2.755	3064.	3.251
708.	2.758	3066.	3.248
710.	2.758	3068.	3.248
712.	2.764	3070.	3.248
714.	2.761	3072.	3.251
716.	2.763	3074.	3.251
718.	2.765	3076.	3.251
720.	2.765	3078.	3.251
722.	2.768	3080.	3.251
724.	2.771	3082.	3.251
726.	2.771	3084.	3.25
728.	2.773	3086.	3.25
730.	2.773	3088.	3.25
732.	2.773	3090.	3.25
734.	2.776	3092.	3.252
736.	2.776	3094.	3.247
738.	2.776	3096.	3.233
740.	2.779	3098.	3.247
742.	2.782	3100.	3.247
744.	2.781	3102.	3.247
746.	2.784	3104.	3.247
748.	2.784	3106.	3.25
750.	2.784	3108.	3.25
752.	2.787	3110.	3.25
754.	2.79	3112.	3.252
756.	2.789	3114.	3.252
758.	2.789	3116.	3.255
760.	2.791	3118.	3.252
762.	2.791	3120.	3.252
764.	2.794	3122.	3.254
766.	2.797	3124.	3.257
768.	2.797	3126.	3.254
770.	2.797	3128.	3.254
772.	2.8	3130.	3.254
774.	2.802	3132.	3.254
776.	2.805	3134.	3.254
778.	2.805	3136.	3.254
780.	2.808	3138.	3.254
782.	2.808	3140.	3.254
784.	2.811	3142.	3.254
786.	2.81	3144.	3.254
788.	2.813	3146.	3.254
790.	2.813	3148.	3.254
792.	2.815	3150.	3.257
794.	2.815	3152.	3.257
796.	2.818	3154.	3.257
798.	2.818	3156.	3.257
800.	2.82	3158.	3.257
802.	2.82	3160.	3.256
804.	2.823	3162.	3.256
806.	2.826	3164.	3.256

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
808.	2.826	3166.	3.256
810.	2.826	3168.	3.256
812.	2.826	3170.	3.256
814.	2.829	3172.	3.256
816.	2.829	3174.	3.256
818.	2.831	3176.	3.258
820.	2.834	3178.	3.258
822.	2.834	3180.	3.258
824.	2.834	3182.	3.258
826.	2.837	3184.	3.258
828.	2.837	3186.	3.256
830.	2.839	3188.	3.256
832.	2.839	3190.	3.258
834.	2.841	3192.	3.258
836.	2.844	3194.	3.258
838.	2.841	3196.	3.256
840.	2.844	3198.	3.257
842.	2.847	3200.	3.255
844.	2.847	3202.	3.255
846.	2.849	3204.	3.255
848.	2.852	3206.	3.257
850.	2.849	3208.	3.257
852.	2.852	3210.	3.257
854.	2.852	3212.	3.257
856.	2.852	3214.	3.26
858.	2.855	3216.	3.26
860.	2.855	3218.	3.257
862.	2.855	3220.	3.26
864.	2.857	3222.	3.26
866.	2.86	3224.	3.26
868.	2.859	3226.	3.26
870.	2.859	3228.	3.263
872.	2.862	3230.	3.263
874.	2.862	3232.	3.263
876.	2.862	3234.	3.263
878.	2.865	3236.	3.265
880.	2.865	3238.	3.262
882.	2.867	3240.	3.262
884.	2.867	3242.	3.265
886.	2.867	3244.	3.262
888.	2.867	3246.	3.262
890.	2.87	3248.	3.262
892.	2.87	3250.	3.265
894.	2.87	3252.	3.265
896.	2.873	3254.	3.265
898.	2.876	3256.	3.265
900.	2.876	3258.	3.265
902.	2.876	3260.	3.265
904.	2.876	3262.	3.265
906.	2.877	3264.	3.265
908.	2.877	3266.	3.265
910.	2.877	3268.	3.267
912.	2.88	3270.	3.267
914.	2.88	3272.	3.266
916.	2.883	3274.	3.266
918.	2.883	3276.	3.266
920.	2.886	3278.	3.266
922.	2.885	3280.	3.266
924.	2.886	3282.	3.269
926.	2.888	3284.	3.266
928.	2.888	3286.	3.266
930.	2.888	3288.	3.266
932.	2.891	3290.	3.266
934.	2.891	3292.	3.266
936.	2.894	3294.	3.266
938.	2.894	3296.	3.269

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
940.	2.894	3298.	3.269
942.	2.896	3300.	3.266
944.	2.895	3302.	3.269
946.	2.895	3304.	3.269
948.	2.898	3306.	3.269
950.	2.898	3308.	3.266
952.	2.901	3310.	3.268
954.	2.898	3312.	3.268
956.	2.901	3314.	3.268
958.	2.901	3316.	3.268
960.	2.901	3318.	3.268
962.	2.901	3320.	3.265
964.	2.904	3322.	3.265
966.	2.906	3324.	3.265
968.	2.906	3326.	3.265
970.	2.906	3328.	3.263
972.	2.909	3330.	3.263
974.	2.909	3332.	3.263
976.	2.909	3334.	3.265
978.	2.912	3336.	3.263
980.	2.911	3338.	3.263
982.	2.911	3340.	3.263
984.	2.911	3342.	3.263
986.	2.913	3344.	3.263
988.	2.913	3346.	3.26
990.	2.916	3348.	3.259
992.	2.916	3350.	3.262
994.	2.919	3352.	3.262
996.	2.919	3354.	3.262
998.	2.919	3356.	3.262
1000.	2.922	3358.	3.264
1002.	2.919	3360.	3.264
1004.	2.924	3362.	3.267
1006.	2.922	3364.	3.267
1008.	2.924	3366.	3.267
1010.	2.924	3368.	3.267
1012.	2.927	3370.	3.27
1014.	2.927	3372.	3.27
1016.	2.927	3374.	3.27
1018.	2.926	3376.	3.27
1020.	2.923	3378.	3.27
1022.	2.923	3380.	3.273
1024.	2.923	3382.	3.273
1026.	2.926	3384.	3.273
1028.	2.926	3386.	3.272
1030.	2.929	3388.	3.272
1032.	2.929	3390.	3.272
1034.	2.931	3392.	3.272
1036.	2.931	3394.	3.272
1038.	2.934	3396.	3.274
1040.	2.934	3398.	3.272
1042.	2.937	3400.	3.274
1044.	2.937	3402.	3.274
1046.	2.937	3404.	3.274
1048.	2.94	3406.	3.277
1050.	2.942	3408.	3.277
1052.	2.942	3410.	3.277
1054.	2.945	3412.	3.277
1056.	2.944	3414.	3.277
1058.	2.947	3416.	3.277
1060.	2.944	3418.	3.277
1062.	2.947	3420.	3.277
1064.	2.95	3422.	3.276
1066.	2.95	3424.	3.276
1068.	2.95	3426.	3.279
1070.	2.952	3428.	3.276

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1072.	2.952	3430.	3.276
1074.	2.952	3432.	3.279
1076.	2.952	3434.	3.279
1078.	2.955	3436.	3.279
1080.	2.955	3438.	3.279
1082.	2.958	3440.	3.279
1084.	2.958	3442.	3.281
1086.	2.958	3444.	3.281
1088.	2.96	3446.	3.281
1090.	2.96	3448.	3.281
1092.	2.96	3450.	3.281
1094.	2.959	3452.	3.282
1096.	2.96	3454.	3.276
1098.	2.962	3456.	3.276
1100.	2.965	3458.	3.276
1102.	2.965	3460.	3.275
1104.	2.968	3462.	3.275
1106.	2.968	3464.	3.278
1108.	2.968	3466.	3.278
1110.	2.97	3468.	3.278
1112.	2.97	3470.	3.278
1114.	2.97	3472.	3.28
1116.	2.973	3474.	3.28
1118.	2.973	3476.	3.283
1120.	2.973	3478.	3.283
1122.	2.976	3480.	3.283
1124.	2.976	3482.	3.283
1126.	2.976	3484.	3.283
1128.	2.976	3486.	3.286
1130.	2.978	3488.	3.286
1132.	2.978	3490.	3.286
1134.	2.978	3492.	3.286
1136.	2.98	3494.	3.286
1138.	2.98	3496.	3.289
1140.	2.983	3498.	3.288
1142.	2.983	3500.	3.288
1144.	2.983	3502.	3.288
1146.	2.986	3504.	3.288
1148.	2.988	3506.	3.288
1150.	2.986	3508.	3.288
1152.	2.988	3510.	3.288
1154.	2.988	3512.	3.29
1156.	2.988	3514.	3.29
1158.	2.988	3516.	3.29
1160.	2.991	3518.	3.29
1162.	2.991	3520.	3.29
1164.	2.991	3522.	3.29
1166.	2.991	3524.	3.29
1168.	2.993	3526.	3.293
1170.	2.993	3528.	3.29
1172.	2.996	3530.	3.293
1174.	2.993	3532.	3.293
1176.	2.996	3534.	3.293
1178.	2.996	3536.	3.292
1180.	2.998	3538.	3.292
1182.	2.998	3540.	3.292
1184.	3.001	3542.	3.292
1186.	3.001	3544.	3.292
1188.	3.001	3546.	3.292
1190.	3.001	3548.	3.292
1192.	3.004	3550.	3.292
1194.	3.004	3552.	3.295
1196.	3.007	3554.	3.295
1198.	3.007	3556.	3.295
1200.	3.009	3558.	3.295
1202.	3.009	3560.	3.295

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1204.	3.012	3562.	3.295
1206.	3.011	3564.	3.295
1208.	3.011	3566.	3.298
1210.	3.014	3568.	3.298
1212.	3.014	3570.	3.298
1214.	3.014	3572.	3.295
1216.	3.014	3574.	3.297
1218.	3.016	3576.	3.297
1220.	3.016	3578.	3.297
1222.	3.019	3580.	3.297
1224.	3.019	3582.	3.297
1226.	3.019	3584.	3.297
1228.	3.019	3586.	3.297
1230.	3.019	3588.	3.299
1232.	3.022	3590.	3.297
1234.	3.019	3592.	3.299
1236.	3.022	3594.	3.299
1238.	3.022	3596.	3.299
1240.	3.022	3598.	3.299
1242.	3.022	3600.	3.299
1244.	3.021	3602.	3.299
1246.	3.024	3604.	3.299
1248.	3.024	3606.	3.302
1250.	3.024	3608.	3.299
1252.	3.024	3610.	3.298
1254.	3.026	3612.	3.301
1256.	3.026	3614.	3.301
1258.	3.026	3616.	3.301
1260.	3.029	3618.	3.301
1262.	3.029	3620.	3.301
1264.	3.032	3622.	3.304
1266.	3.032	3624.	3.304
1268.	3.032	3626.	3.301
1270.	3.032	3628.	3.304
1272.	3.035	3630.	3.304
1274.	3.034	3632.	3.304
1276.	3.035	3634.	3.304
1278.	3.035	3636.	3.304
1280.	3.035	3638.	3.304
1282.	3.033	3640.	3.304
1284.	3.039	3642.	3.304
1286.	3.039	3644.	3.306
1288.	3.039	3646.	3.304
1290.	3.039	3648.	3.305
1292.	3.039	3650.	3.305
1294.	3.042	3652.	3.305
1296.	3.039	3654.	3.308
1298.	3.042	3656.	3.305
1300.	3.042	3658.	3.305
1302.	3.044	3660.	3.308
1304.	3.047	3662.	3.305
1306.	3.047	3664.	3.305
1308.	3.047	3666.	3.308
1310.	3.047	3668.	3.305
1312.	3.05	3670.	3.305
1314.	3.05	3672.	3.305
1316.	3.05	3674.	3.303
1318.	3.052	3676.	3.303
1320.	3.052	3678.	3.303
1322.	3.054	3680.	3.303
1324.	3.054	3682.	3.3
1326.	3.054	3684.	3.303
1328.	3.054	3686.	3.304
1330.	3.057	3688.	3.304
1332.	3.057	3690.	3.304
1334.	3.057	3692.	3.304

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1336.	3.057	3694.	3.304
1338.	3.06	3696.	3.304
1340.	3.057	3698.	3.307
1342.	3.057	3700.	3.307
1344.	3.057	3702.	3.304
1346.	3.054	3704.	3.307
1348.	3.054	3706.	3.307
1350.	3.057	3708.	3.307
1352.	3.057	3710.	3.307
1354.	3.057	3712.	3.31
1356.	3.059	3714.	3.31
1358.	3.059	3716.	3.31
1360.	3.059	3718.	3.31
1362.	3.061	3720.	3.313
1364.	3.061	3722.	3.31
1366.	3.062	3724.	3.312
1368.	3.064	3726.	3.309
1370.	3.064	3728.	3.312
1372.	3.067	3730.	3.309
1374.	3.067	3732.	3.309
1376.	3.067	3734.	3.309
1378.	3.07	3736.	3.309
1380.	3.07	3738.	3.312
1382.	3.064	3740.	3.312
1384.	3.059	3742.	3.312
1386.	3.053	3744.	3.312
1388.	3.053	3746.	3.312
1390.	3.053	3748.	3.312
1392.	3.053	3750.	3.314
1394.	3.05	3752.	3.312
1396.	3.052	3754.	3.312
1398.	3.052	3756.	3.314
1400.	3.052	3758.	3.314
1402.	3.052	3760.	3.313
1404.	3.052	3762.	3.311
1406.	3.052	3764.	3.313
1408.	3.052	3766.	3.311
1410.	3.052	3768.	3.313
1412.	3.052	3770.	3.313
1414.	3.055	3772.	3.313
1416.	3.052	3774.	3.313
1418.	3.055	3776.	3.313
1420.	3.052	3778.	3.313
1422.	3.055	3780.	3.313
1424.	3.052	3782.	3.313
1426.	3.055	3784.	3.313
1428.	3.052	3786.	3.313
1430.	3.052	3788.	3.313
1432.	3.054	3790.	3.316
1434.	3.051	3792.	3.313
1436.	3.054	3794.	3.313
1438.	3.054	3796.	3.313
1440.	3.054	3798.	3.312
1442.	3.054	3800.	3.312
1444.	3.057	3802.	3.312
1446.	3.054	3804.	3.315
1448.	3.057	3806.	3.315
1450.	3.054	3808.	3.312
1452.	3.054	3810.	3.31
1454.	3.054	3812.	3.31
1456.	3.054	3814.	3.31
1458.	3.057	3816.	3.31
1460.	3.057	3818.	3.312
1462.	3.057	3820.	3.312
1464.	3.057	3822.	3.312
1466.	3.059	3824.	3.315

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1468.	3.059	3826.	3.315
1470.	3.059	3828.	3.315
1472.	3.056	3830.	3.315
1474.	3.058	3832.	3.315
1476.	3.058	3834.	3.318
1478.	3.056	3836.	3.317
1480.	3.059	3838.	3.317
1482.	3.058	3840.	3.317
1484.	3.058	3842.	3.317
1486.	3.058	3844.	3.317
1488.	3.058	3846.	3.319
1490.	3.058	3848.	3.319
1492.	3.059	3850.	3.319
1494.	3.058	3852.	3.319
1496.	3.058	3854.	3.319
1498.	3.061	3856.	3.322
1500.	3.061	3858.	3.319
1502.	3.061	3860.	3.319
1504.	3.064	3862.	3.319
1506.	3.06	3864.	3.319
1508.	3.06	3866.	3.319
1510.	3.06	3868.	3.319
1512.	3.06	3870.	3.319
1514.	3.063	3872.	3.322
1516.	3.063	3874.	3.321
1518.	3.063	3876.	3.321
1520.	3.063	3878.	3.321
1522.	3.06	3880.	3.321
1524.	3.06	3882.	3.321
1526.	3.06	3884.	3.321
1528.	3.063	3886.	3.321
1530.	3.063	3888.	3.321
1532.	3.063	3890.	3.324
1534.	3.063	3892.	3.321
1536.	3.063	3894.	3.321
1538.	3.066	3896.	3.321
1540.	3.063	3898.	3.321
1542.	3.066	3900.	3.321
1544.	3.065	3902.	3.321
1546.	3.065	3904.	3.324
1548.	3.065	3906.	3.324
1550.	3.065	3908.	3.324
1552.	3.065	3910.	3.28
1554.	3.065	3912.	3.326
1556.	3.065	3914.	3.326
1558.	3.065	3916.	3.323
1560.	3.065	3918.	3.323
1562.	3.065	3920.	3.323
1564.	3.065	3922.	3.323
1566.	3.065	3924.	3.323
1568.	3.065	3926.	3.323
1570.	3.062	3928.	3.323
1572.	3.051	3930.	3.323
1574.	3.051	3932.	3.326
1576.	3.051	3934.	3.328
1578.	3.054	3936.	3.326
1580.	3.051	3938.	3.326
1582.	3.053	3940.	3.323
1584.	3.053	3942.	3.326
1586.	3.055	3944.	3.326
1588.	3.058	3946.	3.326
1590.	3.061	3948.	3.325
1592.	3.061	3950.	3.325
1594.	3.064	3952.	3.325
1596.	3.066	3954.	3.325
1598.	3.066	3956.	3.325

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1600.	3.066	3958.	3.325
1602.	3.066	3960.	3.325
1604.	3.069	3962.	3.327
1606.	3.072	3964.	3.325
1608.	3.072	3966.	3.325
1610.	3.072	3968.	3.327
1612.	3.072	3970.	3.327
1614.	3.075	3972.	3.325
1616.	3.077	3974.	3.325
1618.	3.077	3976.	3.325
1620.	3.076	3978.	3.325
1622.	3.079	3980.	3.325
1624.	3.079	3982.	3.325
1626.	3.082	3984.	3.327
1628.	3.082	3986.	3.326
1630.	3.082	3988.	3.326
1632.	3.082	3990.	3.324
1634.	3.084	3992.	3.326
1636.	3.084	3994.	3.327
1638.	3.087	3996.	3.326
1640.	3.087	3998.	3.326
1642.	3.09	4000.	3.326
1644.	3.09	4002.	3.332
1646.	3.087	4004.	3.329
1648.	3.087	4006.	3.326
1650.	3.087	4008.	3.329
1652.	3.084	4010.	3.329
1654.	3.084	4012.	3.329
1656.	3.082	4014.	3.326
1658.	3.078	4016.	3.329
1660.	3.073	4018.	3.329
1662.	3.073	4020.	3.329
1664.	3.07	4022.	3.329
1666.	3.067	4024.	3.328
1668.	3.067	4026.	3.328
1670.	3.07	4028.	3.328
1672.	3.067	4030.	3.328
1674.	3.067	4032.	3.328
1676.	3.067	4034.	3.328
1678.	3.064	4036.	3.328
1680.	3.064	4038.	3.328
1682.	3.064	4040.	3.328
1684.	3.064	4042.	3.328
1686.	3.064	4044.	3.328
1688.	3.064	4046.	3.328
1690.	3.062	4048.	3.328
1692.	3.062	4050.	3.328
1694.	3.061	4052.	3.328
1696.	3.061	4054.	3.331
1698.	3.058	4056.	3.331
1700.	3.058	4058.	3.328
1702.	3.058	4060.	3.331
1704.	3.058	4062.	3.33
1706.	3.055	4064.	3.33
1708.	3.055	4066.	3.33
1710.	3.058	4068.	3.333
1712.	3.055	4070.	3.333
1714.	3.061	4072.	3.333
1716.	3.061	4074.	3.333
1718.	3.061	4076.	3.333
1720.	3.061	4078.	3.333
1722.	3.061	4080.	3.333
1724.	3.061	4082.	3.333
1726.	3.061	4084.	3.335
1728.	3.063	4086.	3.335
1730.	3.063	4088.	3.335

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1732.	3.065	4090.	3.335
1734.	3.068	4092.	3.335
1736.	3.068	4094.	3.335
1738.	3.071	4096.	3.335
1740.	3.071	4098.	3.334
1742.	3.071	4100.	3.334
1744.	3.071	4102.	3.334
1746.	3.071	4104.	3.334
1748.	3.071	4106.	3.334
1750.	3.071	4108.	3.337
1752.	3.073	4110.	3.337
1754.	3.076	4112.	3.334
1756.	3.076	4114.	3.337
1758.	3.079	4116.	3.337
1760.	3.079	4118.	3.337
1762.	3.079	4120.	3.337
1764.	3.079	4122.	3.337
1766.	3.079	4124.	3.337
1768.	3.081	4126.	3.337
1770.	3.08	4128.	3.337
1772.	3.08	4130.	3.337
1774.	3.08	4132.	3.334
1776.	3.083	4134.	3.332
1778.	3.08	4136.	3.331
1780.	3.083	4138.	3.331
1782.	3.083	4140.	3.331
1784.	3.083	4142.	3.331
1786.	3.086	4144.	3.331
1788.	3.086	4146.	3.331
1790.	3.086	4148.	3.331
1792.	3.086	4150.	3.331
1794.	3.089	4152.	3.331
1796.	3.086	4154.	3.333
1798.	3.086	4156.	3.336
1800.	3.089	4158.	3.336
1802.	3.089	4160.	3.336
1804.	3.086	4162.	3.339
1806.	3.089	4164.	3.339
1808.	3.088	4166.	3.339
1810.	3.09	4168.	3.339
1812.	3.088	4170.	3.339
1814.	3.09	4172.	3.341
1816.	3.09	4174.	3.34
1818.	3.088	4176.	3.343
1820.	3.09	4178.	3.34
1822.	3.09	4180.	3.338
1824.	3.09	4182.	3.332
1826.	3.093	4184.	3.332
1828.	3.093	4186.	3.33
1830.	3.093	4188.	3.327
1832.	3.093	4190.	3.327
1834.	3.093	4192.	3.324
1836.	3.093	4194.	3.324
1838.	3.096	4196.	3.324
1840.	3.093	4198.	3.324
1842.	3.096	4200.	3.321
1844.	3.092	4202.	3.324
1846.	3.095	4204.	3.321
1848.	3.095	4206.	3.321
1850.	3.095	4208.	3.319
1852.	3.095	4210.	3.321
1854.	3.095	4212.	3.318
1856.	3.095	4214.	3.318
1858.	3.095	4216.	3.318
1860.	3.095	4218.	3.318
1862.	3.097	4220.	3.318

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1864.	3.095	4222.	3.318
1866.	3.097	4224.	3.318
1868.	3.097	4226.	3.315
1870.	3.097	4228.	3.318
1872.	3.097	4230.	3.315
1874.	3.1	4232.	3.315
1876.	3.1	4234.	3.315
1878.	3.1	4236.	3.315
1880.	3.1	4238.	3.315
1882.	3.102	4240.	3.315
1884.	3.102	4242.	3.315
1886.	3.102	4244.	3.312
1888.	3.102	4246.	3.315
1890.	3.102	4248.	3.315
1892.	3.105	4250.	3.314
1894.	3.105	4252.	3.311
1896.	3.105	4254.	3.311
1898.	3.105	4256.	3.311
1900.	3.105	4258.	3.311
1902.	3.105	4260.	3.311
1904.	3.105	4262.	3.314
1906.	3.105	4264.	3.311
1908.	3.107	4266.	3.311
1910.	3.105	4268.	3.311
1912.	3.107	4270.	3.311
1914.	3.11	4272.	3.311
1916.	3.11	4274.	3.311
1918.	3.11	4276.	3.311
1920.	3.109	4278.	3.311
1922.	3.109	4280.	3.311
1924.	3.109	4282.	3.311
1926.	3.109	4284.	3.311
1928.	3.112	4286.	3.311
1930.	3.112	4288.	3.31
1932.	3.112	4290.	3.31
1934.	3.112	4292.	3.31
1936.	3.112	4294.	3.313
1938.	3.112	4296.	3.31
1940.	3.115	4298.	3.31
1942.	3.115	4300.	3.31
1944.	3.117	4302.	3.31
1946.	3.115	4304.	3.31
1948.	3.117	4306.	3.31
1950.	3.115	4308.	3.31
1952.	3.117	4310.	3.31
1954.	3.117	4312.	3.31
1956.	3.117	4314.	3.31
1958.	3.116	4316.	3.31
1960.	3.119	4318.	3.31
1962.	3.119	4320.	3.313

Observation Well No. 2: MW14-03M

X Location: 3039430.044 ft
Y Location: 684506.892 ft

Radial distance from MW14-03B: 10.99452027 ft

Partially Penetrating Well in Aquitard
Depth to Top of Screen: 1.2 ft
Depth to Bottom of Screen: 9.5 ft

No. of Observations: 882

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)

2.	-3.35E-5	884.	0.1072
4.	0.001933	886.	0.1092
6.	-0.0001004	888.	0.1091
8.	-0.0001339	890.	0.1091
10.	0.001833	892.	0.1091
12.	0.004799	894.	0.109
14.	0.004766	896.	0.109
16.	0.006732	898.	0.111
18.	0.004699	900.	0.1089
20.	0.004665	902.	0.1109
22.	0.004632	904.	0.1109
24.	0.004598	906.	0.1108
26.	0.006565	908.	0.1138
28.	0.004531	910.	0.1138
30.	0.004498	912.	0.1137
32.	0.006464	914.	0.1157
34.	0.006431	916.	0.1157
36.	0.009397	918.	0.1136
38.	0.009364	920.	0.1156
40.	0.009331	922.	0.1156
42.	0.009297	924.	0.1155
44.	0.009264	926.	0.1175
46.	0.00923	928.	0.1175
48.	0.009197	930.	0.1174
50.	0.006163	932.	0.1174
52.	0.00913	934.	0.1174
54.	0.009096	936.	0.1173
56.	0.009063	938.	0.1173
58.	0.009029	940.	0.1173
60.	0.008996	942.	0.1202
62.	0.008962	944.	0.1202
64.	0.008929	946.	0.1202
66.	0.008895	948.	0.1201
68.	0.008862	950.	0.1201
70.	0.008828	952.	0.1221
72.	0.0108	954.	0.122
74.	0.008762	956.	0.122
76.	0.01073	958.	0.122
78.	0.01069	960.	0.1219
80.	0.01066	962.	0.1219
82.	0.01063	964.	0.1219
84.	0.008594	966.	0.1238
86.	0.01056	968.	0.1248
88.	0.01053	970.	0.1248
90.	0.01049	972.	0.1267
92.	0.01046	974.	0.1267
94.	0.008427	976.	0.1267
96.	0.01039	978.	0.1286
98.	0.01036	980.	0.1266
100.	0.01033	982.	0.1266
102.	0.01029	984.	0.1265
104.	0.008259	986.	0.1285
106.	0.01023	988.	0.1285
108.	0.01019	990.	0.1284
110.	0.01216	992.	0.1314
112.	0.01013	994.	0.1314
114.	0.01009	996.	0.1313
116.	0.01006	998.	0.1313
118.	0.01003	1000.	0.1283
120.	0.01199	1002.	0.1332
122.	0.01196	1004.	0.1332
124.	0.009925	1006.	0.1312
126.	0.009891	1008.	0.1351
128.	0.009858	1010.	0.1331
130.	0.009824	1012.	0.1331
132.	0.009791	1014.	0.135
134.	0.009757	1016.	0.135

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
136.	0.009724	1018.	0.135
138.	0.00969	1020.	0.1379
140.	0.01166	1022.	0.1349
142.	0.01162	1024.	0.1379
144.	0.01159	1026.	0.1378
146.	0.01156	1028.	0.1378
148.	0.009523	1030.	0.1378
150.	0.00949	1032.	0.1377
152.	0.009456	1034.	0.1397
154.	0.01142	1036.	0.1397
156.	0.009389	1038.	0.1416
158.	0.009356	1040.	0.1416
160.	0.007322	1042.	0.1396
162.	0.009289	1044.	0.1415
164.	0.009255	1046.	0.1415
166.	0.01122	1048.	0.1415
168.	0.01119	1050.	0.1414
170.	0.01115	1052.	0.1444
172.	0.01112	1054.	0.1444
174.	0.01409	1056.	0.1443
176.	0.01105	1058.	0.1463
178.	0.01102	1060.	0.1463
180.	0.01399	1062.	0.1462
182.	0.01395	1064.	0.1462
184.	0.01392	1066.	0.1462
186.	0.01389	1068.	0.1461
188.	0.01385	1070.	0.1461
190.	0.01382	1072.	0.1481
192.	0.01379	1074.	0.148
194.	0.01375	1076.	0.148
196.	0.01372	1078.	0.148
198.	0.01369	1080.	0.1479
200.	0.01065	1082.	0.1509
202.	0.01362	1084.	0.1509
204.	0.01359	1086.	0.1508
206.	0.01355	1088.	0.1508
208.	0.01552	1090.	0.1508
210.	0.01549	1092.	0.1527
212.	0.01545	1094.	0.1527
214.	0.01542	1096.	0.1527
216.	0.01739	1098.	0.1496
218.	0.01535	1100.	0.1526
220.	0.01732	1102.	0.1546
222.	0.01528	1104.	0.1545
224.	0.01725	1106.	0.1525
226.	0.01522	1108.	0.1575
228.	0.01718	1110.	0.1574
230.	0.01515	1112.	0.1574
232.	0.01712	1114.	0.1574
234.	0.01708	1116.	0.1543
236.	0.01705	1118.	0.1573
238.	0.02002	1120.	0.1573
240.	0.01998	1122.	0.1592
242.	0.01695	1124.	0.1592
244.	0.01692	1126.	0.1592
246.	0.01988	1128.	0.1571
248.	0.01685	1130.	0.1591
250.	0.01682	1132.	0.1591
252.	0.01678	1134.	0.161
254.	0.01975	1136.	0.159
256.	0.01672	1138.	0.161
258.	0.01668	1140.	0.1609
260.	0.01665	1142.	0.1609
262.	0.01962	1144.	0.1639
264.	0.01958	1146.	0.1638
266.	0.01955	1148.	0.1638

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
268.	0.01951	1150.	0.1638
270.	0.01948	1152.	0.1637
272.	0.02145	1154.	0.1657
274.	0.01941	1156.	0.1637
276.	0.01938	1158.	0.1656
278.	0.02135	1160.	0.1656
280.	0.02131	1162.	0.1676
282.	0.01928	1164.	0.1655
284.	0.01925	1166.	0.1675
286.	0.01921	1168.	0.1675
288.	0.01918	1170.	0.1674
290.	0.01915	1172.	0.1674
292.	0.01911	1174.	0.1704
294.	0.02108	1176.	0.1703
296.	0.01905	1178.	0.1703
298.	0.02101	1180.	0.1703
300.	0.01898	1182.	0.1702
302.	0.01895	1184.	0.1722
304.	0.01591	1186.	0.1722
306.	0.01888	1188.	0.1721
308.	0.01885	1190.	0.1721
310.	0.01881	1192.	0.1721
312.	0.01878	1194.	0.174
314.	0.01874	1196.	0.174
316.	0.02071	1198.	0.1739
318.	0.02068	1200.	0.1739
320.	0.02064	1202.	0.1739
322.	0.02061	1204.	0.1739
324.	0.02258	1206.	0.1768
326.	0.02254	1208.	0.1768
328.	0.02051	1210.	0.1787
330.	0.02248	1212.	0.1767
332.	0.02044	1214.	0.1767
334.	0.02241	1216.	0.1786
336.	0.02238	1218.	0.1786
338.	0.02234	1220.	0.1786
340.	0.02231	1222.	0.1785
342.	0.02228	1224.	0.1785
344.	0.02224	1226.	0.1785
346.	0.02521	1228.	0.1784
348.	0.02518	1230.	0.1784
350.	0.02514	1232.	0.1804
352.	0.02511	1234.	0.1803
354.	0.02508	1236.	0.1803
356.	0.02504	1238.	0.1803
358.	0.02501	1240.	0.1802
360.	0.02697	1242.	0.1832
362.	0.02694	1244.	0.1832
364.	0.02691	1246.	0.1831
366.	0.02687	1248.	0.1831
368.	0.02684	1250.	0.1831
370.	0.02881	1252.	0.183
372.	0.02677	1254.	0.183
374.	0.02674	1256.	0.185
376.	0.02671	1258.	0.1849
378.	0.02667	1260.	0.1869
380.	0.02664	1262.	0.1849
382.	0.02861	1264.	0.1868
384.	0.02857	1266.	0.1868
386.	0.02854	1268.	0.1848
388.	0.02851	1270.	0.1867
390.	0.02847	1272.	0.1867
392.	0.02844	1274.	0.1867
394.	0.02841	1276.	0.1866
396.	0.02837	1278.	0.1896
398.	0.02834	1280.	0.1896

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
400.	0.02831	1282.	0.1895
402.	0.03127	1284.	0.1895
404.	0.03124	1286.	0.1895
406.	0.02821	1288.	0.1914
408.	0.03117	1290.	0.1914
410.	0.03314	1292.	0.1914
412.	0.0311	1294.	0.1913
414.	0.03307	1296.	0.1933
416.	0.03104	1298.	0.1933
418.	0.031	1300.	0.1932
420.	0.03297	1302.	0.1932
422.	0.03294	1304.	0.1962
424.	0.0329	1306.	0.1961
426.	0.03287	1308.	0.1961
428.	0.03284	1310.	0.1961
430.	0.0328	1312.	0.196
432.	0.03277	1314.	0.198
434.	0.03274	1316.	0.198
436.	0.0347	1318.	0.1979
438.	0.03467	1320.	0.1979
440.	0.03464	1322.	0.1979
442.	0.0346	1324.	0.1978
444.	0.03457	1326.	0.1978
446.	0.03454	1328.	0.1998
448.	0.0345	1330.	0.1997
450.	0.03747	1332.	0.1997
452.	0.03744	1334.	0.1997
454.	0.0374	1336.	0.2026
456.	0.03737	1338.	0.2026
458.	0.03933	1340.	0.2026
460.	0.0373	1342.	0.2025
462.	0.03927	1344.	0.2025
464.	0.03723	1346.	0.2025
466.	0.0392	1348.	0.2044
468.	0.03917	1350.	0.2044
470.	0.04113	1352.	0.2044
472.	0.0391	1354.	0.2043
474.	0.04107	1356.	0.2043
476.	0.04403	1358.	0.2043
478.	0.041	1360.	0.2062
480.	0.04097	1362.	0.2062
482.	0.04093	1364.	0.2042
484.	0.0409	1366.	0.2061
486.	0.04387	1368.	0.2061
488.	0.04383	1370.	0.2061
490.	0.0438	1372.	0.209
492.	0.04377	1374.	0.209
494.	0.04373	1376.	0.209
496.	0.0437	1378.	0.2109
498.	0.04367	1380.	0.2109
500.	0.04363	1382.	0.2089
502.	0.0456	1384.	0.2108
504.	0.04557	1386.	0.2108
506.	0.04553	1388.	0.2128
508.	0.0455	1390.	0.2127
510.	0.04546	1392.	0.2127
512.	0.04543	1394.	0.2127
514.	0.0454	1396.	0.2156
516.	0.04736	1398.	0.2156
518.	0.04733	1400.	0.2156
520.	0.0473	1402.	0.2155
522.	0.04726	1404.	0.2175
524.	0.04723	1406.	0.2155
526.	0.0472	1408.	0.2174
528.	0.05016	1410.	0.2174
530.	0.04713	1412.	0.2174

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
532.	0.0501	1414.	0.2173
534.	0.05006	1416.	0.2193
536.	0.05003	1418.	0.2193
538.	0.05	1420.	0.2192
540.	0.04996	1422.	0.2172
542.	0.05193	1424.	0.2192
544.	0.0519	1426.	0.2191
546.	0.05186	1428.	0.2191
548.	0.05183	1430.	0.2221
550.	0.0518	1432.	0.222
552.	0.05176	1434.	0.222
554.	0.05173	1436.	0.222
556.	0.05169	1438.	0.2219
558.	0.05366	1440.	0.2239
560.	0.05163	1442.	0.2239
562.	0.05359	1444.	0.2258
564.	0.05356	1446.	0.2238
566.	0.05653	1448.	0.2238
568.	0.05349	1450.	0.2257
570.	0.05646	1452.	0.2257
572.	0.05343	1454.	0.2257
574.	0.05639	1456.	0.2256
576.	0.05636	1458.	0.2256
578.	0.05833	1460.	0.2286
580.	0.05829	1462.	0.2285
582.	0.05826	1464.	0.2285
584.	0.05623	1466.	0.2285
586.	0.05819	1468.	0.2284
588.	0.05816	1470.	0.2284
590.	0.05813	1472.	0.2284
592.	0.05809	1474.	0.2303
594.	0.05806	1476.	0.2303
596.	0.05803	1478.	0.2303
598.	0.05799	1480.	0.2322
600.	0.05996	1482.	0.2322
602.	0.05992	1484.	0.2322
604.	0.05989	1486.	0.2321
606.	0.05986	1488.	0.2321
608.	0.06282	1490.	0.2321
610.	0.05979	1492.	0.232
612.	0.06276	1494.	0.232
614.	0.05972	1496.	0.235
616.	0.06269	1498.	0.2349
618.	0.05966	1500.	0.2349
620.	0.05962	1502.	0.2349
622.	0.06259	1504.	0.2368
624.	0.06256	1506.	0.2348
626.	0.06452	1508.	0.2368
628.	0.06249	1510.	0.2367
630.	0.06446	1512.	0.2367
632.	0.06442	1514.	0.2387
634.	0.06439	1516.	0.2386
636.	0.06636	1518.	0.2386
638.	0.06632	1520.	0.2386
640.	0.06629	1522.	0.2385
642.	0.06626	1524.	0.2385
644.	0.06622	1526.	0.2385
646.	0.06619	1528.	0.2414
648.	0.06616	1530.	0.2384
650.	0.06912	1532.	0.2394
652.	0.06609	1534.	0.2393
654.	0.06905	1536.	0.2373
656.	0.06602	1538.	0.2413
658.	0.06899	1540.	0.2392
660.	0.06895	1542.	0.2412
662.	0.06892	1544.	0.2412

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
664.	0.07089	1546.	0.2411
666.	0.06885	1548.	0.2411
668.	0.07082	1550.	0.2411
670.	0.07079	1552.	0.241
672.	0.07075	1554.	0.244
674.	0.07072	1556.	0.241
676.	0.07269	1558.	0.2439
678.	0.07265	1560.	0.2439
680.	0.07062	1562.	0.2439
682.	0.07259	1564.	0.2458
684.	0.07255	1566.	0.2438
686.	0.07252	1568.	0.2408
688.	0.07249	1570.	0.2437
690.	0.07245	1572.	0.2437
692.	0.07542	1574.	0.2437
694.	0.07539	1576.	0.2436
696.	0.07535	1578.	0.2456
698.	0.07532	1580.	0.2456
700.	0.07528	1582.	0.2455
702.	0.07525	1584.	0.2455
704.	0.07722	1586.	0.2475
706.	0.07718	1588.	0.2474
708.	0.07715	1590.	0.2504
710.	0.07712	1592.	0.2524
712.	0.07708	1594.	0.2523
714.	0.07505	1596.	0.2523
716.	0.07702	1598.	0.2503
718.	0.07698	1600.	0.2522
720.	0.07695	1602.	0.2522
722.	0.07692	1604.	0.2542
724.	0.07888	1606.	0.2541
726.	0.07885	1608.	0.2571
728.	0.08182	1610.	0.2541
730.	0.07878	1612.	0.254
732.	0.07875	1614.	0.257
734.	0.08172	1616.	0.257
736.	0.08168	1618.	0.2569
738.	0.08165	1620.	0.2579
740.	0.08162	1621.	0.2579
742.	0.08158	1682.	0.2569
744.	0.08355	1712.	0.2663
746.	0.08351	1801.	0.2949
748.	0.08348	1863.	0.3038
750.	0.08345	1893.	0.3133
752.	0.08341	1922.	0.3128
754.	0.08338	1952.	0.3323
756.	0.08535	1984.	0.3318
758.	0.08331	2011.	0.3413
760.	0.08528	2033.	0.341
762.	0.08525	2092.	0.35
764.	0.08521	2134.	0.3593
766.	0.08518	2164.	0.3688
768.	0.08515	2193.	0.3683
770.	0.08811	2223.	0.3778
772.	0.08808	2252.	0.3873
774.	0.08805	2342.	0.3958
776.	0.09001	2373.	0.4053
778.	0.08998	2402.	0.4148
780.	0.08995	2429.	0.4143
782.	0.08991	2492.	0.4233
784.	0.09188	2520.	0.4328
786.	0.08985	2581.	0.4318
788.	0.08981	2612.	0.4413
790.	0.09178	2642.	0.4508
792.	0.09174	2674.	0.4502
794.	0.09171	2701.	0.4498

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
796.	0.09168	2739.	0.4592
798.	0.09164	2764.	0.4587
800.	0.09161	2822.	0.4678
802.	0.09158	2852.	0.4773
804.	0.09154	2882.	0.4768
806.	0.09451	2912.	0.4863
808.	0.09448	2942.	0.4858
810.	0.09144	2973.	0.4952
812.	0.09441	3001.	0.4948
814.	0.09638	3062.	0.5038
816.	0.09434	3095.	0.5132
818.	0.09631	3122.	0.5128
820.	0.09628	3152.	0.5222
822.	0.09624	3213.	0.5312
824.	0.09621	3256.	0.5405
826.	0.09618	3302.	0.5497
828.	0.09814	3332.	0.5492
830.	0.09811	3363.	0.5587
832.	0.09808	3392.	0.5582
834.	0.09804	3422.	0.5677
836.	0.09801	3451.	0.5772
838.	0.09798	3483.	0.5767
840.	0.1009	3537.	0.5858
842.	0.1009	3573.	0.5852
844.	0.1009	3602.	0.5947
846.	0.1008	3632.	0.6042
848.	0.1008	3662.	0.6037
850.	0.1008	3692.	0.6032
852.	0.1027	3722.	0.6127
854.	0.1027	3780.	0.6117
856.	0.1007	3807.	0.6213
858.	0.1026	3841.	0.6207
860.	0.1026	3870.	0.6302
862.	0.1026	3907.	0.6296
864.	0.1025	3931.	0.6292
866.	0.1025	3966.	0.6386
868.	0.1045	4000.	0.6581
870.	0.1044	4024.	0.6577
872.	0.1044	4057.	0.6671
874.	0.1074	4082.	0.6667
876.	0.1073	4113.	0.6662
878.	0.1073	4143.	0.6757
880.	0.1073	4203.	0.6647
882.	0.1092	4292.	0.6732

SOLUTION

Pumping Test
Aquifer Model: Leaky
Solution Method: Neuman-Witherspoon

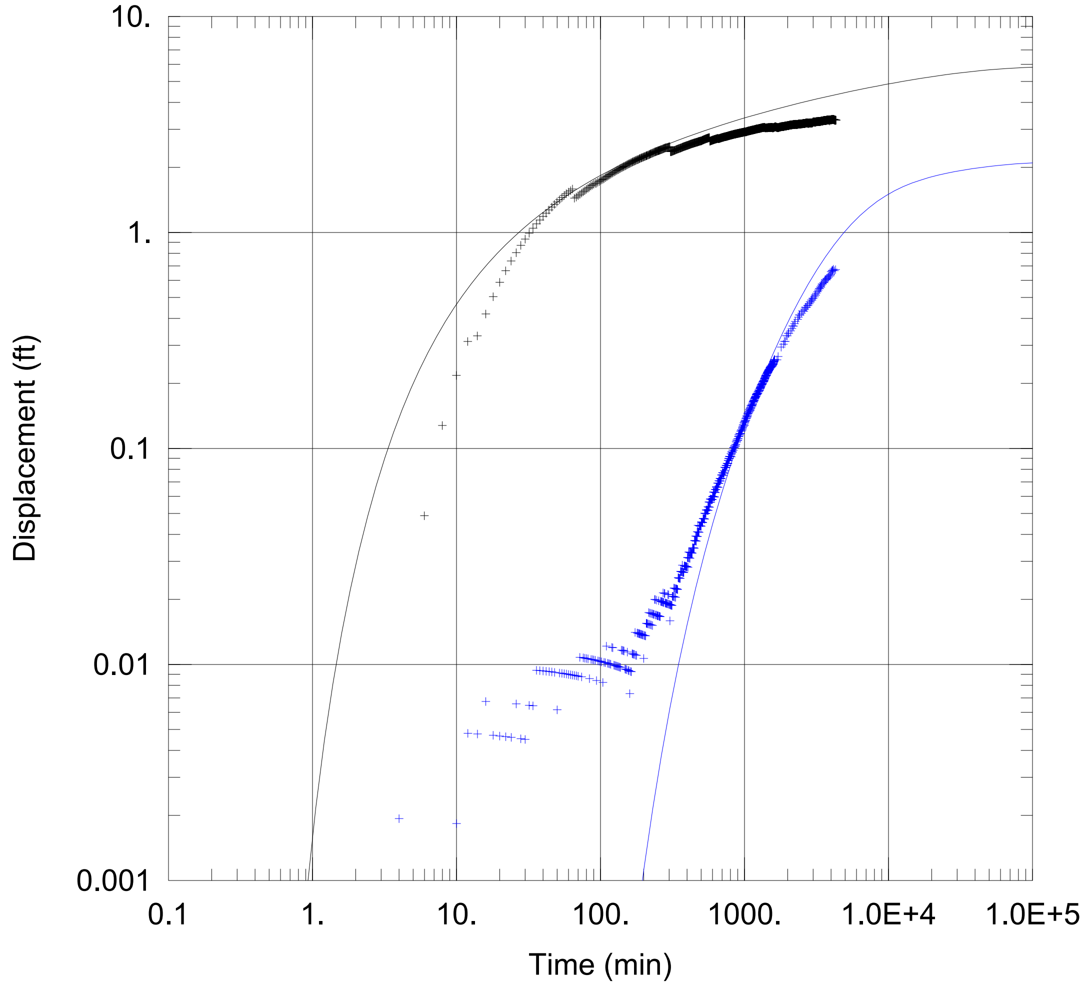
VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	0.2326	cm^2/sec
S	0.007674	
1/B	0.003046	ft^{-1}
ß/r	0.000555	ft^{-1}
T2	1.548E+6	cm^2/sec
S2	1.	

K = T/b = 0.000109 cm/sec
Ss = S/b = 0.0001096 1/ft
K'/b' = 1.394E-7 min^{-1}

K' = 8.851E-7 cm/sec



WELL TEST ANALYSIS

Data Set: C:\...\Pumping Test_2020-07-26_MW14-03D_MW14-03M.aqt
Date: 07/29/20 Time: 10:18:43

PROJECT INFORMATION

Company: Golder Associates, Inc.
Client: Crossroads
Location: ME
Test Well: MW14-03B
Test Date: 7/7/2020

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
MW14-03B	3039420.818	684500.912

Observation Wells

Well Name	X (ft)	Y (ft)
+ MW14-03D	3039425.578	684504.177
+ MW14-03M	3039430.044	684506.892

SOLUTION

Aquifer Model: Leaky

Solution Method: Neuman-Witherspoon

T = 0.2326 cm^2/sec
1/B = 0.003046 ft^{-1}
T2 = 1.548E+6 cm^2/sec

S = 0.007674
ß/r = 0.000555 ft^{-1}
S2 = 1.

Data Set: C:\Users\BCampelia\Desktop\Crossroads Pumping Test Files\2020-07-10 Files\2020-07-26 Updated File
Date: 07/28/20
Time: 09:37:45

PROJECT INFORMATION

Company: Golder Associates, Inc.
Client: Crossroads
Location: ME
Test Date: 7/7/2020
Test Well: MW14-03B

AQUIFER DATA

Saturated Thickness: 70. ft
Anisotropy Ratio (Kz/Kr): 1.
Aquitard Thickness (b'): 12.5 ft
Aquitard Thickness (b"): 12.5 ft

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: MW14-03B

X Location: 3039420.818 ft
Y Location: 684500.912 ft

Casing Radius: 0. ft
Well Radius: 0.1875 ft

Partially Penetrating Well
Depth to Top of Screen: 28. ft
Depth to Bottom of Screen: 51. ft

No. of pumping periods: 1

Pumping Period Data

Time (min)	Rate (gal/min)
0.	1.

OBSERVATION WELL DATA

No. of observation wells: 3

Observation Well No. 1: MW14-03B

X Location: 3039420.818 ft
Y Location: 684500.912 ft

Radial distance from MW14-03B: 0. ft

Partially Penetrating Well
Depth to Top of Screen: 28. ft
Depth to Bottom of Screen: 51. ft

No. of Observations: 2161

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1.	0.	2162.	33.39
2.	3.285	2164.	33.38
4.	11.85	2166.	33.39
6.	15.12	2168.	33.39
8.	17.6	2170.	33.4
10.	19.46	2172.	33.4
12.	20.88	2174.	33.4

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
14.	21.99	2176.	33.39
16.	23.15	2178.	33.4
18.	24.09	2180.	33.4
20.	24.8	2182.	33.4
22.	25.31	2184.	33.41
24.	26.01	2186.	33.4
26.	26.58	2188.	33.41
28.	26.97	2190.	33.41
30.	27.4	2192.	33.4
32.	27.77	2194.	33.41
34.	28.03	2196.	33.4
36.	28.18	2198.	33.4
38.	28.49	2200.	33.4
40.	28.83	2202.	33.4
42.	29.09	2204.	33.41
44.	29.28	2206.	33.41
46.	29.48	2208.	33.41
48.	29.61	2210.	33.4
50.	29.72	2212.	33.41
52.	29.8	2214.	33.4
54.	29.86	2216.	33.4
56.	29.91	2218.	33.4
58.	29.97	2220.	33.4
60.	29.98	2222.	33.4
62.	30.04	2224.	33.4
64.	30.07	2226.	33.4
66.	30.11	2228.	33.4
68.	30.15	2230.	33.39
70.	30.18	2232.	33.4
72.	30.21	2234.	33.39
74.	30.32	2236.	33.38
76.	30.53	2238.	33.39
78.	30.65	2240.	33.39
80.	30.72	2242.	33.4
82.	30.77	2244.	33.4
84.	30.83	2246.	33.41
86.	30.84	2248.	33.4
88.	30.88	2250.	33.41
90.	30.97	2252.	33.39
92.	31.01	2254.	33.39
94.	31.03	2256.	33.4
96.	31.06	2258.	33.38
98.	31.09	2260.	33.39
100.	31.1	2262.	33.4
102.	31.18	2264.	33.39
104.	31.41	2266.	33.4
106.	31.53	2268.	33.4
108.	31.62	2270.	33.4
110.	31.67	2272.	33.41
112.	31.72	2274.	33.41
114.	31.77	2276.	33.39
116.	31.81	2278.	33.26
118.	31.75	2280.	33.21
120.	31.82	2282.	33.17
122.	31.87	2284.	33.18
124.	31.9	2286.	33.18
126.	31.95	2288.	33.17
128.	31.98	2290.	33.16
130.	32.	2292.	33.16
132.	32.03	2294.	33.16
134.	32.04	2296.	33.17
136.	32.01	2298.	33.16
138.	32.07	2300.	33.17
140.	32.1	2302.	33.17
142.	32.13	2304.	33.17
144.	32.18	2306.	33.18

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
146.	32.22	2308.	33.18
148.	32.25	2310.	33.19
150.	32.27	2312.	33.21
152.	32.26	2314.	33.28
154.	32.27	2316.	33.33
156.	32.27	2318.	33.35
158.	32.28	2320.	33.36
160.	32.32	2322.	33.38
162.	32.34	2324.	33.38
164.	32.36	2326.	33.39
166.	32.36	2328.	33.39
168.	32.35	2330.	33.4
170.	32.34	2332.	33.39
172.	32.34	2334.	33.39
174.	32.29	2336.	33.39
176.	32.28	2338.	33.39
178.	32.33	2340.	33.4
180.	32.35	2342.	33.4
182.	32.4	2344.	33.4
184.	32.42	2346.	33.4
186.	32.43	2348.	33.38
188.	32.43	2350.	33.39
190.	32.49	2352.	33.4
192.	32.33	2354.	33.4
194.	32.4	2356.	33.4
196.	32.44	2358.	33.41
198.	32.46	2360.	33.4
200.	32.49	2362.	33.41
202.	32.52	2364.	33.4
204.	32.46	2366.	33.41
206.	32.43	2368.	33.4
208.	32.5	2370.	33.4
210.	32.53	2372.	33.4
212.	32.61	2374.	33.4
214.	32.64	2376.	33.4
216.	32.65	2378.	33.4
218.	32.66	2380.	33.4
220.	32.67	2382.	33.38
222.	32.67	2384.	33.39
224.	32.7	2386.	33.4
226.	32.74	2388.	33.41
228.	32.77	2390.	33.41
230.	32.78	2392.	33.41
232.	32.78	2394.	33.4
234.	32.77	2396.	33.41
236.	32.77	2398.	33.42
238.	32.77	2400.	33.42
240.	32.75	2402.	33.41
242.	32.74	2404.	33.41
244.	32.73	2406.	33.4
246.	32.73	2408.	33.39
248.	32.73	2410.	33.4
250.	32.73	2412.	33.39
252.	32.74	2414.	33.38
254.	32.79	2416.	33.38
256.	32.82	2418.	33.37
258.	32.83	2420.	33.37
260.	32.84	2422.	32.7
262.	32.86	2424.	33.09
264.	32.87	2426.	33.24
266.	32.87	2428.	33.33
268.	32.85	2430.	33.37
270.	32.84	2432.	33.39
272.	32.83	2434.	33.39
274.	32.81	2436.	33.4
276.	32.82	2438.	33.4

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
278.	32.83	2440.	33.4
280.	32.83	2442.	33.4
282.	32.82	2444.	33.41
284.	32.68	2446.	33.41
286.	32.64	2448.	33.41
288.	32.67	2450.	33.41
290.	32.75	2452.	33.41
292.	32.78	2454.	33.41
294.	32.79	2456.	33.41
296.	32.81	2458.	33.41
298.	32.8	2460.	33.41
300.	30.7	2462.	33.39
302.	31.85	2464.	33.4
304.	32.17	2466.	33.41
306.	32.25	2468.	33.41
308.	32.27	2470.	33.41
310.	32.27	2472.	33.41
312.	32.27	2474.	33.4
314.	32.34	2476.	33.4
316.	32.48	2478.	33.41
318.	32.58	2480.	33.4
320.	32.63	2482.	33.41
322.	32.63	2484.	33.41
324.	32.61	2486.	33.4
326.	32.68	2488.	33.41
328.	32.68	2490.	33.41
330.	32.69	2492.	33.41
332.	32.72	2494.	33.41
334.	32.71	2496.	33.41
336.	32.69	2498.	33.41
338.	32.73	2500.	33.41
340.	32.7	2502.	33.4
342.	32.73	2504.	33.41
344.	32.76	2506.	33.41
346.	32.76	2508.	33.41
348.	32.64	2510.	33.4
350.	32.58	2512.	33.41
352.	32.66	2514.	33.41
354.	32.73	2516.	33.41
356.	32.74	2518.	33.41
358.	32.77	2520.	33.4
360.	32.77	2522.	33.4
362.	32.79	2524.	33.41
364.	32.83	2526.	33.41
366.	32.83	2528.	33.42
368.	32.77	2530.	33.42
370.	32.75	2532.	33.41
372.	32.73	2534.	33.42
374.	32.7	2536.	33.42
376.	32.72	2538.	33.42
378.	32.73	2540.	33.42
380.	32.74	2542.	33.42
382.	32.76	2544.	33.41
384.	32.8	2546.	33.42
386.	32.81	2548.	33.42
388.	32.82	2550.	33.42
390.	32.84	2552.	33.42
392.	32.84	2554.	33.43
394.	32.83	2556.	33.43
396.	32.81	2558.	33.43
398.	32.8	2560.	33.43
400.	32.77	2562.	33.43
402.	32.76	2564.	33.43
404.	32.79	2566.	33.43
406.	32.82	2568.	33.43
408.	32.84	2570.	33.43

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
410.	32.89	2572.	33.43
412.	32.91	2574.	33.44
414.	32.91	2576.	33.43
416.	32.91	2578.	33.43
418.	32.91	2580.	33.43
420.	32.89	2582.	33.43
422.	32.86	2584.	33.42
424.	32.86	2586.	33.41
426.	32.85	2588.	33.4
428.	32.83	2590.	33.4
430.	32.82	2592.	33.41
432.	32.82	2594.	33.41
434.	32.81	2596.	33.4
436.	32.82	2598.	33.41
438.	32.82	2600.	33.41
440.	32.8	2602.	33.41
442.	32.81	2604.	33.47
444.	32.8	2606.	33.49
446.	32.81	2608.	33.51
448.	32.81	2610.	33.51
450.	32.81	2612.	33.52
452.	32.8	2614.	33.52
454.	32.8	2616.	33.52
456.	32.8	2618.	33.53
458.	32.79	2620.	33.53
460.	32.79	2622.	33.53
462.	32.78	2624.	33.53
464.	32.77	2626.	33.53
466.	32.77	2628.	33.53
468.	32.77	2630.	33.53
470.	32.77	2632.	33.53
472.	32.78	2634.	33.53
474.	32.77	2636.	33.54
476.	32.77	2638.	33.53
478.	32.72	2640.	33.54
480.	32.7	2642.	33.54
482.	32.7	2644.	33.53
484.	32.69	2646.	33.53
486.	32.69	2648.	33.54
488.	32.68	2650.	33.54
490.	32.69	2652.	33.54
492.	32.68	2654.	33.54
494.	32.68	2656.	33.53
496.	32.68	2658.	33.54
498.	32.73	2660.	33.54
500.	32.82	2662.	33.54
502.	32.84	2664.	33.54
504.	32.91	2666.	33.54
506.	32.93	2668.	33.54
508.	32.98	2670.	33.53
510.	33.02	2672.	33.53
512.	33.04	2674.	33.53
514.	33.06	2676.	33.54
516.	33.07	2678.	33.54
518.	33.08	2680.	33.54
520.	33.08	2682.	33.54
522.	33.09	2684.	33.54
524.	33.09	2686.	33.54
526.	33.09	2688.	33.54
528.	33.09	2690.	33.53
530.	33.1	2692.	33.54
532.	33.09	2694.	33.53
534.	33.1	2696.	33.51
536.	33.1	2698.	33.5
538.	33.1	2700.	33.5
540.	33.09	2702.	33.5

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
542.	33.09	2704.	33.49
544.	33.08	2706.	33.49
546.	33.09	2708.	33.47
548.	33.08	2710.	33.47
550.	33.08	2712.	33.47
552.	33.09	2714.	33.47
554.	33.09	2716.	33.47
556.	33.1	2718.	33.47
558.	33.1	2720.	33.47
560.	33.12	2722.	33.47
562.	33.12	2724.	33.47
564.	33.13	2726.	33.47
566.	33.12	2728.	33.48
568.	33.1	2730.	33.49
570.	33.12	2732.	33.48
572.	33.12	2734.	32.42
574.	33.15	2736.	32.97
576.	33.19	2738.	33.21
578.	33.21	2740.	33.33
580.	33.22	2742.	33.4
582.	33.22	2744.	33.44
584.	33.23	2746.	33.46
586.	33.23	2748.	33.49
588.	33.23	2750.	33.5
590.	33.23	2752.	33.51
592.	33.23	2754.	33.53
594.	33.23	2756.	33.54
596.	33.23	2758.	33.54
598.	33.23	2760.	33.55
600.	33.24	2762.	33.56
602.	33.25	2764.	33.56
604.	33.25	2766.	33.56
606.	33.25	2768.	33.55
608.	33.26	2770.	33.54
610.	33.25	2772.	33.55
612.	33.25	2774.	33.54
614.	33.25	2776.	33.56
616.	33.26	2778.	33.56
618.	33.24	2780.	33.57
620.	33.24	2782.	33.56
622.	33.23	2784.	33.53
624.	33.22	2786.	33.52
626.	33.22	2788.	33.5
628.	33.22	2790.	33.49
630.	33.22	2792.	33.49
632.	33.22	2794.	33.5
634.	33.21	2796.	33.49
636.	33.23	2798.	33.48
638.	33.22	2800.	33.48
640.	33.21	2802.	33.47
642.	33.21	2804.	33.47
644.	33.21	2806.	33.46
646.	33.21	2808.	33.47
648.	33.2	2810.	33.47
650.	33.2	2812.	33.46
652.	33.2	2814.	33.46
654.	31.68	2816.	33.44
656.	32.43	2818.	33.45
658.	32.73	2820.	33.44
660.	32.88	2822.	33.45
662.	32.94	2824.	33.46
664.	32.98	2826.	33.46
666.	33.	2828.	33.46
668.	33.02	2830.	33.47
670.	33.04	2832.	33.46
672.	33.04	2834.	33.46

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
674.	33.04	2836.	33.47
676.	33.04	2838.	33.45
678.	33.03	2840.	33.45
680.	33.03	2842.	33.45
682.	33.03	2844.	33.44
684.	33.03	2846.	33.45
686.	33.02	2848.	33.46
688.	33.02	2850.	33.46
690.	33.03	2852.	33.47
692.	33.05	2854.	33.47
694.	33.06	2856.	33.47
696.	33.06	2858.	33.45
698.	33.07	2860.	33.46
700.	33.06	2862.	33.47
702.	33.07	2864.	33.47
704.	33.06	2866.	33.47
706.	33.07	2868.	33.47
708.	33.07	2870.	33.45
710.	33.07	2872.	33.45
712.	33.06	2874.	33.46
714.	33.05	2876.	33.47
716.	33.05	2878.	33.49
718.	33.05	2880.	33.5
720.	33.04	2882.	33.51
722.	33.05	2884.	33.52
724.	33.04	2886.	33.52
726.	33.05	2888.	33.52
728.	33.04	2890.	33.5
730.	33.05	2892.	33.5
732.	33.04	2894.	33.51
734.	33.04	2896.	33.5
736.	33.05	2898.	33.49
738.	33.04	2900.	33.47
740.	33.05	2902.	33.46
742.	33.05	2904.	33.46
744.	33.05	2906.	33.44
746.	33.05	2908.	33.45
748.	33.06	2910.	33.44
750.	33.06	2912.	33.44
752.	33.06	2914.	33.44
754.	33.06	2916.	33.44
756.	33.08	2918.	33.44
758.	33.09	2920.	33.43
760.	33.1	2922.	33.44
762.	33.1	2924.	33.42
764.	33.11	2926.	33.43
766.	33.11	2928.	33.42
768.	33.11	2930.	33.43
770.	33.12	2932.	33.42
772.	33.11	2934.	33.42
774.	33.11	2936.	33.42
776.	33.11	2938.	33.43
778.	33.12	2940.	33.43
780.	33.14	2942.	33.43
782.	33.14	2944.	33.42
784.	33.14	2946.	33.41
786.	33.14	2948.	33.42
788.	33.15	2950.	33.42
790.	33.15	2952.	33.43
792.	33.14	2954.	33.32
794.	33.15	2956.	33.27
796.	33.15	2958.	33.21
798.	33.15	2960.	33.39
800.	33.16	2962.	33.55
802.	33.16	2964.	33.64
804.	33.17	2966.	33.71

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
806.	33.16	2968.	33.75
808.	33.16	2970.	33.81
810.	33.17	2972.	33.91
812.	33.17	2974.	33.96
814.	33.17	2976.	34.01
816.	33.17	2978.	34.03
818.	33.17	2980.	34.03
820.	33.17	2982.	34.04
822.	33.17	2984.	34.05
824.	33.17	2986.	34.06
826.	33.17	2988.	34.08
828.	33.17	2990.	34.08
830.	33.17	2992.	34.08
832.	33.16	2994.	34.09
834.	33.17	2996.	34.07
836.	33.17	2998.	34.07
838.	33.17	3000.	34.07
840.	33.17	3002.	34.02
842.	33.17	3004.	33.95
844.	33.17	3006.	33.91
846.	33.16	3008.	33.89
848.	33.15	3010.	33.89
850.	33.15	3012.	33.9
852.	33.15	3014.	33.9
854.	33.16	3016.	33.91
856.	33.16	3018.	33.89
858.	33.16	3020.	33.9
860.	33.16	3022.	33.89
862.	33.15	3024.	33.9
864.	33.15	3026.	33.89
866.	33.16	3028.	33.89
868.	33.16	3030.	33.9
870.	33.15	3032.	33.89
872.	33.15	3034.	33.89
874.	33.16	3036.	33.91
876.	33.16	3038.	33.9
878.	33.16	3040.	33.89
880.	33.16	3042.	33.9
882.	33.16	3044.	33.89
884.	33.16	3046.	33.89
886.	33.16	3048.	33.88
888.	33.16	3050.	33.89
890.	33.17	3052.	33.9
892.	33.17	3054.	33.89
894.	33.17	3056.	33.89
896.	33.17	3058.	33.89
898.	33.17	3060.	33.89
900.	33.17	3062.	33.88
902.	33.17	3064.	33.89
904.	33.17	3066.	33.89
906.	33.18	3068.	33.9
908.	33.16	3070.	33.89
910.	33.17	3072.	33.9
912.	33.18	3074.	33.9
914.	33.18	3076.	33.9
916.	33.19	3078.	33.9
918.	33.19	3080.	33.9
920.	33.19	3082.	33.9
922.	33.19	3084.	33.9
924.	33.19	3086.	33.9
926.	33.19	3088.	33.92
928.	33.18	3090.	33.91
930.	33.19	3092.	33.45
932.	33.19	3094.	33.68
934.	33.2	3096.	33.78
936.	33.19	3098.	33.89

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
938.	33.19	3100.	33.94
940.	33.2	3102.	33.97
942.	33.19	3104.	33.97
944.	33.2	3106.	33.98
946.	33.2	3108.	33.98
948.	33.19	3110.	33.97
950.	33.19	3112.	33.98
952.	33.2	3114.	33.98
954.	33.2	3116.	33.98
956.	33.19	3118.	33.99
958.	33.19	3120.	33.98
960.	33.2	3122.	34.
962.	33.2	3124.	34.
964.	33.2	3126.	34.
966.	33.2	3128.	33.99
968.	33.2	3130.	33.99
970.	33.21	3132.	33.99
972.	33.2	3134.	34.
974.	33.21	3136.	34.01
976.	33.21	3138.	34.
978.	33.21	3140.	34.
980.	33.21	3142.	34.
982.	33.22	3144.	34.
984.	33.21	3146.	34.
986.	33.21	3148.	34.
988.	33.21	3150.	34.
990.	33.21	3152.	34.
992.	33.2	3154.	34.
994.	33.21	3156.	34.
996.	33.21	3158.	34.01
998.	33.21	3160.	34.
1000.	33.21	3162.	34.
1002.	33.21	3164.	34.01
1004.	33.21	3166.	34.
1006.	33.21	3168.	34.
1008.	33.22	3170.	34.01
1010.	33.22	3172.	33.99
1012.	33.22	3174.	33.99
1014.	33.21	3176.	34.
1016.	32.54	3178.	34.
1018.	32.9	3180.	34.
1020.	33.05	3182.	34.01
1022.	33.12	3184.	34.01
1024.	33.17	3186.	34.01
1026.	33.2	3188.	34.01
1028.	33.22	3190.	34.01
1030.	33.24	3192.	34.01
1032.	33.25	3194.	34.01
1034.	33.26	3196.	34.02
1036.	33.26	3198.	34.01
1038.	33.26	3200.	34.
1040.	33.26	3202.	34.
1042.	33.26	3204.	34.
1044.	33.26	3206.	34.
1046.	33.26	3208.	34.
1048.	33.26	3210.	34.
1050.	33.27	3212.	34.
1052.	33.26	3214.	34.01
1054.	33.27	3216.	34.05
1056.	33.26	3218.	34.06
1058.	33.26	3220.	34.07
1060.	33.26	3222.	34.07
1062.	33.26	3224.	34.08
1064.	33.26	3226.	34.08
1066.	33.26	3228.	34.07
1068.	33.26	3230.	34.08

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1070.	33.25	3232.	34.09
1072.	33.25	3234.	34.09
1074.	33.24	3236.	34.05
1076.	33.23	3238.	34.04
1078.	33.23	3240.	34.02
1080.	33.23	3242.	34.01
1082.	33.26	3244.	34.
1084.	33.26	3246.	34.01
1086.	33.28	3248.	34.
1088.	33.29	3250.	34.
1090.	33.29	3252.	34.
1092.	33.29	3254.	33.99
1094.	33.29	3256.	33.99
1096.	33.29	3258.	33.98
1098.	33.29	3260.	33.98
1100.	33.28	3262.	33.99
1102.	33.29	3264.	33.99
1104.	33.29	3266.	33.99
1106.	33.28	3268.	34.
1108.	33.28	3270.	34.01
1110.	33.27	3272.	34.01
1112.	33.26	3274.	34.01
1114.	33.26	3276.	34.01
1116.	33.27	3278.	34.01
1118.	33.27	3280.	34.
1120.	33.26	3282.	34.
1122.	33.27	3284.	34.
1124.	33.28	3286.	33.99
1126.	33.28	3288.	33.97
1128.	33.28	3290.	33.97
1130.	33.28	3292.	33.97
1132.	33.29	3294.	33.96
1134.	33.29	3296.	33.96
1136.	33.29	3298.	33.96
1138.	33.29	3300.	33.97
1140.	33.29	3302.	33.97
1142.	33.28	3304.	33.97
1144.	33.29	3306.	33.97
1146.	33.29	3308.	33.95
1148.	33.28	3310.	33.95
1150.	33.27	3312.	33.95
1152.	33.28	3314.	33.81
1154.	33.29	3316.	33.76
1156.	33.28	3318.	33.73
1158.	33.28	3320.	33.72
1160.	33.29	3322.	33.71
1162.	33.29	3324.	33.7
1164.	33.28	3326.	33.69
1166.	33.29	3328.	33.7
1168.	33.29	3330.	33.7
1170.	33.29	3332.	33.7
1172.	33.3	3334.	33.7
1174.	33.3	3336.	33.7
1176.	33.29	3338.	33.7
1178.	33.29	3340.	33.7
1180.	33.28	3342.	33.7
1182.	33.28	3344.	33.71
1184.	33.29	3346.	33.74
1186.	33.29	3348.	33.83
1188.	33.29	3350.	33.88
1190.	33.28	3352.	33.9
1192.	33.28	3354.	33.91
1194.	33.29	3356.	33.92
1196.	33.29	3358.	33.93
1198.	33.29	3360.	33.93
1200.	33.31	3362.	33.94

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1202.	33.33	3364.	33.93
1204.	33.34	3366.	33.93
1206.	33.35	3368.	33.95
1208.	33.34	3370.	33.95
1210.	33.33	3372.	33.95
1212.	33.33	3374.	33.95
1214.	33.32	3376.	33.94
1216.	33.32	3378.	33.95
1218.	33.32	3380.	33.94
1220.	33.32	3382.	33.95
1222.	33.31	3384.	33.95
1224.	33.3	3386.	33.95
1226.	33.29	3388.	33.96
1228.	33.28	3390.	33.95
1230.	33.29	3392.	33.95
1232.	33.29	3394.	33.96
1234.	33.31	3396.	33.96
1236.	33.31	3398.	33.96
1238.	33.31	3400.	33.96
1240.	33.31	3402.	33.95
1242.	33.32	3404.	33.96
1244.	33.31	3406.	33.95
1246.	33.32	3408.	33.95
1248.	33.31	3410.	33.95
1250.	33.31	3412.	33.93
1252.	33.32	3414.	33.92
1254.	33.32	3416.	33.92
1256.	33.33	3418.	33.94
1258.	33.33	3420.	33.92
1260.	33.33	3422.	33.92
1262.	33.34	3424.	33.93
1264.	33.34	3426.	33.95
1266.	33.35	3428.	33.97
1268.	33.34	3430.	33.99
1270.	33.33	3432.	33.99
1272.	33.33	3434.	34.01
1274.	33.32	3436.	34.01
1276.	33.33	3438.	34.01
1278.	33.33	3440.	34.01
1280.	33.36	3442.	34.
1282.	33.39	3444.	34.
1284.	33.39	3446.	34.
1286.	33.4	3448.	34.
1288.	33.4	3450.	33.34
1290.	33.38	3452.	33.64
1292.	33.41	3454.	33.78
1294.	33.4	3456.	33.84
1296.	33.39	3458.	33.9
1298.	33.38	3460.	33.93
1300.	33.37	3462.	33.93
1302.	33.36	3464.	33.95
1304.	33.37	3466.	33.94
1306.	33.4	3468.	33.94
1308.	33.4	3470.	33.96
1310.	33.4	3472.	33.95
1312.	33.39	3474.	33.95
1314.	33.4	3476.	33.95
1316.	33.39	3478.	33.95
1318.	33.38	3480.	33.96
1320.	33.38	3482.	33.96
1322.	33.37	3484.	33.96
1324.	33.39	3486.	33.97
1326.	33.38	3488.	33.96
1328.	33.38	3490.	33.97
1330.	33.37	3492.	33.96
1332.	33.36	3494.	33.96

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1334.	33.21	3496.	33.97
1336.	33.16	3498.	33.96
1338.	33.12	3500.	33.95
1340.	33.11	3502.	33.95
1342.	33.1	3504.	33.96
1344.	33.11	3506.	33.95
1346.	33.15	3508.	33.95
1348.	33.23	3510.	33.95
1350.	33.28	3512.	33.95
1352.	33.32	3514.	33.94
1354.	33.33	3516.	33.95
1356.	33.34	3518.	33.95
1358.	33.34	3520.	33.95
1360.	33.34	3522.	33.94
1362.	33.34	3524.	33.95
1364.	33.35	3526.	33.95
1366.	33.36	3528.	33.96
1368.	33.37	3530.	33.96
1370.	33.37	3532.	33.98
1372.	33.36	3534.	33.98
1374.	33.36	3536.	33.98
1376.	33.35	3538.	34.
1378.	33.36	3540.	33.98
1380.	31.92	3542.	33.97
1382.	32.34	3544.	33.97
1384.	32.58	3546.	33.97
1386.	32.68	3548.	33.97
1388.	32.74	3550.	33.96
1390.	32.77	3552.	33.96
1392.	32.79	3554.	33.96
1394.	32.8	3556.	33.96
1396.	32.81	3558.	33.98
1398.	32.82	3560.	33.97
1400.	32.81	3562.	33.97
1402.	32.81	3564.	33.95
1404.	32.81	3566.	33.96
1406.	32.82	3568.	33.95
1408.	32.82	3570.	33.94
1410.	32.83	3572.	33.94
1412.	32.79	3574.	33.93
1414.	32.76	3576.	33.94
1416.	32.76	3578.	33.95
1418.	32.74	3580.	33.95
1420.	32.74	3582.	33.95
1422.	32.74	3584.	33.95
1424.	32.73	3586.	33.95
1426.	32.73	3588.	33.95
1428.	32.74	3590.	33.94
1430.	32.75	3592.	33.93
1432.	32.75	3594.	33.93
1434.	32.76	3596.	33.94
1436.	32.76	3598.	33.93
1438.	32.76	3600.	33.94
1440.	32.77	3602.	33.94
1442.	32.76	3604.	33.95
1444.	32.77	3606.	33.95
1446.	32.77	3608.	33.96
1448.	32.77	3610.	33.97
1450.	32.76	3612.	33.97
1452.	32.77	3614.	33.98
1454.	32.78	3616.	34.01
1456.	32.78	3618.	34.
1458.	32.78	3620.	34.
1460.	32.79	3622.	33.99
1462.	32.78	3624.	33.98
1464.	32.78	3626.	33.98

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1466.	32.77	3628.	33.98
1468.	32.76	3630.	33.98
1470.	32.75	3632.	33.97
1472.	32.75	3634.	33.98
1474.	32.74	3636.	33.99
1476.	32.74	3638.	34.01
1478.	32.74	3640.	34.01
1480.	32.73	3642.	34.
1482.	32.73	3644.	34.
1484.	32.74	3646.	34.
1486.	32.73	3648.	34.01
1488.	32.71	3650.	34.01
1490.	32.73	3652.	34.
1492.	32.74	3654.	33.99
1494.	32.76	3656.	33.98
1496.	32.76	3658.	33.98
1498.	32.76	3660.	33.99
1500.	32.76	3662.	33.96
1502.	32.77	3664.	33.87
1504.	32.77	3666.	33.8
1506.	32.77	3668.	33.77
1508.	32.77	3670.	33.75
1510.	32.77	3672.	33.73
1512.	32.78	3674.	33.73
1514.	32.79	3676.	33.77
1516.	32.78	3678.	33.83
1518.	32.78	3680.	33.88
1520.	32.79	3682.	33.91
1522.	32.78	3684.	33.92
1524.	32.79	3686.	33.95
1526.	32.79	3688.	33.98
1528.	32.79	3690.	33.98
1530.	32.79	3692.	33.97
1532.	32.79	3694.	33.97
1534.	32.79	3696.	33.97
1536.	32.79	3698.	33.96
1538.	32.79	3700.	33.96
1540.	32.79	3702.	33.98
1542.	32.79	3704.	34.
1544.	32.77	3706.	34.01
1546.	32.77	3708.	34.02
1548.	32.75	3710.	34.02
1550.	32.75	3712.	34.02
1552.	32.74	3714.	34.
1554.	32.74	3716.	33.98
1556.	32.73	3718.	33.99
1558.	32.72	3720.	33.97
1560.	32.72	3722.	33.97
1562.	32.71	3724.	33.98
1564.	32.71	3726.	33.95
1566.	32.7	3728.	33.95
1568.	32.71	3730.	33.96
1570.	32.7	3732.	33.97
1572.	32.7	3734.	33.97
1574.	32.7	3736.	33.95
1576.	32.7	3738.	33.98
1578.	32.69	3740.	34.
1580.	32.91	3742.	33.99
1582.	33.06	3744.	33.97
1584.	33.13	3746.	33.98
1586.	33.17	3748.	33.97
1588.	33.21	3750.	33.95
1590.	33.24	3752.	33.96
1592.	33.25	3754.	33.97
1594.	33.25	3756.	33.96
1596.	33.26	3758.	33.95

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1598.	33.26	3760.	33.95
1600.	33.27	3762.	33.94
1602.	33.28	3764.	33.94
1604.	33.29	3766.	33.95
1606.	33.29	3768.	33.95
1608.	33.3	3770.	33.95
1610.	33.29	3772.	33.98
1612.	33.31	3774.	33.98
1614.	33.31	3776.	33.98
1616.	33.32	3778.	33.98
1618.	33.32	3780.	33.99
1620.	33.32	3782.	33.98
1622.	33.33	3784.	33.95
1624.	33.33	3786.	33.95
1626.	33.33	3788.	33.96
1628.	33.32	3790.	33.96
1630.	33.33	3792.	33.97
1632.	33.32	3794.	33.98
1634.	33.31	3796.	34.01
1636.	33.29	3798.	34.
1638.	33.29	3800.	34.
1640.	33.29	3802.	33.99
1642.	33.28	3804.	34.01
1644.	33.28	3806.	33.44
1646.	33.29	3808.	33.76
1648.	33.29	3810.	33.9
1650.	33.29	3812.	33.95
1652.	33.28	3814.	33.99
1654.	33.29	3816.	34.02
1656.	33.29	3818.	34.03
1658.	33.29	3820.	34.05
1660.	33.28	3822.	34.05
1662.	33.28	3824.	34.05
1664.	33.29	3826.	34.06
1666.	33.28	3828.	34.07
1668.	33.29	3830.	34.07
1670.	33.28	3832.	34.06
1672.	33.28	3834.	34.06
1674.	33.27	3836.	34.05
1676.	33.27	3838.	34.06
1678.	33.26	3840.	34.07
1680.	33.27	3842.	34.06
1682.	33.27	3844.	34.05
1684.	33.28	3846.	34.04
1686.	33.28	3848.	34.04
1688.	33.27	3850.	34.03
1690.	33.27	3852.	34.03
1692.	33.27	3854.	34.03
1694.	33.28	3856.	34.03
1696.	33.28	3858.	34.04
1698.	33.28	3860.	34.04
1700.	33.27	3862.	34.05
1702.	33.27	3864.	34.03
1704.	33.26	3866.	34.05
1706.	33.26	3868.	34.06
1708.	33.26	3870.	34.06
1710.	33.26	3872.	34.07
1712.	33.27	3874.	34.05
1714.	33.3	3876.	34.07
1716.	33.32	3878.	34.07
1718.	32.42	3880.	34.05
1720.	32.67	3882.	34.05
1722.	33.	3884.	34.06
1724.	33.17	3886.	34.05
1726.	33.26	3888.	34.04
1728.	33.31	3890.	34.04

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1730.	33.34	3892.	34.04
1732.	33.36	3894.	34.03
1734.	33.34	3896.	34.04
1736.	33.3	3898.	34.04
1738.	33.27	3900.	34.04
1740.	33.31	3902.	34.06
1742.	33.34	3904.	34.07
1744.	33.36	3906.	34.07
1746.	33.37	3908.	34.05
1748.	33.38	3910.	34.04
1750.	33.39	3912.	34.04
1752.	33.39	3914.	34.04
1754.	33.4	3916.	34.04
1756.	33.41	3918.	34.05
1758.	33.41	3920.	34.05
1760.	33.41	3922.	34.04
1762.	33.41	3924.	34.03
1764.	33.42	3926.	34.03
1766.	33.41	3928.	34.04
1768.	33.41	3930.	34.05
1770.	33.41	3932.	34.06
1772.	33.41	3934.	34.06
1774.	33.42	3936.	34.07
1776.	33.41	3938.	34.06
1778.	33.42	3940.	34.06
1780.	33.41	3942.	34.04
1782.	33.42	3944.	34.06
1784.	33.42	3946.	34.07
1786.	33.42	3948.	34.07
1788.	33.41	3950.	34.07
1790.	33.4	3952.	34.05
1792.	33.38	3954.	34.04
1794.	33.39	3956.	34.04
1796.	33.38	3958.	34.03
1798.	33.38	3960.	34.02
1800.	33.38	3962.	34.03
1802.	33.38	3964.	34.02
1804.	33.37	3966.	34.01
1806.	33.37	3968.	34.
1808.	33.37	3970.	34.
1810.	33.37	3972.	33.99
1812.	33.37	3974.	34.01
1814.	33.37	3976.	34.03
1816.	33.37	3978.	34.04
1818.	33.38	3980.	34.04
1820.	33.38	3982.	34.04
1822.	33.37	3984.	34.04
1824.	33.37	3986.	34.03
1826.	33.38	3988.	34.02
1828.	33.37	3990.	34.02
1830.	33.38	3992.	34.02
1832.	33.38	3994.	34.02
1834.	33.38	3996.	34.01
1836.	33.38	3998.	34.04
1838.	33.37	4000.	34.04
1840.	33.35	4002.	34.04
1842.	33.37	4004.	34.02
1844.	33.35	4006.	34.03
1846.	33.35	4008.	34.03
1848.	33.36	4010.	34.04
1850.	33.36	4012.	34.04
1852.	33.35	4014.	34.05
1854.	33.35	4016.	34.04
1856.	33.35	4018.	34.03
1858.	33.35	4020.	34.01
1860.	33.35	4022.	34.02

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1862.	33.33	4024.	34.03
1864.	33.34	4026.	34.02
1866.	33.33	4028.	34.01
1868.	33.33	4030.	34.
1870.	33.33	4032.	34.
1872.	33.33	4034.	34.
1874.	33.35	4036.	34.01
1876.	33.34	4038.	34.01
1878.	33.34	4040.	34.
1880.	33.34	4042.	33.99
1882.	33.34	4044.	33.99
1884.	33.34	4046.	33.99
1886.	33.34	4048.	34.01
1888.	33.34	4050.	34.02
1890.	33.34	4052.	34.06
1892.	33.34	4054.	34.09
1894.	33.34	4056.	34.08
1896.	33.32	4058.	34.09
1898.	33.3	4060.	34.11
1900.	33.33	4062.	34.12
1902.	33.34	4064.	34.11
1904.	33.36	4066.	34.11
1906.	33.35	4068.	34.11
1908.	33.36	4070.	34.1
1910.	33.37	4072.	34.09
1912.	33.37	4074.	34.08
1914.	33.36	4076.	34.1
1916.	33.38	4078.	34.11
1918.	33.38	4080.	34.12
1920.	33.37	4082.	34.12
1922.	33.38	4084.	34.11
1924.	33.37	4086.	34.13
1926.	33.38	4088.	34.12
1928.	33.37	4090.	34.12
1930.	33.36	4092.	34.1
1932.	33.37	4094.	34.09
1934.	33.37	4096.	34.07
1936.	33.35	4098.	34.07
1938.	33.36	4100.	34.1
1940.	33.38	4102.	34.11
1942.	33.38	4104.	34.12
1944.	33.35	4106.	34.13
1946.	33.37	4108.	34.12
1948.	33.36	4110.	34.11
1950.	33.37	4112.	34.07
1952.	33.36	4114.	34.05
1954.	33.38	4116.	34.04
1956.	33.37	4118.	34.03
1958.	33.37	4120.	34.
1960.	33.36	4122.	34.
1962.	33.35	4124.	33.95
1964.	33.35	4126.	33.89
1966.	33.34	4128.	33.86
1968.	33.35	4130.	33.83
1970.	33.35	4132.	33.81
1972.	33.35	4134.	33.82
1974.	33.34	4136.	33.8
1976.	33.33	4138.	33.8
1978.	33.34	4140.	33.83
1980.	33.35	4142.	33.85
1982.	33.35	4144.	33.95
1984.	33.36	4146.	34.01
1986.	33.37	4148.	34.05
1988.	33.37	4150.	34.1
1990.	33.37	4152.	34.09
1992.	33.37	4154.	34.09

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1994.	33.37	4156.	34.11
1996.	33.39	4158.	34.14
1998.	33.38	4160.	34.14
2000.	33.39	4162.	34.14
2002.	33.39	4164.	34.12
2004.	33.38	4166.	34.15
2006.	33.38	4168.	34.16
2008.	33.39	4170.	34.15
2010.	32.74	4172.	34.12
2012.	33.11	4174.	34.15
2014.	33.26	4176.	33.16
2016.	33.33	4178.	33.43
2018.	33.35	4180.	33.52
2020.	33.38	4182.	33.54
2022.	33.39	4184.	33.57
2024.	33.41	4186.	33.57
2026.	33.42	4188.	33.57
2028.	33.42	4190.	33.56
2030.	33.42	4192.	33.56
2032.	33.42	4194.	33.56
2034.	33.43	4196.	33.54
2036.	33.42	4198.	33.53
2038.	33.42	4200.	33.53
2040.	33.42	4202.	33.52
2042.	33.43	4204.	33.52
2044.	33.43	4206.	33.51
2046.	33.42	4208.	33.5
2048.	33.42	4210.	33.49
2050.	33.43	4212.	33.49
2052.	33.42	4214.	33.48
2054.	33.43	4216.	33.49
2056.	33.43	4218.	33.49
2058.	33.42	4220.	33.5
2060.	33.43	4222.	33.48
2062.	33.43	4224.	33.48
2064.	33.44	4226.	33.48
2066.	33.43	4228.	33.47
2068.	33.44	4230.	33.47
2070.	33.44	4232.	33.48
2072.	33.44	4234.	33.47
2074.	33.44	4236.	33.47
2076.	33.45	4238.	33.47
2078.	33.45	4240.	33.47
2080.	33.45	4242.	33.47
2082.	33.44	4244.	33.46
2084.	33.44	4246.	33.47
2086.	33.46	4248.	33.47
2088.	33.47	4250.	33.47
2090.	33.47	4252.	33.47
2092.	33.49	4254.	33.47
2094.	33.49	4256.	33.46
2096.	33.49	4258.	33.46
2098.	33.49	4260.	33.46
2100.	33.48	4262.	33.46
2102.	33.48	4264.	33.46
2104.	33.48	4266.	33.45
2106.	33.48	4268.	33.46
2108.	33.47	4270.	33.46
2110.	33.46	4272.	33.46
2112.	33.46	4274.	33.45
2114.	33.46	4276.	33.46
2116.	33.46	4278.	33.46
2118.	33.46	4280.	33.46
2120.	33.45	4282.	33.46
2122.	33.46	4284.	33.46
2124.	33.46	4286.	33.46

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
2126.	33.47	4288.	33.46
2128.	33.45	4290.	33.47
2130.	33.46	4292.	33.46
2132.	33.45	4294.	33.46
2134.	33.45	4296.	33.46
2136.	33.43	4298.	33.45
2138.	33.44	4300.	33.45
2140.	33.4	4302.	33.44
2142.	33.4	4304.	33.44
2144.	33.39	4306.	33.46
2146.	33.39	4308.	33.47
2148.	33.39	4310.	33.48
2150.	33.39	4312.	33.48
2152.	33.39	4314.	33.49
2154.	33.39	4316.	33.49
2156.	33.4	4318.	33.48
2158.	33.39	4320.	33.31
2160.	33.39		

Observation Well No. 2: PZ-23D

X Location: 3039399.222 ft
Y Location: 684529.203 ft

Radial distance from MW14-03B: 35.59168298 ft

Partially Penetrating Well
Depth to Top of Screen: 1.8 ft
Depth to Bottom of Screen: 5.5 ft

No. of Observations: 2159

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
2.	-0.001988	2162.	3.273
4.	2.36E-5	2164.	3.271
6.	0.009035	2166.	3.271
8.	0.02605	2168.	3.271
10.	0.05306	2170.	3.273
12.	0.08807	2172.	3.273
14.	0.1301	2174.	3.271
16.	0.1761	2176.	3.273
18.	0.2251	2178.	3.271
20.	0.2781	2180.	3.273
22.	0.3321	2182.	3.273
24.	0.3871	2184.	3.273
26.	0.4432	2186.	3.276
28.	0.4962	2188.	3.276
30.	0.5522	2190.	3.273
32.	0.6082	2192.	3.276
34.	0.6592	2194.	3.276
36.	0.7102	2196.	3.276
38.	0.7612	2198.	3.276
40.	0.8052	2200.	3.278
42.	0.8532	2202.	3.276
44.	0.8973	2204.	3.278
46.	0.9393	2206.	3.279
48.	0.9343	2208.	3.279
50.	1.02	2210.	3.279
52.	1.06	2212.	3.279
54.	1.099	2214.	3.279
56.	1.131	2216.	3.279
58.	1.169	2218.	3.279
60.	1.199	2220.	3.279
62.	1.231	2222.	3.281
64.	1.259	2224.	3.279

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
66.	1.289	2226.	3.281
68.	1.301	2228.	3.279
70.	1.345	2230.	3.281
72.	1.37	2232.	3.281
74.	1.393	2234.	3.281
76.	1.417	2236.	3.281
78.	1.44	2238.	3.281
80.	1.461	2240.	3.281
82.	1.482	2242.	3.281
84.	1.502	2244.	3.281
86.	1.522	2246.	3.284
88.	1.543	2248.	3.281
90.	1.561	2250.	3.284
92.	1.578	2252.	3.281
94.	1.594	2254.	3.284
96.	1.615	2256.	3.281
98.	1.631	2258.	3.284
100.	1.645	2260.	3.284
102.	1.661	2262.	3.286
104.	1.675	2264.	3.286
106.	1.689	2266.	3.286
108.	1.705	2268.	3.286
110.	1.719	2270.	3.286
112.	1.733	2272.	3.286
114.	1.747	2274.	3.286
116.	1.761	2276.	3.286
118.	1.775	2278.	3.288
120.	1.786	2280.	3.286
122.	1.8	2282.	3.288
124.	1.814	2284.	3.286
126.	1.826	2286.	3.286
128.	1.837	2288.	3.288
130.	1.851	2290.	3.286
132.	1.86	2292.	3.286
134.	1.872	2294.	3.288
136.	1.881	2296.	3.286
138.	1.895	2298.	3.286
140.	1.905	2300.	3.286
142.	1.916	2302.	3.286
144.	1.928	2304.	3.286
146.	1.935	2306.	3.286
148.	1.944	2308.	3.286
150.	1.956	2310.	3.286
152.	1.965	2312.	3.286
154.	1.972	2314.	3.286
156.	1.983	2316.	3.286
158.	1.993	2318.	3.284
160.	2.	2320.	3.284
162.	2.009	2322.	3.284
164.	2.016	2324.	3.284
166.	2.027	2326.	3.284
168.	2.034	2328.	3.286
170.	2.041	2330.	3.284
172.	2.051	2332.	3.288
174.	2.058	2334.	3.286
176.	2.064	2336.	3.286
178.	2.074	2338.	3.288
180.	2.083	2340.	3.286
182.	2.09	2342.	3.288
184.	2.095	2344.	3.288
186.	2.102	2346.	3.288
188.	2.109	2348.	3.291
190.	2.115	2350.	3.291
192.	2.122	2352.	3.291
194.	2.127	2354.	3.291
196.	2.136	2356.	3.291

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
198.	2.141	2358.	3.293
200.	2.148	2360.	3.291
202.	2.153	2362.	3.293
204.	2.157	2364.	3.293
206.	2.164	2366.	3.291
208.	2.173	2368.	3.293
210.	2.176	2370.	3.293
212.	2.183	2372.	3.293
214.	2.187	2374.	3.295
216.	2.194	2376.	3.293
218.	2.199	2378.	3.296
220.	2.204	2380.	3.296
222.	2.213	2382.	3.296
224.	2.218	2384.	3.299
226.	2.222	2386.	3.299
228.	2.229	2388.	3.299
230.	2.234	2390.	3.296
232.	2.238	2392.	3.296
234.	2.245	2394.	3.299
236.	2.252	2396.	3.299
238.	2.257	2398.	3.299
240.	2.262	2400.	3.299
242.	2.266	2402.	3.299
244.	2.271	2404.	3.299
246.	2.275	2406.	3.299
248.	2.282	2408.	3.299
250.	2.287	2410.	3.299
252.	2.289	2412.	3.299
254.	2.297	2414.	3.301
256.	2.3	2416.	3.299
258.	2.304	2418.	3.299
260.	2.309	2420.	3.299
262.	2.314	2422.	3.299
264.	2.318	2424.	3.301
266.	2.323	2426.	3.301
268.	2.327	2428.	3.299
270.	2.332	2430.	3.301
272.	2.337	2432.	3.299
274.	2.339	2434.	3.299
276.	2.346	2436.	3.301
278.	2.348	2438.	3.301
280.	2.353	2440.	3.301
282.	2.355	2442.	3.301
284.	2.362	2444.	3.301
286.	2.367	2446.	3.301
288.	2.369	2448.	3.301
290.	2.369	2450.	3.301
292.	2.374	2452.	3.301
294.	2.378	2454.	3.303
296.	2.381	2456.	3.303
298.	2.383	2458.	3.303
300.	2.385	2460.	3.303
302.	2.39	2462.	3.301
304.	2.392	2464.	3.303
306.	2.395	2466.	3.305
308.	2.397	2468.	3.303
310.	2.399	2470.	3.305
312.	2.402	2472.	3.303
314.	2.404	2474.	3.308
316.	2.406	2476.	3.305
318.	2.409	2478.	3.305
320.	2.413	2480.	3.308
322.	2.416	2482.	3.308
324.	2.418	2484.	3.308
326.	2.423	2486.	3.308
328.	2.427	2488.	3.308

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
330.	2.427	2490.	3.31
332.	2.432	2492.	3.31
334.	2.436	2494.	3.308
336.	2.439	2496.	3.308
338.	2.441	2498.	3.308
340.	2.446	2500.	3.31
342.	2.45	2502.	3.31
344.	2.453	2504.	3.31
346.	2.455	2506.	3.31
348.	2.457	2508.	3.31
350.	2.462	2510.	3.31
352.	2.464	2512.	3.31
354.	2.469	2514.	3.308
356.	2.471	2516.	3.31
358.	2.474	2518.	3.31
360.	2.478	2520.	3.31
362.	2.48	2522.	3.31
364.	2.483	2524.	3.31
366.	2.485	2526.	3.31
368.	2.49	2528.	3.31
370.	2.492	2530.	3.312
372.	2.497	2532.	3.312
374.	2.501	2534.	3.312
376.	2.504	2536.	3.312
378.	2.506	2538.	3.312
380.	2.508	2540.	3.312
382.	2.511	2542.	3.312
384.	2.515	2544.	3.312
386.	2.52	2546.	3.313
388.	2.522	2548.	3.316
390.	2.525	2550.	3.316
392.	2.525	2552.	3.316
394.	2.532	2554.	3.316
396.	2.534	2556.	3.313
398.	2.536	2558.	3.316
400.	2.538	2560.	3.316
402.	2.541	2562.	3.316
404.	2.545	2564.	3.316
406.	2.548	2566.	3.318
408.	2.55	2568.	3.318
410.	2.555	2570.	3.318
412.	2.557	2572.	3.318
414.	2.559	2574.	3.32
416.	2.562	2576.	3.318
418.	2.564	2578.	3.318
420.	2.566	2580.	3.318
422.	2.569	2582.	3.318
424.	2.574	2584.	3.318
426.	2.577	2586.	3.318
428.	2.581	2588.	3.318
430.	2.581	2590.	3.318
432.	2.586	2592.	3.318
434.	2.588	2594.	3.318
436.	2.59	2596.	3.318
438.	2.59	2598.	3.316
440.	2.593	2600.	3.318
442.	2.597	2602.	3.318
444.	2.597	2604.	3.318
446.	2.6	2606.	3.32
448.	2.604	2608.	3.32
450.	2.607	2610.	3.32
452.	2.609	2612.	3.32
454.	2.611	2614.	3.318
456.	2.614	2616.	3.32
458.	2.614	2618.	3.32
460.	2.616	2620.	3.32

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
462.	2.621	2622.	3.32
464.	2.621	2624.	3.32
466.	2.625	2626.	3.32
468.	2.625	2628.	3.323
470.	2.628	2630.	3.323
472.	2.63	2632.	3.323
474.	2.635	2634.	3.323
476.	2.635	2636.	3.325
478.	2.635	2638.	3.323
480.	2.639	2640.	3.325
482.	2.641	2642.	3.325
484.	2.641	2644.	3.325
486.	2.646	2646.	3.325
488.	2.646	2648.	3.327
490.	2.648	2650.	3.327
492.	2.651	2652.	3.327
494.	2.651	2654.	3.33
496.	2.655	2656.	3.327
498.	2.655	2658.	3.327
500.	2.658	2660.	3.33
502.	2.66	2662.	3.33
504.	2.66	2664.	3.33
506.	2.662	2666.	3.33
508.	2.665	2668.	3.33
510.	2.667	2670.	3.332
512.	2.672	2672.	3.332
514.	2.672	2674.	3.332
516.	2.674	2676.	3.332
518.	2.676	2678.	3.332
520.	2.681	2680.	3.332
522.	2.683	2682.	3.332
524.	2.686	2684.	3.334
526.	2.688	2686.	3.334
528.	2.69	2688.	3.334
530.	2.692	2690.	3.334
532.	2.695	2692.	3.334
534.	2.699	2694.	3.334
536.	2.699	2696.	3.337
538.	2.702	2698.	3.337
540.	2.704	2700.	3.337
542.	2.709	2702.	3.337
544.	2.711	2704.	3.337
546.	2.713	2706.	3.337
548.	2.716	2708.	3.339
550.	2.718	2710.	3.339
552.	2.72	2712.	3.337
554.	2.723	2714.	3.339
556.	2.723	2716.	3.338
558.	2.727	2718.	3.34
560.	2.727	2720.	3.338
562.	2.732	2722.	3.338
564.	2.732	2724.	3.34
566.	2.734	2726.	3.338
568.	2.737	2728.	3.338
570.	2.739	2730.	3.338
572.	2.741	2732.	3.338
574.	2.743	2734.	3.338
576.	2.746	2736.	3.34
578.	2.748	2738.	3.34
580.	2.748	2740.	3.34
582.	2.75	2742.	3.338
584.	2.753	2744.	3.335
586.	2.755	2746.	3.335
588.	2.757	2748.	3.338
590.	2.76	2750.	3.338
592.	2.762	2752.	3.338

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
594.	2.765	2754.	3.338
596.	2.765	2756.	3.338
598.	2.768	2758.	3.338
600.	2.77	2760.	3.34
602.	2.772	2762.	3.34
604.	2.775	2764.	3.34
606.	2.777	2766.	3.34
608.	2.779	2768.	3.34
610.	2.782	2770.	3.34
612.	2.782	2772.	3.342
614.	2.784	2774.	3.342
616.	2.786	2776.	3.345
618.	2.789	2778.	3.342
620.	2.791	2780.	3.342
622.	2.791	2782.	3.345
624.	2.793	2784.	3.345
626.	2.795	2786.	3.345
628.	2.795	2788.	3.347
630.	2.8	2790.	3.347
632.	2.798	2792.	3.347
634.	2.802	2794.	3.347
636.	2.802	2796.	3.347
638.	2.805	2798.	3.347
640.	2.807	2800.	3.349
642.	2.807	2802.	3.349
644.	2.809	2804.	3.349
646.	2.812	2806.	3.349
648.	2.812	2808.	3.352
650.	2.814	2810.	3.352
652.	2.814	2812.	3.352
654.	2.816	2814.	3.352
656.	2.819	2816.	3.354
658.	2.819	2818.	3.352
660.	2.819	2820.	3.354
662.	2.819	2822.	3.352
664.	2.819	2824.	3.354
666.	2.821	2826.	3.326
668.	2.821	2828.	3.356
670.	2.821	2830.	3.354
672.	2.821	2832.	3.354
674.	2.823	2834.	3.354
676.	2.826	2836.	3.354
678.	2.826	2838.	3.354
680.	2.828	2840.	3.354
682.	2.83	2842.	3.354
684.	2.83	2844.	3.356
686.	2.833	2846.	3.354
688.	2.833	2848.	3.356
690.	2.835	2850.	3.356
692.	2.835	2852.	3.356
694.	2.837	2854.	3.356
696.	2.84	2856.	3.356
698.	2.84	2858.	3.359
700.	2.84	2860.	3.356
702.	2.842	2862.	3.356
704.	2.844	2864.	3.356
706.	2.844	2866.	3.356
708.	2.846	2868.	3.356
710.	2.849	2870.	3.356
712.	2.849	2872.	3.356
714.	2.851	2874.	3.359
716.	2.851	2876.	3.359
718.	2.853	2878.	3.359
720.	2.853	2880.	3.359
722.	2.856	2882.	3.359
724.	2.856	2884.	3.36

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
726.	2.858	2886.	3.36
728.	2.858	2888.	3.362
730.	2.86	2890.	3.362
732.	2.863	2892.	3.362
734.	2.863	2894.	3.362
736.	2.865	2896.	3.362
738.	2.865	2898.	3.362
740.	2.865	2900.	3.362
742.	2.867	2902.	3.364
744.	2.867	2904.	3.364
746.	2.87	2906.	3.364
748.	2.872	2908.	3.364
750.	2.87	2910.	3.364
752.	2.874	2912.	3.364
754.	2.874	2914.	3.364
756.	2.877	2916.	3.364
758.	2.877	2918.	3.364
760.	2.877	2920.	3.364
762.	2.879	2922.	3.364
764.	2.882	2924.	3.364
766.	2.882	2926.	3.364
768.	2.882	2928.	3.364
770.	2.885	2930.	3.364
772.	2.885	2932.	3.364
774.	2.889	2934.	3.364
776.	2.889	2936.	3.366
778.	2.892	2938.	3.364
780.	2.892	2940.	3.366
782.	2.894	2942.	3.366
784.	2.894	2944.	3.366
786.	2.896	2946.	3.366
788.	2.896	2948.	3.366
790.	2.898	2950.	3.364
792.	2.898	2952.	3.366
794.	2.901	2954.	3.364
796.	2.901	2956.	3.364
798.	2.903	2958.	3.364
800.	2.903	2960.	3.364
802.	2.905	2962.	3.366
804.	2.905	2964.	3.364
806.	2.908	2966.	3.366
808.	2.908	2968.	3.366
810.	2.908	2970.	3.366
812.	2.91	2972.	3.369
814.	2.912	2974.	3.366
816.	2.912	2976.	3.369
818.	2.912	2978.	3.369
820.	2.915	2980.	3.371
822.	2.915	2982.	3.373
824.	2.917	2984.	3.373
826.	2.917	2986.	3.376
828.	2.919	2988.	3.376
830.	2.919	2990.	3.378
832.	2.922	2992.	3.378
834.	2.924	2994.	3.378
836.	2.922	2996.	3.38
838.	2.924	2998.	3.38
840.	2.926	3000.	3.383
842.	2.926	3002.	3.383
844.	2.926	3004.	3.383
846.	2.929	3006.	3.387
848.	2.929	3008.	3.387
850.	2.931	3010.	3.387
852.	2.933	3012.	3.387
854.	2.933	3014.	3.39
856.	2.933	3016.	3.39

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
858.	2.933	3018.	3.387
860.	2.936	3020.	3.39
862.	2.936	3022.	3.39
864.	2.936	3024.	3.39
866.	2.938	3026.	3.392
868.	2.94	3028.	3.39
870.	2.94	3030.	3.39
872.	2.94	3032.	3.39
874.	2.943	3034.	3.39
876.	2.943	3036.	3.392
878.	2.945	3038.	3.392
880.	2.945	3040.	3.392
882.	2.945	3042.	3.39
884.	2.945	3044.	3.392
886.	2.947	3046.	3.39
888.	2.947	3048.	3.392
890.	2.947	3050.	3.392
892.	2.95	3052.	3.392
894.	2.952	3054.	3.393
896.	2.95	3056.	3.393
898.	2.952	3058.	3.395
900.	2.952	3060.	3.395
902.	2.954	3062.	3.395
904.	2.954	3064.	3.393
906.	2.956	3066.	3.395
908.	2.956	3068.	3.393
910.	2.959	3070.	3.395
912.	2.959	3072.	3.395
914.	2.959	3074.	3.395
916.	2.959	3076.	3.395
918.	2.961	3078.	3.395
920.	2.961	3080.	3.395
922.	2.961	3082.	3.395
924.	2.963	3084.	3.395
926.	2.966	3086.	3.395
928.	2.966	3088.	3.395
930.	2.966	3090.	3.395
932.	2.966	3092.	3.395
934.	2.969	3094.	3.395
936.	2.969	3096.	3.395
938.	2.969	3098.	3.393
940.	2.971	3100.	3.393
942.	2.974	3102.	3.395
944.	2.974	3104.	3.393
946.	2.974	3106.	3.393
948.	2.976	3108.	3.395
950.	2.974	3110.	3.395
952.	2.976	3112.	3.398
954.	2.976	3114.	3.398
956.	2.978	3116.	3.395
958.	2.978	3118.	3.398
960.	2.981	3120.	3.395
962.	2.978	3122.	3.398
964.	2.981	3124.	3.398
966.	2.983	3126.	3.398
968.	2.983	3128.	3.4
970.	2.985	3130.	3.398
972.	2.985	3132.	3.4
974.	2.985	3134.	3.4
976.	2.985	3136.	3.395
978.	2.988	3138.	3.398
980.	2.988	3140.	3.398
982.	2.988	3142.	3.4
984.	2.99	3144.	3.4
986.	2.99	3146.	3.4
988.	2.99	3148.	3.4

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
990.	2.992	3150.	3.402
992.	2.992	3152.	3.402
994.	2.995	3154.	3.402
996.	2.995	3156.	3.402
998.	2.995	3158.	3.402
1000.	2.997	3160.	3.405
1002.	2.997	3162.	3.402
1004.	2.999	3164.	3.402
1006.	2.999	3166.	3.402
1008.	3.002	3168.	3.405
1010.	3.002	3170.	3.405
1012.	3.002	3172.	3.405
1014.	3.004	3174.	3.405
1016.	3.004	3176.	3.405
1018.	3.004	3178.	3.402
1020.	3.004	3180.	3.405
1022.	3.004	3182.	3.405
1024.	3.004	3184.	3.405
1026.	3.006	3186.	3.405
1028.	3.006	3188.	3.405
1030.	3.006	3190.	3.405
1032.	3.006	3192.	3.405
1034.	3.006	3194.	3.402
1036.	3.008	3196.	3.405
1038.	3.011	3198.	3.405
1040.	3.008	3200.	3.405
1042.	3.011	3202.	3.402
1044.	3.011	3204.	3.405
1046.	3.011	3206.	3.405
1048.	3.013	3208.	3.405
1050.	3.013	3210.	3.405
1052.	3.015	3212.	3.402
1054.	3.018	3214.	3.405
1056.	3.018	3216.	3.407
1058.	3.018	3218.	3.407
1060.	3.02	3220.	3.407
1062.	3.02	3222.	3.407
1064.	3.02	3224.	3.41
1066.	3.022	3226.	3.408
1068.	3.022	3228.	3.41
1070.	3.025	3230.	3.41
1072.	3.025	3232.	3.41
1074.	3.027	3234.	3.41
1076.	3.027	3236.	3.413
1078.	3.027	3238.	3.41
1080.	3.027	3240.	3.41
1082.	3.027	3242.	3.413
1084.	3.029	3244.	3.41
1086.	3.029	3246.	3.413
1088.	3.032	3248.	3.413
1090.	3.032	3250.	3.413
1092.	3.032	3252.	3.413
1094.	3.034	3254.	3.413
1096.	3.036	3256.	3.413
1098.	3.036	3258.	3.415
1100.	3.036	3260.	3.413
1102.	3.036	3262.	3.413
1104.	3.04	3264.	3.415
1106.	3.04	3266.	3.415
1108.	3.042	3268.	3.415
1110.	3.042	3270.	3.415
1112.	3.042	3272.	3.415
1114.	3.042	3274.	3.415
1116.	3.044	3276.	3.415
1118.	3.044	3278.	3.415
1120.	3.047	3280.	3.417

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1122.	3.047	3282.	3.415
1124.	3.047	3284.	3.417
1126.	3.049	3286.	3.417
1128.	3.049	3288.	3.417
1130.	3.049	3290.	3.417
1132.	3.051	3292.	3.417
1134.	3.054	3294.	3.417
1136.	3.051	3296.	3.419
1138.	3.054	3298.	3.417
1140.	3.054	3300.	3.419
1142.	3.056	3302.	3.417
1144.	3.056	3304.	3.417
1146.	3.056	3306.	3.417
1148.	3.058	3308.	3.417
1150.	3.058	3310.	3.417
1152.	3.058	3312.	3.417
1154.	3.058	3314.	3.419
1156.	3.058	3316.	3.419
1158.	3.06	3318.	3.419
1160.	3.06	3320.	3.419
1162.	3.06	3322.	3.419
1164.	3.06	3324.	3.419
1166.	3.063	3326.	3.417
1168.	3.065	3328.	3.417
1170.	3.065	3330.	3.419
1172.	3.065	3332.	3.417
1174.	3.065	3334.	3.417
1176.	3.067	3336.	3.417
1178.	3.067	3338.	3.417
1180.	3.067	3340.	3.417
1182.	3.07	3342.	3.415
1184.	3.07	3344.	3.415
1186.	3.07	3346.	3.415
1188.	3.07	3348.	3.415
1190.	3.072	3350.	3.415
1192.	3.072	3352.	3.413
1194.	3.074	3354.	3.413
1196.	3.074	3356.	3.415
1198.	3.074	3358.	3.415
1200.	3.079	3360.	3.417
1202.	3.079	3362.	3.415
1204.	3.079	3364.	3.417
1206.	3.079	3366.	3.415
1208.	3.079	3368.	3.417
1210.	3.081	3370.	3.417
1212.	3.084	3372.	3.417
1214.	3.084	3374.	3.417
1216.	3.084	3376.	3.419
1218.	3.086	3378.	3.419
1220.	3.086	3380.	3.422
1222.	3.086	3382.	3.422
1224.	3.088	3384.	3.419
1226.	3.088	3386.	3.422
1228.	3.086	3388.	3.419
1230.	3.088	3390.	3.422
1232.	3.088	3392.	3.422
1234.	3.088	3394.	3.425
1236.	3.091	3396.	3.42
1238.	3.086	3398.	3.425
1240.	3.091	3400.	3.423
1242.	3.091	3402.	3.425
1244.	3.091	3404.	3.425
1246.	3.093	3406.	3.425
1248.	3.093	3408.	3.427
1250.	3.093	3410.	3.427
1252.	3.093	3412.	3.425

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1254.	3.093	3414.	3.425
1256.	3.095	3416.	3.427
1258.	3.095	3418.	3.427
1260.	3.095	3420.	3.427
1262.	3.095	3422.	3.427
1264.	3.1	3424.	3.43
1266.	3.098	3426.	3.427
1268.	3.098	3428.	3.427
1270.	3.1	3430.	3.427
1272.	3.1	3432.	3.43
1274.	3.101	3434.	3.43
1276.	3.101	3436.	3.43
1278.	3.103	3438.	3.43
1280.	3.103	3440.	3.432
1282.	3.106	3442.	3.432
1284.	3.106	3444.	3.432
1286.	3.103	3446.	3.432
1288.	3.106	3448.	3.434
1290.	3.108	3450.	3.432
1292.	3.108	3452.	3.432
1294.	3.108	3454.	3.432
1296.	3.108	3456.	3.432
1298.	3.11	3458.	3.432
1300.	3.11	3460.	3.432
1302.	3.11	3462.	3.43
1304.	3.112	3464.	3.432
1306.	3.115	3466.	3.43
1308.	3.115	3468.	3.432
1310.	3.115	3470.	3.432
1312.	3.117	3472.	3.432
1314.	3.117	3474.	3.432
1316.	3.117	3476.	3.432
1318.	3.119	3478.	3.432
1320.	3.119	3480.	3.434
1322.	3.119	3482.	3.432
1324.	3.119	3484.	3.434
1326.	3.122	3486.	3.434
1328.	3.122	3488.	3.434
1330.	3.124	3490.	3.434
1332.	3.124	3492.	3.437
1334.	3.122	3494.	3.437
1336.	3.124	3496.	3.439
1338.	3.126	3498.	3.437
1340.	3.126	3500.	3.437
1342.	3.124	3502.	3.437
1344.	3.126	3504.	3.437
1346.	3.124	3506.	3.437
1348.	3.124	3508.	3.439
1350.	3.124	3510.	3.439
1352.	3.124	3512.	3.439
1354.	3.129	3514.	3.439
1356.	3.126	3516.	3.441
1358.	3.126	3518.	3.441
1360.	3.126	3520.	3.441
1362.	3.129	3522.	3.441
1364.	3.129	3524.	3.444
1366.	3.129	3526.	3.441
1368.	3.129	3528.	3.444
1370.	3.131	3530.	3.444
1372.	3.131	3532.	3.444
1374.	3.131	3534.	3.444
1376.	3.133	3536.	3.441
1378.	3.133	3538.	3.444
1380.	3.136	3540.	3.444
1382.	3.133	3542.	3.444
1384.	3.133	3544.	3.444

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1386.	3.131	3546.	3.446
1388.	3.131	3548.	3.446
1390.	3.131	3550.	3.446
1392.	3.129	3552.	3.446
1394.	3.129	3554.	3.446
1396.	3.129	3556.	3.446
1398.	3.126	3558.	3.446
1400.	3.126	3560.	3.446
1402.	3.126	3562.	3.446
1404.	3.124	3564.	3.446
1406.	3.124	3566.	3.449
1408.	3.124	3568.	3.447
1410.	3.126	3570.	3.447
1412.	3.126	3572.	3.449
1414.	3.124	3574.	3.449
1416.	3.129	3576.	3.447
1418.	3.126	3578.	3.449
1420.	3.126	3580.	3.449
1422.	3.124	3582.	3.449
1424.	3.126	3584.	3.452
1426.	3.126	3586.	3.449
1428.	3.126	3588.	3.452
1430.	3.126	3590.	3.449
1432.	3.126	3592.	3.452
1434.	3.124	3594.	3.452
1436.	3.126	3596.	3.452
1438.	3.126	3598.	3.452
1440.	3.126	3600.	3.452
1442.	3.127	3602.	3.452
1444.	3.127	3604.	3.454
1446.	3.127	3606.	3.449
1448.	3.127	3608.	3.452
1450.	3.127	3610.	3.452
1452.	3.127	3612.	3.454
1454.	3.127	3614.	3.454
1456.	3.127	3616.	3.454
1458.	3.127	3618.	3.454
1460.	3.127	3620.	3.454
1462.	3.127	3622.	3.456
1464.	3.13	3624.	3.456
1466.	3.127	3626.	3.454
1468.	3.13	3628.	3.454
1470.	3.127	3630.	3.454
1472.	3.13	3632.	3.456
1474.	3.13	3634.	3.456
1476.	3.13	3636.	3.452
1478.	3.13	3638.	3.456
1480.	3.13	3640.	3.456
1482.	3.13	3642.	3.456
1484.	3.132	3644.	3.459
1486.	3.13	3646.	3.459
1488.	3.127	3648.	3.459
1490.	3.13	3650.	3.459
1492.	3.13	3652.	3.461
1494.	3.132	3654.	3.459
1496.	3.132	3656.	3.459
1498.	3.132	3658.	3.459
1500.	3.132	3660.	3.461
1502.	3.132	3662.	3.461
1504.	3.163	3664.	3.461
1506.	3.165	3666.	3.459
1508.	3.167	3668.	3.459
1510.	3.165	3670.	3.461
1512.	3.167	3672.	3.461
1514.	3.167	3674.	3.459
1516.	3.167	3676.	3.461

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1518.	3.165	3678.	3.461
1520.	3.167	3680.	3.461
1522.	3.165	3682.	3.461
1524.	3.167	3684.	3.459
1526.	3.165	3686.	3.459
1528.	3.168	3688.	3.459
1530.	3.168	3690.	3.459
1532.	3.168	3692.	3.459
1534.	3.168	3694.	3.461
1536.	3.168	3696.	3.459
1538.	3.171	3698.	3.459
1540.	3.171	3700.	3.461
1542.	3.171	3702.	3.461
1544.	3.171	3704.	3.463
1546.	3.171	3706.	3.461
1548.	3.171	3708.	3.463
1550.	3.171	3710.	3.463
1552.	3.171	3712.	3.463
1554.	3.171	3714.	3.463
1556.	3.171	3716.	3.463
1558.	3.173	3718.	3.463
1560.	3.171	3720.	3.463
1562.	3.171	3722.	3.463
1564.	3.173	3724.	3.466
1566.	3.173	3726.	3.461
1568.	3.173	3728.	3.466
1570.	3.173	3730.	3.466
1572.	3.171	3732.	3.466
1574.	3.171	3734.	3.466
1576.	3.173	3736.	3.467
1578.	3.173	3738.	3.467
1580.	3.173	3740.	3.469
1582.	3.173	3742.	3.467
1584.	3.173	3744.	3.464
1586.	3.173	3746.	3.469
1588.	3.175	3748.	3.469
1590.	3.175	3750.	3.469
1592.	3.178	3752.	3.469
1594.	3.178	3754.	3.469
1596.	3.178	3756.	3.469
1598.	3.178	3758.	3.469
1600.	3.18	3760.	3.469
1602.	3.175	3762.	3.469
1604.	3.178	3764.	3.469
1606.	3.178	3766.	3.471
1608.	3.18	3768.	3.469
1610.	3.178	3770.	3.469
1612.	3.175	3772.	3.469
1614.	3.168	3774.	3.469
1616.	3.164	3776.	3.471
1618.	3.161	3778.	3.471
1620.	3.157	3780.	3.469
1622.	3.15	3782.	3.471
1624.	3.145	3784.	3.469
1626.	3.131	3786.	3.469
1628.	3.147	3788.	3.471
1630.	3.147	3790.	3.471
1632.	3.198	3792.	3.471
1634.	3.198	3794.	3.469
1636.	3.198	3796.	3.471
1638.	3.201	3798.	3.471
1640.	3.201	3800.	3.471
1642.	3.201	3802.	3.471
1644.	3.201	3804.	3.469
1646.	3.201	3806.	3.471
1648.	3.203	3808.	3.471

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1650.	3.203	3810.	3.471
1652.	3.205	3812.	3.471
1654.	3.203	3814.	3.471
1656.	3.203	3816.	3.471
1658.	3.201	3818.	3.471
1660.	3.198	3820.	3.473
1662.	3.196	3822.	3.471
1664.	3.196	3824.	3.469
1666.	3.194	3826.	3.471
1668.	3.194	3828.	3.473
1670.	3.192	3830.	3.473
1672.	3.189	3832.	3.471
1674.	3.189	3834.	3.473
1676.	3.187	3836.	3.471
1678.	3.185	3838.	3.476
1680.	3.185	3840.	3.473
1682.	3.185	3842.	3.473
1684.	3.182	3844.	3.473
1686.	3.182	3846.	3.476
1688.	3.18	3848.	3.476
1690.	3.18	3850.	3.476
1692.	3.178	3852.	3.476
1694.	3.18	3854.	3.476
1696.	3.178	3856.	3.478
1698.	3.179	3858.	3.478
1700.	3.176	3860.	3.478
1702.	3.176	3862.	3.478
1704.	3.176	3864.	3.478
1706.	3.176	3866.	3.48
1708.	3.176	3868.	3.478
1710.	3.176	3870.	3.48
1712.	3.179	3872.	3.478
1714.	3.179	3874.	3.478
1716.	3.179	3876.	3.478
1718.	3.181	3878.	3.48
1720.	3.186	3880.	3.48
1722.	3.19	3882.	3.478
1724.	3.19	3884.	3.48
1726.	3.188	3886.	3.48
1728.	3.186	3888.	3.48
1730.	3.188	3890.	3.48
1732.	3.193	3892.	3.48
1734.	3.19	3894.	3.48
1736.	3.188	3896.	3.48
1738.	3.188	3898.	3.48
1740.	3.188	3900.	3.48
1742.	3.183	3902.	3.48
1744.	3.183	3904.	3.481
1746.	3.186	3906.	3.481
1748.	3.186	3908.	3.484
1750.	3.188	3910.	3.484
1752.	3.188	3912.	3.481
1754.	3.193	3914.	3.486
1756.	3.19	3916.	3.486
1758.	3.193	3918.	3.486
1760.	3.19	3920.	3.486
1762.	3.19	3922.	3.486
1764.	3.193	3924.	3.486
1766.	3.193	3926.	3.486
1768.	3.193	3928.	3.486
1770.	3.193	3930.	3.484
1772.	3.193	3932.	3.484
1774.	3.195	3934.	3.484
1776.	3.195	3936.	3.484
1778.	3.197	3938.	3.486
1780.	3.197	3940.	3.484

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1782.	3.195	3942.	3.484
1784.	3.197	3944.	3.486
1786.	3.199	3946.	3.486
1788.	3.199	3948.	3.486
1790.	3.199	3950.	3.486
1792.	3.202	3952.	3.486
1794.	3.202	3954.	3.486
1796.	3.204	3956.	3.488
1798.	3.202	3958.	3.488
1800.	3.202	3960.	3.488
1802.	3.202	3962.	3.488
1804.	3.204	3964.	3.488
1806.	3.202	3966.	3.488
1808.	3.204	3968.	3.486
1810.	3.202	3970.	3.486
1812.	3.206	3972.	3.488
1814.	3.204	3974.	3.486
1816.	3.204	3976.	3.488
1818.	3.204	3978.	3.486
1820.	3.204	3980.	3.488
1822.	3.206	3982.	3.488
1824.	3.206	3984.	3.488
1826.	3.206	3986.	3.488
1828.	3.206	3988.	3.488
1830.	3.206	3990.	3.488
1832.	3.206	3992.	3.488
1834.	3.206	3994.	3.488
1836.	3.206	3996.	3.488
1838.	3.206	3998.	3.488
1840.	3.206	4000.	3.488
1842.	3.206	4002.	3.488
1844.	3.209	4004.	3.488
1846.	3.209	4006.	3.491
1848.	3.209	4008.	3.491
1850.	3.209	4010.	3.491
1852.	3.211	4012.	3.491
1854.	3.211	4014.	3.491
1856.	3.209	4016.	3.488
1858.	3.209	4018.	3.491
1860.	3.211	4020.	3.488
1862.	3.211	4022.	3.491
1864.	3.213	4024.	3.491
1866.	3.213	4026.	3.488
1868.	3.214	4028.	3.491
1870.	3.214	4030.	3.488
1872.	3.214	4032.	3.491
1874.	3.214	4034.	3.491
1876.	3.214	4036.	3.488
1878.	3.217	4038.	3.491
1880.	3.217	4040.	3.491
1882.	3.217	4042.	3.491
1884.	3.217	4044.	3.491
1886.	3.217	4046.	3.491
1888.	3.219	4048.	3.491
1890.	3.219	4050.	3.488
1892.	3.219	4052.	3.491
1894.	3.217	4054.	3.493
1896.	3.217	4056.	3.491
1898.	3.221	4058.	3.491
1900.	3.219	4060.	3.491
1902.	3.219	4062.	3.491
1904.	3.219	4064.	3.493
1906.	3.221	4066.	3.493
1908.	3.221	4068.	3.493
1910.	3.221	4070.	3.493
1912.	3.224	4072.	3.494

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1914.	3.221	4074.	3.494
1916.	3.224	4076.	3.494
1918.	3.221	4078.	3.496
1920.	3.221	4080.	3.494
1922.	3.224	4082.	3.494
1924.	3.224	4084.	3.496
1926.	3.224	4086.	3.494
1928.	3.224	4088.	3.496
1930.	3.224	4090.	3.496
1932.	3.226	4092.	3.496
1934.	3.226	4094.	3.499
1936.	3.226	4096.	3.496
1938.	3.228	4098.	3.499
1940.	3.228	4100.	3.499
1942.	3.228	4102.	3.499
1944.	3.228	4104.	3.499
1946.	3.228	4106.	3.499
1948.	3.231	4108.	3.499
1950.	3.231	4110.	3.499
1952.	3.231	4112.	3.499
1954.	3.231	4114.	3.499
1956.	3.233	4116.	3.499
1958.	3.231	4118.	3.499
1960.	3.233	4120.	3.499
1962.	3.233	4122.	3.499
1964.	3.233	4124.	3.501
1966.	3.233	4126.	3.501
1968.	3.233	4128.	3.499
1970.	3.233	4130.	3.499
1972.	3.233	4132.	3.499
1974.	3.235	4134.	3.499
1976.	3.235	4136.	3.499
1978.	3.235	4138.	3.499
1980.	3.235	4140.	3.499
1982.	3.235	4142.	3.499
1984.	3.235	4144.	3.499
1986.	3.235	4146.	3.499
1988.	3.235	4148.	3.496
1990.	3.238	4150.	3.499
1992.	3.238	4152.	3.499
1994.	3.238	4154.	3.499
1996.	3.238	4156.	3.499
1998.	3.238	4158.	3.499
2000.	3.238	4160.	3.499
2002.	3.24	4162.	3.499
2004.	3.24	4164.	3.501
2006.	3.24	4166.	3.501
2008.	3.24	4168.	3.501
2010.	3.24	4170.	3.501
2012.	3.24	4172.	3.501
2014.	3.242	4174.	3.501
2016.	3.24	4176.	3.503
2018.	3.24	4178.	3.503
2020.	3.24	4180.	3.503
2022.	3.242	4182.	3.503
2024.	3.242	4184.	3.499
2026.	3.242	4186.	3.501
2028.	3.242	4188.	3.501
2030.	3.242	4190.	3.499
2032.	3.245	4192.	3.496
2034.	3.245	4194.	3.496
2036.	3.245	4196.	3.496
2038.	3.246	4198.	3.494
2040.	3.246	4200.	3.494
2042.	3.246	4202.	3.492
2044.	3.248	4204.	3.492

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
2046.	3.25	4206.	3.492
2048.	3.25	4208.	3.492
2050.	3.25	4210.	3.492
2052.	3.25	4212.	3.492
2054.	3.252	4214.	3.489
2056.	3.252	4216.	3.489
2058.	3.252	4218.	3.489
2060.	3.252	4220.	3.489
2062.	3.255	4222.	3.489
2064.	3.255	4224.	3.487
2066.	3.255	4226.	3.489
2068.	3.255	4228.	3.489
2070.	3.255	4230.	3.485
2072.	3.255	4232.	3.487
2074.	3.255	4234.	3.485
2076.	3.257	4236.	3.487
2078.	3.257	4238.	3.487
2080.	3.257	4240.	3.485
2082.	3.257	4242.	3.486
2084.	3.259	4244.	3.486
2086.	3.259	4246.	3.483
2088.	3.259	4248.	3.483
2090.	3.259	4250.	3.483
2092.	3.259	4252.	3.483
2094.	3.259	4254.	3.483
2096.	3.259	4256.	3.483
2098.	3.262	4258.	3.483
2100.	3.259	4260.	3.483
2102.	3.264	4262.	3.483
2104.	3.262	4264.	3.486
2106.	3.264	4266.	3.483
2108.	3.264	4268.	3.483
2110.	3.264	4270.	3.483
2112.	3.264	4272.	3.483
2114.	3.264	4274.	3.481
2116.	3.264	4276.	3.483
2118.	3.264	4278.	3.483
2120.	3.264	4280.	3.483
2122.	3.266	4282.	3.483
2124.	3.266	4284.	3.483
2126.	3.266	4286.	3.481
2128.	3.266	4288.	3.481
2130.	3.269	4290.	3.483
2132.	3.269	4292.	3.483
2134.	3.269	4294.	3.481
2136.	3.269	4296.	3.481
2138.	3.266	4298.	3.481
2140.	3.266	4300.	3.483
2142.	3.269	4302.	3.483
2144.	3.269	4304.	3.483
2146.	3.271	4306.	3.481
2148.	3.269	4308.	3.481
2150.	3.271	4310.	3.481
2152.	3.271	4312.	3.481
2154.	3.271	4314.	3.481
2156.	3.271	4316.	3.481
2158.	3.271	4318.	3.481
2160.	3.271		

Observation Well No. 3: PZ-23M

X Location: 3039403.169 ft
Y Location: 684524.464 ft

Radial distance from MW14-03B: 29.43100245 ft

Partially Penetrating Well in Aquitard
Depth to Top of Screen: 3.2 ft
Depth to Bottom of Screen: 7.9 ft

No. of Observations: 889

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1.	1.07E-6	912.	0.03798
3.98	4.26E-6	914.	0.03798
25.98	0.002028	916.	0.03798
27.98	2.995E-5	918.	0.03798
29.98	0.002032	920.	0.03798
31.98	0.002034	922.	0.03799
33.98	0.002036	924.	0.03799
35.98	0.005039	926.	0.04099
37.98	0.005041	928.	0.03799
39.98	0.005043	930.	0.041
41.98	0.005045	932.	0.038
43.98	0.002047	934.	0.041
45.98	0.005049	936.	0.041
47.98	0.005051	938.	0.041
49.98	0.005053	940.	0.04101
51.98	0.002056	942.	0.04101
53.98	0.005058	944.	0.04101
55.98	0.00206	946.	0.04101
57.98	0.002062	948.	0.04101
59.98	0.002064	950.	0.04102
61.98	0.005066	952.	0.04102
63.98	0.005068	954.	0.04102
65.98	0.005071	956.	0.04102
67.98	0.005073	958.	0.04103
69.98	0.005075	960.	0.04103
71.98	0.005077	962.	0.04103
73.98	0.005079	964.	0.04103
75.98	0.007081	966.	0.04303
77.98	0.005083	968.	0.04304
79.98	0.005086	970.	0.04304
81.98	0.005088	972.	0.04304
83.98	0.00509	974.	0.04304
85.98	0.005092	976.	0.04304
87.98	0.007094	978.	0.04305
89.98	0.005096	980.	0.04305
91.98	0.005098	982.	0.04305
93.98	0.005101	984.	0.04305
95.98	0.007103	986.	0.04306
97.98	0.007105	988.	0.04306
100.	0.005107	990.	0.04306
102.	0.007109	992.	0.04306
104.	0.005111	994.	0.04106
106.	0.005113	996.	0.04307
108.	0.005116	998.	0.04307
110.	0.007118	1000.	0.04307
112.	0.00512	1002.	0.04307
114.	0.007122	1004.	0.04307
116.	0.005124	1006.	0.04308
118.	0.005126	1008.	0.04308
120.	0.005128	1010.	0.04308
122.	0.005131	1012.	0.04308
124.	0.005133	1014.	0.04309
126.	0.005135	1016.	0.04309
128.	0.005137	1018.	0.04509
130.	0.005139	1020.	0.04509
132.	0.007141	1022.	0.04309
134.	0.005143	1024.	0.0451
136.	0.007146	1026.	0.0481
138.	0.007148	1028.	0.0451

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
140.	0.00715	1030.	0.0451
142.	0.007152	1032.	0.0451
144.	0.007154	1034.	0.04511
146.	0.007156	1036.	0.04511
148.	0.007158	1038.	0.04511
150.	0.005161	1040.	0.04511
152.	0.007163	1042.	0.04512
154.	0.005165	1044.	0.04512
156.	0.007167	1046.	0.04512
158.	0.007169	1048.	0.04512
160.	0.005171	1050.	0.04512
162.	0.005173	1052.	0.04513
164.	0.007176	1054.	0.04513
166.	0.007178	1056.	0.04813
168.	0.00718	1058.	0.04513
170.	0.007182	1060.	0.04813
172.	0.007184	1062.	0.04814
174.	0.005186	1064.	0.04814
176.	0.007188	1066.	0.04814
178.	0.005191	1068.	0.04814
180.	0.007193	1070.	0.04515
182.	0.007195	1072.	0.04815
184.	0.007197	1074.	0.04815
186.	0.007199	1076.	0.04815
188.	0.007201	1078.	0.04815
190.	0.007203	1080.	0.04816
192.	0.007206	1082.	0.04816
194.	0.007208	1084.	0.04816
196.	0.00721	1086.	0.04816
198.	0.005212	1088.	0.04816
200.	0.005214	1090.	0.04817
202.	0.007216	1092.	0.04817
204.	0.007218	1094.	0.04817
206.	0.00722	1096.	0.04817
208.	0.007223	1098.	0.04818
210.	0.007225	1100.	0.04818
212.	0.007227	1102.	0.04818
214.	0.007229	1104.	0.04818
216.	0.007231	1106.	0.04818
218.	0.007233	1108.	0.04819
220.	0.007235	1110.	0.04819
222.	0.009238	1112.	0.04819
224.	0.00924	1114.	0.04819
226.	0.007242	1116.	0.04819
228.	0.007244	1118.	0.0502
230.	0.009246	1120.	0.0482
232.	0.007248	1122.	0.0502
234.	0.00925	1124.	0.0482
236.	0.009253	1126.	0.04821
238.	0.009255	1128.	0.05021
240.	0.007257	1130.	0.05021
242.	0.009259	1132.	0.05021
244.	0.009261	1134.	0.05021
246.	0.009263	1136.	0.05022
248.	0.009265	1138.	0.05022
250.	0.009268	1140.	0.05022
252.	0.00927	1142.	0.05022
254.	0.009272	1144.	0.05022
256.	0.009274	1146.	0.05023
258.	0.009276	1148.	0.05023
260.	0.009278	1150.	0.05023
262.	0.00928	1152.	0.05023
264.	0.009283	1154.	0.05024
266.	0.009285	1156.	0.05024
268.	0.009287	1158.	0.05024
270.	0.009289	1160.	0.05024

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
272.	0.009291	1162.	0.05224
274.	0.009293	1164.	0.05225
276.	0.009295	1166.	0.05225
278.	0.009298	1168.	0.05025
280.	0.0093	1170.	0.05225
282.	0.009302	1172.	0.05225
284.	0.009304	1174.	0.05226
286.	0.009306	1176.	0.05026
288.	0.009308	1178.	0.05226
290.	0.02131	1180.	0.05226
292.	0.02131	1182.	0.05227
294.	0.02131	1184.	0.05227
296.	0.01932	1186.	0.05227
298.	0.01632	1188.	0.05227
300.	0.01632	1190.	0.05227
302.	0.01632	1192.	0.05228
304.	0.01633	1194.	0.05228
306.	0.01433	1196.	0.05228
308.	0.01633	1198.	0.05228
310.	0.01633	1200.	0.05528
312.	0.01633	1202.	0.05229
314.	0.01634	1204.	0.05229
316.	0.01634	1206.	0.05229
318.	0.01634	1208.	0.05529
320.	0.01634	1210.	0.0553
322.	0.01634	1212.	0.0553
324.	0.01635	1214.	0.0553
326.	0.01635	1216.	0.0553
328.	0.01635	1218.	0.0553
330.	0.01635	1220.	0.05531
332.	0.01636	1222.	0.05531
334.	0.01636	1224.	0.05531
336.	0.01636	1226.	0.05531
338.	0.01636	1228.	0.05531
340.	0.01636	1230.	0.05532
342.	0.01637	1232.	0.05532
344.	0.01637	1234.	0.05532
346.	0.01637	1236.	0.05532
348.	0.01637	1238.	0.05533
350.	0.01637	1240.	0.05233
352.	0.01638	1242.	0.05533
354.	0.01938	1244.	0.05533
356.	0.01638	1246.	0.05533
358.	0.01638	1248.	0.05534
360.	0.01939	1250.	0.05534
362.	0.01639	1252.	0.05534
364.	0.01939	1254.	0.05534
366.	0.01639	1256.	0.05534
368.	0.01639	1258.	0.05535
370.	0.0164	1260.	0.05535
372.	0.0164	1262.	0.05535
374.	0.0164	1264.	0.05535
376.	0.0194	1266.	0.05736
378.	0.0164	1268.	0.05536
380.	0.01941	1270.	0.05736
382.	0.01641	1272.	0.05736
384.	0.01941	1274.	0.05736
386.	0.01941	1276.	0.05737
388.	0.01642	1278.	0.05737
390.	0.01642	1280.	0.05737
392.	0.01642	1282.	0.05737
394.	0.01942	1284.	0.05737
396.	0.01942	1286.	0.05738
398.	0.01943	1288.	0.05738
400.	0.01643	1290.	0.05738
402.	0.01943	1292.	0.05738

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
404.	0.01643	1294.	0.05739
406.	0.01943	1296.	0.05739
408.	0.01644	1298.	0.05739
410.	0.01644	1300.	0.05739
412.	0.01944	1302.	0.05739
414.	0.01644	1304.	0.0574
416.	0.01645	1306.	0.0574
418.	0.01945	1308.	0.0574
420.	0.01645	1310.	0.0594
422.	0.01645	1312.	0.0574
424.	0.01945	1314.	0.05941
426.	0.01946	1316.	0.05941
428.	0.01946	1318.	0.05941
430.	0.01946	1320.	0.05941
432.	0.01946	1322.	0.05942
434.	0.01946	1324.	0.05942
436.	0.01947	1326.	0.04142
438.	0.01947	1328.	0.04142
440.	0.01947	1330.	0.04142
442.	0.01947	1332.	0.04143
444.	0.01948	1334.	0.03843
446.	0.01948	1336.	0.04143
448.	0.01948	1338.	0.04143
450.	0.01948	1340.	0.04143
452.	0.01948	1342.	0.04144
454.	0.01949	1344.	0.04144
456.	0.01949	1346.	0.04144
458.	0.01949	1348.	0.04144
460.	0.01949	1350.	0.04145
462.	0.01949	1352.	0.04145
464.	0.0195	1354.	0.04145
466.	0.0215	1356.	0.04145
468.	0.0215	1358.	0.04145
470.	0.0195	1360.	0.04146
472.	0.02151	1362.	0.04346
474.	0.02151	1364.	0.04146
476.	0.02151	1366.	0.04346
478.	0.02151	1368.	0.04346
480.	0.01951	1370.	0.04347
482.	0.02152	1372.	0.04147
484.	0.01952	1374.	0.04347
486.	0.02152	1376.	0.04147
488.	0.02152	1378.	0.04348
490.	0.02152	1380.	0.04348
492.	0.02153	1382.	0.04348
494.	0.02153	1384.	0.04148
496.	0.02153	1386.	0.04148
498.	0.02153	1388.	0.04349
500.	0.02154	1390.	0.04149
502.	0.02154	1392.	0.04549
504.	0.02154	1394.	0.04349
506.	0.02154	1396.	0.04549
508.	0.02154	1398.	0.0455
510.	0.02155	1400.	0.0435
512.	0.02155	1402.	0.0455
514.	0.02155	1404.	0.0435
516.	0.02355	1406.	0.04351
518.	0.02155	1408.	0.04351
520.	0.02156	1410.	0.04551
522.	0.02156	1412.	0.04351
524.	0.02156	1414.	0.04551
526.	0.02156	1416.	0.04552
528.	0.02157	1418.	0.04552
530.	0.02157	1420.	0.04552
532.	0.02157	1422.	0.04552
534.	0.02157	1424.	0.04552

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
536.	0.02157	1426.	0.04553
538.	0.02158	1428.	0.04553
540.	0.02358	1430.	0.04553
542.	0.02158	1432.	0.04553
544.	0.02158	1434.	0.04553
546.	0.02158	1436.	0.04554
548.	0.02159	1438.	0.04554
550.	0.02159	1440.	0.04854
552.	0.02159	1442.	0.04554
554.	0.02159	1444.	0.04555
556.	0.0216	1446.	0.04855
558.	0.0236	1448.	0.04855
560.	0.0216	1450.	0.04855
562.	0.0216	1452.	0.04855
564.	0.0216	1454.	0.04856
566.	0.02161	1456.	0.04856
568.	0.02161	1458.	0.04856
570.	0.02161	1460.	0.04856
572.	0.02161	1462.	0.04856
574.	0.02161	1464.	0.04857
576.	0.02162	1466.	0.04857
578.	0.02162	1468.	0.04857
580.	0.02162	1470.	0.04857
582.	0.02162	1472.	0.04858
584.	0.02163	1474.	0.04858
586.	0.02163	1476.	0.04858
588.	0.02163	1478.	0.04858
590.	0.02163	1480.	0.05058
592.	0.02163	1482.	0.04859
594.	0.02164	1484.	0.05059
596.	0.02364	1486.	0.04859
598.	0.02364	1488.	0.05059
600.	0.02164	1490.	0.05059
602.	0.02364	1492.	0.0486
604.	0.02165	1494.	0.0486
606.	0.02165	1496.	0.0506
608.	0.02165	1498.	0.0506
610.	0.02365	1500.	0.05061
612.	0.02166	1502.	0.05061
614.	0.02166	1504.	0.05061
616.	0.02366	1506.	0.05061
618.	0.02166	1508.	0.05061
620.	0.02366	1510.	0.05062
622.	0.02167	1512.	0.05262
624.	0.02367	1514.	0.05062
626.	0.02167	1516.	0.05262
628.	0.02167	1518.	0.05062
630.	0.02167	1520.	0.05263
632.	0.02368	1522.	0.05063
634.	0.02368	1524.	0.05063
636.	0.02368	1526.	0.05263
638.	0.02168	1528.	0.05064
640.	0.02369	1530.	0.05064
642.	0.02369	1532.	0.05064
644.	0.02369	1534.	0.05064
646.	0.02369	1536.	0.05264
648.	0.02369	1538.	0.05265
650.	0.0237	1540.	0.05265
652.	0.0237	1542.	0.05265
654.	0.0237	1544.	0.05265
656.	0.0237	1546.	0.05265
658.	0.0237	1548.	0.05266
660.	0.02371	1550.	0.05266
662.	0.03071	1552.	0.05266
664.	0.03071	1554.	0.05266
666.	0.03071	1556.	0.05267

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
668.	0.03071	1558.	0.05267
670.	0.03072	1560.	0.05267
672.	0.03072	1562.	0.05267
674.	0.03072	1564.	0.05267
676.	0.03072	1566.	0.05268
678.	0.03073	1568.	0.05568
680.	0.03073	1570.	0.05268
682.	0.03073	1572.	0.05268
684.	0.03073	1574.	0.05268
686.	0.03073	1576.	0.05269
688.	0.03074	1578.	0.05269
690.	0.03074	1580.	0.05269
692.	0.03074	1582.	0.05269
694.	0.03074	1584.	0.0527
696.	0.03075	1586.	0.0557
698.	0.03375	1588.	0.0557
700.	0.03075	1590.	0.0557
702.	0.03375	1592.	0.0557
704.	0.03375	1594.	0.05571
706.	0.03076	1596.	0.05571
708.	0.03376	1598.	0.05571
710.	0.03076	1600.	0.05571
712.	0.03376	1602.	0.05571
714.	0.03076	1604.	0.05572
716.	0.03377	1606.	0.05572
718.	0.03077	1608.	0.05572
720.	0.03077	1610.	0.05572
722.	0.03377	1612.	0.05573
724.	0.03077	1614.	0.05573
726.	0.03378	1616.	0.05573
728.	0.03378	1618.	0.05573
730.	0.03378	1620.	0.05573
732.	0.03378	1622.	0.05774
734.	0.03379	1624.	0.05574
736.	0.03379	1626.	0.05774
738.	0.03379	1628.	0.05774
740.	0.03379	1630.	0.05774
742.	0.03379	1632.	0.05775
744.	0.0338	1634.	0.05775
746.	0.0338	1636.	0.05775
748.	0.0338	1638.	0.05775
750.	0.0338	1640.	0.05776
752.	0.0338	1642.	0.05776
754.	0.03381	1644.	0.05776
756.	0.03381	1646.	0.05976
758.	0.03381	1648.	0.05776
760.	0.03381	1650.	0.05777
762.	0.03382	1652.	0.05777
764.	0.03582	1654.	0.05777
766.	0.03382	1656.	0.05777
768.	0.03582	1658.	0.05977
770.	0.03582	1716.	0.06184
772.	0.03383	1805.	0.1019
774.	0.03383	1866.	0.102
776.	0.03383	1895.	0.102
778.	0.03383	1925.	0.1021
780.	0.03383	1954.	0.1121
782.	0.03584	1986.	0.1121
784.	0.03384	2014.	0.1122
786.	0.03584	2035.	0.1122
788.	0.03584	2094.	0.1222
790.	0.03585	2136.	0.1223
792.	0.03585	2166.	0.1223
794.	0.03585	2196.	0.1224
796.	0.03585	2226.	0.1224
798.	0.03585	2255.	0.1324

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
800.	0.03586	2345.	0.1325
802.	0.03586	2375.	0.1325
804.	0.03586	2405.	0.1426
806.	0.03586	2431.	0.1426
808.	0.03586	2495.	0.1427
810.	0.03587	2524.	0.1527
812.	0.03587	2591.	0.1528
814.	0.03787	2616.	0.1528
816.	0.03587	2645.	0.1528
818.	0.03588	2677.	0.1529
820.	0.03588	2705.	0.1529
822.	0.03788	2742.	0.1529
824.	0.03588	2767.	0.153
826.	0.03588	2826.	0.153
828.	0.03589	2855.	0.1531
830.	0.03589	2885.	0.1731
832.	0.03589	2915.	0.1731
834.	0.03589	2945.	0.1732
836.	0.03589	2976.	0.1732
838.	0.0359	3004.	0.1832
840.	0.0359	3065.	0.1833
842.	0.0359	3098.	0.1933
844.	0.0359	3126.	0.1933
846.	0.03591	3156.	0.1934
848.	0.03591	3216.	0.2034
850.	0.03591	3258.	0.2035
852.	0.03791	3305.	0.2035
854.	0.03591	3335.	0.2136
856.	0.03592	3365.	0.2136
858.	0.03592	3395.	0.2136
860.	0.03592	3425.	0.2137
862.	0.03592	3453.	0.2137
864.	0.03592	3485.	0.2137
866.	0.03593	3540.	0.2238
868.	0.03593	3575.	0.2238
870.	0.03793	3605.	0.2239
872.	0.03793	3635.	0.2339
874.	0.03794	3665.	0.2339
876.	0.03594	3695.	0.234
878.	0.03794	3724.	0.234
880.	0.03594	3782.	0.234
882.	0.03794	3809.	0.2341
884.	0.03595	3843.	0.2341
886.	0.03795	3872.	0.2441
888.	0.03795	3912.	0.2442
890.	0.03795	3934.	0.2442
892.	0.03595	3968.	0.2542
894.	0.03796	4004.	0.2643
896.	0.03596	4028.	0.2643
898.	0.03796	4059.	0.2643
900.	0.03796	4085.	0.2644
902.	0.03797	4116.	0.2644
904.	0.03797	4146.	0.2744
906.	0.03797	4206.	0.2645
908.	0.03797	4295.	0.2646
910.	0.03797		

SOLUTION

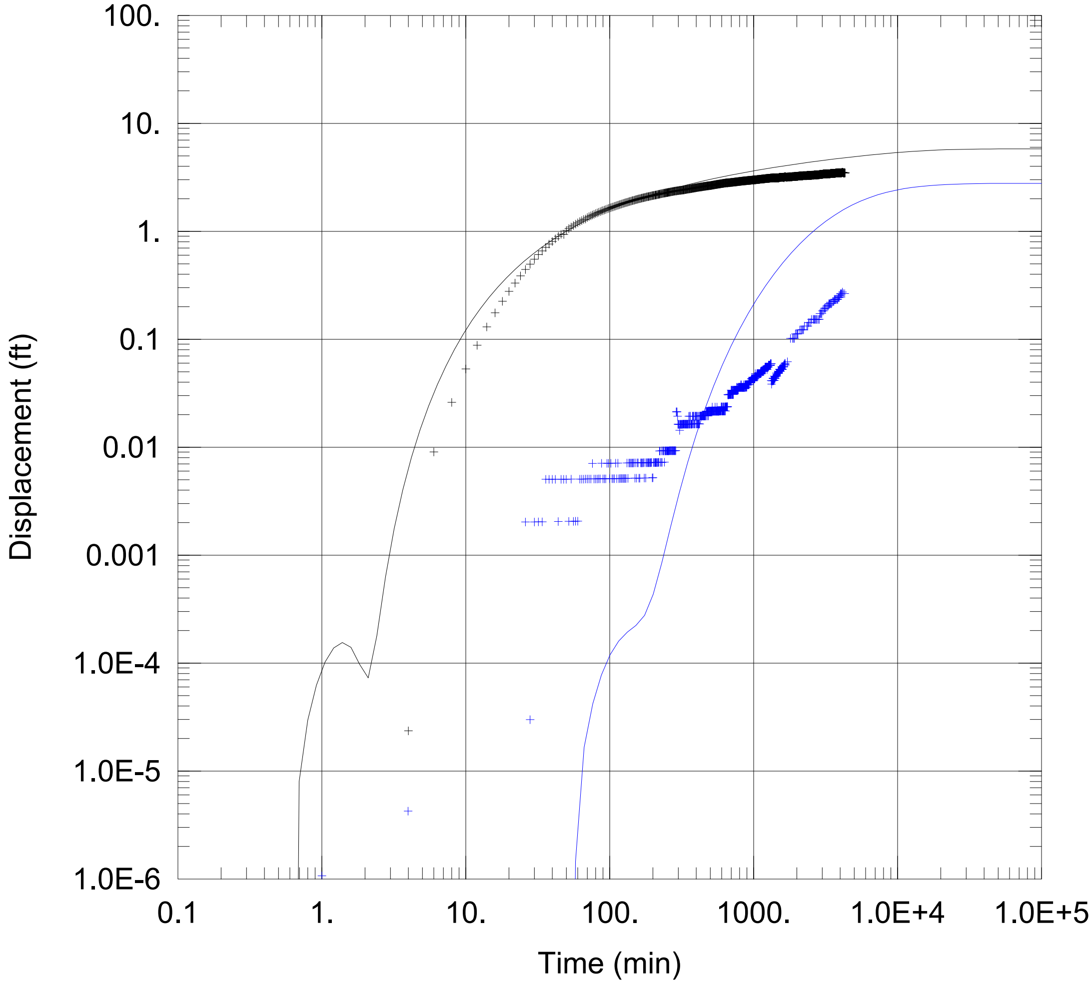
Pumping Test
Aquifer Model: Leaky
Solution Method: Neuman-Witherspoon

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	0.1346	cm^2/sec
S	0.0003917	
1/B	0.002973	ft^{-1}
ß/r	0.001583	ft^{-1}
T2	1.548E+6	cm^2/sec
S2	1.0E-10	

K = T/b = 6.308E-5 cm/sec
Ss = S/b = 5.596E-6 1/ft
K'/b' = 7.68E-8 min^{-1}
K' = 4.877E-7 cm/sec



WELL TEST ANALYSIS

Data Set: C:\...\Pumping Test_2020-07-28_PZ-23D_PZ-23M.aqt
Date: 07/29/20 Time: 10:16:03

PROJECT INFORMATION

Company: Golder Associates, Inc.
Client: Crossroads
Location: ME
Test Well: MW14-03B
Test Date: 7/7/2020

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
MW14-03B	3039420.818	684500.912

Observation Wells

Well Name	X (ft)	Y (ft)
+ PZ-23D	3039399.222	684529.203
+ PZ-23M	3039403.169	684524.464

SOLUTION

Aquifer Model: Leaky
Solution Method: Neuman-Witherspoon

$T = 0.1346\ cm^2/sec$
$1/B = 0.002973\ ft^{-1}$
$T2 = 1.548E+6\ cm^2/sec$
$S = 0.0003917$
$ß/r = 0.001583\ ft^{-1}$
$S2 = 1.0E-10$

Data Set: C:\Users\BCampelia\Desktop\Crossroads Pumping Test Files\2020-07-10 Files\2020-07-26 Updated File
Date: 07/26/20
Time: 10:34:45

PROJECT INFORMATION

Company: Golder Associates, Inc.
Client: Crossroads
Location: ME
Test Date: 7/7/2020
Test Well: MW14-03B

AQUIFER DATA

Saturated Thickness: 70. ft
Anisotropy Ratio (Kz/Kr): 1.
Aquitard Thickness (b'): 12.5 ft
Aquitard Thickness (b"): 12.5 ft

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: MW14-03B

X Location: 3039420.818 ft
Y Location: 684500.912 ft

Casing Radius: 0. ft
Well Radius: 0.1875 ft

Partially Penetrating Well
Depth to Top of Screen: 28. ft
Depth to Bottom of Screen: 51. ft

No. of pumping periods: 1

Pumping Period Data

Time (min)	Rate (gal/min)
0.	1.

OBSERVATION WELL DATA

No. of observation wells: 3

Observation Well No. 1: MW14-03B

X Location: 3039420.818 ft
Y Location: 684500.912 ft

Radial distance from MW14-03B: 0. ft

Partially Penetrating Well
Depth to Top of Screen: 28. ft
Depth to Bottom of Screen: 51. ft

No. of Observations: 2161

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1.	0.	2162.	33.39
2.	3.285	2164.	33.38
4.	11.85	2166.	33.39
6.	15.12	2168.	33.39
8.	17.6	2170.	33.4
10.	19.46	2172.	33.4
12.	20.88	2174.	33.4

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
14.	21.99	2176.	33.39
16.	23.15	2178.	33.4
18.	24.09	2180.	33.4
20.	24.8	2182.	33.4
22.	25.31	2184.	33.41
24.	26.01	2186.	33.4
26.	26.58	2188.	33.41
28.	26.97	2190.	33.41
30.	27.4	2192.	33.4
32.	27.77	2194.	33.41
34.	28.03	2196.	33.4
36.	28.18	2198.	33.4
38.	28.49	2200.	33.4
40.	28.83	2202.	33.4
42.	29.09	2204.	33.41
44.	29.28	2206.	33.41
46.	29.48	2208.	33.41
48.	29.61	2210.	33.4
50.	29.72	2212.	33.41
52.	29.8	2214.	33.4
54.	29.86	2216.	33.4
56.	29.91	2218.	33.4
58.	29.97	2220.	33.4
60.	29.98	2222.	33.4
62.	30.04	2224.	33.4
64.	30.07	2226.	33.4
66.	30.11	2228.	33.4
68.	30.15	2230.	33.39
70.	30.18	2232.	33.4
72.	30.21	2234.	33.39
74.	30.32	2236.	33.38
76.	30.53	2238.	33.39
78.	30.65	2240.	33.39
80.	30.72	2242.	33.4
82.	30.77	2244.	33.4
84.	30.83	2246.	33.41
86.	30.84	2248.	33.4
88.	30.88	2250.	33.41
90.	30.97	2252.	33.39
92.	31.01	2254.	33.39
94.	31.03	2256.	33.4
96.	31.06	2258.	33.38
98.	31.09	2260.	33.39
100.	31.1	2262.	33.4
102.	31.18	2264.	33.39
104.	31.41	2266.	33.4
106.	31.53	2268.	33.4
108.	31.62	2270.	33.4
110.	31.67	2272.	33.41
112.	31.72	2274.	33.41
114.	31.77	2276.	33.39
116.	31.81	2278.	33.26
118.	31.75	2280.	33.21
120.	31.82	2282.	33.17
122.	31.87	2284.	33.18
124.	31.9	2286.	33.18
126.	31.95	2288.	33.17
128.	31.98	2290.	33.16
130.	32.	2292.	33.16
132.	32.03	2294.	33.16
134.	32.04	2296.	33.17
136.	32.01	2298.	33.16
138.	32.07	2300.	33.17
140.	32.1	2302.	33.17
142.	32.13	2304.	33.17
144.	32.18	2306.	33.18

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
146.	32.22	2308.	33.18
148.	32.25	2310.	33.19
150.	32.27	2312.	33.21
152.	32.26	2314.	33.28
154.	32.27	2316.	33.33
156.	32.27	2318.	33.35
158.	32.28	2320.	33.36
160.	32.32	2322.	33.38
162.	32.34	2324.	33.38
164.	32.36	2326.	33.39
166.	32.36	2328.	33.39
168.	32.35	2330.	33.4
170.	32.34	2332.	33.39
172.	32.34	2334.	33.39
174.	32.29	2336.	33.39
176.	32.28	2338.	33.39
178.	32.33	2340.	33.4
180.	32.35	2342.	33.4
182.	32.4	2344.	33.4
184.	32.42	2346.	33.4
186.	32.43	2348.	33.38
188.	32.43	2350.	33.39
190.	32.49	2352.	33.4
192.	32.33	2354.	33.4
194.	32.4	2356.	33.4
196.	32.44	2358.	33.41
198.	32.46	2360.	33.4
200.	32.49	2362.	33.41
202.	32.52	2364.	33.4
204.	32.46	2366.	33.41
206.	32.43	2368.	33.4
208.	32.5	2370.	33.4
210.	32.53	2372.	33.4
212.	32.61	2374.	33.4
214.	32.64	2376.	33.4
216.	32.65	2378.	33.4
218.	32.66	2380.	33.4
220.	32.67	2382.	33.38
222.	32.67	2384.	33.39
224.	32.7	2386.	33.4
226.	32.74	2388.	33.41
228.	32.77	2390.	33.41
230.	32.78	2392.	33.41
232.	32.78	2394.	33.4
234.	32.77	2396.	33.41
236.	32.77	2398.	33.42
238.	32.77	2400.	33.42
240.	32.75	2402.	33.41
242.	32.74	2404.	33.41
244.	32.73	2406.	33.4
246.	32.73	2408.	33.39
248.	32.73	2410.	33.4
250.	32.73	2412.	33.39
252.	32.74	2414.	33.38
254.	32.79	2416.	33.38
256.	32.82	2418.	33.37
258.	32.83	2420.	33.37
260.	32.84	2422.	32.7
262.	32.86	2424.	33.09
264.	32.87	2426.	33.24
266.	32.87	2428.	33.33
268.	32.85	2430.	33.37
270.	32.84	2432.	33.39
272.	32.83	2434.	33.39
274.	32.81	2436.	33.4
276.	32.82	2438.	33.4

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
278.	32.83	2440.	33.4
280.	32.83	2442.	33.4
282.	32.82	2444.	33.41
284.	32.68	2446.	33.41
286.	32.64	2448.	33.41
288.	32.67	2450.	33.41
290.	32.75	2452.	33.41
292.	32.78	2454.	33.41
294.	32.79	2456.	33.41
296.	32.81	2458.	33.41
298.	32.8	2460.	33.41
300.	30.7	2462.	33.39
302.	31.85	2464.	33.4
304.	32.17	2466.	33.41
306.	32.25	2468.	33.41
308.	32.27	2470.	33.41
310.	32.27	2472.	33.41
312.	32.27	2474.	33.4
314.	32.34	2476.	33.4
316.	32.48	2478.	33.41
318.	32.58	2480.	33.4
320.	32.63	2482.	33.41
322.	32.63	2484.	33.41
324.	32.61	2486.	33.4
326.	32.68	2488.	33.41
328.	32.68	2490.	33.41
330.	32.69	2492.	33.41
332.	32.72	2494.	33.41
334.	32.71	2496.	33.41
336.	32.69	2498.	33.41
338.	32.73	2500.	33.41
340.	32.7	2502.	33.4
342.	32.73	2504.	33.41
344.	32.76	2506.	33.41
346.	32.76	2508.	33.41
348.	32.64	2510.	33.4
350.	32.58	2512.	33.41
352.	32.66	2514.	33.41
354.	32.73	2516.	33.41
356.	32.74	2518.	33.41
358.	32.77	2520.	33.4
360.	32.77	2522.	33.4
362.	32.79	2524.	33.41
364.	32.83	2526.	33.41
366.	32.83	2528.	33.42
368.	32.77	2530.	33.42
370.	32.75	2532.	33.41
372.	32.73	2534.	33.42
374.	32.7	2536.	33.42
376.	32.72	2538.	33.42
378.	32.73	2540.	33.42
380.	32.74	2542.	33.42
382.	32.76	2544.	33.41
384.	32.8	2546.	33.42
386.	32.81	2548.	33.42
388.	32.82	2550.	33.42
390.	32.84	2552.	33.42
392.	32.84	2554.	33.43
394.	32.83	2556.	33.43
396.	32.81	2558.	33.43
398.	32.8	2560.	33.43
400.	32.77	2562.	33.43
402.	32.76	2564.	33.43
404.	32.79	2566.	33.43
406.	32.82	2568.	33.43
408.	32.84	2570.	33.43

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
410.	32.89	2572.	33.43
412.	32.91	2574.	33.44
414.	32.91	2576.	33.43
416.	32.91	2578.	33.43
418.	32.91	2580.	33.43
420.	32.89	2582.	33.43
422.	32.86	2584.	33.42
424.	32.86	2586.	33.41
426.	32.85	2588.	33.4
428.	32.83	2590.	33.4
430.	32.82	2592.	33.41
432.	32.82	2594.	33.41
434.	32.81	2596.	33.4
436.	32.82	2598.	33.41
438.	32.82	2600.	33.41
440.	32.8	2602.	33.41
442.	32.81	2604.	33.47
444.	32.8	2606.	33.49
446.	32.81	2608.	33.51
448.	32.81	2610.	33.51
450.	32.81	2612.	33.52
452.	32.8	2614.	33.52
454.	32.8	2616.	33.52
456.	32.8	2618.	33.53
458.	32.79	2620.	33.53
460.	32.79	2622.	33.53
462.	32.78	2624.	33.53
464.	32.77	2626.	33.53
466.	32.77	2628.	33.53
468.	32.77	2630.	33.53
470.	32.77	2632.	33.53
472.	32.78	2634.	33.53
474.	32.77	2636.	33.54
476.	32.77	2638.	33.53
478.	32.72	2640.	33.54
480.	32.7	2642.	33.54
482.	32.7	2644.	33.53
484.	32.69	2646.	33.53
486.	32.69	2648.	33.54
488.	32.68	2650.	33.54
490.	32.69	2652.	33.54
492.	32.68	2654.	33.54
494.	32.68	2656.	33.53
496.	32.68	2658.	33.54
498.	32.73	2660.	33.54
500.	32.82	2662.	33.54
502.	32.84	2664.	33.54
504.	32.91	2666.	33.54
506.	32.93	2668.	33.54
508.	32.98	2670.	33.53
510.	33.02	2672.	33.53
512.	33.04	2674.	33.53
514.	33.06	2676.	33.54
516.	33.07	2678.	33.54
518.	33.08	2680.	33.54
520.	33.08	2682.	33.54
522.	33.09	2684.	33.54
524.	33.09	2686.	33.54
526.	33.09	2688.	33.54
528.	33.09	2690.	33.53
530.	33.1	2692.	33.54
532.	33.09	2694.	33.53
534.	33.1	2696.	33.51
536.	33.1	2698.	33.5
538.	33.1	2700.	33.5
540.	33.09	2702.	33.5

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
542.	33.09	2704.	33.49
544.	33.08	2706.	33.49
546.	33.09	2708.	33.47
548.	33.08	2710.	33.47
550.	33.08	2712.	33.47
552.	33.09	2714.	33.47
554.	33.09	2716.	33.47
556.	33.1	2718.	33.47
558.	33.1	2720.	33.47
560.	33.12	2722.	33.47
562.	33.12	2724.	33.47
564.	33.13	2726.	33.47
566.	33.12	2728.	33.48
568.	33.1	2730.	33.49
570.	33.12	2732.	33.48
572.	33.12	2734.	32.42
574.	33.15	2736.	32.97
576.	33.19	2738.	33.21
578.	33.21	2740.	33.33
580.	33.22	2742.	33.4
582.	33.22	2744.	33.44
584.	33.23	2746.	33.46
586.	33.23	2748.	33.49
588.	33.23	2750.	33.5
590.	33.23	2752.	33.51
592.	33.23	2754.	33.53
594.	33.23	2756.	33.54
596.	33.23	2758.	33.54
598.	33.23	2760.	33.55
600.	33.24	2762.	33.56
602.	33.25	2764.	33.56
604.	33.25	2766.	33.56
606.	33.25	2768.	33.55
608.	33.26	2770.	33.54
610.	33.25	2772.	33.55
612.	33.25	2774.	33.54
614.	33.25	2776.	33.56
616.	33.26	2778.	33.56
618.	33.24	2780.	33.57
620.	33.24	2782.	33.56
622.	33.23	2784.	33.53
624.	33.22	2786.	33.52
626.	33.22	2788.	33.5
628.	33.22	2790.	33.49
630.	33.22	2792.	33.49
632.	33.22	2794.	33.5
634.	33.21	2796.	33.49
636.	33.23	2798.	33.48
638.	33.22	2800.	33.48
640.	33.21	2802.	33.47
642.	33.21	2804.	33.47
644.	33.21	2806.	33.46
646.	33.21	2808.	33.47
648.	33.2	2810.	33.47
650.	33.2	2812.	33.46
652.	33.2	2814.	33.46
654.	31.68	2816.	33.44
656.	32.43	2818.	33.45
658.	32.73	2820.	33.44
660.	32.88	2822.	33.45
662.	32.94	2824.	33.46
664.	32.98	2826.	33.46
666.	33.	2828.	33.46
668.	33.02	2830.	33.47
670.	33.04	2832.	33.46
672.	33.04	2834.	33.46

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
674.	33.04	2836.	33.47
676.	33.04	2838.	33.45
678.	33.03	2840.	33.45
680.	33.03	2842.	33.45
682.	33.03	2844.	33.44
684.	33.03	2846.	33.45
686.	33.02	2848.	33.46
688.	33.02	2850.	33.46
690.	33.03	2852.	33.47
692.	33.05	2854.	33.47
694.	33.06	2856.	33.47
696.	33.06	2858.	33.45
698.	33.07	2860.	33.46
700.	33.06	2862.	33.47
702.	33.07	2864.	33.47
704.	33.06	2866.	33.47
706.	33.07	2868.	33.47
708.	33.07	2870.	33.45
710.	33.07	2872.	33.45
712.	33.06	2874.	33.46
714.	33.05	2876.	33.47
716.	33.05	2878.	33.49
718.	33.05	2880.	33.5
720.	33.04	2882.	33.51
722.	33.05	2884.	33.52
724.	33.04	2886.	33.52
726.	33.05	2888.	33.52
728.	33.04	2890.	33.5
730.	33.05	2892.	33.5
732.	33.04	2894.	33.51
734.	33.04	2896.	33.5
736.	33.05	2898.	33.49
738.	33.04	2900.	33.47
740.	33.05	2902.	33.46
742.	33.05	2904.	33.46
744.	33.05	2906.	33.44
746.	33.05	2908.	33.45
748.	33.06	2910.	33.44
750.	33.06	2912.	33.44
752.	33.06	2914.	33.44
754.	33.06	2916.	33.44
756.	33.08	2918.	33.44
758.	33.09	2920.	33.43
760.	33.1	2922.	33.44
762.	33.1	2924.	33.42
764.	33.11	2926.	33.43
766.	33.11	2928.	33.42
768.	33.11	2930.	33.43
770.	33.12	2932.	33.42
772.	33.11	2934.	33.42
774.	33.11	2936.	33.42
776.	33.11	2938.	33.43
778.	33.12	2940.	33.43
780.	33.14	2942.	33.43
782.	33.14	2944.	33.42
784.	33.14	2946.	33.41
786.	33.14	2948.	33.42
788.	33.15	2950.	33.42
790.	33.15	2952.	33.43
792.	33.14	2954.	33.32
794.	33.15	2956.	33.27
796.	33.15	2958.	33.21
798.	33.15	2960.	33.39
800.	33.16	2962.	33.55
802.	33.16	2964.	33.64
804.	33.17	2966.	33.71

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
806.	33.16	2968.	33.75
808.	33.16	2970.	33.81
810.	33.17	2972.	33.91
812.	33.17	2974.	33.96
814.	33.17	2976.	34.01
816.	33.17	2978.	34.03
818.	33.17	2980.	34.03
820.	33.17	2982.	34.04
822.	33.17	2984.	34.05
824.	33.17	2986.	34.06
826.	33.17	2988.	34.08
828.	33.17	2990.	34.08
830.	33.17	2992.	34.08
832.	33.16	2994.	34.09
834.	33.17	2996.	34.07
836.	33.17	2998.	34.07
838.	33.17	3000.	34.07
840.	33.17	3002.	34.02
842.	33.17	3004.	33.95
844.	33.17	3006.	33.91
846.	33.16	3008.	33.89
848.	33.15	3010.	33.89
850.	33.15	3012.	33.9
852.	33.15	3014.	33.9
854.	33.16	3016.	33.91
856.	33.16	3018.	33.89
858.	33.16	3020.	33.9
860.	33.16	3022.	33.89
862.	33.15	3024.	33.9
864.	33.15	3026.	33.89
866.	33.16	3028.	33.89
868.	33.16	3030.	33.9
870.	33.15	3032.	33.89
872.	33.15	3034.	33.89
874.	33.16	3036.	33.91
876.	33.16	3038.	33.9
878.	33.16	3040.	33.89
880.	33.16	3042.	33.9
882.	33.16	3044.	33.89
884.	33.16	3046.	33.89
886.	33.16	3048.	33.88
888.	33.16	3050.	33.89
890.	33.17	3052.	33.9
892.	33.17	3054.	33.89
894.	33.17	3056.	33.89
896.	33.17	3058.	33.89
898.	33.17	3060.	33.89
900.	33.17	3062.	33.88
902.	33.17	3064.	33.89
904.	33.17	3066.	33.89
906.	33.18	3068.	33.9
908.	33.16	3070.	33.89
910.	33.17	3072.	33.9
912.	33.18	3074.	33.9
914.	33.18	3076.	33.9
916.	33.19	3078.	33.9
918.	33.19	3080.	33.9
920.	33.19	3082.	33.9
922.	33.19	3084.	33.9
924.	33.19	3086.	33.9
926.	33.19	3088.	33.92
928.	33.18	3090.	33.91
930.	33.19	3092.	33.45
932.	33.19	3094.	33.68
934.	33.2	3096.	33.78
936.	33.19	3098.	33.89

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
938.	33.19	3100.	33.94
940.	33.2	3102.	33.97
942.	33.19	3104.	33.97
944.	33.2	3106.	33.98
946.	33.2	3108.	33.98
948.	33.19	3110.	33.97
950.	33.19	3112.	33.98
952.	33.2	3114.	33.98
954.	33.2	3116.	33.98
956.	33.19	3118.	33.99
958.	33.19	3120.	33.98
960.	33.2	3122.	34.
962.	33.2	3124.	34.
964.	33.2	3126.	34.
966.	33.2	3128.	33.99
968.	33.2	3130.	33.99
970.	33.21	3132.	33.99
972.	33.2	3134.	34.
974.	33.21	3136.	34.01
976.	33.21	3138.	34.
978.	33.21	3140.	34.
980.	33.21	3142.	34.
982.	33.22	3144.	34.
984.	33.21	3146.	34.
986.	33.21	3148.	34.
988.	33.21	3150.	34.
990.	33.21	3152.	34.
992.	33.2	3154.	34.
994.	33.21	3156.	34.
996.	33.21	3158.	34.01
998.	33.21	3160.	34.
1000.	33.21	3162.	34.
1002.	33.21	3164.	34.01
1004.	33.21	3166.	34.
1006.	33.21	3168.	34.
1008.	33.22	3170.	34.01
1010.	33.22	3172.	33.99
1012.	33.22	3174.	33.99
1014.	33.21	3176.	34.
1016.	32.54	3178.	34.
1018.	32.9	3180.	34.
1020.	33.05	3182.	34.01
1022.	33.12	3184.	34.01
1024.	33.17	3186.	34.01
1026.	33.2	3188.	34.01
1028.	33.22	3190.	34.01
1030.	33.24	3192.	34.01
1032.	33.25	3194.	34.01
1034.	33.26	3196.	34.02
1036.	33.26	3198.	34.01
1038.	33.26	3200.	34.
1040.	33.26	3202.	34.
1042.	33.26	3204.	34.
1044.	33.26	3206.	34.
1046.	33.26	3208.	34.
1048.	33.26	3210.	34.
1050.	33.27	3212.	34.
1052.	33.26	3214.	34.01
1054.	33.27	3216.	34.05
1056.	33.26	3218.	34.06
1058.	33.26	3220.	34.07
1060.	33.26	3222.	34.07
1062.	33.26	3224.	34.08
1064.	33.26	3226.	34.08
1066.	33.26	3228.	34.07
1068.	33.26	3230.	34.08

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1070.	33.25	3232.	34.09
1072.	33.25	3234.	34.09
1074.	33.24	3236.	34.05
1076.	33.23	3238.	34.04
1078.	33.23	3240.	34.02
1080.	33.23	3242.	34.01
1082.	33.26	3244.	34.
1084.	33.26	3246.	34.01
1086.	33.28	3248.	34.
1088.	33.29	3250.	34.
1090.	33.29	3252.	34.
1092.	33.29	3254.	33.99
1094.	33.29	3256.	33.99
1096.	33.29	3258.	33.98
1098.	33.29	3260.	33.98
1100.	33.28	3262.	33.99
1102.	33.29	3264.	33.99
1104.	33.29	3266.	33.99
1106.	33.28	3268.	34.
1108.	33.28	3270.	34.01
1110.	33.27	3272.	34.01
1112.	33.26	3274.	34.01
1114.	33.26	3276.	34.01
1116.	33.27	3278.	34.01
1118.	33.27	3280.	34.
1120.	33.26	3282.	34.
1122.	33.27	3284.	34.
1124.	33.28	3286.	33.99
1126.	33.28	3288.	33.97
1128.	33.28	3290.	33.97
1130.	33.28	3292.	33.97
1132.	33.29	3294.	33.96
1134.	33.29	3296.	33.96
1136.	33.29	3298.	33.96
1138.	33.29	3300.	33.97
1140.	33.29	3302.	33.97
1142.	33.28	3304.	33.97
1144.	33.29	3306.	33.97
1146.	33.29	3308.	33.95
1148.	33.28	3310.	33.95
1150.	33.27	3312.	33.95
1152.	33.28	3314.	33.81
1154.	33.29	3316.	33.76
1156.	33.28	3318.	33.73
1158.	33.28	3320.	33.72
1160.	33.29	3322.	33.71
1162.	33.29	3324.	33.7
1164.	33.28	3326.	33.69
1166.	33.29	3328.	33.7
1168.	33.29	3330.	33.7
1170.	33.29	3332.	33.7
1172.	33.3	3334.	33.7
1174.	33.3	3336.	33.7
1176.	33.29	3338.	33.7
1178.	33.29	3340.	33.7
1180.	33.28	3342.	33.7
1182.	33.28	3344.	33.71
1184.	33.29	3346.	33.74
1186.	33.29	3348.	33.83
1188.	33.29	3350.	33.88
1190.	33.28	3352.	33.9
1192.	33.28	3354.	33.91
1194.	33.29	3356.	33.92
1196.	33.29	3358.	33.93
1198.	33.29	3360.	33.93
1200.	33.31	3362.	33.94

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1202.	33.33	3364.	33.93
1204.	33.34	3366.	33.93
1206.	33.35	3368.	33.95
1208.	33.34	3370.	33.95
1210.	33.33	3372.	33.95
1212.	33.33	3374.	33.95
1214.	33.32	3376.	33.94
1216.	33.32	3378.	33.95
1218.	33.32	3380.	33.94
1220.	33.32	3382.	33.95
1222.	33.31	3384.	33.95
1224.	33.3	3386.	33.95
1226.	33.29	3388.	33.96
1228.	33.28	3390.	33.95
1230.	33.29	3392.	33.95
1232.	33.29	3394.	33.96
1234.	33.31	3396.	33.96
1236.	33.31	3398.	33.96
1238.	33.31	3400.	33.96
1240.	33.31	3402.	33.95
1242.	33.32	3404.	33.96
1244.	33.31	3406.	33.95
1246.	33.32	3408.	33.95
1248.	33.31	3410.	33.95
1250.	33.31	3412.	33.93
1252.	33.32	3414.	33.92
1254.	33.32	3416.	33.92
1256.	33.33	3418.	33.94
1258.	33.33	3420.	33.92
1260.	33.33	3422.	33.92
1262.	33.34	3424.	33.93
1264.	33.34	3426.	33.95
1266.	33.35	3428.	33.97
1268.	33.34	3430.	33.99
1270.	33.33	3432.	33.99
1272.	33.33	3434.	34.01
1274.	33.32	3436.	34.01
1276.	33.33	3438.	34.01
1278.	33.33	3440.	34.01
1280.	33.36	3442.	34.
1282.	33.39	3444.	34.
1284.	33.39	3446.	34.
1286.	33.4	3448.	34.
1288.	33.4	3450.	33.34
1290.	33.38	3452.	33.64
1292.	33.41	3454.	33.78
1294.	33.4	3456.	33.84
1296.	33.39	3458.	33.9
1298.	33.38	3460.	33.93
1300.	33.37	3462.	33.93
1302.	33.36	3464.	33.95
1304.	33.37	3466.	33.94
1306.	33.4	3468.	33.94
1308.	33.4	3470.	33.96
1310.	33.4	3472.	33.95
1312.	33.39	3474.	33.95
1314.	33.4	3476.	33.95
1316.	33.39	3478.	33.95
1318.	33.38	3480.	33.96
1320.	33.38	3482.	33.96
1322.	33.37	3484.	33.96
1324.	33.39	3486.	33.97
1326.	33.38	3488.	33.96
1328.	33.38	3490.	33.97
1330.	33.37	3492.	33.96
1332.	33.36	3494.	33.96

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1334.	33.21	3496.	33.97
1336.	33.16	3498.	33.96
1338.	33.12	3500.	33.95
1340.	33.11	3502.	33.95
1342.	33.1	3504.	33.96
1344.	33.11	3506.	33.95
1346.	33.15	3508.	33.95
1348.	33.23	3510.	33.95
1350.	33.28	3512.	33.95
1352.	33.32	3514.	33.94
1354.	33.33	3516.	33.95
1356.	33.34	3518.	33.95
1358.	33.34	3520.	33.95
1360.	33.34	3522.	33.94
1362.	33.34	3524.	33.95
1364.	33.35	3526.	33.95
1366.	33.36	3528.	33.96
1368.	33.37	3530.	33.96
1370.	33.37	3532.	33.98
1372.	33.36	3534.	33.98
1374.	33.36	3536.	33.98
1376.	33.35	3538.	34.
1378.	33.36	3540.	33.98
1380.	31.92	3542.	33.97
1382.	32.34	3544.	33.97
1384.	32.58	3546.	33.97
1386.	32.68	3548.	33.97
1388.	32.74	3550.	33.96
1390.	32.77	3552.	33.96
1392.	32.79	3554.	33.96
1394.	32.8	3556.	33.96
1396.	32.81	3558.	33.98
1398.	32.82	3560.	33.97
1400.	32.81	3562.	33.97
1402.	32.81	3564.	33.95
1404.	32.81	3566.	33.96
1406.	32.82	3568.	33.95
1408.	32.82	3570.	33.94
1410.	32.83	3572.	33.94
1412.	32.79	3574.	33.93
1414.	32.76	3576.	33.94
1416.	32.76	3578.	33.95
1418.	32.74	3580.	33.95
1420.	32.74	3582.	33.95
1422.	32.74	3584.	33.95
1424.	32.73	3586.	33.95
1426.	32.73	3588.	33.95
1428.	32.74	3590.	33.94
1430.	32.75	3592.	33.93
1432.	32.75	3594.	33.93
1434.	32.76	3596.	33.94
1436.	32.76	3598.	33.93
1438.	32.76	3600.	33.94
1440.	32.77	3602.	33.94
1442.	32.76	3604.	33.95
1444.	32.77	3606.	33.95
1446.	32.77	3608.	33.96
1448.	32.77	3610.	33.97
1450.	32.76	3612.	33.97
1452.	32.77	3614.	33.98
1454.	32.78	3616.	34.01
1456.	32.78	3618.	34.
1458.	32.78	3620.	34.
1460.	32.79	3622.	33.99
1462.	32.78	3624.	33.98
1464.	32.78	3626.	33.98

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1466.	32.77	3628.	33.98
1468.	32.76	3630.	33.98
1470.	32.75	3632.	33.97
1472.	32.75	3634.	33.98
1474.	32.74	3636.	33.99
1476.	32.74	3638.	34.01
1478.	32.74	3640.	34.01
1480.	32.73	3642.	34.
1482.	32.73	3644.	34.
1484.	32.74	3646.	34.
1486.	32.73	3648.	34.01
1488.	32.71	3650.	34.01
1490.	32.73	3652.	34.
1492.	32.74	3654.	33.99
1494.	32.76	3656.	33.98
1496.	32.76	3658.	33.98
1498.	32.76	3660.	33.99
1500.	32.76	3662.	33.96
1502.	32.77	3664.	33.87
1504.	32.77	3666.	33.8
1506.	32.77	3668.	33.77
1508.	32.77	3670.	33.75
1510.	32.77	3672.	33.73
1512.	32.78	3674.	33.73
1514.	32.79	3676.	33.77
1516.	32.78	3678.	33.83
1518.	32.78	3680.	33.88
1520.	32.79	3682.	33.91
1522.	32.78	3684.	33.92
1524.	32.79	3686.	33.95
1526.	32.79	3688.	33.98
1528.	32.79	3690.	33.98
1530.	32.79	3692.	33.97
1532.	32.79	3694.	33.97
1534.	32.79	3696.	33.97
1536.	32.79	3698.	33.96
1538.	32.79	3700.	33.96
1540.	32.79	3702.	33.98
1542.	32.79	3704.	34.
1544.	32.77	3706.	34.01
1546.	32.77	3708.	34.02
1548.	32.75	3710.	34.02
1550.	32.75	3712.	34.02
1552.	32.74	3714.	34.
1554.	32.74	3716.	33.98
1556.	32.73	3718.	33.99
1558.	32.72	3720.	33.97
1560.	32.72	3722.	33.97
1562.	32.71	3724.	33.98
1564.	32.71	3726.	33.95
1566.	32.7	3728.	33.95
1568.	32.71	3730.	33.96
1570.	32.7	3732.	33.97
1572.	32.7	3734.	33.97
1574.	32.7	3736.	33.95
1576.	32.7	3738.	33.98
1578.	32.69	3740.	34.
1580.	32.91	3742.	33.99
1582.	33.06	3744.	33.97
1584.	33.13	3746.	33.98
1586.	33.17	3748.	33.97
1588.	33.21	3750.	33.95
1590.	33.24	3752.	33.96
1592.	33.25	3754.	33.97
1594.	33.25	3756.	33.96
1596.	33.26	3758.	33.95

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1598.	33.26	3760.	33.95
1600.	33.27	3762.	33.94
1602.	33.28	3764.	33.94
1604.	33.29	3766.	33.95
1606.	33.29	3768.	33.95
1608.	33.3	3770.	33.95
1610.	33.29	3772.	33.98
1612.	33.31	3774.	33.98
1614.	33.31	3776.	33.98
1616.	33.32	3778.	33.98
1618.	33.32	3780.	33.99
1620.	33.32	3782.	33.98
1622.	33.33	3784.	33.95
1624.	33.33	3786.	33.95
1626.	33.33	3788.	33.96
1628.	33.32	3790.	33.96
1630.	33.33	3792.	33.97
1632.	33.32	3794.	33.98
1634.	33.31	3796.	34.01
1636.	33.29	3798.	34.
1638.	33.29	3800.	34.
1640.	33.29	3802.	33.99
1642.	33.28	3804.	34.01
1644.	33.28	3806.	33.44
1646.	33.29	3808.	33.76
1648.	33.29	3810.	33.9
1650.	33.29	3812.	33.95
1652.	33.28	3814.	33.99
1654.	33.29	3816.	34.02
1656.	33.29	3818.	34.03
1658.	33.29	3820.	34.05
1660.	33.28	3822.	34.05
1662.	33.28	3824.	34.05
1664.	33.29	3826.	34.06
1666.	33.28	3828.	34.07
1668.	33.29	3830.	34.07
1670.	33.28	3832.	34.06
1672.	33.28	3834.	34.06
1674.	33.27	3836.	34.05
1676.	33.27	3838.	34.06
1678.	33.26	3840.	34.07
1680.	33.27	3842.	34.06
1682.	33.27	3844.	34.05
1684.	33.28	3846.	34.04
1686.	33.28	3848.	34.04
1688.	33.27	3850.	34.03
1690.	33.27	3852.	34.03
1692.	33.27	3854.	34.03
1694.	33.28	3856.	34.03
1696.	33.28	3858.	34.04
1698.	33.28	3860.	34.04
1700.	33.27	3862.	34.05
1702.	33.27	3864.	34.03
1704.	33.26	3866.	34.05
1706.	33.26	3868.	34.06
1708.	33.26	3870.	34.06
1710.	33.26	3872.	34.07
1712.	33.27	3874.	34.05
1714.	33.3	3876.	34.07
1716.	33.32	3878.	34.07
1718.	32.42	3880.	34.05
1720.	32.67	3882.	34.05
1722.	33.	3884.	34.06
1724.	33.17	3886.	34.05
1726.	33.26	3888.	34.04
1728.	33.31	3890.	34.04

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1730.	33.34	3892.	34.04
1732.	33.36	3894.	34.03
1734.	33.34	3896.	34.04
1736.	33.3	3898.	34.04
1738.	33.27	3900.	34.04
1740.	33.31	3902.	34.06
1742.	33.34	3904.	34.07
1744.	33.36	3906.	34.07
1746.	33.37	3908.	34.05
1748.	33.38	3910.	34.04
1750.	33.39	3912.	34.04
1752.	33.39	3914.	34.04
1754.	33.4	3916.	34.04
1756.	33.41	3918.	34.05
1758.	33.41	3920.	34.05
1760.	33.41	3922.	34.04
1762.	33.41	3924.	34.03
1764.	33.42	3926.	34.03
1766.	33.41	3928.	34.04
1768.	33.41	3930.	34.05
1770.	33.41	3932.	34.06
1772.	33.41	3934.	34.06
1774.	33.42	3936.	34.07
1776.	33.41	3938.	34.06
1778.	33.42	3940.	34.06
1780.	33.41	3942.	34.04
1782.	33.42	3944.	34.06
1784.	33.42	3946.	34.07
1786.	33.42	3948.	34.07
1788.	33.41	3950.	34.07
1790.	33.4	3952.	34.05
1792.	33.38	3954.	34.04
1794.	33.39	3956.	34.04
1796.	33.38	3958.	34.03
1798.	33.38	3960.	34.02
1800.	33.38	3962.	34.03
1802.	33.38	3964.	34.02
1804.	33.37	3966.	34.01
1806.	33.37	3968.	34.
1808.	33.37	3970.	34.
1810.	33.37	3972.	33.99
1812.	33.37	3974.	34.01
1814.	33.37	3976.	34.03
1816.	33.37	3978.	34.04
1818.	33.38	3980.	34.04
1820.	33.38	3982.	34.04
1822.	33.37	3984.	34.04
1824.	33.37	3986.	34.03
1826.	33.38	3988.	34.02
1828.	33.37	3990.	34.02
1830.	33.38	3992.	34.02
1832.	33.38	3994.	34.02
1834.	33.38	3996.	34.01
1836.	33.38	3998.	34.04
1838.	33.37	4000.	34.04
1840.	33.35	4002.	34.04
1842.	33.37	4004.	34.02
1844.	33.35	4006.	34.03
1846.	33.35	4008.	34.03
1848.	33.36	4010.	34.04
1850.	33.36	4012.	34.04
1852.	33.35	4014.	34.05
1854.	33.35	4016.	34.04
1856.	33.35	4018.	34.03
1858.	33.35	4020.	34.01
1860.	33.35	4022.	34.02

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1862.	33.33	4024.	34.03
1864.	33.34	4026.	34.02
1866.	33.33	4028.	34.01
1868.	33.33	4030.	34.
1870.	33.33	4032.	34.
1872.	33.33	4034.	34.
1874.	33.35	4036.	34.01
1876.	33.34	4038.	34.01
1878.	33.34	4040.	34.
1880.	33.34	4042.	33.99
1882.	33.34	4044.	33.99
1884.	33.34	4046.	33.99
1886.	33.34	4048.	34.01
1888.	33.34	4050.	34.02
1890.	33.34	4052.	34.06
1892.	33.34	4054.	34.09
1894.	33.34	4056.	34.08
1896.	33.32	4058.	34.09
1898.	33.3	4060.	34.11
1900.	33.33	4062.	34.12
1902.	33.34	4064.	34.11
1904.	33.36	4066.	34.11
1906.	33.35	4068.	34.11
1908.	33.36	4070.	34.1
1910.	33.37	4072.	34.09
1912.	33.37	4074.	34.08
1914.	33.36	4076.	34.1
1916.	33.38	4078.	34.11
1918.	33.38	4080.	34.12
1920.	33.37	4082.	34.12
1922.	33.38	4084.	34.11
1924.	33.37	4086.	34.13
1926.	33.38	4088.	34.12
1928.	33.37	4090.	34.12
1930.	33.36	4092.	34.1
1932.	33.37	4094.	34.09
1934.	33.37	4096.	34.07
1936.	33.35	4098.	34.07
1938.	33.36	4100.	34.1
1940.	33.38	4102.	34.11
1942.	33.38	4104.	34.12
1944.	33.35	4106.	34.13
1946.	33.37	4108.	34.12
1948.	33.36	4110.	34.11
1950.	33.37	4112.	34.07
1952.	33.36	4114.	34.05
1954.	33.38	4116.	34.04
1956.	33.37	4118.	34.03
1958.	33.37	4120.	34.
1960.	33.36	4122.	34.
1962.	33.35	4124.	33.95
1964.	33.35	4126.	33.89
1966.	33.34	4128.	33.86
1968.	33.35	4130.	33.83
1970.	33.35	4132.	33.81
1972.	33.35	4134.	33.82
1974.	33.34	4136.	33.8
1976.	33.33	4138.	33.8
1978.	33.34	4140.	33.83
1980.	33.35	4142.	33.85
1982.	33.35	4144.	33.95
1984.	33.36	4146.	34.01
1986.	33.37	4148.	34.05
1988.	33.37	4150.	34.1
1990.	33.37	4152.	34.09
1992.	33.37	4154.	34.09

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1994.	33.37	4156.	34.11
1996.	33.39	4158.	34.14
1998.	33.38	4160.	34.14
2000.	33.39	4162.	34.14
2002.	33.39	4164.	34.12
2004.	33.38	4166.	34.15
2006.	33.38	4168.	34.16
2008.	33.39	4170.	34.15
2010.	32.74	4172.	34.12
2012.	33.11	4174.	34.15
2014.	33.26	4176.	33.16
2016.	33.33	4178.	33.43
2018.	33.35	4180.	33.52
2020.	33.38	4182.	33.54
2022.	33.39	4184.	33.57
2024.	33.41	4186.	33.57
2026.	33.42	4188.	33.57
2028.	33.42	4190.	33.56
2030.	33.42	4192.	33.56
2032.	33.42	4194.	33.56
2034.	33.43	4196.	33.54
2036.	33.42	4198.	33.53
2038.	33.42	4200.	33.53
2040.	33.42	4202.	33.52
2042.	33.43	4204.	33.52
2044.	33.43	4206.	33.51
2046.	33.42	4208.	33.5
2048.	33.42	4210.	33.49
2050.	33.43	4212.	33.49
2052.	33.42	4214.	33.48
2054.	33.43	4216.	33.49
2056.	33.43	4218.	33.49
2058.	33.42	4220.	33.5
2060.	33.43	4222.	33.48
2062.	33.43	4224.	33.48
2064.	33.44	4226.	33.48
2066.	33.43	4228.	33.47
2068.	33.44	4230.	33.47
2070.	33.44	4232.	33.48
2072.	33.44	4234.	33.47
2074.	33.44	4236.	33.47
2076.	33.45	4238.	33.47
2078.	33.45	4240.	33.47
2080.	33.45	4242.	33.47
2082.	33.44	4244.	33.46
2084.	33.44	4246.	33.47
2086.	33.46	4248.	33.47
2088.	33.47	4250.	33.47
2090.	33.47	4252.	33.47
2092.	33.49	4254.	33.47
2094.	33.49	4256.	33.46
2096.	33.49	4258.	33.46
2098.	33.49	4260.	33.46
2100.	33.48	4262.	33.46
2102.	33.48	4264.	33.46
2104.	33.48	4266.	33.45
2106.	33.48	4268.	33.46
2108.	33.47	4270.	33.46
2110.	33.46	4272.	33.46
2112.	33.46	4274.	33.45
2114.	33.46	4276.	33.46
2116.	33.46	4278.	33.46
2118.	33.46	4280.	33.46
2120.	33.45	4282.	33.46
2122.	33.46	4284.	33.46
2124.	33.46	4286.	33.46

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
2126.	33.47	4288.	33.46
2128.	33.45	4290.	33.47
2130.	33.46	4292.	33.46
2132.	33.45	4294.	33.46
2134.	33.45	4296.	33.46
2136.	33.43	4298.	33.45
2138.	33.44	4300.	33.45
2140.	33.4	4302.	33.44
2142.	33.4	4304.	33.44
2144.	33.39	4306.	33.46
2146.	33.39	4308.	33.47
2148.	33.39	4310.	33.48
2150.	33.39	4312.	33.48
2152.	33.39	4314.	33.49
2154.	33.39	4316.	33.49
2156.	33.4	4318.	33.48
2158.	33.39	4320.	33.31
2160.	33.39		

Observation Well No. 2: MW14-04M

X Location: 3038829.98 ft
Y Location: 684718.75 ft

Radial distance from MW14-03B: 629.7165525 ft

Partially Penetrating Well in Aquitard
Depth to Top of Screen: 5. ft
Depth to Bottom of Screen: 17.5 ft

No. of Observations: 712

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
5.	-0.002297	2045.	0.03362
10.	0.002297	2050.	0.04084
15.	-0.00689	2055.	0.0369
20.	0.004265	2060.	0.0369
25.	0.003609	2065.	0.04281
30.	-0.005906	2070.	0.04051
35.	0.0003281	2075.	0.03592
40.	0.0003281	2080.	0.04051
45.	0.003937	2085.	0.04281
50.	0.0006562	2090.	0.03657
55.	-0.005906	2095.	0.04215
60.	0.001969	2100.	0.03854
65.	-0.0003281	2105.	0.03822
70.	0.007546	2110.	0.04084
75.	-0.004265	2115.	0.04018
80.	0.0128	2120.	0.03657
85.	0.001969	2125.	0.04018
90.	0.01312	2130.	0.03362
95.	0.002953	2135.	0.04215
100.	0.007874	2140.	0.03887
105.	0.01673	2145.	0.03395
110.	0.01804	2150.	0.03789
115.	0.007874	2155.	0.04051
120.	0.003609	2160.	0.03559
125.	0.00853	2165.	0.03986
130.	0.01345	2170.	0.04379
135.	0.01312	2175.	0.04084
140.	0.01608	2180.	0.03559
145.	0.01575	2185.	0.03854
150.	0.007546	2190.	0.03657
155.	0.0006562	2195.	0.03329
160.	0.01083	2200.	0.03559

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
165.	0.01115	2205.	0.03625
170.	0.00853	2210.	0.04084
175.	0.01247	2215.	0.0392
180.	0.001312	2220.	0.04445
185.	0.01017	2225.	0.04642
190.	0.01345	2230.	0.03986
195.	0.0128	2235.	0.03986
200.	0.02001	2240.	0.03723
205.	0.01411	2245.	0.0392
210.	0.01214	2250.	0.0392
215.	0.02395	2255.	0.03559
220.	0.01575	2260.	0.0369
225.	0.01083	2265.	0.04051
230.	0.01542	2270.	0.04412
235.	0.01476	2275.	0.03115
240.	0.02034	2280.	0.03411
245.	0.02559	2285.	0.03083
250.	0.02264	2290.	0.03181
255.	0.01804	2295.	0.02787
260.	0.02559	2300.	0.03083
265.	0.03412	2305.	0.03542
270.	0.02493	2310.	0.03542
275.	0.04265	2315.	0.04067
280.	0.004593	2320.	0.03903
285.	0.02756	2325.	0.03345
290.	0.03904	2330.	0.03247
295.	0.0351	2335.	0.03476
300.	0.03675	2340.	0.03542
305.	0.02887	2345.	0.03214
310.	0.03609	2350.	0.04034
315.	0.03839	2355.	0.03509
320.	0.0315	2360.	0.04428
325.	0.03576	2365.	0.03214
330.	0.04101	2370.	0.02623
335.	0.03871	2375.	0.02591
340.	0.04167	2380.	0.02459
345.	0.05741	2385.	0.0387
350.	0.04692	2390.	0.03214
355.	0.04528	2395.	0.03312
360.	0.05413	2400.	0.03411
365.	0.04856	2405.	0.03903
370.	0.05151	2410.	0.03673
375.	0.04856	2415.	0.03411
380.	0.04495	2420.	0.03312
385.	0.05545	2425.	0.03411
390.	0.04856	2430.	0.03214
395.	0.05512	2435.	0.02558
400.	0.04757	2440.	0.03378
405.	0.04888	2445.	0.03247
410.	0.05282	2450.	0.03378
415.	0.04659	2455.	0.03083
420.	0.04757	2460.	0.02951
425.	0.05315	2465.	0.03148
430.	0.05282	2470.	0.02656
435.	0.05052	2475.	0.02951
440.	0.05381	2480.	0.02591
445.	0.05479	2485.	0.02787
450.	0.04921	2490.	0.03411
455.	0.05446	2495.	0.03115
460.	0.05348	2500.	0.03411
465.	0.05741	2505.	0.03772
470.	0.04035	2510.	0.03312
475.	0.05512	2515.	0.02984
480.	0.05249	2520.	0.03148
485.	0.05643	2525.	0.02591
490.	0.0502	2530.	0.03115

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
495.	0.05906	2770.	0.03115
500.	0.05479	3015.	0.04115
505.	0.05643	3020.	0.04378
510.	0.06299	3025.	0.04739
515.	0.05545	3030.	0.04476
520.	0.05643	3035.	0.04444
525.	0.05971	3040.	0.04706
530.	0.06135	3045.	0.03951
535.	0.05807	3050.	0.04608
540.	0.05249	3055.	0.03853
545.	0.05381	3060.	0.04476
550.	0.06037	3065.	0.04608
555.	0.0643	3070.	0.03656
560.	0.05774	3075.	0.03787
565.	0.04856	3080.	0.03984
570.	0.05184	3085.	0.0428
575.	0.05971	3090.	0.03623
580.	0.05577	3095.	0.04181
585.	0.0584	3100.	0.04017
590.	0.0689	3105.	0.04444
595.	0.0561	3110.	0.03656
600.	0.05118	3115.	0.04936
605.	0.05577	3120.	0.04181
610.	0.06135	3125.	0.04148
615.	0.06037	3130.	0.04444
620.	0.06102	3135.	0.04148
625.	0.0561	3140.	0.04181
630.	0.06004	3145.	0.03755
635.	0.06496	3150.	0.03656
640.	0.05545	3155.	0.04542
645.	0.05315	3160.	0.04115
650.	0.06529	3165.	0.03656
655.	0.06299	3170.	0.04345
660.	0.06037	3175.	0.04148
665.	0.06398	3180.	0.04837
670.	0.06135	3185.	0.04345
675.	0.05282	3190.	0.04247
680.	0.05545	3195.	0.04247
685.	0.05938	3200.	0.03919
690.	0.05906	3205.	0.04083
695.	0.05315	3210.	0.0428
700.	0.06529	3215.	0.0323
705.	0.06234	3220.	0.03262
710.	0.05249	3225.	0.0382
715.	0.05676	3230.	0.03919
720.	0.05643	3235.	0.0405
725.	0.0607	3240.	0.03623
730.	0.05971	3245.	0.03689
735.	0.0561	3250.	0.04181
740.	0.05938	3255.	0.0382
745.	0.0561	3260.	0.03722
750.	0.06463	3265.	0.03755
755.	0.0666	3270.	0.04575
760.	0.05085	3275.	0.04378
765.	0.05807	3280.	0.04608
770.	0.06135	3285.	0.0382
775.	0.05512	3290.	0.04378
780.	0.05413	3295.	0.0428
785.	0.05315	3300.	0.03984
790.	0.06168	3305.	0.04509
795.	0.0607	3310.	0.04542
800.	0.05906	3315.	0.04608
805.	0.06398	3320.	0.04214
810.	0.06693	3325.	0.03984
815.	0.05741	3330.	0.04017
820.	0.06168	3335.	0.04411

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
825.	0.05741	3340.	0.04444
830.	0.06004	3345.	0.04214
835.	0.06135	3350.	0.051
840.	0.05971	3355.	0.04476
845.	0.05577	3360.	0.05297
850.	0.06496	3365.	0.04608
855.	0.06857	3370.	0.04673
860.	0.05676	3375.	0.05067
865.	0.05479	3380.	0.04673
870.	0.05381	3385.	0.04444
875.	0.05479	3390.	0.04411
880.	0.05971	3395.	0.04706
885.	0.05577	3400.	0.04804
890.	0.05249	3405.	0.04673
895.	0.06332	3410.	0.0487
900.	0.0502	3415.	0.05034
905.	0.05085	3420.	0.0464
910.	0.06234	3425.	0.04936
915.	0.05906	3430.	0.05133
920.	0.06266	3435.	0.04608
925.	0.06496	3440.	0.0464
930.	0.05151	3445.	0.05165
935.	0.05873	3450.	0.04804
940.	0.05249	3455.	0.05001
945.	0.06562	3460.	0.05001
950.	0.0561	3465.	0.04903
955.	0.06463	3470.	0.05034
960.	0.06266	3475.	0.051
965.	0.05118	3480.	0.04673
970.	0.05348	3485.	0.04542
975.	0.0643	3490.	0.05198
980.	0.05938	3495.	0.05461
985.	0.05085	3500.	0.05067
990.	0.05413	3505.	0.04509
995.	0.05741	3510.	0.05165
1000.	0.05151	3515.	0.05231
1005.	0.05184	3520.	0.05231
1010.	0.05184	3525.	0.04903
1015.	0.0561	3530.	0.05165
1020.	0.06102	3535.	0.04969
1025.	0.06102	3540.	0.05264
1030.	0.06496	3545.	0.04542
1035.	0.0479	3550.	0.05329
1040.	0.05906	3555.	0.04936
1045.	0.06201	3560.	0.05133
1050.	0.04823	3565.	0.05067
1055.	0.05446	3570.	0.04969
1060.	0.05643	3575.	0.05034
1065.	0.05446	3580.	0.05329
1070.	0.05217	3585.	0.05165
1075.	0.0561	3590.	0.04411
1080.	0.05085	3595.	0.05067
1085.	0.05938	3600.	0.05395
1090.	0.05249	3605.	0.05231
1095.	0.05151	3610.	0.05297
1100.	0.05545	3615.	0.05133
1105.	0.0502	3620.	0.05297
1110.	0.06266	3625.	0.05198
1115.	0.04593	3630.	0.05198
1120.	0.05479	3635.	0.05362
1125.	0.04692	3640.	0.05428
1130.	0.04331	3645.	0.05559
1135.	0.04199	3650.	0.05329
1140.	0.05348	3655.	0.05165
1145.	0.05282	3660.	0.05198
1150.	0.05381	3665.	0.05723

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1155.	0.05282	3670.	0.051
1160.	0.05118	3675.	0.05034
1165.	0.04888	3680.	0.05198
1170.	0.05282	3685.	0.05723
1175.	0.05381	3690.	0.05001
1180.	0.06102	3695.	0.06018
1185.	0.05446	3700.	0.05297
1190.	0.04167	3705.	0.05756
1195.	0.04593	3710.	0.05133
1200.	0.04495	3715.	0.05395
1205.	0.04626	3720.	0.05526
1210.	0.0456	3725.	0.05231
1215.	0.04232	3730.	0.04673
1220.	0.05938	3735.	0.05198
1225.	0.07513	3740.	0.05592
1230.	0.06332	3745.	0.05395
1235.	0.05873	3750.	0.05362
1240.	0.04232	3755.	0.05428
1245.	0.06201	3760.	0.05625
1250.	0.05479	3765.	0.05461
1255.	0.04232	3770.	0.05625
1260.	0.04921	3775.	0.05723
1265.	0.04626	3780.	0.05264
1270.	0.04199	3785.	0.0569
1275.	0.05643	3790.	0.05854
1280.	0.03543	3795.	0.05297
1285.	0.04626	3800.	0.06445
1290.	0.0456	3805.	0.05526
1295.	0.04528	3810.	0.05395
1300.	0.02428	3815.	0.05461
1305.	0.03412	3820.	0.05559
1310.	0.03478	3825.	0.05657
1315.	0.04298	3830.	0.05264
1320.	0.03215	3835.	0.05789
1325.	0.04035	3840.	0.0592
1330.	0.03904	3845.	0.05461
1335.	0.04265	3850.	0.05789
1340.	0.04232	3855.	0.05428
1345.	0.04068	3860.	0.05986
1350.	0.04232	3865.	0.05953
1355.	0.03543	3870.	0.06084
1360.	0.03707	3875.	0.05789
1365.	0.03609	3880.	0.06084
1370.	0.03412	3885.	0.05789
1375.	0.03675	3890.	0.05854
1380.	0.02165	3895.	0.05297
1385.	0.03051	3900.	0.05723
1390.	0.0315	3905.	0.05854
1395.	0.02854	3910.	0.06018
1400.	0.03182	3915.	0.06182
1405.	0.03675	3920.	0.05723
1410.	0.03084	3925.	0.06412
1415.	0.03445	3930.	0.06215
1420.	0.03248	3935.	0.05592
1425.	0.0397	3940.	0.06051
1430.	0.04134	3945.	0.05657
1435.	0.02822	3950.	0.06281
1440.	0.03248	3955.	0.06215
1445.	0.04396	3960.	0.06084
1450.	0.04528	3965.	0.0615
1455.	0.03773	3970.	0.06445
1460.	0.03675	3975.	0.06412
1465.	0.04265	3980.	0.05723
1470.	0.04659	3985.	0.05657
1475.	0.03609	3990.	0.05461
1480.	0.03379	3995.	0.06248

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1485.	0.04035	4000.	0.05953
1490.	0.03281	4005.	0.05986
1495.	0.03707	4010.	0.0615
1500.	0.02986	4015.	0.06314
1505.	0.03281	4020.	0.0674
1510.	0.04167	4025.	0.06478
1515.	0.04528	4030.	0.06806
1520.	0.03576	4035.	0.06445
1525.	0.04298	4040.	0.0674
1530.	0.02493	4050.	0.07115
1535.	0.02986	4055.	0.07115
1540.	0.02559	4060.	0.07115
1545.	0.04888	4065.	0.07214
1550.	0.03248	4070.	0.07542
1555.	0.02115	4075.	0.08034
1820.	0.02115	4080.	0.07673
1825.	0.03428	4085.	0.07969
1830.	0.03133	4090.	0.07345
1835.	0.02772	4095.	0.07739
1840.	0.031	4100.	0.08559
1845.	0.02969	4105.	0.07772
1850.	0.01951	4125.	0.06984
1855.	0.02837	4130.	0.08264
1860.	0.02247	4135.	0.07969
1865.	0.02247	4140.	0.08493
1870.	0.02739	4145.	0.08133
1875.	0.02247	4150.	0.08297
1880.	0.01984	4155.	0.08329
1885.	0.02542	4160.	0.07706
1890.	0.03592	4165.	0.0869
1895.	0.03625	4170.	0.08428
1900.	0.03034	4175.	0.08329
1905.	0.02312	4180.	0.08854
1910.	0.04051	4185.	0.081
1915.	0.03657	4190.	0.08067
1920.	0.03625	4195.	0.09215
1925.	0.03822	4200.	0.08789
1930.	0.02936	4205.	0.08395
1935.	0.02969	4210.	0.08395
1940.	0.03657	4215.	0.08625
1945.	0.03165	4220.	0.08395
1950.	0.03493	4225.	0.08592
1955.	0.03461	4230.	0.08297
1960.	0.03723	4235.	0.08067
1965.	0.03986	4240.	0.08625
1970.	0.03034	4245.	0.08657
1975.	0.04018	4250.	0.08362
1980.	0.03953	4255.	0.08165
1985.	0.03822	4260.	0.08165
1990.	0.03723	4265.	0.08461
1995.	0.04576	4270.	0.07969
2000.	0.03428	4275.	0.08461
2005.	0.03756	4280.	0.08034
2010.	0.04117	4285.	0.08559
2015.	0.03953	4290.	0.09215
2020.	0.0369	4295.	0.08034
2025.	0.03395	4300.	0.08526
2030.	0.03297	4305.	0.08657
2035.	0.04018	4310.	0.08231
2040.	0.03067	4315.	0.08493

Observation Well No. 3: MW14-04D

X Location: 3038830.66 ft
Y Location: 684713.22 ft

Radial distance from MW14-03B: 627.1851017 ft

Partially Penetrating Well
Depth to Top of Screen: 8.5 ft
Depth to Bottom of Screen: 11. ft

No. of Observations: 862

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
5.	-0.003609	2160.	0.3711
10.	0.	2165.	0.3684
15.	-0.004593	2170.	0.3717
20.	0.002297	2175.	0.375
25.	0.003281	2180.	0.3737
30.	-0.004265	2185.	0.3704
35.	0.003281	2190.	0.374
40.	0.002297	2195.	0.3727
45.	0.005249	2200.	0.3704
50.	0.002953	2205.	0.3727
55.	0.0003281	2210.	0.3724
60.	0.008202	2215.	0.377
65.	0.002297	2220.	0.3763
70.	0.008202	2225.	0.3796
75.	0.001969	2230.	0.3819
80.	0.01542	2235.	0.3776
85.	0.007218	2240.	0.3773
90.	0.0164	2245.	0.3773
95.	0.007218	2250.	0.3776
100.	0.01509	2255.	0.378
105.	0.01903	2260.	0.3757
110.	0.02001	2265.	0.378
115.	0.01312	2270.	0.3799
120.	0.009514	2275.	0.3819
125.	0.01345	2280.	0.3783
130.	0.01706	2285.	0.3796
135.	0.01936	2290.	0.3776
140.	0.02067	2295.	0.3793
145.	0.02329	2300.	0.3763
150.	0.01608	2305.	0.3786
155.	0.01181	2310.	0.3819
160.	0.0187	2315.	0.3806
165.	0.01739	2320.	0.3862
170.	0.0164	2325.	0.3839
175.	0.01739	2330.	0.3819
180.	0.01936	2335.	0.3796
185.	0.01476	2340.	0.3802
190.	0.02231	2345.	0.3829
195.	0.02297	2350.	0.3799
200.	0.02395	2355.	0.3862
205.	0.03018	2360.	0.3809
210.	0.02887	2365.	0.3881
215.	0.02854	2370.	0.3806
220.	0.03675	2375.	0.3753
225.	0.03412	2380.	0.3757
230.	0.03117	2385.	0.3757
235.	0.03445	2390.	0.3842
240.	0.03609	2395.	0.3806
245.	0.03871	2400.	0.3796
250.	0.04495	2405.	0.3819
255.	0.04364	2410.	0.3845
260.	0.04298	2415.	0.3825
265.	0.04987	2420.	0.3822
270.	0.05545	2425.	0.3806
275.	0.05085	2430.	0.3789
280.	0.06102	2435.	0.3796
285.	0.0374	2440.	0.3747

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
290.	0.05446	2445.	0.3796
295.	0.06726	2450.	0.3802
300.	0.06168	2455.	0.3812
305.	0.06627	2460.	0.3766
310.	0.06234	2465.	0.3776
315.	0.06857	2470.	0.3793
320.	0.07087	2475.	0.3773
325.	0.06824	2480.	0.3783
330.	0.07382	2485.	0.3753
335.	0.07743	2490.	0.378
340.	0.07776	2495.	0.3829
345.	0.08136	2500.	0.3789
350.	0.09252	2505.	0.3809
355.	0.08563	2510.	0.3832
360.	0.08661	2515.	0.3806
365.	0.09416	2520.	0.376
370.	0.09121	2525.	0.3789
375.	0.09383	2530.	0.375
380.	0.09285	2535.	0.3724
385.	0.09088	2540.	0.375
390.	0.09744	2545.	0.3737
395.	0.09547	2550.	0.3707
400.	0.1017	2555.	0.3711
405.	0.09711	2560.	0.3701
410.	0.09875	2565.	0.3684
415.	0.1037	2570.	0.3622
420.	0.1014	2575.	0.3622
425.	0.104	2580.	0.3638
430.	0.1066	2585.	0.3655
435.	0.1099	2590.	0.3648
440.	0.1093	2595.	0.3602
445.	0.1148	2600.	0.3589
450.	0.1145	2605.	0.357
455.	0.1122	2610.	0.3589
460.	0.1165	2615.	0.3606
465.	0.1188	2620.	0.3596
470.	0.1201	2625.	0.3593
475.	0.1122	2630.	0.3537
480.	0.1227	2635.	0.3507
485.	0.1243	2640.	0.3524
490.	0.128	2645.	0.3507
495.	0.126	2650.	0.3543
500.	0.1335	2655.	0.3556
505.	0.1306	2660.	0.3494
510.	0.1325	2665.	0.3484
515.	0.1401	2670.	0.3471
520.	0.1352	2675.	0.351
525.	0.1394	2680.	0.3494
530.	0.1417	2685.	0.3488
535.	0.1444	2690.	0.3488
540.	0.1444	2695.	0.3501
545.	0.1411	2700.	0.3465
550.	0.1424	2705.	0.3481
555.	0.1483	2710.	0.3481
560.	0.1526	2715.	0.3563
565.	0.1512	2720.	0.3514
570.	0.1457	2725.	0.3491
575.	0.1486	2730.	0.352
580.	0.1565	2735.	0.3524
585.	0.1558	2740.	0.3501
590.	0.1568	2745.	0.3504
595.	0.1657	2750.	0.3461
600.	0.1575	2755.	0.3491
605.	0.1572	2760.	0.3501
610.	0.164	2765.	0.3468
615.	0.165	2770.	0.3451

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
620.	0.1677	2775.	0.3438
625.	0.168	2780.	0.3491
630.	0.1673	2785.	0.3428
635.	0.1706	2790.	0.3442
640.	0.1749	2795.	0.3432
645.	0.1699	2800.	0.3015
650.	0.1696	2805.	0.4163
655.	0.1788	2810.	0.4259
660.	0.1782	2815.	0.4193
665.	0.1788	2820.	0.4213
670.	0.1808	2825.	0.4186
675.	0.1811	2830.	0.418
680.	0.1765	2835.	0.4222
685.	0.1795	2840.	0.4242
690.	0.1818	2845.	0.4206
695.	0.1841	2850.	0.4262
700.	0.1811	2855.	0.4177
705.	0.1883	2860.	0.4278
710.	0.1903	2865.	0.4259
715.	0.1847	2870.	0.4265
720.	0.186	2875.	0.4255
725.	0.1893	2880.	0.4213
730.	0.1926	2885.	0.4222
735.	0.1923	2890.	0.4229
740.	0.1909	2895.	0.4252
745.	0.1959	2900.	0.4219
750.	0.1942	2905.	0.4236
755.	0.1988	2910.	0.4265
760.	0.2008	2915.	0.4259
765.	0.1916	2920.	0.4295
770.	0.1975	2925.	0.4275
775.	0.2005	2930.	0.4259
780.	0.1991	2935.	0.4298
785.	0.1972	2940.	0.4259
790.	0.1959	2945.	0.4301
795.	0.2031	2950.	0.4308
800.	0.2037	2955.	0.4354
805.	0.2031	2960.	0.4295
810.	0.2073	2965.	0.4304
815.	0.2106	2970.	0.4288
820.	0.2051	2975.	0.4334
825.	0.207	2980.	0.4314
830.	0.2057	2985.	0.4331
835.	0.206	2990.	0.4341
840.	0.2083	2995.	0.4337
845.	0.2087	3000.	0.437
850.	0.2051	3005.	0.4324
855.	0.211	3010.	0.438
860.	0.2123	3015.	0.4334
865.	0.2067	3020.	0.4367
870.	0.2073	3025.	0.4373
875.	0.2041	3030.	0.439
880.	0.2077	3035.	0.437
885.	0.2093	3040.	0.437
890.	0.2087	3045.	0.439
895.	0.2077	3050.	0.4347
900.	0.2136	3055.	0.4386
905.	0.2067	3060.	0.4337
910.	0.2083	3065.	0.4383
915.	0.2149	3070.	0.4383
920.	0.2139	3075.	0.4327
925.	0.2178	3080.	0.4337
930.	0.2175	3085.	0.4357
935.	0.2093	3090.	0.4383
940.	0.2162	3095.	0.4341
945.	0.211	3100.	0.4367

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
950.	0.2201	3105.	0.4367
955.	0.2139	3110.	0.4403
960.	0.2185	3115.	0.435
965.	0.2182	3120.	0.4429
970.	0.2103	3125.	0.4373
975.	0.2129	3130.	0.436
980.	0.2221	3135.	0.4383
985.	0.2178	3140.	0.4386
990.	0.2142	3145.	0.4373
995.	0.2156	3150.	0.4357
1000.	0.2178	3155.	0.4341
1005.	0.2142	3160.	0.4393
1010.	0.2175	3165.	0.437
1015.	0.2165	3170.	0.4337
1020.	0.2211	3175.	0.439
1025.	0.2234	3180.	0.436
1030.	0.2247	3185.	0.4409
1035.	0.2283	3190.	0.439
1040.	0.2169	3195.	0.4377
1045.	0.2244	3200.	0.4377
1050.	0.2264	3205.	0.436
1055.	0.2159	3210.	0.4364
1060.	0.2234	3215.	0.4383
1065.	0.2228	3220.	0.4308
1070.	0.2261	3225.	0.4321
1075.	0.2218	3230.	0.4341
1080.	0.2254	3235.	0.437
1085.	0.2231	3240.	0.436
1090.	0.229	3245.	0.4334
1095.	0.2241	3250.	0.4344
1100.	0.2257	3255.	0.4393
1105.	0.2254	3260.	0.4364
1110.	0.2231	3265.	0.4367
1115.	0.2316	3270.	0.4357
1120.	0.2215	3275.	0.4406
1125.	0.2287	3280.	0.4386
1130.	0.2257	3285.	0.44
1135.	0.2228	3290.	0.436
1140.	0.2228	3295.	0.4396
1145.	0.2313	3300.	0.4393
1150.	0.2306	3305.	0.439
1155.	0.2336	3310.	0.4409
1160.	0.2329	3315.	0.4413
1165.	0.2339	3320.	0.4419
1170.	0.2359	3325.	0.44
1175.	0.2359	3330.	0.439
1180.	0.2379	3335.	0.4383
1185.	0.2438	3340.	0.4419
1190.	0.2408	3345.	0.4439
1195.	0.232	3350.	0.4413
1200.	0.2362	3355.	0.4465
1205.	0.2372	3360.	0.4442
1210.	0.2369	3365.	0.4488
1215.	0.2395	3370.	0.4449
1220.	0.2385	3375.	0.4459
1225.	0.2497	3380.	0.4478
1230.	0.2615	3385.	0.4472
1235.	0.2549	3390.	0.4439
1240.	0.2526	3395.	0.4442
1245.	0.2408	3400.	0.4469
1250.	0.2566	3405.	0.4491
1255.	0.253	3410.	0.4469
1260.	0.2434	3415.	0.4491
1265.	0.2497	3420.	0.4508
1270.	0.2513	3425.	0.4488
1275.	0.2448	3430.	0.4488

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1280.	0.2592	3435.	0.4528
1285.	0.2461	3440.	0.4498
1290.	0.2516	3445.	0.4485
1295.	0.2572	3450.	0.4544
1300.	0.2552	3455.	0.4521
1305.	0.2418	3460.	0.4534
1310.	0.2493	3465.	0.4544
1315.	0.253	3470.	0.4531
1320.	0.2572	3475.	0.4537
1325.	0.2536	3480.	0.4547
1330.	0.2589	3485.	0.4524
1335.	0.2595	3490.	0.4511
1340.	0.2618	3495.	0.4577
1345.	0.2631	3500.	0.459
1350.	0.2628	3505.	0.4583
1355.	0.268	3510.	0.4541
1360.	0.2612	3515.	0.4583
1365.	0.2644	3520.	0.4596
1370.	0.2651	3525.	0.4593
1375.	0.2644	3530.	0.458
1380.	0.2671	3535.	0.459
1385.	0.2602	3540.	0.4593
1390.	0.2671	3545.	0.4626
1395.	0.2674	3550.	0.458
1400.	0.2664	3555.	0.4639
1405.	0.2697	3560.	0.4603
1410.	0.2766	3565.	0.4636
1415.	0.2723	3570.	0.4636
1420.	0.2766	3575.	0.4626
1425.	0.2762	3580.	0.4619
1430.	0.2828	3585.	0.4636
1435.	0.2854	3590.	0.4656
1440.	0.2792	3595.	0.459
1445.	0.2815	3600.	0.4639
1450.	0.2887	3605.	0.4662
1455.	0.2917	3610.	0.4665
1460.	0.29	3615.	0.4662
1465.	0.289	3620.	0.4662
1470.	0.291	3625.	0.4675
1475.	0.2966	3630.	0.4682
1480.	0.292	3635.	0.4675
1485.	0.2881	3640.	0.4692
1490.	0.2963	3645.	0.4692
1495.	0.2897	3650.	0.4711
1500.	0.2933	3655.	0.4698
1505.	0.2894	3660.	0.4685
1510.	0.2927	3665.	0.4692
1515.	0.2979	3670.	0.4718
1520.	0.3028	3675.	0.4698
1525.	0.2972	3680.	0.4701
1530.	0.3015	3685.	0.4698
1535.	0.2923	3690.	0.4724
1540.	0.293	3695.	0.4685
1545.	0.2917	3700.	0.4751
1550.	0.3077	3705.	0.4705
1555.	0.2972	3710.	0.4744
1560.	0.2995	3715.	0.4708
1565.	0.2963	3720.	0.4731
1570.	0.2979	3725.	0.4721
1575.	0.3051	3730.	0.4728
1580.	0.2976	3735.	0.4685
1585.	0.3054	3740.	0.4718
1590.	0.289	3745.	0.4734
1595.	0.3077	3750.	0.4718
1600.	0.3248	3755.	0.4708
1605.	0.3071	3760.	0.4708

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1610.	0.3219	3765.	0.4751
1615.	0.2982	3770.	0.4728
1620.	0.3012	3775.	0.4738
1625.	0.3038	3780.	0.4751
1630.	0.3248	3785.	0.4724
1635.	0.3107	3790.	0.4741
1640.	0.3031	3795.	0.476
1645.	0.3209	3800.	0.4708
1650.	0.31	3805.	0.4767
1655.	0.3064	3810.	0.4738
1660.	0.3163	3815.	0.4711
1665.	0.3182	3820.	0.4724
1670.	0.3094	3825.	0.4734
1675.	0.3271	3830.	0.4751
1680.	0.3346	3835.	0.4711
1685.	0.3159	3840.	0.4744
1690.	0.3219	3845.	0.4754
1695.	0.3314	3850.	0.4721
1700.	0.3251	3855.	0.4744
1705.	0.3287	3860.	0.4721
1710.	0.3173	3865.	0.476
1715.	0.2664	3870.	0.476
1720.	0.2677	3875.	0.4767
1725.	0.2165	3880.	0.4741
1730.	0.2933	3885.	0.4764
1735.	0.271	3890.	0.4747
1740.	0.333	3895.	0.4754
1745.	0.3376	3900.	0.4715
1750.	0.3176	3905.	0.4747
1755.	0.2887	3910.	0.4754
1760.	0.334	3915.	0.4751
1765.	0.3251	3920.	0.478
1770.	0.3228	3925.	0.4731
1775.	0.3215	3930.	0.4787
1780.	0.3219	3935.	0.4777
1785.	0.3051	3940.	0.4721
1790.	0.3192	3945.	0.4764
1795.	0.313	3950.	0.4731
1800.	0.3225	3955.	0.4774
1805.	0.3241	3960.	0.476
1810.	0.3238	3965.	0.4774
1815.	0.3215	3970.	0.4757
1820.	0.3255	3975.	0.4774
1825.	0.314	3980.	0.4783
1830.	0.3232	3985.	0.4734
1835.	0.3235	3990.	0.4734
1840.	0.3228	3995.	0.4724
1845.	0.3255	4000.	0.478
1850.	0.3264	4005.	0.4767
1855.	0.3196	4010.	0.4751
1860.	0.3268	4015.	0.4757
1865.	0.3228	4020.	0.4764
1870.	0.3232	4025.	0.48
1875.	0.3297	4030.	0.4806
1880.	0.3255	4035.	0.482
1885.	0.3241	4050.	0.4574
1890.	0.3294	4055.	0.4574
1895.	0.3353	4060.	0.4659
1900.	0.3366	4065.	0.4672
1905.	0.335	4070.	0.4689
1910.	0.3314	4075.	0.4702
1915.	0.3425	4080.	0.4761
1920.	0.3406	4085.	0.4744
1925.	0.3409	4090.	0.4754
1930.	0.3425	4095.	0.4725
1935.	0.3379	4100.	0.4738

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1940.	0.3369	4105.	0.4807
1945.	0.3455	4110.	0.4777
1950.	0.3409	4115.	0.4928
1955.	0.3451	4120.	0.484
1960.	0.3435	4125.	0.3449
1965.	0.3451	4130.	0.4728
1970.	0.3501	4135.	0.484
1975.	0.3445	4140.	0.4827
1980.	0.3501	4145.	0.4872
1985.	0.352	4150.	0.4843
1990.	0.3524	4155.	0.4859
1995.	0.3507	4160.	0.4863
2000.	0.3586	4165.	0.4833
2005.	0.3501	4170.	0.4902
2010.	0.3543	4175.	0.4892
2015.	0.3556	4180.	0.4892
2020.	0.3583	4185.	0.4928
2025.	0.3576	4190.	0.4899
2030.	0.354	4195.	0.4882
2035.	0.353	4200.	0.4964
2040.	0.3599	4205.	0.4958
2045.	0.3537	4210.	0.4941
2050.	0.353	4215.	0.4928
2055.	0.3593	4220.	0.4994
2060.	0.3586	4225.	0.4968
2065.	0.3576	4230.	0.5
2070.	0.3629	4235.	0.4987
2075.	0.3615	4240.	0.4971
2080.	0.3593	4245.	0.502
2085.	0.3632	4250.	0.502
2090.	0.3665	4255.	0.502
2095.	0.3625	4260.	0.5014
2100.	0.3668	4265.	0.5014
2105.	0.3648	4270.	0.5046
2110.	0.3655	4275.	0.502
2115.	0.3668	4280.	0.5053
2120.	0.3671	4285.	0.505
2125.	0.3652	4290.	0.5089
2130.	0.3694	4295.	0.5132
2135.	0.3638	4300.	0.5092
2140.	0.3698	4305.	0.5128
2145.	0.3701	4310.	0.5128
2150.	0.3661	4315.	0.5112
2155.	0.3698	4320.	0.5122

SOLUTION

Pumping Test
Aquifer Model: Leaky
Solution Method: Neuman-Witherspoon

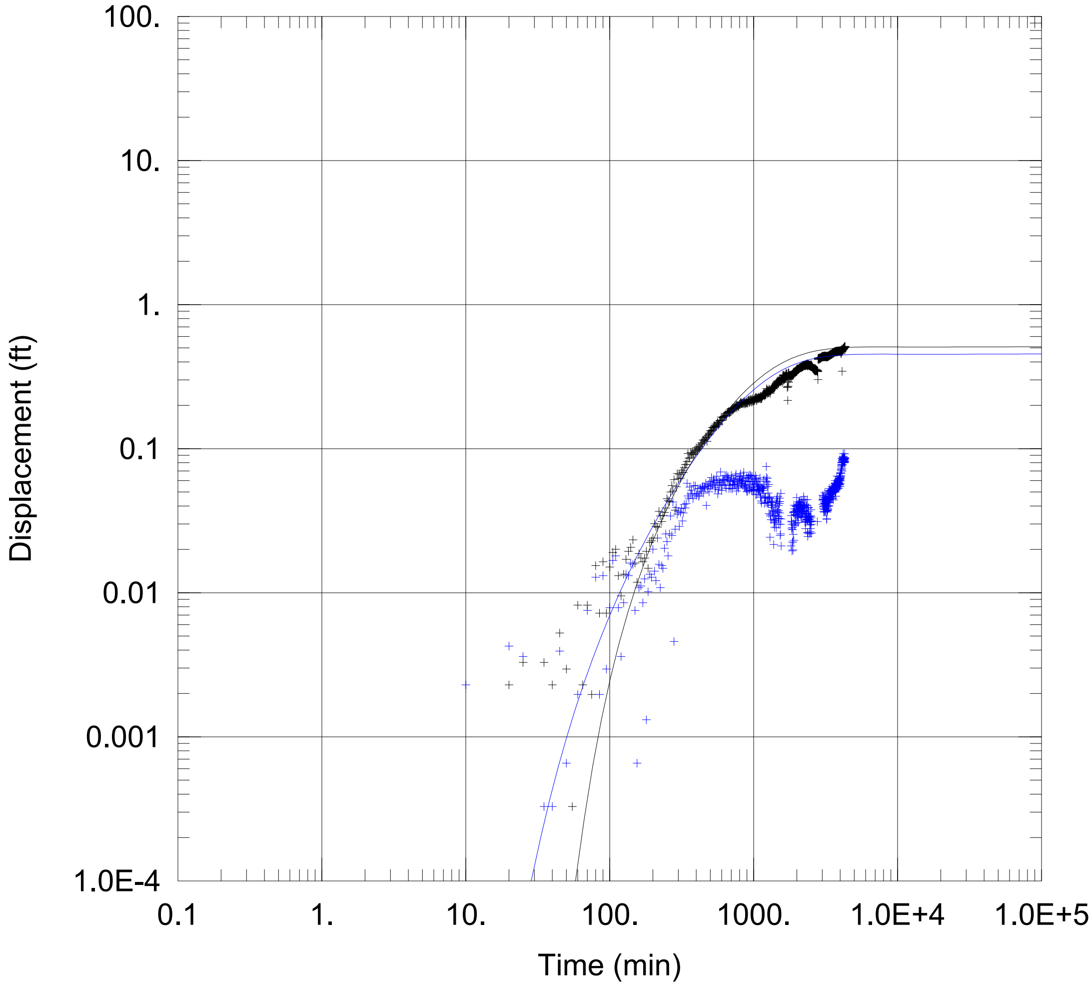
VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	0.06651	cm^2/sec
S	1.362E-5	
1/B	0.003328	ft^{-1}
ß/r	0.002068	ft^{-1}
T2	0.0001548	cm^2/sec
S2	1.	

K = T/b = 3.117E-5 cm/sec
Ss = S/b = 1.946E-7 1/ft
K'/b' = 4.757E-8 min^{-1}

K' = 3.021E-7 cm/sec



WELL TEST ANALYSIS

Data Set: C:\...\Pumping Test_2020-07-23_MW14-04M_MW14-04D.aqt
Date: 07/29/20 Time: 10:25:47

PROJECT INFORMATION

Company: Golder Associates, Inc.
Client: Crossroads
Location: ME
Test Well: MW14-03B
Test Date: 7/7/2020

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
MW14-03B	3039420.818	684500.912

Observation Wells

Well Name	X (ft)	Y (ft)
+ MW14-04M	3038829.98	684718.75
+ MW14-04D	3038830.66	684713.22

SOLUTION

Aquifer Model: Leaky
Solution Method: Neuman-Witherspoon

$T = 0.06651$ cm^2/sec
$1/B = 0.003328$ ft^{-1}
$T2 = 0.0001548$ cm^2/sec
$S = 1.362E-5$
$ß/r = 0.002068$ ft^{-1}
$S2 = 1.$

Data Set: C:\Users\BCampelia\Desktop\Crossroads Pumping Test Files\2020-07-10 Files\2020-07-26 Updated File
Date: 07/26/20
Time: 10:37:07

PROJECT INFORMATION

Company: Golder Associates, Inc.
Client: Crossroads
Location: ME
Test Date: 7/7/2020
Test Well: MW14-03B

AQUIFER DATA

Saturated Thickness: 70. ft
Anisotropy Ratio (Kz/Kr): 1.
Aquitard Thickness (b'): 12.5 ft
Aquitard Thickness (b"): 12.5 ft

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: MW14-03B

X Location: 3039420.818 ft
Y Location: 684500.912 ft

Casing Radius: 0. ft
Well Radius: 0.1875 ft

Partially Penetrating Well
Depth to Top of Screen: 28. ft
Depth to Bottom of Screen: 51. ft

No. of pumping periods: 1

Pumping Period Data

Time (min)	Rate (gal/min)
0.	1.

OBSERVATION WELL DATA

No. of observation wells: 3

Observation Well No. 1: MW14-03B

X Location: 3039420.818 ft
Y Location: 684500.912 ft

Radial distance from MW14-03B: 0. ft

Partially Penetrating Well
Depth to Top of Screen: 28. ft
Depth to Bottom of Screen: 51. ft

No. of Observations: 2161

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1.	0.	2162.	33.39
2.	3.285	2164.	33.38
4.	11.85	2166.	33.39
6.	15.12	2168.	33.39
8.	17.6	2170.	33.4
10.	19.46	2172.	33.4
12.	20.88	2174.	33.4

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
14.	21.99	2176.	33.39
16.	23.15	2178.	33.4
18.	24.09	2180.	33.4
20.	24.8	2182.	33.4
22.	25.31	2184.	33.41
24.	26.01	2186.	33.4
26.	26.58	2188.	33.41
28.	26.97	2190.	33.41
30.	27.4	2192.	33.4
32.	27.77	2194.	33.41
34.	28.03	2196.	33.4
36.	28.18	2198.	33.4
38.	28.49	2200.	33.4
40.	28.83	2202.	33.4
42.	29.09	2204.	33.41
44.	29.28	2206.	33.41
46.	29.48	2208.	33.41
48.	29.61	2210.	33.4
50.	29.72	2212.	33.41
52.	29.8	2214.	33.4
54.	29.86	2216.	33.4
56.	29.91	2218.	33.4
58.	29.97	2220.	33.4
60.	29.98	2222.	33.4
62.	30.04	2224.	33.4
64.	30.07	2226.	33.4
66.	30.11	2228.	33.4
68.	30.15	2230.	33.39
70.	30.18	2232.	33.4
72.	30.21	2234.	33.39
74.	30.32	2236.	33.38
76.	30.53	2238.	33.39
78.	30.65	2240.	33.39
80.	30.72	2242.	33.4
82.	30.77	2244.	33.4
84.	30.83	2246.	33.41
86.	30.84	2248.	33.4
88.	30.88	2250.	33.41
90.	30.97	2252.	33.39
92.	31.01	2254.	33.39
94.	31.03	2256.	33.4
96.	31.06	2258.	33.38
98.	31.09	2260.	33.39
100.	31.1	2262.	33.4
102.	31.18	2264.	33.39
104.	31.41	2266.	33.4
106.	31.53	2268.	33.4
108.	31.62	2270.	33.4
110.	31.67	2272.	33.41
112.	31.72	2274.	33.41
114.	31.77	2276.	33.39
116.	31.81	2278.	33.26
118.	31.75	2280.	33.21
120.	31.82	2282.	33.17
122.	31.87	2284.	33.18
124.	31.9	2286.	33.18
126.	31.95	2288.	33.17
128.	31.98	2290.	33.16
130.	32.	2292.	33.16
132.	32.03	2294.	33.16
134.	32.04	2296.	33.17
136.	32.01	2298.	33.16
138.	32.07	2300.	33.17
140.	32.1	2302.	33.17
142.	32.13	2304.	33.17
144.	32.18	2306.	33.18

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
146.	32.22	2308.	33.18
148.	32.25	2310.	33.19
150.	32.27	2312.	33.21
152.	32.26	2314.	33.28
154.	32.27	2316.	33.33
156.	32.27	2318.	33.35
158.	32.28	2320.	33.36
160.	32.32	2322.	33.38
162.	32.34	2324.	33.38
164.	32.36	2326.	33.39
166.	32.36	2328.	33.39
168.	32.35	2330.	33.4
170.	32.34	2332.	33.39
172.	32.34	2334.	33.39
174.	32.29	2336.	33.39
176.	32.28	2338.	33.39
178.	32.33	2340.	33.4
180.	32.35	2342.	33.4
182.	32.4	2344.	33.4
184.	32.42	2346.	33.4
186.	32.43	2348.	33.38
188.	32.43	2350.	33.39
190.	32.49	2352.	33.4
192.	32.33	2354.	33.4
194.	32.4	2356.	33.4
196.	32.44	2358.	33.41
198.	32.46	2360.	33.4
200.	32.49	2362.	33.41
202.	32.52	2364.	33.4
204.	32.46	2366.	33.41
206.	32.43	2368.	33.4
208.	32.5	2370.	33.4
210.	32.53	2372.	33.4
212.	32.61	2374.	33.4
214.	32.64	2376.	33.4
216.	32.65	2378.	33.4
218.	32.66	2380.	33.4
220.	32.67	2382.	33.38
222.	32.67	2384.	33.39
224.	32.7	2386.	33.4
226.	32.74	2388.	33.41
228.	32.77	2390.	33.41
230.	32.78	2392.	33.41
232.	32.78	2394.	33.4
234.	32.77	2396.	33.41
236.	32.77	2398.	33.42
238.	32.77	2400.	33.42
240.	32.75	2402.	33.41
242.	32.74	2404.	33.41
244.	32.73	2406.	33.4
246.	32.73	2408.	33.39
248.	32.73	2410.	33.4
250.	32.73	2412.	33.39
252.	32.74	2414.	33.38
254.	32.79	2416.	33.38
256.	32.82	2418.	33.37
258.	32.83	2420.	33.37
260.	32.84	2422.	32.7
262.	32.86	2424.	33.09
264.	32.87	2426.	33.24
266.	32.87	2428.	33.33
268.	32.85	2430.	33.37
270.	32.84	2432.	33.39
272.	32.83	2434.	33.39
274.	32.81	2436.	33.4
276.	32.82	2438.	33.4

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
278.	32.83	2440.	33.4
280.	32.83	2442.	33.4
282.	32.82	2444.	33.41
284.	32.68	2446.	33.41
286.	32.64	2448.	33.41
288.	32.67	2450.	33.41
290.	32.75	2452.	33.41
292.	32.78	2454.	33.41
294.	32.79	2456.	33.41
296.	32.81	2458.	33.41
298.	32.8	2460.	33.41
300.	30.7	2462.	33.39
302.	31.85	2464.	33.4
304.	32.17	2466.	33.41
306.	32.25	2468.	33.41
308.	32.27	2470.	33.41
310.	32.27	2472.	33.41
312.	32.27	2474.	33.4
314.	32.34	2476.	33.4
316.	32.48	2478.	33.41
318.	32.58	2480.	33.4
320.	32.63	2482.	33.41
322.	32.63	2484.	33.41
324.	32.61	2486.	33.4
326.	32.68	2488.	33.41
328.	32.68	2490.	33.41
330.	32.69	2492.	33.41
332.	32.72	2494.	33.41
334.	32.71	2496.	33.41
336.	32.69	2498.	33.41
338.	32.73	2500.	33.41
340.	32.7	2502.	33.4
342.	32.73	2504.	33.41
344.	32.76	2506.	33.41
346.	32.76	2508.	33.41
348.	32.64	2510.	33.4
350.	32.58	2512.	33.41
352.	32.66	2514.	33.41
354.	32.73	2516.	33.41
356.	32.74	2518.	33.41
358.	32.77	2520.	33.4
360.	32.77	2522.	33.4
362.	32.79	2524.	33.41
364.	32.83	2526.	33.41
366.	32.83	2528.	33.42
368.	32.77	2530.	33.42
370.	32.75	2532.	33.41
372.	32.73	2534.	33.42
374.	32.7	2536.	33.42
376.	32.72	2538.	33.42
378.	32.73	2540.	33.42
380.	32.74	2542.	33.42
382.	32.76	2544.	33.41
384.	32.8	2546.	33.42
386.	32.81	2548.	33.42
388.	32.82	2550.	33.42
390.	32.84	2552.	33.42
392.	32.84	2554.	33.43
394.	32.83	2556.	33.43
396.	32.81	2558.	33.43
398.	32.8	2560.	33.43
400.	32.77	2562.	33.43
402.	32.76	2564.	33.43
404.	32.79	2566.	33.43
406.	32.82	2568.	33.43
408.	32.84	2570.	33.43

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
410.	32.89	2572.	33.43
412.	32.91	2574.	33.44
414.	32.91	2576.	33.43
416.	32.91	2578.	33.43
418.	32.91	2580.	33.43
420.	32.89	2582.	33.43
422.	32.86	2584.	33.42
424.	32.86	2586.	33.41
426.	32.85	2588.	33.4
428.	32.83	2590.	33.4
430.	32.82	2592.	33.41
432.	32.82	2594.	33.41
434.	32.81	2596.	33.4
436.	32.82	2598.	33.41
438.	32.82	2600.	33.41
440.	32.8	2602.	33.41
442.	32.81	2604.	33.47
444.	32.8	2606.	33.49
446.	32.81	2608.	33.51
448.	32.81	2610.	33.51
450.	32.81	2612.	33.52
452.	32.8	2614.	33.52
454.	32.8	2616.	33.52
456.	32.8	2618.	33.53
458.	32.79	2620.	33.53
460.	32.79	2622.	33.53
462.	32.78	2624.	33.53
464.	32.77	2626.	33.53
466.	32.77	2628.	33.53
468.	32.77	2630.	33.53
470.	32.77	2632.	33.53
472.	32.78	2634.	33.53
474.	32.77	2636.	33.54
476.	32.77	2638.	33.53
478.	32.72	2640.	33.54
480.	32.7	2642.	33.54
482.	32.7	2644.	33.53
484.	32.69	2646.	33.53
486.	32.69	2648.	33.54
488.	32.68	2650.	33.54
490.	32.69	2652.	33.54
492.	32.68	2654.	33.54
494.	32.68	2656.	33.53
496.	32.68	2658.	33.54
498.	32.73	2660.	33.54
500.	32.82	2662.	33.54
502.	32.84	2664.	33.54
504.	32.91	2666.	33.54
506.	32.93	2668.	33.54
508.	32.98	2670.	33.53
510.	33.02	2672.	33.53
512.	33.04	2674.	33.53
514.	33.06	2676.	33.54
516.	33.07	2678.	33.54
518.	33.08	2680.	33.54
520.	33.08	2682.	33.54
522.	33.09	2684.	33.54
524.	33.09	2686.	33.54
526.	33.09	2688.	33.54
528.	33.09	2690.	33.53
530.	33.1	2692.	33.54
532.	33.09	2694.	33.53
534.	33.1	2696.	33.51
536.	33.1	2698.	33.5
538.	33.1	2700.	33.5
540.	33.09	2702.	33.5

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
542.	33.09	2704.	33.49
544.	33.08	2706.	33.49
546.	33.09	2708.	33.47
548.	33.08	2710.	33.47
550.	33.08	2712.	33.47
552.	33.09	2714.	33.47
554.	33.09	2716.	33.47
556.	33.1	2718.	33.47
558.	33.1	2720.	33.47
560.	33.12	2722.	33.47
562.	33.12	2724.	33.47
564.	33.13	2726.	33.47
566.	33.12	2728.	33.48
568.	33.1	2730.	33.49
570.	33.12	2732.	33.48
572.	33.12	2734.	32.42
574.	33.15	2736.	32.97
576.	33.19	2738.	33.21
578.	33.21	2740.	33.33
580.	33.22	2742.	33.4
582.	33.22	2744.	33.44
584.	33.23	2746.	33.46
586.	33.23	2748.	33.49
588.	33.23	2750.	33.5
590.	33.23	2752.	33.51
592.	33.23	2754.	33.53
594.	33.23	2756.	33.54
596.	33.23	2758.	33.54
598.	33.23	2760.	33.55
600.	33.24	2762.	33.56
602.	33.25	2764.	33.56
604.	33.25	2766.	33.56
606.	33.25	2768.	33.55
608.	33.26	2770.	33.54
610.	33.25	2772.	33.55
612.	33.25	2774.	33.54
614.	33.25	2776.	33.56
616.	33.26	2778.	33.56
618.	33.24	2780.	33.57
620.	33.24	2782.	33.56
622.	33.23	2784.	33.53
624.	33.22	2786.	33.52
626.	33.22	2788.	33.5
628.	33.22	2790.	33.49
630.	33.22	2792.	33.49
632.	33.22	2794.	33.5
634.	33.21	2796.	33.49
636.	33.23	2798.	33.48
638.	33.22	2800.	33.48
640.	33.21	2802.	33.47
642.	33.21	2804.	33.47
644.	33.21	2806.	33.46
646.	33.21	2808.	33.47
648.	33.2	2810.	33.47
650.	33.2	2812.	33.46
652.	33.2	2814.	33.46
654.	31.68	2816.	33.44
656.	32.43	2818.	33.45
658.	32.73	2820.	33.44
660.	32.88	2822.	33.45
662.	32.94	2824.	33.46
664.	32.98	2826.	33.46
666.	33.	2828.	33.46
668.	33.02	2830.	33.47
670.	33.04	2832.	33.46
672.	33.04	2834.	33.46

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
674.	33.04	2836.	33.47
676.	33.04	2838.	33.45
678.	33.03	2840.	33.45
680.	33.03	2842.	33.45
682.	33.03	2844.	33.44
684.	33.03	2846.	33.45
686.	33.02	2848.	33.46
688.	33.02	2850.	33.46
690.	33.03	2852.	33.47
692.	33.05	2854.	33.47
694.	33.06	2856.	33.47
696.	33.06	2858.	33.45
698.	33.07	2860.	33.46
700.	33.06	2862.	33.47
702.	33.07	2864.	33.47
704.	33.06	2866.	33.47
706.	33.07	2868.	33.47
708.	33.07	2870.	33.45
710.	33.07	2872.	33.45
712.	33.06	2874.	33.46
714.	33.05	2876.	33.47
716.	33.05	2878.	33.49
718.	33.05	2880.	33.5
720.	33.04	2882.	33.51
722.	33.05	2884.	33.52
724.	33.04	2886.	33.52
726.	33.05	2888.	33.52
728.	33.04	2890.	33.5
730.	33.05	2892.	33.5
732.	33.04	2894.	33.51
734.	33.04	2896.	33.5
736.	33.05	2898.	33.49
738.	33.04	2900.	33.47
740.	33.05	2902.	33.46
742.	33.05	2904.	33.46
744.	33.05	2906.	33.44
746.	33.05	2908.	33.45
748.	33.06	2910.	33.44
750.	33.06	2912.	33.44
752.	33.06	2914.	33.44
754.	33.06	2916.	33.44
756.	33.08	2918.	33.44
758.	33.09	2920.	33.43
760.	33.1	2922.	33.44
762.	33.1	2924.	33.42
764.	33.11	2926.	33.43
766.	33.11	2928.	33.42
768.	33.11	2930.	33.43
770.	33.12	2932.	33.42
772.	33.11	2934.	33.42
774.	33.11	2936.	33.42
776.	33.11	2938.	33.43
778.	33.12	2940.	33.43
780.	33.14	2942.	33.43
782.	33.14	2944.	33.42
784.	33.14	2946.	33.41
786.	33.14	2948.	33.42
788.	33.15	2950.	33.42
790.	33.15	2952.	33.43
792.	33.14	2954.	33.32
794.	33.15	2956.	33.27
796.	33.15	2958.	33.21
798.	33.15	2960.	33.39
800.	33.16	2962.	33.55
802.	33.16	2964.	33.64
804.	33.17	2966.	33.71

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
806.	33.16	2968.	33.75
808.	33.16	2970.	33.81
810.	33.17	2972.	33.91
812.	33.17	2974.	33.96
814.	33.17	2976.	34.01
816.	33.17	2978.	34.03
818.	33.17	2980.	34.03
820.	33.17	2982.	34.04
822.	33.17	2984.	34.05
824.	33.17	2986.	34.06
826.	33.17	2988.	34.08
828.	33.17	2990.	34.08
830.	33.17	2992.	34.08
832.	33.16	2994.	34.09
834.	33.17	2996.	34.07
836.	33.17	2998.	34.07
838.	33.17	3000.	34.07
840.	33.17	3002.	34.02
842.	33.17	3004.	33.95
844.	33.17	3006.	33.91
846.	33.16	3008.	33.89
848.	33.15	3010.	33.89
850.	33.15	3012.	33.9
852.	33.15	3014.	33.9
854.	33.16	3016.	33.91
856.	33.16	3018.	33.89
858.	33.16	3020.	33.9
860.	33.16	3022.	33.89
862.	33.15	3024.	33.9
864.	33.15	3026.	33.89
866.	33.16	3028.	33.89
868.	33.16	3030.	33.9
870.	33.15	3032.	33.89
872.	33.15	3034.	33.89
874.	33.16	3036.	33.91
876.	33.16	3038.	33.9
878.	33.16	3040.	33.89
880.	33.16	3042.	33.9
882.	33.16	3044.	33.89
884.	33.16	3046.	33.89
886.	33.16	3048.	33.88
888.	33.16	3050.	33.89
890.	33.17	3052.	33.9
892.	33.17	3054.	33.89
894.	33.17	3056.	33.89
896.	33.17	3058.	33.89
898.	33.17	3060.	33.89
900.	33.17	3062.	33.88
902.	33.17	3064.	33.89
904.	33.17	3066.	33.89
906.	33.18	3068.	33.9
908.	33.16	3070.	33.89
910.	33.17	3072.	33.9
912.	33.18	3074.	33.9
914.	33.18	3076.	33.9
916.	33.19	3078.	33.9
918.	33.19	3080.	33.9
920.	33.19	3082.	33.9
922.	33.19	3084.	33.9
924.	33.19	3086.	33.9
926.	33.19	3088.	33.92
928.	33.18	3090.	33.91
930.	33.19	3092.	33.45
932.	33.19	3094.	33.68
934.	33.2	3096.	33.78
936.	33.19	3098.	33.89

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
938.	33.19	3100.	33.94
940.	33.2	3102.	33.97
942.	33.19	3104.	33.97
944.	33.2	3106.	33.98
946.	33.2	3108.	33.98
948.	33.19	3110.	33.97
950.	33.19	3112.	33.98
952.	33.2	3114.	33.98
954.	33.2	3116.	33.98
956.	33.19	3118.	33.99
958.	33.19	3120.	33.98
960.	33.2	3122.	34.
962.	33.2	3124.	34.
964.	33.2	3126.	34.
966.	33.2	3128.	33.99
968.	33.2	3130.	33.99
970.	33.21	3132.	33.99
972.	33.2	3134.	34.
974.	33.21	3136.	34.01
976.	33.21	3138.	34.
978.	33.21	3140.	34.
980.	33.21	3142.	34.
982.	33.22	3144.	34.
984.	33.21	3146.	34.
986.	33.21	3148.	34.
988.	33.21	3150.	34.
990.	33.21	3152.	34.
992.	33.2	3154.	34.
994.	33.21	3156.	34.
996.	33.21	3158.	34.01
998.	33.21	3160.	34.
1000.	33.21	3162.	34.
1002.	33.21	3164.	34.01
1004.	33.21	3166.	34.
1006.	33.21	3168.	34.
1008.	33.22	3170.	34.01
1010.	33.22	3172.	33.99
1012.	33.22	3174.	33.99
1014.	33.21	3176.	34.
1016.	32.54	3178.	34.
1018.	32.9	3180.	34.
1020.	33.05	3182.	34.01
1022.	33.12	3184.	34.01
1024.	33.17	3186.	34.01
1026.	33.2	3188.	34.01
1028.	33.22	3190.	34.01
1030.	33.24	3192.	34.01
1032.	33.25	3194.	34.01
1034.	33.26	3196.	34.02
1036.	33.26	3198.	34.01
1038.	33.26	3200.	34.
1040.	33.26	3202.	34.
1042.	33.26	3204.	34.
1044.	33.26	3206.	34.
1046.	33.26	3208.	34.
1048.	33.26	3210.	34.
1050.	33.27	3212.	34.
1052.	33.26	3214.	34.01
1054.	33.27	3216.	34.05
1056.	33.26	3218.	34.06
1058.	33.26	3220.	34.07
1060.	33.26	3222.	34.07
1062.	33.26	3224.	34.08
1064.	33.26	3226.	34.08
1066.	33.26	3228.	34.07
1068.	33.26	3230.	34.08

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1070.	33.25	3232.	34.09
1072.	33.25	3234.	34.09
1074.	33.24	3236.	34.05
1076.	33.23	3238.	34.04
1078.	33.23	3240.	34.02
1080.	33.23	3242.	34.01
1082.	33.26	3244.	34.
1084.	33.26	3246.	34.01
1086.	33.28	3248.	34.
1088.	33.29	3250.	34.
1090.	33.29	3252.	34.
1092.	33.29	3254.	33.99
1094.	33.29	3256.	33.99
1096.	33.29	3258.	33.98
1098.	33.29	3260.	33.98
1100.	33.28	3262.	33.99
1102.	33.29	3264.	33.99
1104.	33.29	3266.	33.99
1106.	33.28	3268.	34.
1108.	33.28	3270.	34.01
1110.	33.27	3272.	34.01
1112.	33.26	3274.	34.01
1114.	33.26	3276.	34.01
1116.	33.27	3278.	34.01
1118.	33.27	3280.	34.
1120.	33.26	3282.	34.
1122.	33.27	3284.	34.
1124.	33.28	3286.	33.99
1126.	33.28	3288.	33.97
1128.	33.28	3290.	33.97
1130.	33.28	3292.	33.97
1132.	33.29	3294.	33.96
1134.	33.29	3296.	33.96
1136.	33.29	3298.	33.96
1138.	33.29	3300.	33.97
1140.	33.29	3302.	33.97
1142.	33.28	3304.	33.97
1144.	33.29	3306.	33.97
1146.	33.29	3308.	33.95
1148.	33.28	3310.	33.95
1150.	33.27	3312.	33.95
1152.	33.28	3314.	33.81
1154.	33.29	3316.	33.76
1156.	33.28	3318.	33.73
1158.	33.28	3320.	33.72
1160.	33.29	3322.	33.71
1162.	33.29	3324.	33.7
1164.	33.28	3326.	33.69
1166.	33.29	3328.	33.7
1168.	33.29	3330.	33.7
1170.	33.29	3332.	33.7
1172.	33.3	3334.	33.7
1174.	33.3	3336.	33.7
1176.	33.29	3338.	33.7
1178.	33.29	3340.	33.7
1180.	33.28	3342.	33.7
1182.	33.28	3344.	33.71
1184.	33.29	3346.	33.74
1186.	33.29	3348.	33.83
1188.	33.29	3350.	33.88
1190.	33.28	3352.	33.9
1192.	33.28	3354.	33.91
1194.	33.29	3356.	33.92
1196.	33.29	3358.	33.93
1198.	33.29	3360.	33.93
1200.	33.31	3362.	33.94

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1202.	33.33	3364.	33.93
1204.	33.34	3366.	33.93
1206.	33.35	3368.	33.95
1208.	33.34	3370.	33.95
1210.	33.33	3372.	33.95
1212.	33.33	3374.	33.95
1214.	33.32	3376.	33.94
1216.	33.32	3378.	33.95
1218.	33.32	3380.	33.94
1220.	33.32	3382.	33.95
1222.	33.31	3384.	33.95
1224.	33.3	3386.	33.95
1226.	33.29	3388.	33.96
1228.	33.28	3390.	33.95
1230.	33.29	3392.	33.95
1232.	33.29	3394.	33.96
1234.	33.31	3396.	33.96
1236.	33.31	3398.	33.96
1238.	33.31	3400.	33.96
1240.	33.31	3402.	33.95
1242.	33.32	3404.	33.96
1244.	33.31	3406.	33.95
1246.	33.32	3408.	33.95
1248.	33.31	3410.	33.95
1250.	33.31	3412.	33.93
1252.	33.32	3414.	33.92
1254.	33.32	3416.	33.92
1256.	33.33	3418.	33.94
1258.	33.33	3420.	33.92
1260.	33.33	3422.	33.92
1262.	33.34	3424.	33.93
1264.	33.34	3426.	33.95
1266.	33.35	3428.	33.97
1268.	33.34	3430.	33.99
1270.	33.33	3432.	33.99
1272.	33.33	3434.	34.01
1274.	33.32	3436.	34.01
1276.	33.33	3438.	34.01
1278.	33.33	3440.	34.01
1280.	33.36	3442.	34.
1282.	33.39	3444.	34.
1284.	33.39	3446.	34.
1286.	33.4	3448.	34.
1288.	33.4	3450.	33.34
1290.	33.38	3452.	33.64
1292.	33.41	3454.	33.78
1294.	33.4	3456.	33.84
1296.	33.39	3458.	33.9
1298.	33.38	3460.	33.93
1300.	33.37	3462.	33.93
1302.	33.36	3464.	33.95
1304.	33.37	3466.	33.94
1306.	33.4	3468.	33.94
1308.	33.4	3470.	33.96
1310.	33.4	3472.	33.95
1312.	33.39	3474.	33.95
1314.	33.4	3476.	33.95
1316.	33.39	3478.	33.95
1318.	33.38	3480.	33.96
1320.	33.38	3482.	33.96
1322.	33.37	3484.	33.96
1324.	33.39	3486.	33.97
1326.	33.38	3488.	33.96
1328.	33.38	3490.	33.97
1330.	33.37	3492.	33.96
1332.	33.36	3494.	33.96

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1334.	33.21	3496.	33.97
1336.	33.16	3498.	33.96
1338.	33.12	3500.	33.95
1340.	33.11	3502.	33.95
1342.	33.1	3504.	33.96
1344.	33.11	3506.	33.95
1346.	33.15	3508.	33.95
1348.	33.23	3510.	33.95
1350.	33.28	3512.	33.95
1352.	33.32	3514.	33.94
1354.	33.33	3516.	33.95
1356.	33.34	3518.	33.95
1358.	33.34	3520.	33.95
1360.	33.34	3522.	33.94
1362.	33.34	3524.	33.95
1364.	33.35	3526.	33.95
1366.	33.36	3528.	33.96
1368.	33.37	3530.	33.96
1370.	33.37	3532.	33.98
1372.	33.36	3534.	33.98
1374.	33.36	3536.	33.98
1376.	33.35	3538.	34.
1378.	33.36	3540.	33.98
1380.	31.92	3542.	33.97
1382.	32.34	3544.	33.97
1384.	32.58	3546.	33.97
1386.	32.68	3548.	33.97
1388.	32.74	3550.	33.96
1390.	32.77	3552.	33.96
1392.	32.79	3554.	33.96
1394.	32.8	3556.	33.96
1396.	32.81	3558.	33.98
1398.	32.82	3560.	33.97
1400.	32.81	3562.	33.97
1402.	32.81	3564.	33.95
1404.	32.81	3566.	33.96
1406.	32.82	3568.	33.95
1408.	32.82	3570.	33.94
1410.	32.83	3572.	33.94
1412.	32.79	3574.	33.93
1414.	32.76	3576.	33.94
1416.	32.76	3578.	33.95
1418.	32.74	3580.	33.95
1420.	32.74	3582.	33.95
1422.	32.74	3584.	33.95
1424.	32.73	3586.	33.95
1426.	32.73	3588.	33.95
1428.	32.74	3590.	33.94
1430.	32.75	3592.	33.93
1432.	32.75	3594.	33.93
1434.	32.76	3596.	33.94
1436.	32.76	3598.	33.93
1438.	32.76	3600.	33.94
1440.	32.77	3602.	33.94
1442.	32.76	3604.	33.95
1444.	32.77	3606.	33.95
1446.	32.77	3608.	33.96
1448.	32.77	3610.	33.97
1450.	32.76	3612.	33.97
1452.	32.77	3614.	33.98
1454.	32.78	3616.	34.01
1456.	32.78	3618.	34.
1458.	32.78	3620.	34.
1460.	32.79	3622.	33.99
1462.	32.78	3624.	33.98
1464.	32.78	3626.	33.98

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1466.	32.77	3628.	33.98
1468.	32.76	3630.	33.98
1470.	32.75	3632.	33.97
1472.	32.75	3634.	33.98
1474.	32.74	3636.	33.99
1476.	32.74	3638.	34.01
1478.	32.74	3640.	34.01
1480.	32.73	3642.	34.
1482.	32.73	3644.	34.
1484.	32.74	3646.	34.
1486.	32.73	3648.	34.01
1488.	32.71	3650.	34.01
1490.	32.73	3652.	34.
1492.	32.74	3654.	33.99
1494.	32.76	3656.	33.98
1496.	32.76	3658.	33.98
1498.	32.76	3660.	33.99
1500.	32.76	3662.	33.96
1502.	32.77	3664.	33.87
1504.	32.77	3666.	33.8
1506.	32.77	3668.	33.77
1508.	32.77	3670.	33.75
1510.	32.77	3672.	33.73
1512.	32.78	3674.	33.73
1514.	32.79	3676.	33.77
1516.	32.78	3678.	33.83
1518.	32.78	3680.	33.88
1520.	32.79	3682.	33.91
1522.	32.78	3684.	33.92
1524.	32.79	3686.	33.95
1526.	32.79	3688.	33.98
1528.	32.79	3690.	33.98
1530.	32.79	3692.	33.97
1532.	32.79	3694.	33.97
1534.	32.79	3696.	33.97
1536.	32.79	3698.	33.96
1538.	32.79	3700.	33.96
1540.	32.79	3702.	33.98
1542.	32.79	3704.	34.
1544.	32.77	3706.	34.01
1546.	32.77	3708.	34.02
1548.	32.75	3710.	34.02
1550.	32.75	3712.	34.02
1552.	32.74	3714.	34.
1554.	32.74	3716.	33.98
1556.	32.73	3718.	33.99
1558.	32.72	3720.	33.97
1560.	32.72	3722.	33.97
1562.	32.71	3724.	33.98
1564.	32.71	3726.	33.95
1566.	32.7	3728.	33.95
1568.	32.71	3730.	33.96
1570.	32.7	3732.	33.97
1572.	32.7	3734.	33.97
1574.	32.7	3736.	33.95
1576.	32.7	3738.	33.98
1578.	32.69	3740.	34.
1580.	32.91	3742.	33.99
1582.	33.06	3744.	33.97
1584.	33.13	3746.	33.98
1586.	33.17	3748.	33.97
1588.	33.21	3750.	33.95
1590.	33.24	3752.	33.96
1592.	33.25	3754.	33.97
1594.	33.25	3756.	33.96
1596.	33.26	3758.	33.95

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1598.	33.26	3760.	33.95
1600.	33.27	3762.	33.94
1602.	33.28	3764.	33.94
1604.	33.29	3766.	33.95
1606.	33.29	3768.	33.95
1608.	33.3	3770.	33.95
1610.	33.29	3772.	33.98
1612.	33.31	3774.	33.98
1614.	33.31	3776.	33.98
1616.	33.32	3778.	33.98
1618.	33.32	3780.	33.99
1620.	33.32	3782.	33.98
1622.	33.33	3784.	33.95
1624.	33.33	3786.	33.95
1626.	33.33	3788.	33.96
1628.	33.32	3790.	33.96
1630.	33.33	3792.	33.97
1632.	33.32	3794.	33.98
1634.	33.31	3796.	34.01
1636.	33.29	3798.	34.
1638.	33.29	3800.	34.
1640.	33.29	3802.	33.99
1642.	33.28	3804.	34.01
1644.	33.28	3806.	33.44
1646.	33.29	3808.	33.76
1648.	33.29	3810.	33.9
1650.	33.29	3812.	33.95
1652.	33.28	3814.	33.99
1654.	33.29	3816.	34.02
1656.	33.29	3818.	34.03
1658.	33.29	3820.	34.05
1660.	33.28	3822.	34.05
1662.	33.28	3824.	34.05
1664.	33.29	3826.	34.06
1666.	33.28	3828.	34.07
1668.	33.29	3830.	34.07
1670.	33.28	3832.	34.06
1672.	33.28	3834.	34.06
1674.	33.27	3836.	34.05
1676.	33.27	3838.	34.06
1678.	33.26	3840.	34.07
1680.	33.27	3842.	34.06
1682.	33.27	3844.	34.05
1684.	33.28	3846.	34.04
1686.	33.28	3848.	34.04
1688.	33.27	3850.	34.03
1690.	33.27	3852.	34.03
1692.	33.27	3854.	34.03
1694.	33.28	3856.	34.03
1696.	33.28	3858.	34.04
1698.	33.28	3860.	34.04
1700.	33.27	3862.	34.05
1702.	33.27	3864.	34.03
1704.	33.26	3866.	34.05
1706.	33.26	3868.	34.06
1708.	33.26	3870.	34.06
1710.	33.26	3872.	34.07
1712.	33.27	3874.	34.05
1714.	33.3	3876.	34.07
1716.	33.32	3878.	34.07
1718.	32.42	3880.	34.05
1720.	32.67	3882.	34.05
1722.	33.	3884.	34.06
1724.	33.17	3886.	34.05
1726.	33.26	3888.	34.04
1728.	33.31	3890.	34.04

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1730.	33.34	3892.	34.04
1732.	33.36	3894.	34.03
1734.	33.34	3896.	34.04
1736.	33.3	3898.	34.04
1738.	33.27	3900.	34.04
1740.	33.31	3902.	34.06
1742.	33.34	3904.	34.07
1744.	33.36	3906.	34.07
1746.	33.37	3908.	34.05
1748.	33.38	3910.	34.04
1750.	33.39	3912.	34.04
1752.	33.39	3914.	34.04
1754.	33.4	3916.	34.04
1756.	33.41	3918.	34.05
1758.	33.41	3920.	34.05
1760.	33.41	3922.	34.04
1762.	33.41	3924.	34.03
1764.	33.42	3926.	34.03
1766.	33.41	3928.	34.04
1768.	33.41	3930.	34.05
1770.	33.41	3932.	34.06
1772.	33.41	3934.	34.06
1774.	33.42	3936.	34.07
1776.	33.41	3938.	34.06
1778.	33.42	3940.	34.06
1780.	33.41	3942.	34.04
1782.	33.42	3944.	34.06
1784.	33.42	3946.	34.07
1786.	33.42	3948.	34.07
1788.	33.41	3950.	34.07
1790.	33.4	3952.	34.05
1792.	33.38	3954.	34.04
1794.	33.39	3956.	34.04
1796.	33.38	3958.	34.03
1798.	33.38	3960.	34.02
1800.	33.38	3962.	34.03
1802.	33.38	3964.	34.02
1804.	33.37	3966.	34.01
1806.	33.37	3968.	34.
1808.	33.37	3970.	34.
1810.	33.37	3972.	33.99
1812.	33.37	3974.	34.01
1814.	33.37	3976.	34.03
1816.	33.37	3978.	34.04
1818.	33.38	3980.	34.04
1820.	33.38	3982.	34.04
1822.	33.37	3984.	34.04
1824.	33.37	3986.	34.03
1826.	33.38	3988.	34.02
1828.	33.37	3990.	34.02
1830.	33.38	3992.	34.02
1832.	33.38	3994.	34.02
1834.	33.38	3996.	34.01
1836.	33.38	3998.	34.04
1838.	33.37	4000.	34.04
1840.	33.35	4002.	34.04
1842.	33.37	4004.	34.02
1844.	33.35	4006.	34.03
1846.	33.35	4008.	34.03
1848.	33.36	4010.	34.04
1850.	33.36	4012.	34.04
1852.	33.35	4014.	34.05
1854.	33.35	4016.	34.04
1856.	33.35	4018.	34.03
1858.	33.35	4020.	34.01
1860.	33.35	4022.	34.02

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1862.	33.33	4024.	34.03
1864.	33.34	4026.	34.02
1866.	33.33	4028.	34.01
1868.	33.33	4030.	34.
1870.	33.33	4032.	34.
1872.	33.33	4034.	34.
1874.	33.35	4036.	34.01
1876.	33.34	4038.	34.01
1878.	33.34	4040.	34.
1880.	33.34	4042.	33.99
1882.	33.34	4044.	33.99
1884.	33.34	4046.	33.99
1886.	33.34	4048.	34.01
1888.	33.34	4050.	34.02
1890.	33.34	4052.	34.06
1892.	33.34	4054.	34.09
1894.	33.34	4056.	34.08
1896.	33.32	4058.	34.09
1898.	33.3	4060.	34.11
1900.	33.33	4062.	34.12
1902.	33.34	4064.	34.11
1904.	33.36	4066.	34.11
1906.	33.35	4068.	34.11
1908.	33.36	4070.	34.1
1910.	33.37	4072.	34.09
1912.	33.37	4074.	34.08
1914.	33.36	4076.	34.1
1916.	33.38	4078.	34.11
1918.	33.38	4080.	34.12
1920.	33.37	4082.	34.12
1922.	33.38	4084.	34.11
1924.	33.37	4086.	34.13
1926.	33.38	4088.	34.12
1928.	33.37	4090.	34.12
1930.	33.36	4092.	34.1
1932.	33.37	4094.	34.09
1934.	33.37	4096.	34.07
1936.	33.35	4098.	34.07
1938.	33.36	4100.	34.1
1940.	33.38	4102.	34.11
1942.	33.38	4104.	34.12
1944.	33.35	4106.	34.13
1946.	33.37	4108.	34.12
1948.	33.36	4110.	34.11
1950.	33.37	4112.	34.07
1952.	33.36	4114.	34.05
1954.	33.38	4116.	34.04
1956.	33.37	4118.	34.03
1958.	33.37	4120.	34.
1960.	33.36	4122.	34.
1962.	33.35	4124.	33.95
1964.	33.35	4126.	33.89
1966.	33.34	4128.	33.86
1968.	33.35	4130.	33.83
1970.	33.35	4132.	33.81
1972.	33.35	4134.	33.82
1974.	33.34	4136.	33.8
1976.	33.33	4138.	33.8
1978.	33.34	4140.	33.83
1980.	33.35	4142.	33.85
1982.	33.35	4144.	33.95
1984.	33.36	4146.	34.01
1986.	33.37	4148.	34.05
1988.	33.37	4150.	34.1
1990.	33.37	4152.	34.09
1992.	33.37	4154.	34.09

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1994.	33.37	4156.	34.11
1996.	33.39	4158.	34.14
1998.	33.38	4160.	34.14
2000.	33.39	4162.	34.14
2002.	33.39	4164.	34.12
2004.	33.38	4166.	34.15
2006.	33.38	4168.	34.16
2008.	33.39	4170.	34.15
2010.	32.74	4172.	34.12
2012.	33.11	4174.	34.15
2014.	33.26	4176.	33.16
2016.	33.33	4178.	33.43
2018.	33.35	4180.	33.52
2020.	33.38	4182.	33.54
2022.	33.39	4184.	33.57
2024.	33.41	4186.	33.57
2026.	33.42	4188.	33.57
2028.	33.42	4190.	33.56
2030.	33.42	4192.	33.56
2032.	33.42	4194.	33.56
2034.	33.43	4196.	33.54
2036.	33.42	4198.	33.53
2038.	33.42	4200.	33.53
2040.	33.42	4202.	33.52
2042.	33.43	4204.	33.52
2044.	33.43	4206.	33.51
2046.	33.42	4208.	33.5
2048.	33.42	4210.	33.49
2050.	33.43	4212.	33.49
2052.	33.42	4214.	33.48
2054.	33.43	4216.	33.49
2056.	33.43	4218.	33.49
2058.	33.42	4220.	33.5
2060.	33.43	4222.	33.48
2062.	33.43	4224.	33.48
2064.	33.44	4226.	33.48
2066.	33.43	4228.	33.47
2068.	33.44	4230.	33.47
2070.	33.44	4232.	33.48
2072.	33.44	4234.	33.47
2074.	33.44	4236.	33.47
2076.	33.45	4238.	33.47
2078.	33.45	4240.	33.47
2080.	33.45	4242.	33.47
2082.	33.44	4244.	33.46
2084.	33.44	4246.	33.47
2086.	33.46	4248.	33.47
2088.	33.47	4250.	33.47
2090.	33.47	4252.	33.47
2092.	33.49	4254.	33.47
2094.	33.49	4256.	33.46
2096.	33.49	4258.	33.46
2098.	33.49	4260.	33.46
2100.	33.48	4262.	33.46
2102.	33.48	4264.	33.46
2104.	33.48	4266.	33.45
2106.	33.48	4268.	33.46
2108.	33.47	4270.	33.46
2110.	33.46	4272.	33.46
2112.	33.46	4274.	33.45
2114.	33.46	4276.	33.46
2116.	33.46	4278.	33.46
2118.	33.46	4280.	33.46
2120.	33.45	4282.	33.46
2122.	33.46	4284.	33.46
2124.	33.46	4286.	33.46

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
2126.	33.47	4288.	33.46
2128.	33.45	4290.	33.47
2130.	33.46	4292.	33.46
2132.	33.45	4294.	33.46
2134.	33.45	4296.	33.46
2136.	33.43	4298.	33.45
2138.	33.44	4300.	33.45
2140.	33.4	4302.	33.44
2142.	33.4	4304.	33.44
2144.	33.39	4306.	33.46
2146.	33.39	4308.	33.47
2148.	33.39	4310.	33.48
2150.	33.39	4312.	33.48
2152.	33.39	4314.	33.49
2154.	33.39	4316.	33.49
2156.	33.4	4318.	33.48
2158.	33.39	4320.	33.31
2160.	33.39		

Observation Well No. 2: MW14-05M

X Location: 3038283.21 ft
Y Location: 685211.79 ft

Radial distance from MW14-03B: 1341.454245 ft

Partially Penetrating Well in Aquitard
Depth to Top of Screen: 3. ft
Depth to Bottom of Screen: 15.6 ft

No. of Observations: 558

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
5.	-0.00164	1400.	0.08924
10.	0.001641	1405.	0.09154
15.	-0.0006561	1410.	0.09022
20.	0.003281	1415.	0.09482
25.	0.005249	1420.	0.09252
30.	0.0003281	1425.	0.09678
35.	0.0006562	1430.	0.09744
40.	0.004921	1435.	0.09482
45.	0.005249	1440.	0.09514
50.	0.004265	1445.	0.09875
55.	0.001312	1450.	0.09843
60.	0.005906	1455.	0.09941
65.	0.003281	1460.	0.09843
70.	0.005578	1465.	0.0981
75.	0.004265	1470.	0.1001
80.	0.01312	1475.	0.09777
85.	0.008858	1480.	0.0958
90.	0.01575	1485.	0.09875
95.	0.007546	1490.	0.09711
100.	0.0164	1495.	0.09744
105.	0.01804	1500.	0.09613
110.	0.01903	1505.	0.09744
115.	0.01444	1510.	0.1001
120.	0.01542	1515.	0.1011
125.	0.01739	1520.	0.1004
130.	0.01936	1525.	0.1004
135.	0.01837	1530.	0.09514
140.	0.01969	1535.	0.09416
145.	0.02198	1540.	0.09646
150.	0.01706	1545.	0.1004
155.	0.01739	1550.	0.09843
160.	0.021	1555.	0.1004

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
165.	0.01837	1560.	0.09908
170.	0.0187	1565.	0.1001
175.	0.01936	1570.	0.103
180.	0.0164	1575.	0.1037
185.	0.01804	1580.	0.1066
190.	0.02034	1585.	0.1017
195.	0.02165	1590.	0.1096
200.	0.02559	1595.	0.1145
205.	0.02428	1600.	0.1099
210.	0.02133	1605.	0.1142
215.	0.02854	1610.	0.1086
220.	0.02559	1615.	0.1106
225.	0.02362	1620.	0.1089
230.	0.02953	1625.	0.1171
235.	0.02986	1630.	0.1142
240.	0.02887	1635.	0.1106
245.	0.03117	1640.	0.1145
250.	0.03314	1645.	0.1119
255.	0.03084	1650.	0.1109
260.	0.03642	1655.	0.1112
265.	0.04265	1660.	0.1142
270.	0.03707	1665.	0.1175
275.	0.04331	1670.	0.1329
280.	0.0269	1675.	0.1325
285.	0.04003	1680.	0.128
290.	0.04757	1685.	0.1329
295.	0.04462	1690.	0.1345
300.	0.04856	1695.	0.1365
305.	0.04692	1700.	0.1388
310.	0.04921	1705.	0.1339
315.	0.05249	1710.	0.1161
320.	0.05053	1715.	0.1181
325.	0.05151	1720.	0.09941
330.	0.05643	1725.	0.1283
335.	0.05545	1730.	0.1201
340.	0.05741	1735.	0.1411
345.	0.06299	1740.	0.1411
350.	0.05971	1745.	0.1329
355.	0.05906	1750.	0.1253
360.	0.06266	1755.	0.1385
365.	0.06201	1760.	0.1358
370.	0.06037	1765.	0.1355
375.	0.06135	1770.	0.1368
380.	0.06201	1775.	0.1365
385.	0.06398	1780.	0.1316
390.	0.06332	1785.	0.1365
395.	0.06693	1790.	0.1362
400.	0.06365	1795.	0.1398
405.	0.06398	1800.	0.1385
410.	0.06693	1805.	0.1368
415.	0.0643	1810.	0.1391
420.	0.0666	1815.	0.1388
425.	0.06627	1820.	0.1355
430.	0.06693	1825.	0.1404
435.	0.06627	1830.	0.1381
440.	0.06988	1835.	0.1381
445.	0.06824	1840.	0.1411
450.	0.0666	1845.	0.1404
455.	0.06824	1850.	0.1381
460.	0.06923	1855.	0.1421
465.	0.06988	1860.	0.1407
470.	0.06562	1865.	0.1391
475.	0.07087	1870.	0.1424
480.	0.06955	1875.	0.1421
485.	0.07218	1880.	0.1414
490.	0.07021	1885.	0.1421

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
495.	0.07218	1890.	0.1447
500.	0.07185	1895.	0.147
505.	0.07251	1900.	0.146
510.	0.07448	1905.	0.1444
515.	0.07185	1910.	0.1493
520.	0.07349	1915.	0.1476
525.	0.07382	1920.	0.1486
530.	0.07546	1925.	0.148
535.	0.07415	1930.	0.1467
540.	0.07251	1935.	0.147
545.	0.07513	1940.	0.1499
550.	0.07513	1945.	0.149
555.	0.07644	1950.	0.1516
560.	0.07644	1955.	0.1506
565.	0.07382	1960.	0.1516
570.	0.0748	1965.	0.1535
575.	0.07644	1970.	0.1509
580.	0.07579	1975.	0.1529
585.	0.07579	1980.	0.1529
590.	0.07874	1985.	0.1539
595.	0.07579	1990.	0.1552
600.	0.07513	1995.	0.1552
605.	0.07743	2000.	0.1545
610.	0.07841	2005.	0.1542
615.	0.07841	2010.	0.1558
620.	0.07808	2015.	0.1552
625.	0.07776	2020.	0.1565
630.	0.07874	2025.	0.1555
635.	0.08038	2030.	0.1568
640.	0.07776	2035.	0.1568
645.	0.07677	2040.	0.1558
650.	0.08038	2045.	0.1555
655.	0.07841	2050.	0.1581
660.	0.07907	2055.	0.1588
665.	0.08104	2060.	0.1594
670.	0.08071	2065.	0.1601
675.	0.0794	2070.	0.1591
680.	0.0794	2075.	0.1591
685.	0.0794	2080.	0.1611
690.	0.08038	2085.	0.1621
695.	0.07776	2090.	0.1591
700.	0.08169	2095.	0.1611
705.	0.08104	2100.	0.1608
710.	0.08104	2105.	0.1604
715.	0.08071	2110.	0.1614
720.	0.08038	2115.	0.1608
725.	0.08202	2120.	0.1621
730.	0.08136	2125.	0.1624
735.	0.08104	2130.	0.1608
740.	0.08235	2135.	0.164
745.	0.08301	2140.	0.1631
750.	0.08497	2145.	0.1604
755.	0.08465	2150.	0.1627
760.	0.08136	2155.	0.1637
765.	0.08301	2160.	0.1621
770.	0.08432	2165.	0.1657
775.	0.08366	2170.	0.1657
780.	0.08268	2175.	0.1654
785.	0.08268	2180.	0.165
790.	0.08629	2185.	0.1644
795.	0.08465	2190.	0.1644
800.	0.08497	2195.	0.164
805.	0.08825	2200.	0.1644
810.	0.08825	2205.	0.166
815.	0.08727	2210.	0.1647
820.	0.08727	2215.	0.1654

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
825.	0.08596	2220.	0.1667
830.	0.08563	2225.	0.1673
835.	0.08694	2230.	0.165
840.	0.0876	2235.	0.1663
845.	0.08563	2240.	0.1667
850.	0.08825	2245.	0.1657
855.	0.08924	2250.	0.1663
860.	0.08825	2255.	0.1657
865.	0.08727	2260.	0.1677
870.	0.08596	2265.	0.167
875.	0.08727	2270.	0.169
880.	0.08825	2275.	0.1677
885.	0.0876	2280.	0.1667
890.	0.0876	2285.	0.1677
895.	0.08957	2290.	0.1683
900.	0.08727	2295.	0.167
905.	0.0876	2300.	0.1677
910.	0.09055	2305.	0.1683
915.	0.08957	2310.	0.1683
920.	0.09154	2315.	0.1703
925.	0.09055	2320.	0.1686
930.	0.08793	2325.	0.1686
935.	0.09154	2330.	0.1677
940.	0.08858	2335.	0.1673
945.	0.09219	2340.	0.1696
950.	0.09121	2345.	0.168
955.	0.09285	2350.	0.1699
960.	0.09154	2355.	0.1683
965.	0.08891	2360.	0.1729
970.	0.08957	2365.	0.169
975.	0.09318	2370.	0.1667
980.	0.09088	2375.	0.1677
985.	0.08957	2380.	0.167
990.	0.09022	2385.	0.1716
995.	0.09055	2390.	0.1683
1000.	0.09055	2395.	0.1686
1005.	0.09055	2400.	0.1677
1010.	0.09219	2405.	0.169
1015.	0.09186	2410.	0.1677
1020.	0.09285	2415.	0.1667
1025.	0.09285	2420.	0.1693
1030.	0.09482	2425.	0.1683
1035.	0.09121	2430.	0.168
1040.	0.09383	2435.	0.1673
1045.	0.09285	2440.	0.1673
1050.	0.09121	2445.	0.1677
1055.	0.09318	2450.	0.1703
1060.	0.09252	2455.	0.1677
1065.	0.09383	2460.	0.1673
1070.	0.09186	2465.	0.1677
1075.	0.09285	2470.	0.165
1080.	0.09219	2475.	0.1667
1085.	0.09318	2480.	0.166
1090.	0.0935	2485.	0.1654
1095.	0.09088	2490.	0.1693
1100.	0.09285	2495.	0.166
1105.	0.09186	2500.	0.1657
1110.	0.0958	2505.	0.1673
1115.	0.09186	2510.	0.1644
1120.	0.09252	2515.	0.164
1125.	0.09088	2520.	0.1644
1130.	0.08957	2525.	0.1617
1135.	0.0899	2530.	0.1614
1140.	0.09285	2535.	0.1617
1145.	0.09186	2540.	0.1591
1150.	0.09383	2545.	0.1585

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1155.	0.09318	2550.	0.1585
1160.	0.09252	2555.	0.1565
1165.	0.09285	2560.	0.1575
1170.	0.0935	2565.	0.1535
1175.	0.09383	2570.	0.1526
1180.	0.09646	2575.	0.1542
1185.	0.09383	2580.	0.1555
1190.	0.08957	2585.	0.1575
1195.	0.09285	2590.	0.1558
1200.	0.0935	2595.	0.1581
1205.	0.09252	2600.	0.1568
1210.	0.09318	2605.	0.1598
1215.	0.09022	2610.	0.1594
1220.	0.0958	2615.	0.1627
1225.	0.1014	2620.	0.1614
1230.	0.0981	2625.	0.1617
1235.	0.09646	2630.	0.1621
1240.	0.09285	2635.	0.1631
1245.	0.09941	2640.	0.1634
1250.	0.09646	2645.	0.166
1255.	0.09121	2650.	0.1686
1260.	0.09449	2655.	0.165
1265.	0.09449	2660.	0.167
1270.	0.0899	2665.	0.165
1275.	0.09482	2670.	0.1686
1280.	0.09088	2675.	0.1699
1285.	0.09285	2680.	0.169
1290.	0.09482	2685.	0.169
1295.	0.09416	2690.	0.168
1300.	0.08727	2695.	0.166
1305.	0.08957	2700.	0.1683
1310.	0.09285	2705.	0.1686
1315.	0.09449	2710.	0.1716
1320.	0.09055	2715.	0.169
1325.	0.0935	2720.	0.1673
1330.	0.09219	2725.	0.1696
1335.	0.09383	2730.	0.1696
1340.	0.09711	2735.	0.1677
1345.	0.0935	2740.	0.168
1350.	0.09514	2745.	0.1663
1355.	0.09022	2750.	0.166
1360.	0.09285	2755.	0.1673
1365.	0.09186	2760.	0.165
1370.	0.0899	2765.	0.1644
1375.	0.09088	2770.	0.1621
1380.	0.08563	2775.	0.165
1385.	0.08825	2780.	0.1624
1390.	0.08924	2785.	0.1617
1395.	0.08957	2790.	0.09744

Observation Well No. 3: MW14-05D

X Location: 3038280.59 ft
Y Location: 685216.49 ft

Radial distance from MW14-03B: 1346.169293 ft

Partially Penetrating Well
Depth to Top of Screen: 17.5 ft
Depth to Bottom of Screen: 19.5 ft

No. of Observations: 861

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
5.	-0.007218	2160.	0.3494

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
10.	-0.0009843	2165.	0.3524
15.	-0.004265	2170.	0.355
20.	0.0009843	2175.	0.3537
25.	0.003281	2180.	0.3507
30.	-0.005577	2185.	0.3533
35.	0.002297	2190.	0.3524
40.	0.003281	2195.	0.3514
45.	0.007218	2200.	0.3527
50.	0.004921	2205.	0.354
55.	-0.0003281	2210.	0.3576
60.	0.004921	2215.	0.3579
65.	0.007546	2220.	0.3612
70.	0.007874	2225.	0.3632
75.	0.005906	2230.	0.3586
80.	0.02067	2235.	0.3576
85.	0.01345	2240.	0.357
90.	0.02493	2245.	0.3573
95.	0.01673	2250.	0.3579
100.	0.02559	2255.	0.3553
105.	0.03084	2260.	0.3583
110.	0.03248	2265.	0.3593
115.	0.0269	2270.	0.3619
120.	0.02297	2275.	0.3596
125.	0.03051	2280.	0.3609
130.	0.03478	2285.	0.3583
135.	0.0351	2290.	0.3593
140.	0.03871	2295.	0.3576
145.	0.04035	2300.	0.3596
150.	0.0351	2305.	0.3629
155.	0.03182	2310.	0.3615
160.	0.03871	2315.	0.3678
165.	0.04035	2320.	0.3655
170.	0.04003	2325.	0.3622
175.	0.04396	2330.	0.3609
180.	0.03871	2335.	0.3612
185.	0.04429	2340.	0.3629
190.	0.05151	2345.	0.3596
195.	0.04888	2350.	0.3661
200.	0.05446	2355.	0.3609
205.	0.05545	2360.	0.3675
210.	0.05446	2365.	0.3596
215.	0.06037	2370.	0.354
220.	0.05807	2375.	0.3543
225.	0.0561	2380.	0.3533
230.	0.06004	2385.	0.3625
235.	0.06168	2390.	0.3589
240.	0.06562	2395.	0.3589
245.	0.07349	2400.	0.3625
250.	0.07087	2405.	0.3638
255.	0.07087	2410.	0.3629
260.	0.07546	2415.	0.3609
265.	0.08399	2420.	0.3599
270.	0.07776	2425.	0.3589
275.	0.09121	2430.	0.3576
280.	0.06168	2435.	0.354
285.	0.08366	2440.	0.3576
290.	0.09088	2445.	0.3602
295.	0.08891	2450.	0.3609
300.	0.09482	2455.	0.357
305.	0.08793	2460.	0.3579
310.	0.09449	2465.	0.3599
315.	0.09777	2470.	0.3566
320.	0.09547	2475.	0.3579
325.	0.1004	2480.	0.357
330.	0.1063	2485.	0.3589
335.	0.1056	2490.	0.3645

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
340.	0.1073	2495.	0.3625
345.	0.1204	2500.	0.3635
350.	0.1129	2505.	0.3648
355.	0.1109	2510.	0.3612
360.	0.1191	2515.	0.3586
365.	0.1161	2520.	0.3593
370.	0.1171	2525.	0.355
375.	0.1155	2530.	0.352
380.	0.1161	2535.	0.3527
385.	0.1214	2540.	0.352
390.	0.1191	2545.	0.3507
395.	0.123	2550.	0.3507
400.	0.1171	2555.	0.3481
405.	0.1178	2560.	0.3471
410.	0.123	2565.	0.3415
415.	0.1188	2570.	0.3399
420.	0.1207	2575.	0.3428
425.	0.1237	2580.	0.3432
430.	0.1257	2585.	0.3428
435.	0.1257	2590.	0.3392
440.	0.1283	2595.	0.3373
445.	0.1296	2600.	0.333
450.	0.1257	2605.	0.3363
455.	0.1319	2610.	0.3379
460.	0.1312	2615.	0.3356
465.	0.1319	2620.	0.3353
470.	0.123	2625.	0.3317
475.	0.1325	2630.	0.3291
480.	0.1332	2635.	0.3323
485.	0.1365	2640.	0.331
490.	0.1332	2645.	0.3363
495.	0.1401	2650.	0.3386
500.	0.1385	2655.	0.334
505.	0.1398	2660.	0.3353
510.	0.1447	2665.	0.3363
515.	0.1385	2670.	0.3399
520.	0.1417	2675.	0.3399
525.	0.1424	2680.	0.3406
530.	0.1434	2685.	0.3435
535.	0.1421	2690.	0.3428
540.	0.1375	2695.	0.3415
545.	0.1401	2700.	0.3435
550.	0.1434	2705.	0.3448
555.	0.1457	2710.	0.3527
560.	0.1424	2715.	0.3491
565.	0.1368	2720.	0.3471
570.	0.1388	2725.	0.3488
575.	0.1463	2730.	0.3471
580.	0.145	2735.	0.3455
585.	0.146	2740.	0.3432
590.	0.1522	2745.	0.3412
595.	0.143	2750.	0.3422
600.	0.1414	2755.	0.3435
605.	0.1467	2760.	0.3402
610.	0.1483	2765.	0.3396
615.	0.1493	2770.	0.3353
620.	0.1499	2775.	0.3425
625.	0.147	2780.	0.3386
630.	0.1499	2785.	0.3386
635.	0.1529	2790.	0.3376
640.	0.147	2795.	0.2812
645.	0.144	2800.	0.4101
650.	0.1535	2805.	0.4206
655.	0.1512	2810.	0.415
660.	0.1519	2815.	0.4167
665.	0.1512	2820.	0.4144

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
670.	0.1509	2825.	0.415
675.	0.145	2830.	0.4177
680.	0.1476	2835.	0.4203
685.	0.1499	2840.	0.4157
690.	0.1522	2845.	0.4193
695.	0.1463	2850.	0.4147
700.	0.1526	2855.	0.4236
705.	0.1539	2860.	0.4219
710.	0.1463	2865.	0.4206
715.	0.1486	2870.	0.4183
720.	0.1496	2875.	0.4137
725.	0.1532	2880.	0.4114
730.	0.1535	2885.	0.4127
735.	0.1503	2890.	0.416
740.	0.1535	2895.	0.4124
745.	0.1509	2900.	0.4117
750.	0.1545	2905.	0.4154
755.	0.1568	2910.	0.415
760.	0.1457	2915.	0.4154
765.	0.1519	2920.	0.4127
770.	0.1522	2925.	0.4137
775.	0.1516	2930.	0.4167
780.	0.1467	2935.	0.4137
785.	0.1473	2940.	0.416
790.	0.1545	2945.	0.4196
795.	0.1535	2950.	0.4249
800.	0.1516	2955.	0.4203
805.	0.1565	2960.	0.4229
810.	0.1585	2965.	0.4213
815.	0.1512	2970.	0.4272
820.	0.1509	2975.	0.4249
825.	0.1486	2980.	0.4281
830.	0.1486	2985.	0.4278
835.	0.1499	2990.	0.4295
840.	0.1496	2995.	0.4318
845.	0.1447	3000.	0.4301
850.	0.1522	3005.	0.4367
855.	0.1522	3010.	0.4298
860.	0.1453	3015.	0.4334
865.	0.1437	3020.	0.4324
870.	0.1398	3025.	0.4367
875.	0.1427	3030.	0.4341
880.	0.144	3035.	0.4331
885.	0.1434	3040.	0.4367
890.	0.1404	3045.	0.4324
895.	0.146	3050.	0.4373
900.	0.1381	3055.	0.4321
905.	0.1388	3060.	0.4337
910.	0.1463	3065.	0.4383
915.	0.1447	3070.	0.4321
920.	0.1473	3075.	0.4324
925.	0.149	3080.	0.4357
930.	0.1375	3085.	0.4383
935.	0.1444	3090.	0.4364
940.	0.1381	3095.	0.4386
945.	0.1473	3100.	0.4396
950.	0.1407	3105.	0.4436
955.	0.1457	3110.	0.439
960.	0.1424	3115.	0.4472
965.	0.1339	3120.	0.4432
970.	0.1348	3125.	0.4419
975.	0.1437	3130.	0.4446
980.	0.1381	3135.	0.4455
985.	0.1325	3140.	0.4442
990.	0.1342	3145.	0.4442
995.	0.1368	3150.	0.4426

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1000.	0.1339	3155.	0.4485
1005.	0.1352	3160.	0.4495
1010.	0.1342	3165.	0.4442
1015.	0.1365	3170.	0.4508
1020.	0.1394	3175.	0.4485
1025.	0.1388	3180.	0.4547
1030.	0.1421	3185.	0.4505
1035.	0.1316	3190.	0.4508
1040.	0.1375	3195.	0.4518
1045.	0.1378	3200.	0.4485
1050.	0.1293	3205.	0.4482
1055.	0.1335	3210.	0.4505
1060.	0.1322	3215.	0.4446
1065.	0.1352	3220.	0.4472
1070.	0.1306	3225.	0.4498
1075.	0.1339	3230.	0.4541
1080.	0.1306	3235.	0.4528
1085.	0.1355	3240.	0.4511
1090.	0.1329	3245.	0.4537
1095.	0.1302	3250.	0.4587
1100.	0.1316	3255.	0.4567
1105.	0.1306	3260.	0.457
1110.	0.1394	3265.	0.4603
1115.	0.1266	3270.	0.4649
1120.	0.1316	3275.	0.4626
1125.	0.1289	3280.	0.4642
1130.	0.1227	3285.	0.4616
1135.	0.1257	3290.	0.4633
1140.	0.1332	3295.	0.4646
1145.	0.1319	3300.	0.4633
1150.	0.1339	3305.	0.4669
1155.	0.1332	3310.	0.4665
1160.	0.1332	3315.	0.4665
1165.	0.1322	3320.	0.4652
1170.	0.1342	3325.	0.4636
1175.	0.1355	3330.	0.4633
1180.	0.1424	3335.	0.4682
1185.	0.1362	3340.	0.4685
1190.	0.126	3345.	0.4672
1195.	0.1309	3350.	0.4718
1200.	0.1322	3355.	0.4685
1205.	0.1322	3360.	0.4754
1210.	0.1342	3365.	0.4698
1215.	0.1335	3370.	0.4698
1220.	0.1453	3375.	0.4718
1225.	0.1581	3380.	0.4692
1230.	0.1496	3385.	0.4672
1235.	0.146	3390.	0.4656
1240.	0.1319	3395.	0.4688
1245.	0.1476	3400.	0.4708
1250.	0.144	3405.	0.4688
1255.	0.1319	3410.	0.4698
1260.	0.1391	3415.	0.4715
1265.	0.1401	3420.	0.4682
1270.	0.1342	3425.	0.4695
1275.	0.1493	3430.	0.4728
1280.	0.1345	3435.	0.4678
1285.	0.1424	3440.	0.4678
1290.	0.144	3445.	0.4708
1295.	0.1453	3450.	0.4678
1300.	0.1306	3455.	0.4688
1305.	0.1391	3460.	0.4701
1310.	0.1444	3465.	0.4701
1315.	0.1526	3470.	0.4701
1320.	0.149	3475.	0.4705
1325.	0.1549	3480.	0.4678

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1330.	0.1572	3485.	0.4656
1335.	0.1611	3490.	0.4708
1340.	0.1634	3495.	0.4718
1345.	0.1631	3500.	0.4708
1350.	0.169	3505.	0.4669
1355.	0.1621	3510.	0.4692
1360.	0.166	3515.	0.4701
1365.	0.1683	3520.	0.4692
1370.	0.1657	3525.	0.4678
1375.	0.1706	3530.	0.4698
1380.	0.1624	3535.	0.4692
1385.	0.1699	3540.	0.4718
1390.	0.1719	3545.	0.4662
1395.	0.1719	3550.	0.4708
1400.	0.1742	3555.	0.4685
1405.	0.1821	3560.	0.4685
1410.	0.1765	3565.	0.4701
1415.	0.1834	3570.	0.4678
1420.	0.1814	3575.	0.4688
1425.	0.1886	3580.	0.4708
1430.	0.19	3585.	0.4701
1435.	0.1837	3590.	0.4629
1440.	0.186	3595.	0.4682
1445.	0.1949	3600.	0.4721
1450.	0.1975	3605.	0.4698
1455.	0.1952	3610.	0.4708
1460.	0.1939	3615.	0.4698
1465.	0.1959	3620.	0.4721
1470.	0.2024	3625.	0.4711
1475.	0.1965	3630.	0.4715
1480.	0.1909	3635.	0.4718
1485.	0.1985	3640.	0.4705
1490.	0.1939	3645.	0.4721
1495.	0.1965	3650.	0.4711
1500.	0.1936	3655.	0.4685
1505.	0.1965	3660.	0.4678
1510.	0.2031	3665.	0.4728
1515.	0.208	3670.	0.4672
1520.	0.2014	3675.	0.4682
1525.	0.208	3680.	0.4672
1530.	0.1978	3685.	0.4705
1535.	0.1988	3690.	0.4675
1540.	0.1985	3695.	0.4724
1545.	0.2159	3700.	0.4678
1550.	0.2064	3705.	0.4711
1555.	0.2106	3710.	0.4665
1560.	0.2083	3715.	0.4685
1565.	0.2103	3720.	0.4675
1570.	0.2185	3725.	0.4669
1575.	0.2103	3730.	0.4629
1580.	0.2205	3735.	0.4672
1585.	0.2057	3740.	0.4692
1590.	0.2261	3745.	0.4695
1595.	0.2451	3750.	0.4659
1600.	0.2277	3755.	0.4675
1605.	0.2421	3760.	0.4688
1610.	0.2215	3765.	0.4672
1615.	0.2274	3770.	0.4678
1620.	0.2313	3775.	0.4698
1625.	0.252	3780.	0.4662
1630.	0.2434	3785.	0.4669
1635.	0.2352	3790.	0.4705
1640.	0.2546	3795.	0.4652
1645.	0.248	3800.	0.4721
1650.	0.2467	3805.	0.4682
1655.	0.2566	3810.	0.4662

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1660.	0.2592	3815.	0.4662
1665.	0.2592	3820.	0.4675
1670.	0.2789	3825.	0.4678
1675.	0.2851	3830.	0.4649
1680.	0.2638	3835.	0.4678
1685.	0.273	3840.	0.4695
1690.	0.2789	3845.	0.4659
1695.	0.2713	3850.	0.4685
1700.	0.2746	3855.	0.4662
1705.	0.2575	3860.	0.4705
1710.	0.2054	3865.	0.4695
1715.	0.2041	3870.	0.4701
1720.	0.1542	3875.	0.4672
1725.	0.2484	3880.	0.4688
1730.	0.228	3885.	0.4669
1735.	0.2999	3890.	0.4652
1740.	0.3087	3895.	0.461
1745.	0.29	3900.	0.4649
1750.	0.2631	3905.	0.4656
1755.	0.3087	3910.	0.4662
1760.	0.3015	3915.	0.4688
1765.	0.2992	3920.	0.4642
1770.	0.2972	3925.	0.4688
1775.	0.2972	3930.	0.4669
1780.	0.2812	3935.	0.4616
1785.	0.2943	3940.	0.4646
1790.	0.2917	3945.	0.4616
1795.	0.3009	3950.	0.4675
1800.	0.3022	3955.	0.4652
1805.	0.3015	3960.	0.4656
1810.	0.3009	3965.	0.4646
1815.	0.3031	3970.	0.4662
1820.	0.2936	3975.	0.4652
1825.	0.3018	3980.	0.4587
1830.	0.3002	3985.	0.4587
1835.	0.3002	3990.	0.4593
1840.	0.3005	3995.	0.4629
1845.	0.3018	4000.	0.4626
1850.	0.2959	4005.	0.4613
1855.	0.3038	4010.	0.4629
1860.	0.3002	4015.	0.4629
1865.	0.3009	4020.	0.4669
1870.	0.3091	4025.	0.4652
1875.	0.3064	4030.	0.4672
1880.	0.3061	4035.	0.4639
1885.	0.3123	4040.	0.4659
1890.	0.3199	4045.	0.4636
1895.	0.3222	4050.	0.4636
1900.	0.3209	4055.	0.4646
1905.	0.3173	4060.	0.4626
1910.	0.3291	4065.	0.4616
1915.	0.3271	4070.	0.4623
1920.	0.3278	4075.	0.4675
1925.	0.3304	4080.	0.4665
1930.	0.3235	4085.	0.4672
1935.	0.3225	4090.	0.4642
1940.	0.3314	4095.	0.4669
1945.	0.3274	4100.	0.4744
1950.	0.331	4105.	0.4692
1955.	0.331	4110.	0.4898
1960.	0.333	4115.	0.4888
1965.	0.3379	4120.	0.3238
1970.	0.3314	4125.	0.4662
1975.	0.3356	4130.	0.479
1980.	0.3386	4135.	0.48
1985.	0.3366	4140.	0.4856

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
1990.	0.3376	4145.	0.4839
1995.	0.3428	4150.	0.4865
2000.	0.334	4155.	0.4879
2005.	0.3366	4160.	0.4862
2010.	0.3383	4165.	0.4928
2015.	0.3392	4170.	0.4934
2020.	0.3383	4175.	0.4941
2025.	0.335	4180.	0.5
2030.	0.3346	4185.	0.497
2035.	0.3402	4190.	0.4974
2040.	0.335	4195.	0.5089
2045.	0.3373	4200.	0.5075
2050.	0.3438	4205.	0.5072
2055.	0.3409	4210.	0.5085
2060.	0.3419	4215.	0.5131
2065.	0.3461	4220.	0.5118
2070.	0.3451	4235.	0.6237
2075.	0.3409	4240.	0.6306
2080.	0.3458	4245.	0.6316
2085.	0.3478	4250.	0.6296
2090.	0.3438	4255.	0.6306
2095.	0.3468	4260.	0.6257
2100.	0.3458	4265.	0.6293
2105.	0.3451	4270.	0.6237
2110.	0.3468	4275.	0.6276
2115.	0.3465	4280.	0.6253
2120.	0.3455	4285.	0.6293
2125.	0.3497	4290.	0.6345
2130.	0.3445	4295.	0.6289
2135.	0.3497	4300.	0.6316
2140.	0.3488	4305.	0.6329
2145.	0.3438	4310.	0.6322
2150.	0.3497	4315.	0.6329
2155.	0.3527		

SOLUTION

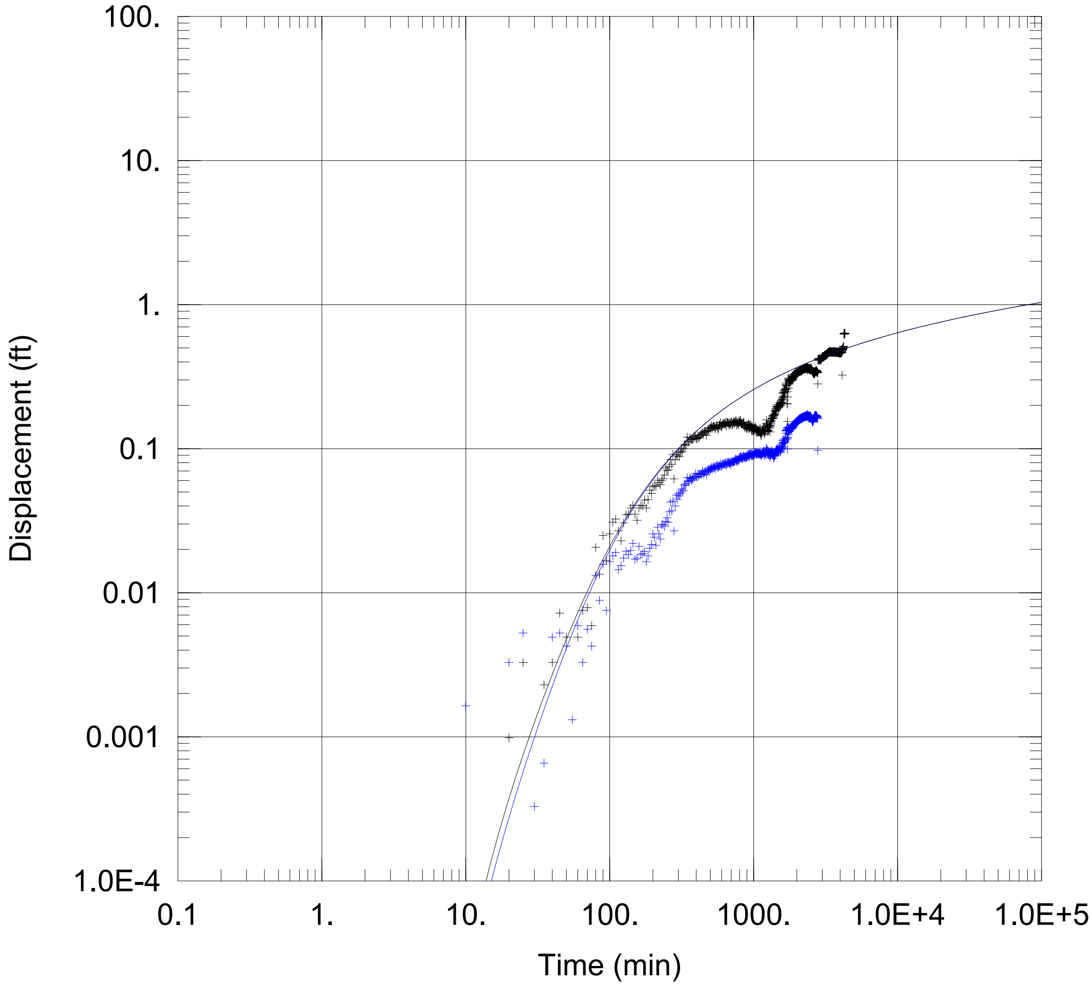
Pumping Test
Aquifer Model: Leaky
Solution Method: Neuman-Witherspoon

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	0.9444	cm^2/sec
S	5.824E-6	
1/B	0.003245	ft^{-1}
ß/r	0.001264	ft^{-1}
T2	0.0001548	cm^2/sec
S2	1.0E-10	

K = T/b = 0.0004426 cm/sec
Ss = S/b = 8.319E-8 1/ft
K'/b' = 6.425E-7 min^{-1}
K' = 4.08E-6 cm/sec



WELL TEST ANALYSIS

Data Set: C:\...\Pumping Test_2020-07-23_MW14-05M_MW14-05D.aqt
Date: 07/29/20 Time: 10:32:54

PROJECT INFORMATION

Company: Golder Associates, Inc.
Client: Crossroads
Location: ME
Test Well: MW14-03B
Test Date: 7/7/2020

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
MW14-03B	3039420.818	684500.912

Observation Wells

Well Name	X (ft)	Y (ft)
+ MW14-05M	3038283.21	685211.79
+ MW14-05D	3038280.59	685216.49

SOLUTION

Aquifer Model: Leaky

Solution Method: Neuman-Witherspoon

T = 0.9444 cm^2/sec
1/B = 0.003245 ft^{-1}
T2 = 0.0001548 cm^2/sec

S = 5.824E-6
ß/r = 0.001264 ft^{-1}
S2 = 1.0E-10

APPENDIX F

Time of Travel Calculations

APPENDIX F-1

Effective Porosity Supporting Information

Appendix F-1: Porosity Calculations

Objective: Calculate total porosity of Presumpscot clay
Porosity: n=e/(1+e)
Void Ratio: e=(w)Gs/S

Location	SB-3a 9-11 ft		SB-3a 16-18 ft		SB-4a 9-11 ft		SB-2S 2-4 ft		GB-06 21-23 ft		GB-06 29-31 ft		GB-16 17-19 ft		GB-16 27-29 ft	
Parameter / **Test**	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Moisture Content (w)	0.245	0.264	0.272	0.290	0.229	0.225	0.236	0.252	0.246	0.247	0.302	0.275	0.280	0.269	0.309	0.305
Assumed Specific Gravity (Gs)	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75
Degree of Saturation (S)	0.99	0.96	0.98	0.95	0.88	0.98	0.95	0.99	0.98	0.99	0.81	0.98	1.00	1.00	0.84	0.95
Void Ratio (e)	0.68	0.76	0.76	0.84	0.72	0.63	0.68	0.70	0.69	0.69	1.03	0.77	0.77	0.74	1.01	0.88
Porosity estimate (n)	0.40	0.43	0.43	0.46	0.42	0.39	0.41	0.41	0.41	0.41	0.51	0.44	0.44	0.43	0.50	0.47
Porosity - Average at Each Location	0.42		0.44		0.40		0.41		0.41		0.47		0.43		0.49	

Porosity Mamimum	0.51
Porosity Minimum	0.39
Arithmetic Mean	0.43

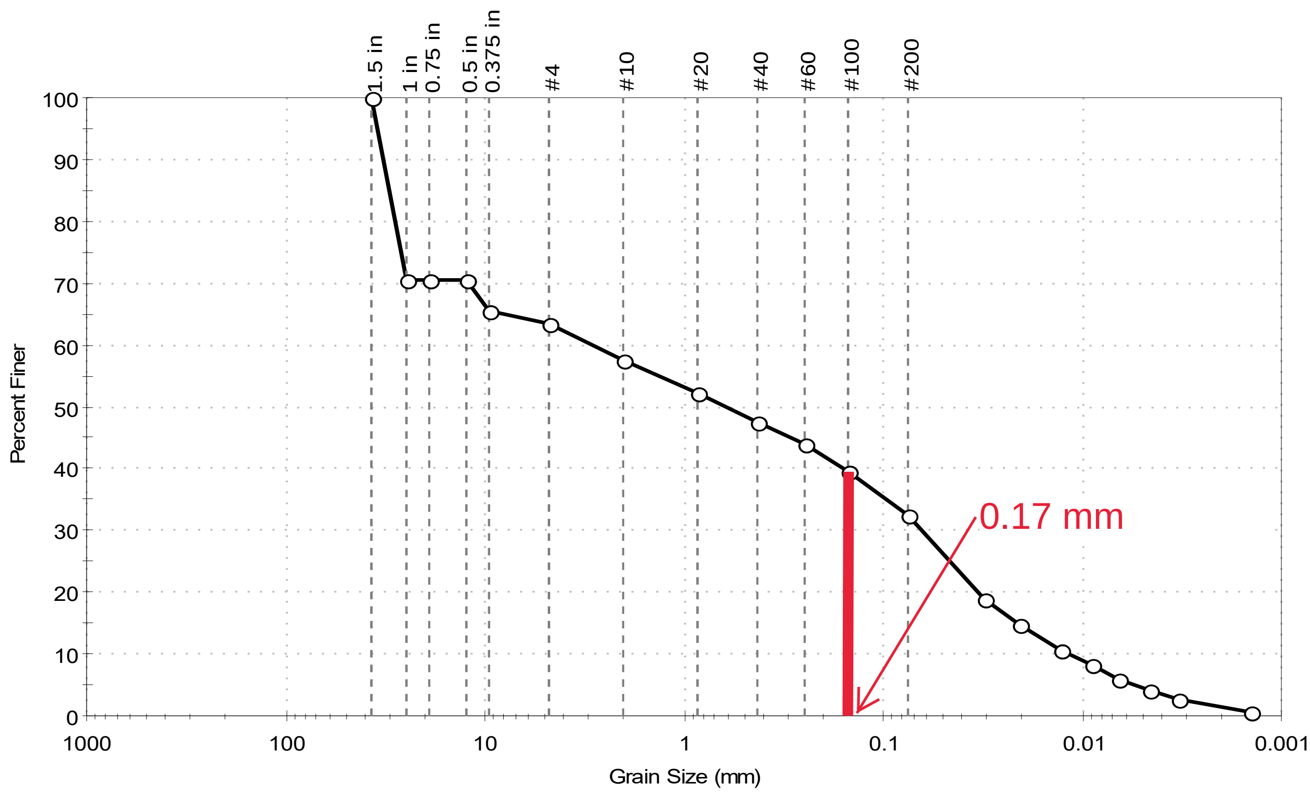
Prepared by: BDL
Checked by: DFSC
Reviewed by: APTM

Notes:

Parameter values from flexible wall permeameter tests (ASTM D5084) performed by GeoTesting Express

Client: Golder Associates				
Project: Crossroads Landfill Investigation				
Location: Norridgewock, ME			Project No:	GTX-307036
Boring ID: SB-5 ← i.e. PZ-5D	Sample Type:	jar	Tested By:	jbr
Sample ID: SS5, SS6	Test Date:	09/27/17	Checked By:	emm
Depth : 12.8-16.8	Test Id:	425898		
Test Comment: ---				
Visual Description: Moist, gray silty gravel with sand				
Sample Comment: ---				

Particle Size Analysis - ASTM D422



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	36.5	31.1	32.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1.5 in	37.50	100		
1 in	25.00	71		
0.75 in	19.00	71		
0.5 in	12.50	71		
0.375 in	9.50	66		
#4	4.75	64		
#10	2.00	58		
#20	0.85	52		
#40	0.42	48		
#60	0.25	44		
#100	0.15	40		
#200	0.075	32		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0312	19		
---	0.0205	15		
---	0.0127	11		
---	0.0089	8		
---	0.0065	6		
---	0.0047	4		
---	0.0033	3		
---	0.0014	1		

Coefficients

D_{85} = 30.4820 mm	D_{30} = 0.0641 mm
D_{60} = 2.8469 mm	D_{15} = 0.0210 mm
D_{50} = 0.6099 mm	D_{10} = 0.0116 mm
C_u = 245.422	C_c = 0.124

Classification

ASTM Silty gravel with sand (GM)

AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

Specific Gravity : 2.65

Separation of Sample: #200 Sieve

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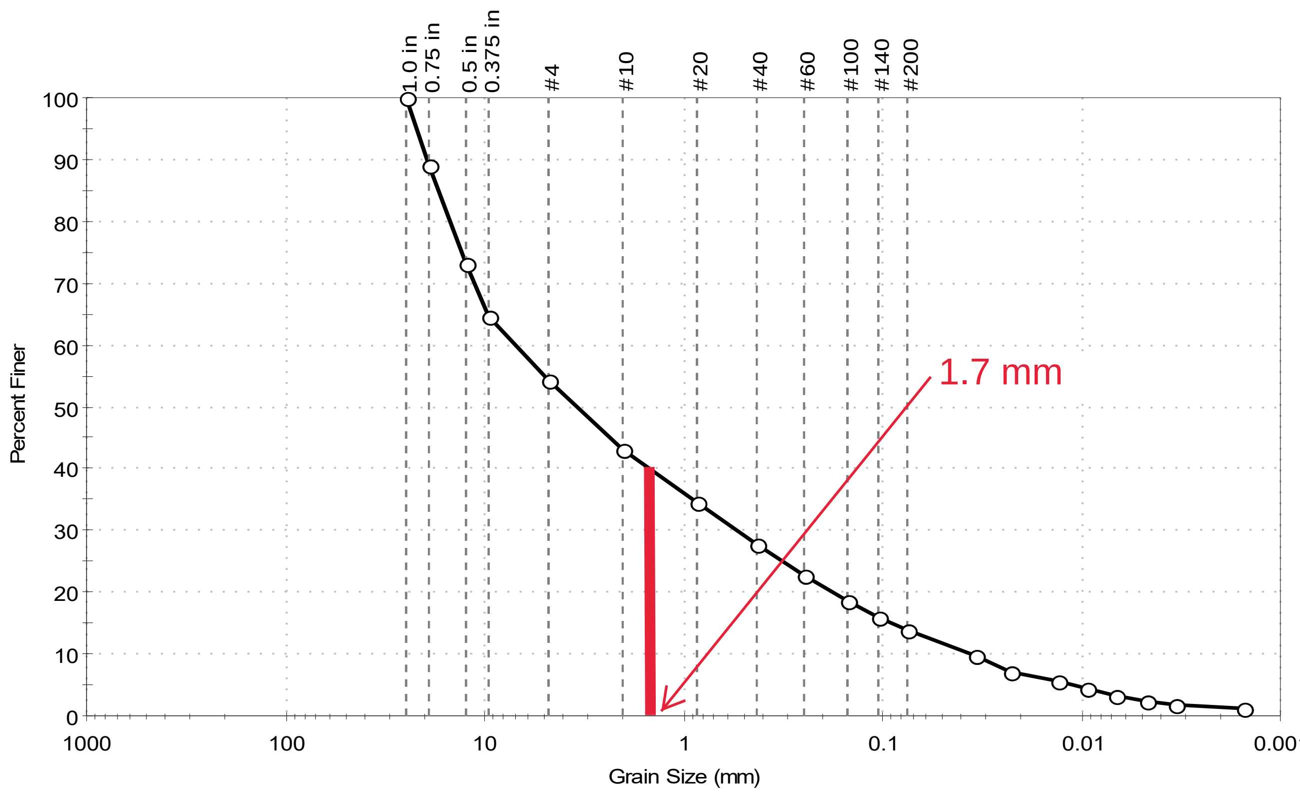
GeoTesting EXPRESS

Client: Golder Associates			
Project: WM Crossroads			
Location: Maine		Project No:	GTX-309120
Boring ID: ---	Sample Type: jar	Tested By:	GA
Sample ID: PZ-8D	Test Date: 11/16/18	Checked By:	emm
Depth : 16-18	Test Id: 480928		

Test Comment: ---
Visual Description: Moist, grayish brown silty gravel with sand
Sample Comment: ---

Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	45.7	40.5	13.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1.0 in	25.00	100		
0.75 in	19.00	89		
0.5 in	12.50	73		
0.375 in	9.50	65		
#4	4.75	54		
#10	2.00	43		
#20	0.85	34		
#40	0.42	28		
#60	0.25	23		
#100	0.15	19		
#140	0.11	16		
#200	0.075	14		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0344	10		
---	0.0227	7		
---	0.0131	6		
---	0.0094	4		
---	0.0067	3		
---	0.0047	2		
---	0.0034	2		
---	0.0016	1		

Coefficients

D_{85} = 17.0107 mm D_{30} = 0.5432 mm
D_{60} = 6.9735 mm D_{15} = 0.0919 mm
D_{50} = 3.4155 mm D_{10} = 0.0370 mm
C_u = 188.473 C_c = 1.144

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-a (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD
Dispersion Device : Apparatus A - Mech Mixer
Dispersion Period : 1 minute
Est. Specific Gravity : 2.65
Separation of Sample: #200 Sieve

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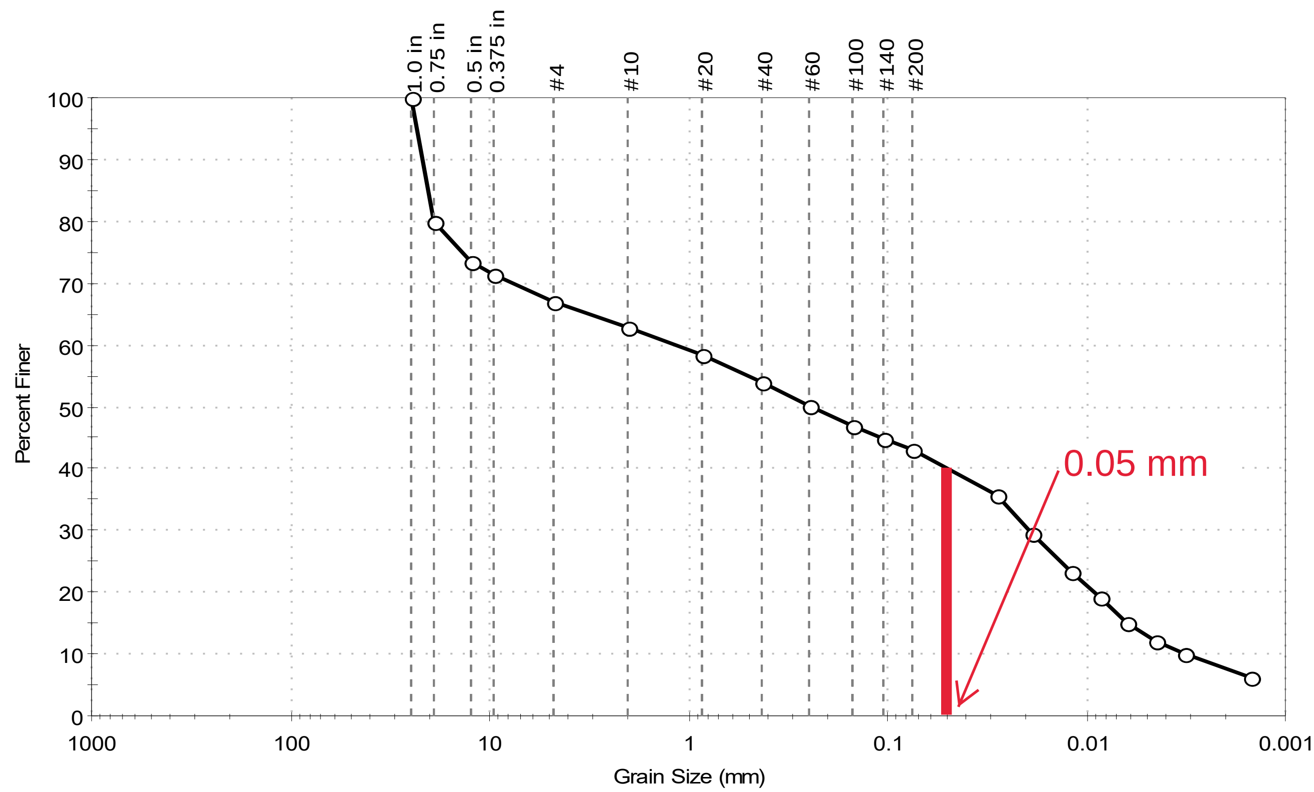
Client:	Golder Associates		
Project:	WM Crossroads		
Location:	Maine	Project No:	GTX-309120
Boring ID: ---	Sample Type: jar	Tested By:	GA
Sample ID: PZ-9D	Test Date: 11/16/18	Checked By:	emm
Depth : 53-55	Test Id: 480931		

Test Comment: ---

Visual Description: Moist, dark gray silty gravel with sand

Sample Comment: ---

Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	33.1	23.9	43.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1.0 in	25.00	100		
0.75 in	19.00	80		
0.5 in	12.50	74		
0.375 in	9.50	71		
#4	4.75	67		
#10	2.00	63		
#20	0.85	59		
#40	0.42	54		
#60	0.25	50		
#100	0.15	47		
#140	0.11	45		
#200	0.075	43		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0285	36		
---	0.0189	30		
---	0.0119	23		
---	0.0086	19		
---	0.0063	15		
---	0.0045	12		
---	0.0032	10		
---	0.0015	6		

Coefficients

D_{85} = 20.3844 mm D_{30} = 0.0195 mm

D_{60} = 1.1500 mm D_{15} = 0.0062 mm

D_{50} = 0.2448 mm D_{10} = 0.0033 mm

C_u = 348.485 C_c = 0.100

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

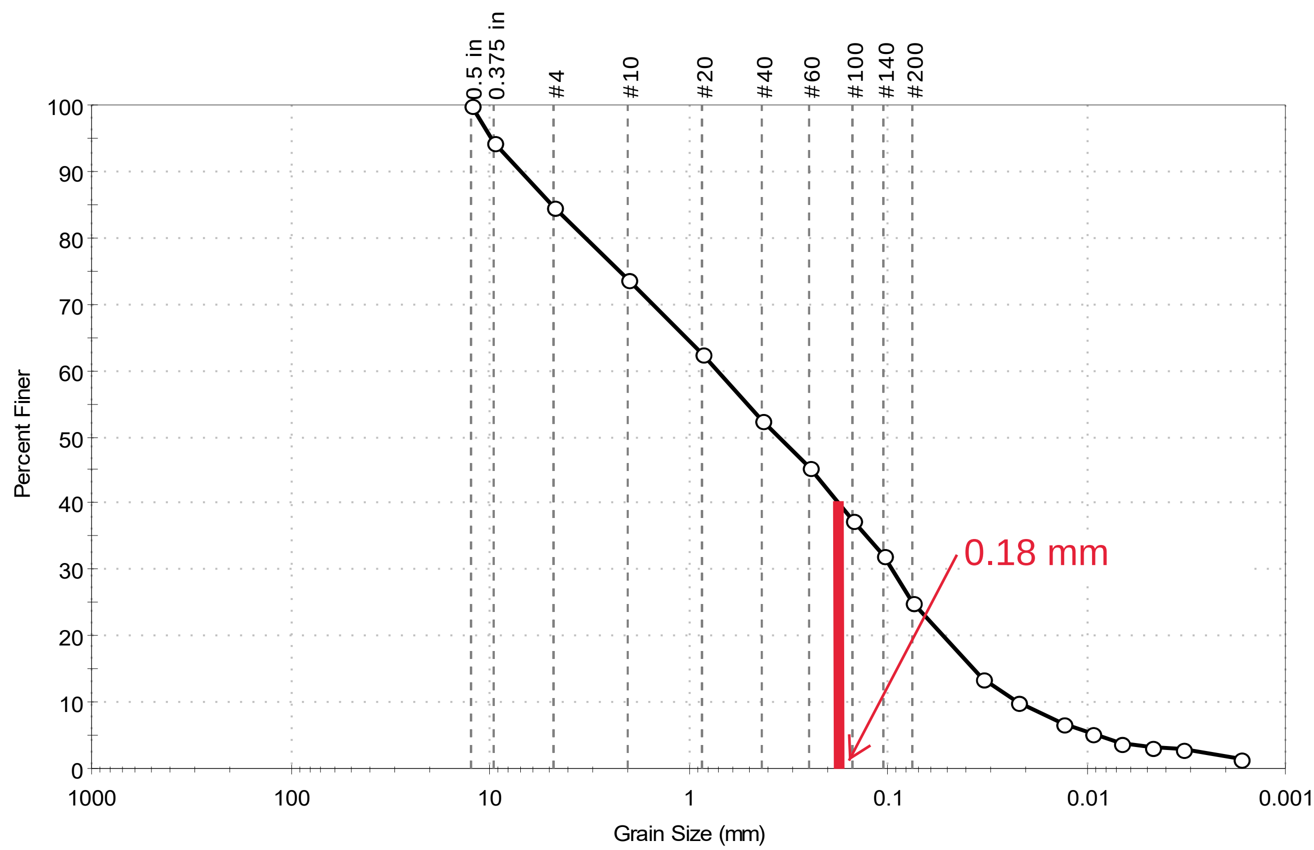
Est. Specific Gravity : 2.65

Separation of Sample: #200 Sieve

Client: Golder Associates			
Project: WM Crossroads			
Location: Maine		Project No:	GTX-309120
Boring ID: ---	Sample Type: jar	Tested By:	GA
Sample ID: PZ-13D	Test Date: 11/16/18	Checked By:	emm
Depth : 32-34	Test Id: 480933		

Test Comment: ---
Visual Description: Moist, light grayish brown silty sand with gravel
Sample Comment: ---

Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	15.2	59.6	25.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.5 in	12.50	100		
0.375 in	9.50	94		
#4	4.75	85		
#10	2.00	74		
#20	0.85	63		
#40	0.42	53		
#60	0.25	45		
#100	0.15	38		
#140	0.11	32		
#200	0.075	25		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0330	14		
---	0.0224	10		
---	0.0132	7		
---	0.0093	5		
---	0.0067	4		
---	0.0047	3		
---	0.0033	3		
---	0.0017	2		

Coefficients

D_{85} = 4.8355 mm	D_{30} = 0.0954 mm
D_{60} = 0.7124 mm	D_{15} = 0.0366 mm
D_{50} = 0.3508 mm	D_{10} = 0.0225 mm
C_u = 31.662	C_c = 0.568

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

Est. Specific Gravity : 2.65

Separation of Sample: #200 Sieve

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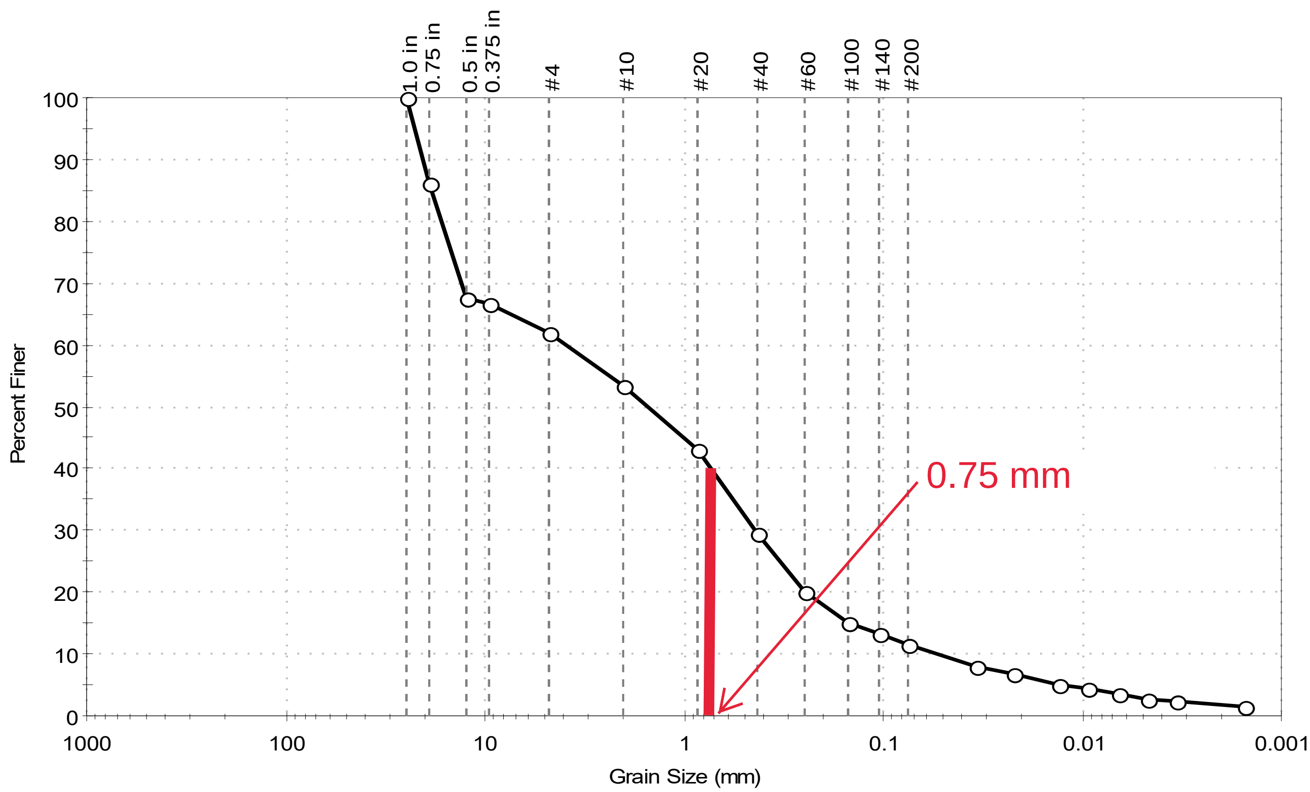
Client: Golder Associates			
Project: WM Crossroads			
Location: Maine		Project No:	GTX-309120
Boring ID: ---	Sample Type: jar	Tested By:	GA
Sample ID: PZ-14D	Test Date: 11/16/18	Checked By:	emm
Depth : 38-40	Test Id: 480935		
Test Comment: ---			
Visual Description: Moist, dark gray sand with silt and gravel			
Sample Comment: ---			

Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	38.2	50.4	11.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1.0 in	25.00	100		
0.75 in	19.00	86		
0.5 in	12.50	68		
0.375 in	9.50	67		
#4	4.75	62		
#10	2.00	53		
#20	0.85	43		
#40	0.42	29		
#60	0.25	20		
#100	0.15	15		
#140	0.11	13		
#200	0.075	11		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0341	8		
---	0.0223	7		
---	0.0130	5		
---	0.0093	4		
---	0.0066	4		
---	0.0047	3		
---	0.0033	2		
---	0.0015	1		

Coefficients

D_{85} = 18.5545 mm D_{30} = 0.4385 mm

D_{60} = 3.9479 mm D_{15} = 0.1449 mm

D_{50} = 1.5150 mm D_{10} = 0.0538 mm

C_u = 73.381 C_c = 0.905

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

Est. Specific Gravity : 2.65

Separation of Sample: #200 Sieve

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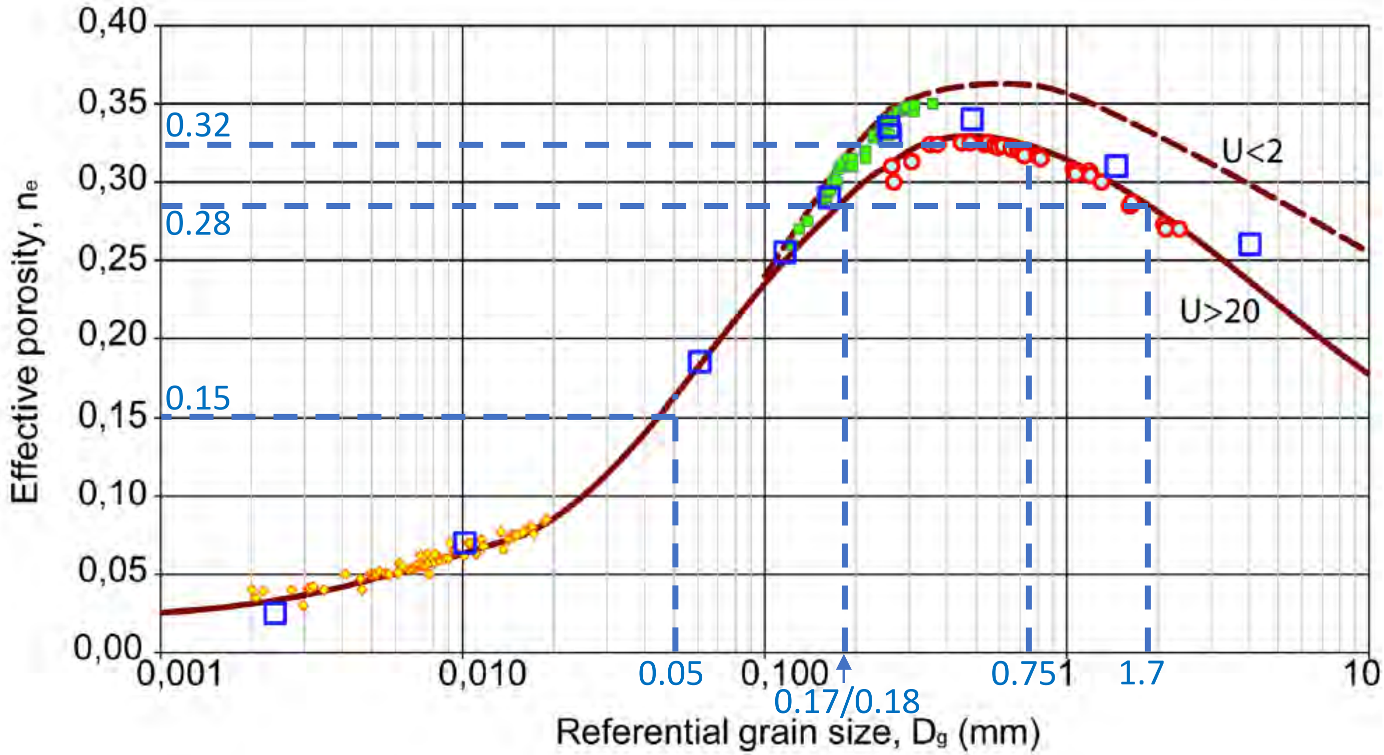

From: Urumovi´c and Urumovi´c Sr., The referential grain size and effective porosity in the Kozeny–Carman Model, Hydrology and Earth System Sciences, 2016,

APPENDIX F-2

Time of Travel Calculation Sheets

Seepage Velocity and Time of Travel Calculation
WMDSM Phase 14 - Supplemental Site Assessment Report
Pathway 1: Phase 14E Sump to Stream West of Phase 14 Waste Boundary
Average Input Parameters

Purpose: Calculate a time of travel for groundwater at the Phase 14E sump, horizontally through the stiff clay to the location of the closest stream.

Calculations:

A.1 - Calculate horizontal seepage velocity through the stiff clay

Seepage Velocity: V = Kh(i)/(n)

Input Parameters		Value	Units	Source
Horizontal hydraulic conductivity of stiff clay	Kh =	1.23	ft/yr	Geomean of Stiff Upper Clay Slug Tests
Horizontal Hydraulic Gradient	i =	0.047	ft/ft	Gradient from Phase 14E Sump to S-5 ((277 ft msl to 259.27 ft msl) / Distance (376 ft))
Effective porosity	n =	0.15	-	Average estimated values
Horizontal seepage velocity through the till	**V =**	**0.4**	**ft/yr**	

A.2 - Calculate time of travel through stiff clay, from sump 14E west to closest stream

Time of Travel: T= x/V

Input Parameters		Value	Units	Source
Distance, Phase 14E sump to closest stream	x =	382	ft	Figure 12b, Pathway 1
Horizontal seepage velocity of stiff clay	V =	0.4	ft/yr	Calculation A.1
Total Pathway Time of Travel	**T =**	**955**	**years**	

Checked by: BDL
Approved by: APTM

Seepage Velocity and Time of Travel Calculation
WMDSM Phase 14 - Supplemental Site Assessment Report
Pathway 1: Phase 14E Sump to Stream West of Phase 14 Waste Boundary
High-End Input Parameters

Purpose: Calculate a time of travel for groundwater at the Phase 14E sump, horizontally through the stiff clay to the location of the closest stream.

Calculations:

A.1 - Calculate horizontal seepage velocity through the stiff clay

Seepage Velocity: V = Kh(i)/(n)

Input Parameters		Value	Units	Source
Horizontal hydraulic conductivity of stiff clay	Kh =	18.31	ft/yr	95% UCL of Stiff Upper Clay Slug Tests
Horizontal Hydraulic Gradient	i =	0.047	ft/ft	Gradient from Phase 14E Sump to S-5 ((277 ft msl to 259.27 ft msl) / Distance (376 ft))
Effective porosity	n =	0.10	-	Low end of estimated values
Horizontal seepage velocity through the till	**V =**	**8.6**	**ft/yr**	

A.2 - Calculate time of travel through stiff clay, from sump 14E west to closest stream

Time of Travel: T= x/V

Input Parameters		Value	Units	Source
Distance, Phase 14E sump to closest stream	x =	382	ft	Figure 12b, Pathway 1
Horizontal seepage velocity of stiff clay	V =	8.6	ft/yr	Calculation A.1
Total Pathway Time of Travel	**T =**	**44**	**years**	

Checked by: BDL
Approved by: APTM

Seepage Velocity and Time of Travel Calculation
WMDSM Phase 14 - Supplemental Site Assessment Report
Pathway 2: Phase 14A Sump to Stream Southeast of Phase 14 Waste Boundary
Average Input Parameters

Purpose: Calculate a time of travel for theoretical release to groundwater at the Phase 14A sump, horizontally through the stiff clay to the location of the closest stream.

Calculations:

A.1 - Calculate horizontal seepage velocity through the stiff clay

Seepage Velocity: V= Kh(i)/(n)

Input Parameters		Value	Units	Source
Horizontal hydraulic conductivity of stiff clay	Kh =	1.23	ft/yr	Geomean of Stiff Upper Clay Slug Tests
Horizontal Hydraulic Gradient	i =	0.036	ft/ft	Gradient from Phase 14A Sump to S-4 ((275 ft msl to 251.35 ft msl) / Distance (664 ft))
Effective porosity	n =	0.15	-	Average estimated values
Horizontal seepage velocity through the till	**V =**	**0.30**	**ft/yr**	

A.2 - Calculate time of travel through stiff clay, from sump 14A southeast to closest stream

Time of Travel: T= x/V

Input Parameters		Value	Units	Source
Distance, Phase 14A sump to closest stream	x =	615	ft	Figure 12b
Horizontal seepage velocity of stiff clay	V =	0.3	ft/yr	Calculation A.1
Total Pathway Time of Travel	**T =**	**2,050**	**years**	

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Approved by: APTM

Seepage Velocity and Time of Travel Calculation
WMDSM Phase 14 - Supplemental Site Assessment Report
Pathway 2: Phase 14A Sump to Stream Southeast of Phase 14 Waste Boundary
High-End Input Parameters

Purpose: Calculate a time of travel for theoretical release to groundwater at the Phase 14A sump, horizontally through the stiff clay to the location of the closest stream.

Calculations:

A.1 - Calculate horizontal seepage velocity through the stiff clay

Seepage Velocity: V= Kh(i)/(n)

Input Parameters		Value	Units	Source
Horizontal hydraulic conductivity of stiff clay	Kh =	18.31	ft/yr	95% UCL of Stiff Upper Clay Slug Tests
Horizontal Hydraulic Gradient	i =	0.036	ft/ft	Gradient from Phase 14A Sump to S-4 ((275 ft msl to 251.35 ft msl) / Distance (664 ft))
Effective porosity	n =	0.10	-	Low end of estimated values
Horizontal seepage velocity through the till	**V =**	**6.50**	**ft/yr**	

A.2 - Calculate time of travel through stiff clay, from sump 14A southeast to closest stream

Time of Travel: T= x/V

Input Parameters		Value	Units	Source
Distance, Phase 14A sump to closest stream	x =	615	ft	Figure 12b
Horizontal seepage velocity of stiff clay	V =	6.5	ft/yr	Calculation A.1
Total Pathway Time of Travel	**T =**	**95**	**years**	

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Approved by: APTM

Seepage Velocity and Time of Travel Calculation
WMDSM Phase 14 - Supplemental Site Assessment Report
Pathway 3: Phase 14A to WMDSM New Office Well
Average Input Values

Purpose: Calculate a time of travel for theoretical release to groundwater at the Phase 14A sump, vertically through the clay to the till, horizontal through the till to the location of the WMDSM New Office well.

Calculations:

A.1 - Calculate vertical seepage velocity through the stiff upper Presumpscot clay

Seepage Velocity: V= Kv(I)/n

Input Parameters		Value	Units	Note
Vertical hydraulic conductivity of stiff clay	Kv=	0.19	ft/yr	Geometric mean of all testing methods
Hydraulic gradient of phreatic and till units	I=	0.470	ft/ft	Average calculated between MW14-03M and MW14-03D. Table 5 (0.54+0.40)/2
Effective porosity	n	0.15	-	Average estimate for upper clay
Vertical seepage velocity of stiff clay	**V=**	**0.6**	**ft/yr**	

A.2 - Calculate time of travel through stiff clay

Travel Time: T= X/V

Input Parameters		Value	Units	Note
Distance, thickness of stiff clay	X=	6.5	ft	Thickness measured at CPT17 (9.5 ft), sump bottom approximately 3 ft below top of unit
Vertical seepage velocity of stiff clay	V=	0.6	ft/yr	Calculation A.1
Time of travel through stiff clay	**T=**	**10.8**	**years**	

B.1 - Calculate vertical seepage velocity through the soft lower Presumpscot clay

Seepage Velocity: V= Kv(I)/n

Input Parameters		Value	Units	Note
Vertical hydraulic conductivity of soft clay	Kv=	0.19	ft/yr	Geometric mean of all testing methods
Hydraulic gradient of phreatic and till units	I=	0.47	ft/ft	Average calculated between MW14-03M and MW14-03D. Table 5 (0.54+0.40)/2
Effective porosity	n	0.40	-	Average estimate for lower clay
Vertical seepage velocity of soft clay	**V=**	**0.2**	**ft/yr**	

B.2 - Calculate time of travel through soft clay

Time of Travel: T= X/V

Input Parameters		Value	Units	Note
Distance, thickness of soft clay	X=	4.5	ft	Thickness measured at CPT17
Vertical seepage velocity of soft clay	V=	0.2	ft/yr	Calculation B.1
Time of travel through soft clay	**T=**	**23**	**years**	

C.1 - Calculate horizontal seepage velocity through the till

Seepage Velocity: V= Kh(I)/n

Input Parameters		Value	Units	Note
Horizontal hydraulic conductivity of till	Kh=	213	ft/yr	Geometric mean of all testing methods
Horizontal Hydraulic Gradient	I=	0.027	ft/ft	Average gradient (Figure 13a, Golder 2019)
Effective porosity	n	0.28	-	Average estimate for till
Horizontal seepage velocity through the till	**V=**	**20.4**	**ft/yr**	

C.2 - Calculate time of travel through till, from bottom of clay beneath sump, to WMDSM Well

Time of Travel: T= X/V

Input Parameters		Value	Units	Note
Distance, Phase 14A sump to WMDSM well	X=	1577	ft	Pathway 3 (Figure 13b, Golder 2019)
Horizontal seepage velocity of till	V=	20.4	ft/yr	Calculation C.1
Time of travel horizontal through till	**T=**	**77**	**years**	

D - Calculate time of travel time from sump bottom to WMDSM New Office Well

T= T+T+T

Time of travel through stiff clay	**T=**	**11**	**years**
Time of travel through soft clay	**T=**	**23**	**years**
Time of travel horizontal through till	**T=**	**77**	**years**
Total Pathway Time of Travel	**T=**	**111**	**years**

Checked by: BDL
Approved by: APTM

Seepage Velocity and Time of Travel Calculation
WMDSM Phase 14 - Supplemental Site Assessment Report
Pathway 3: Phase 14A to WMDSM New Office Well
High End Input Values

Purpose: Calculate a time of travel for theoretical release to groundwater at the Phase 14A sump, vertically through the clay to the till, horizontal through the till to the location of the WMDSM New Office well.

Calculations:

A.1 - Calculate vertical seepage velocity through the stiff upper Presumpscot clay

Input Parameters		Value	Units	Note
Seepage Velocity:	V= Kv(I)/n			
Vertical hydraulic conductivity of stiff clay	Kv=	0.93	ft/yr	95% UCL for all testing metthods
Hydraulic gradient of phreatic and till units	I=	0.540	ft/ft	Highest calculated gradient at MW14-03M and MW14-03D. Table 5 (Golder 2019)
Effective porosity	n	0.1	-	Default value per MEDEP Chapter 401.2.C(2)
Vertical seepage velocity of stiff clay	**V=**	**5.0**	**ft/yr**	

A.2 - Calculate time of travel through stiff clay

Input Parameters		Value	Units	Note
Travel Time:	T= X/V			
Distance, thickness of stiff clay	X=	6.5	ft	Thickness measured at CPT17 (9.5 ft), sump bottom approximately 3 ft below top of unit
Vertical seepage velocity of stiff clay	V=	5.0	ft/yr	Calculation A.1
Time of travel through stiff clay	**T=**	**1.3**	**years**	

B.1 - Calculate vertical seepage velocity through the soft lower Presumpscot clay

Input Parameters		Value	Units	Note
Seepage Velocity:	V= Kv(I)/n			
Vertical hydraulic conductivity of soft clay	Kv=	0.93	ft/yr	95% UCL for all testing metthods
Hydraulic gradient of phreatic and till units	I=	0.54	ft/ft	Highest calculated gradient at MW14-03M and MW14-03D. Table 5 (Golder 2019)
Effective porosity	n	0.3	-	Low estimated value
Vertical seepage velocity of soft clay	**V=**	**1.7**	**ft/yr**	

B.2 - Calculate time of travel through soft clay

Input Parameters		Value	Units	Note
Time of Travel:	T= X/V			
Distance, thickness of soft clay	X=	4.5	ft	Thickness measured at CPT17
Vertical seepage velocity of soft clay	V=	1.7	ft/yr	Calculation B.1
Time of travel through soft clay	**T=**	**2.6**	**years**	

C.1 - Calculate horizontal seepage velocity through the till

Input Parameters		Value	Units	Note
Seepage Velocity:	V= Kh(I)/n			
Horizontal hydraulic conductivity of till	Kh=	3032	ft/yr	95% UCL for all testing metthods
Horizontal Hydraulic Gradient	I=	0.027	ft/ft	Average gradient, (Figure 13a, Golder 2019)
Effective porosity	n	0.15	-	Low estimated value
Horizontal seepage velocity through the till	**V=**	**541.6**	**ft/yr**	

C.2 - Calculate time of travel through till, from bottom of clay beneath sump, to WMDSM New Office Well

Input Parameters		Value	Units	Note
Time of Travel:	T= X/V			
Distance, Phase 14A sump to WMDSM well	X=	1577	ft	Pathway 3 (Figure 13b, Golder 2019)
Horizontal seepage velocity of till	V=	541.6	ft/yr	Calculation C.1
Time of travel horizontal through till	**T=**	**2.9**	**years**	

D - Calculate time of travel time from sump bottom to WMDSM Well

	T= T+T+T		
Time of travel through stiff clay	**T=**	**1.3**	**years**
Time of travel through soft clay	**T=**	**2.6**	**years**
Time of travel horizontal through till	**T=**	**2.9**	**years**
Total Pathway Time of Travel	**T=**	**6.8**	**years**

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Approved by: APTM

Seepage Velocity and Time of Travel Calculation
WMDSM Phase 14 - Supplemental Site Assessment Report
MEDEP Pathway 1: Phase 14E Sump to Stream West of Phase 14 Waste Boundary though Clay
Average Input Parameters

Purpose: Calculate a time of travel for theoretical release to groundwater at the Phase 14E sump, vertically through the clay to the till, horizontally through the till, vertically upward through clay to a stream on the west side of Phase 14.

Calculations:

A.1 - Calculate vertical seepage velocity through the stiff upper Presumpscot clay at Phase Sump 14E

Seepage Velocity: Vs = Kv(i)/n

Input Parameters			Units	Note
Vertical hydraulic conductivity of stiff clay	Kv =	0.19	ft/yr	Geometric mean of all testing methods
Vertical hydraulic gradient from clay to till	i =	0.20	ft/ft	Vertical hydraulic gradient at nearby well pair PZ-5M/5D (see Table 5, Golder 2019)
Effective porosity	n =	0.15	-	Average estimate for upper clay
Vertical seepage velocity of stiff clay	**Vs =**	**0.3**	**ft/yr**	

A.2 - Calculate time of travel the stiff upper Presumpscot clay at Phase Sump 14E

Travel Time: T = x/Vs

Input Parameters			Units	Note
Distance, thickness of stiff clay	x =	4.2	ft	Based on Isopach Map (Figure 6b, Golder 2019), sump elevation and top of stiff clay approximately equal (273 ft
Vertical seepage velocity of stiff clay	Vs =	0.3	ft/yr	Calculation A.1
Time of travel through stiff clay	**T =**	**14.0**	**years**	

B.1 - Calculate vertical seepage velocity through the soft lower Presumpscot clay at Phase 14 Sump E

Seepage Velocity: Vs = Kv(i)/n

Input Parameters			Units	Note
Vertical hydraulic conductivity of soft clay	Kv =	0.19	ft/yr	Geometric mean of all testing methods
Vertical hydraulic gradient from clay to till	i =	0.20	ft/ft	Vertical hydraulic gradient at nearby well pair PZ-5M/5D (see Table 5, Golder 2019)
Effective porosity	n =	0.4	-	Average estimate for lower clay
Vertical seepage velocity of soft clay	**Vs =**	**0.1**	**ft/yr**	

B.2 - Calculate time of travel through soft lower Presumpscot clay at Phase 14 Sump E

Time of Travel: T = x/Vs

Input Parameters		Value	Units	Note
Distance, thickness of soft clay	x =	1.0	ft	Based on Isopach Map (Figure 7b, Golder 2019)
Vertical seepage velocity of soft clay	Vs =	0.1	ft/yr	Calculation B.1
Time of travel through soft clay	**T =**	**10.0**	**years**	

C.1 - Calculate horizontal seepage velocity through the till

Seepage Velocity: V= Kh(I)/n

Input Parameters		Value	Units	Note
Horizontal hydraulic conductivity of till	Kh =	213	ft/yr	Geometric mean of all testing methods
Horizontal Hydraulic Gradient	i =	0.044	ft/ft	Average gradient near phase 14E Sump
Effective porosity	n =	0.3	-	Average estimate for till
Horizontal seepage velocity through the till	**Vs =**	**33.5**	**ft/yr**	

C.2 - Calculate time of travel through till, from bottom of clay beneath Phase 14E sump to theoretical stream discharge location

Time of Travel: T = x/Vs

Input Parameters		Value	Units	Note
Distance, Phase 14E Sump to theoretical stream	X=	800	ft	Value as assumed by MEDEP in June 22, 2020 Memorandum
Horizontal seepage velocity of till	V=	33.5	ft/yr	Calculation C.1
Time of travel horizontal through till	**T =**	**24**	**years**	

D.1 - Calculate upward vertical seepage velocity through the soft lower Presumpscot clay at theoretical stream discharge location

Seepage Velocity: Vs = Kv(i)/n

Input Parameters			Units	Note
Vertical hydraulic conductivity of soft clay	Kv =	0.19	ft/yr	Geometric mean of all testing methods
Vertical hydraulic gradient from clay to till	i =	0.20	ft/ft	Assumed upward vertical gradient at theoretical stream discharge location
Effective porosity	n =	0.4	-	Average estimate for lower clay
Vertical seepage velocity of soft clay	**Vs =**	**0.1**	**ft/yr**	

D.2 - Calculate time of travel upward through soft lower Presumpscot clay at theoretical stream discharge location

Time of Travel: T = x/Vs

Input Parameters		Value	Units	Note
Distance, thickness of soft clay	x =	5.0	ft	Half of MEDEP estimated clay thickness (10 ft) at theoretical stream discharge location
Vertical seepage velocity of soft clay	Vs =	0.1	ft/yr	Calculation B.1
Time of travel through soft clay	**T =**	**50**	**years**	

E.1 - Calculate upward vertical seepage velocity through the stiff upper Presumpscot clay at theoretical stream discharge location

Seepage Velocity: Vs = Kv(i)/n

Input Parameters			Units	Note
Vertical hydraulic conductivity of stiff clay	Kv =	0.19	ft/yr	Geometric mean of all testing methods
Vertical hydraulic gradient from clay to till	i =	0.20	ft/ft	Assumed upward vertical gradient at theoretical stream discharge location
Effective porosity	n =	0.2	-	Average estimate for upper clay
Vertical seepage velocity of stiff clay	**Vs =**	**0.3**	**ft/yr**	

E.2 - Calculate time of travel upward through the stiff upper Presumpscot clay at theoretical stream discharge location

Travel Time: T = x/Vs

Input Parameters			Units	Note
Distance, thickness of stiff clay	x =	5.0	ft	Half of MEDEP estimated clay thickness (10 ft) at theoretical stream discharge location
Vertical seepage velocity of stiff clay	Vs =	0.3	ft/yr	Calculation A.1
Time of travel through stiff clay	**T =**	**17**	**years**	

D - Calculate total time of travel time from Phase 14 Sump E to Theoretical Stream Discharge Location

Total Pathway Time of Travel: Tt = T+T+T+T+T

Time of travel downward through stiff clay	**T =**	**14**	**years**	Result of calculation E.1.
Time of travel downward through soft clay	**T =**	**10**	**years**	Result of calculation E.2.
Time of travel horizontal through till	**T =**	**24**	**years**	Result of calculation E.3.
Time of travel upward through soft clay	**T =**	**50**	**years**	Result of calculation E.4.
Time of travel upward through stiff clay	**T =**	**17**	**years**	Result of calculation E.5.
Total Pathway Time of Travel	**Tt =**	**115**	**years**	

Checked by: BDL
Approved by: APTM

Seepage Velocity and Time of Travel Calculation
WMDSM Phase 14 - Supplemental Site Assessment Report
MEDEP Pathway 1: Phase 14E Sump to Stream West of Phase 14 Waste Boundary though Clay
High-End Input Parameters

Purpose: Calculate a time of travel for theoretical release to groundwater at the Phase 14E sump, vertically through the clay to the till, horizontally through the till, vertically upward through clay to a stream on the west side of Phase 14.

Calculations:

A.1 - Calculate vertical seepage velocity through the stiff upper Presumpscot clay at Phase Sump 14E

Seepage Velocity:	Vs = Kv(i)/n			
Input Parameters			Units	Note
Vertical hydraulic conductivity of stiff clay	Kv =	0.88	ft/yr	Geometric Mean for Neuman-Witherspoon Pumping Period
Vertical hydraulic gradient from clay to till	i =	0.20	ft/ft	Vertical hydraulic gradient at nearby well pair PZ-5M/5D (see Table 5, Golder 2019)
Effective porosity	n =	0.10	-	Default value per MEDEP Chapter 401.2.C(2)
Vertical seepage velocity of stiff clay	**Vs =**	**1.8**	**ft/yr**	

A.2 - Calculate time of travel the stiff upper Presumpscot clay at Phase Sump 14E

Travel Time:	T = x/Vs			
Input Parameters			Units	Note
Distance, thickness of stiff clay	x =	4.2	ft	Based on Isopach Map (Figure 6b, Golder 2019), sump elevation and top of stiff clay approximately equal (273 ft msl)
Vertical seepage velocity of stiff clay	Vs =	1.8	ft/yr	Calculation A.1
Time of travel through stiff clay	**T =**	**2**	**years**	

B.1 - Calculate vertical seepage velocity through the soft lower Presumpscot clay at Phase 14 Sump E

Seepage Velocity:	Vs = Kv(i)/n			
Input Parameters			Units	Note
Vertical hydraulic conductivity of soft clay	Kv =	0.88	ft/yr	Geometric Mean for Neuman-Witherspoon Pumping Period
Vertical hydraulic gradient from clay to till	i =	0.20	ft/ft	Vertical hydraulic gradient at nearby well pair PZ-5M/5D (see Table 5, Golder 2019)
Effective porosity	n =	0.3	-	Low estimated value
Vertical seepage velocity of soft clay	**Vs =**	**0.6**	**ft/yr**	

B.2 - Calculate time of travel through soft lower Presumpscot clay at Phase 14 Sump E

Time of Travel:	T = x/Vs			
Input Parameters	Value		Units	Note
Distance, thickness of soft clay	x =	1.0	ft	Based on Isopach Map (Figure 6b, Golder 2019)
Vertical seepage velocity of soft clay	Vs =	0.6	ft/yr	Calculation B.1
Time of travel through soft clay	**T =**	**2**	**years**	

C.1 - Calculate horizontal seepage velocity through the till

Seepage Velocity:	V= Kh(I)/n			
Input Parameters	Value		Units	Note
Horizontal hydraulic conductivity of till	Kh =	3083	ft/yr	95% UCL of Till Slug Tests
Horizontal Hydraulic Gradient	i =	0.044	ft/ft	Average gradient near phase 14E Sump
Effective porosity	n =	0.2	-	Low estimated value
Horizontal seepage velocity through the till	**Vs =**	**904.4**	**ft/yr**	

C.2 - Calculate time of travel through till, from bottom of clay beneath Phase 14E sump to theoretical stream discharge location

Time of Travel:	T = x/Vs			
Input Parameters	Value		Units	Note
Distance, Phase 14E Sump to theoretical stream	X=	800	ft	Value as assumed by MEDEP in June 22, 2020 Memorandum
Horizontal seepage velocity of till	V=	904.4	ft/yr	Calculation C.1
Time of travel horizontal through till	**T =**	**1**	**years**	

D.1 - Calculate upward vertical seepage velocity through the soft lower Presumpscot clay at theoretical stream discharge location

Seepage Velocity:	Vs = Kv(i)/n			
Input Parameters			Units	Note
Vertical hydraulic conductivity of soft clay	Kv =	0.88	ft/yr	Geometric Mean for Neuman-Witherspoon Pumping Period
Vertical hydraulic gradient from clay to till	i =	0.20	ft/ft	Assumed upward vertical gradient at theoretical stream discharge location
Effective porosity	n =	0.3	-	Low estimated value
Vertical seepage velocity of soft clay	**Vs =**	**0.6**	**ft/yr**	

D.2 - Calculate time of travel upward through soft lower Presumpscot clay at theoretical stream discharge location

Time of Travel:	T = x/Vs			
Input Parameters	Value		Units	Note
Distance, thickness of soft clay	x =	5.0	ft	Half of MEDEP estimated clay thickness (10 ft) at theoretical stream discharge location
Vertical seepage velocity of soft clay	Vs =	0.6	ft/yr	Calculation B.1
Time of travel through soft clay	**T =**	**8**	**years**	

E.1 - Calculate upward vertical seepage velocity through the stiff upper Presumpscot clay at theoretical stream discharge location

Seepage Velocity:	Vs = Kv(i)/n			
Input Parameters			Units	Note
Vertical hydraulic conductivity of stiff clay	Kv =	0.88	ft/yr	Geometric Mean for Neuman-Witherspoon Pumping Period
Vertical hydraulic gradient from clay to till	i =	0.20	ft/ft	Assumed upward vertical gradient at theoretical stream discharge location
Effective porosity	n =	0.1	-	Default value per MEDEP Chapter 401.2.C(2)
Vertical seepage velocity of stiff clay	**Vs =**	**1.8**	**ft/yr**	

E.2 - Calculate time of travel upward through the stiff upper Presumpscot clay at theoretical stream discharge location

Travel Time:	T = x/Vs			
Input Parameters			Units	Note
Distance, thickness of stiff clay	x =	5.0	ft	Half of MEDEP estimated clay thickness (10 ft) at theoretical stream discharge location
Vertical seepage velocity of stiff clay	Vs =	1.8	ft/yr	Calculation A.1
Time of travel through stiff clay	**t =**	**3**	**years**	

D - Calculate total time of travel from Phase 14 Sump E to Theoretical Stream Discharge Location

Total Pathway Time of Travel:	Tt = T+T+T+T+T			
Time of travel downward through stiff clay	**T =**	**2**	**years**	Result of calculation E.1.
Time of travel downward through soft clay	**T =**	**2**	**years**	Result of calculation E.2.
Time of travel horizontal through till	**T =**	**1**	**years**	Result of calculation E.3.
Time of travel upward through soft clay	**T =**	**8**	**years**	Result of calculation E.4.
Time of travel upward through stiff clay	**T =**	**3**	**years**	Result of calculation E.5.
Total Pathway Time of Travel	**Tt =**	**16.0**	**years**	

Checked by: BDL
Approved by: APTM

Seepage Velocity and Time of Travel Calculation
WMDSM Phase 14 - Supplemental Site Assessment Report
MEDEP Pathway 2: Phase 14A Sump to Stream East of Phase 14 Waste Boundary through Clay
Average Input Parameters

Purpose: Calculate a time of travel for theoretical release to groundwater at the Phase 14A sump, vertically through the clay to the till, horizontally through the till, vertically upward through clay to a stream on the east side of Phase 14.

Calculations:

A.1 - Calculate vertical seepage velocity through the stiff upper Presumpscot clay at Phase Sump 14A

Seepage Velocity: Vs = Kv(i)/n

Input Parameters			Units	Note
Vertical hydraulic conductivity of stiff clay	Kv =	0.19	ft/yr	Geometric mean of all testing methods
Vertical hydraulic gradient from clay to till	i =	0.20	ft/ft	Average calculated between MW14-03M and MW14-03D (0.54+0.40)/2 (Table 5, Golder 2019)
Effective porosity	n =	0.15	-	Average estimate for upper clay
Vertical seepage velocity of stiff clay	**Vs =**	**0.3**	**ft/yr**	

A.2 - Calculate time of travel the stiff upper Presumpscot clay at Phase Sump 14A

Travel Time: T = x/Vs

Input Parameters			Units	Note
Distance, thickness of stiff clay	x =	6.5	ft	Thickness measured at CPT17 (9.5 ft), sump bottom approximately 3 ft below top of unit
Vertical seepage velocity of stiff clay	Vs =	0.3	ft/yr	Calculation A.1
Time of travel through stiff clay	**T =**	**22**	**years**	

B.1 - Calculate vertical seepage velocity through the soft lower Presumpscot clay at Phase 14 Sump A

Seepage Velocity: Vs = Kv(i)/n

Input Parameters			Units	Note
Vertical hydraulic conductivity of soft clay	Kv =	0.19	ft/yr	Geometric mean of all testing methods
Vertical hydraulic gradient from clay to till	i =	0.20	ft/ft	Average calculated between MW14-03M and MW14-03D (0.54+0.40)/2 (Table 5, Golder 2019)
Effective porosity	n =	0.4	-	Average estimate for lower clay
Vertical seepage velocity of soft clay	**Vs =**	**0.1**	**ft/yr**	

B.2 - Calculate time of travel through soft lower Presumpscot clay at Phase 14 Sump A

Time of Travel: T = x/Vs

Input Parameters		Value	Units	Note
Distance, thickness of soft clay	x =	4.5	ft	Thickness measured at CPT17
Vertical seepage velocity of soft clay	Vs =	0.1	ft/yr	Calculation B.1
Time of travel through soft clay	**T =**	**45**	**years**	

C.1 - Calculate horizontal seepage velocity through the till

Seepage Velocity: V= Kh(I)/n

Input Parameters		Value	Units	Note
Horizontal hydraulic conductivity of till	Kh =	213	ft/yr	Geometric mean of all testing methods
Horizontal Hydraulic Gradient	i =	0.044	ft/ft	Average gradient near phase 14A Sump
Effective porosity	n =	0.3	-	Average estimate for till
Horizontal seepage velocity through the till	**Vs =**	**33.5**	**ft/yr**	

C.2 - Calculate time of travel through till, from bottom of clay beneath Phase 14A sump to theoreticl stream discharge location

Time of Travel: T = x/Vs

Input Parameters		Value	Units	Note
Distance, Phase 14E Sump to theortical stream	X=	1000	ft	Value as assumed by MEDEP in June 22, 2020 Memorandum
Horizontal seepage velocity of till	V=	33.5	ft/yr	Calculation C.1
Time of travel horizontal through till	**T =**	**30**	**years**	

D.1 - Calculate upward vertical seepage velocity through the soft lower Presumpscot clay at theoretical stream discharge location

Seepage Velocity: Vs = Kv(i)/n

Input Parameters			Units	Note
Vertical hydraulic conductivity of soft clay	Kv =	0.19	ft/yr	Geometric mean of all testing methods
Vertical hydraulic gradient from clay to till	i =	0.20	ft/ft	Assumed upward vertical gradient at theoretical stream discharge location
Effective porosity	n =	0.4	-	Average estimate for lower clay
Vertical seepage velocity of soft clay	**Vs =**	**0.1**	**ft/yr**	

D.2 - Calculate time of travel upward through soft lower Presumpscot clay at theoretical stream discharge location

Time of Travel: T = x/Vs

Input Parameters		Value	Units	Note
Distance, thickness of soft clay	x =	7.0	ft	Half of MEDEP estimated clay thickness (14 ft) at theoretical stream discharge location
Vertical seepage velocity of soft clay	Vs =	0.1	ft/yr	Calculation B.1
Time of travel through soft clay	**T =**	**70**	**years**	

E.1 - Calculate upward vertical seepage velocity through the stiff upper Presumpscot clay at theoretical stream discharge location

Seepage Velocity: Vs = Kv(i)/n

Input Parameters			Units	Note
Vertical hydraulic conductivity of stiff clay	Kv =	0.19	ft/yr	Geometric mean of all testing methods
Vertical hydraulic gradient from clay to till	i =	0.20	ft/ft	Assumed upward vertical gradient at theoretical stream discharge location
Effective porosity	n =	0.2	-	Average estimate for upper clay
Vertical seepage velocity of stiff clay	**Vs =**	**0.3**	**ft/yr**	

E.2 - Calculate time of travel upward through the stiff upper Presumpscot clay at theoretical stream discharge location

Travel Time: T = x/Vs

Input Parameters			Units	Note
Distance, thickness of stiff clay	x =	7.0	ft	Half of MEDEP estimated clay thickness (14 ft) at theoretical stream discharge location
Vertical seepage velocity of stiff clay	Vs =	0.3	ft/yr	Calculation A.1
Time of travel through stiff clay	**T =**	**23**	**years**	

D - Calculate total time of travel from Phase 14 Sump E to Theoretical Stream Discharge Location

Total Pathway Time of Travel: Tt = T+T+T+T+T

Time of travel downward through stiff clay	**T =**	**22**	**years**	Result of calculation E.1.
Time of travel downward through soft clay	**T =**	**45**	**years**	Result of calculation E.2.
Time of travel horizontal through till	**T =**	**30**	**years**	Result of calculation E.3.
Time of travel upward through soft clay	**T =**	**70**	**years**	Result of calculation E.4.
Time of travel upward through stiff clay	**T =**	**23**	**years**	Result of calculation E.5.
Total Pathway Time of Travel	**Tt =**	**190**	**years**	

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Seepage Velocity and Time of Travel Calculation
WMDSM Phase 14 - Supplemental Site Assessment Report
MEDEP Pathway 2: Phase 14A Sump to Stream East of Phase 14 Waste Boundary through Clay
High End Input Parameters

Purpose: Calculate a time of travel for theoretical release to groundwater at the Phase 14A sump, vertically through the clay to the till, horizontally through the till, vertically upward through clay to a stream on the east side of Phase 14.

Calculations:

A.1 - Calculate vertical seepage velocity through the stiff upper Presumpscot clay at Phase Sump 14E

Seepage Velocity: Vs = Kv(i)/n

Input Parameters			Units	Note
Vertical hydraulic conductivity of stiff clay	Kv =	0.93	ft/yr	95% UCL of all testing methods
Vertical hydraulic gradient from clay to till	i =	0.20	ft/ft	Vertical hydraulic gradient at nearby well pair PZ-5M/5D (see Table 5, Golder 2019)
Effective porosity	n =	0.10	-	Default value per MEDEP Chapter 401.2.C(2)
Vertical seepage velocity of stiff clay	**Vs =**	**1.9**	**ft/yr**	

A.2 - Calculate time of travel the stiff upper Presumpscot clay at Phase Sump 14E

Travel Time: T = x/Vs

Input Parameters			Units	Note
Distance, thickness of stiff clay	x =	6.5	ft	Thickness measured at CPT17 (9.5 ft), sump bottom approximately 3 ft below top of unit
Vertical seepage velocity of stiff clay	Vs =	1.9	ft/yr	Calculation A.1
Time of travel through stiff clay	**T =**	**3**	**years**	

B.1 - Calculate vertical seepage velocity through the soft lower Presumpscot clay at Phase 14 Sump E

Seepage Velocity: Vs = Kv(i)/n

Input Parameters			Units	Note
Vertical hydraulic conductivity of soft clay	Kv =	0.93	ft/yr	95% UCL of all testing methods
Vertical hydraulic gradient from clay to till	i =	0.20	ft/ft	Vertical hydraulic gradient at nearby well pair PZ-5M/5D (see Table 5, Golder 2019)
Effective porosity	n =	0.3	-	Low estimated value
Vertical seepage velocity of soft clay	**Vs =**	**0.6**	**ft/yr**	

B.2 - Calculate time of travel through soft lower Presumpscot clay at Phase 14 Sump E

Time of Travel: T = x/Vs

Input Parameters		Value	Units	Note
Distance, thickness of soft clay	x =	4.5	ft	Thickness measured at CPT17
Vertical seepage velocity of soft clay	Vs =	0.6	ft/yr	Calculation B.1
Time of travel through soft clay	**T =**	**8**	**years**	

C.1 - Calculate horizontal seepage velocity through the till

Seepage Velocity: V= Kh(I)/n

Input Parameters		Value	Units	Note
Horizontal hydraulic conductivity of till	Kh =	3083	ft/yr	95% UCL of all testing methods
Horizontal Hydraulic Gradient	i =	0.044	ft/ft	Average gradient near phase 14E Sump
Effective porosity	n =	0.2	-	Low estimated value
Horizontal seepage velocity through the till	**Vs =**	**904.4**	**ft/yr**	

C.2 - Calculate time of travel through till, from bottom of clay beneath Phase 14E sump to theoretical stream discharge location

Time of Travel: T = x/Vs

Input Parameters		Value	Units	Note
Distance, Phase 14E Sump to theoretical stream	X=	1000	ft	Value as assumed by MEDEP in June 22, 2020 Memorandum
Horizontal seepage velocity of till	V=	904.4	ft/yr	Calculation C.1
Time of travel horizontal through till	**T =**	**1**	**years**	

D.1 - Calculate upward vertical seepage velocity through the soft lower Presumpscot clay at theoretical stream discharge location

Seepage Velocity: Vs = Kv(i)/n

Input Parameters			Units	Note
Vertical hydraulic conductivity of soft clay	Kv =	0.93	ft/yr	95% UCL of all testing methods
Vertical hydraulic gradient from clay to till	i =	0.20	ft/ft	Assumed upward vertical gradient at theoretical stream discharge location
Effective porosity	n =	0.3	-	Low estimated value
Vertical seepage velocity of soft clay	**Vs =**	**0.6**	**ft/yr**	

D.2 - Calculate time of travel upward through soft lower Presumpscot clay at theoretical stream discharge location

Time of Travel: T = x/Vs

Input Parameters		Value	Units	Note
Distance, thickness of soft clay	x =	7.0	ft	Half of MEDEP estimated clay thickness (14 ft) at theoretical stream discharge location
Vertical seepage velocity of soft clay	Vs =	0.6	ft/yr	Calculation B.1
Time of travel through soft clay	**T =**	**12**	**years**	

E.1 - Calculate upward vertical seepage velocity through the stiff upper Presumpscot clay at theoretical stream discharge location

Seepage Velocity: Vs = Kv(i)/n

Input Parameters			Units	Note
Vertical hydraulic conductivity of stiff clay	Kv =	0.93	ft/yr	95% UCL of all testing methods
Vertical hydraulic gradient from clay to till	i =	0.2	ft/ft	Assumed upward vertical gradient at theoretical stream discharge location
Effective porosity	n =	0.1	-	Default value per MEDEP Chapter 401.2.C(2)
Vertical seepage velocity of stiff clay	**Vs =**	**1.9**	**ft/yr**	

E.2 - Calculate time of travel upward through the stiff upper Presumpscot clay at theoretical stream discharge location

Travel Time: T = x/Vs

Input Parameters			Units	Note
Distance, thickness of stiff clay	x =	7.0	ft	Half of MEDEP estimated clay thickness (14 ft) at theoretical stream discharge location
Vertical seepage velocity of stiff clay	Vs =	1.9	ft/yr	Calculation A.1
Time of travel through stiff clay	**T =**	**4**	**years**	

D - Calculate total time of travel from Phase 14 Sump E to Theoretical Stream Discharge Location

Total Pathway Time of Travel: Tt = T+T+T+T+T

Time of travel downward through stiff clay	**t =**	**3**	**years**	Result of calculation E.1.
Time of travel downward through soft clay	**t =**	**8**	**years**	Result of calculation E.2.
Time of travel horizontal through till	**t =**	**1**	**years**	Result of calculation E.3.
Time of travel upward through soft clay	**t =**	**12**	**years**	Result of calculation E.4.
Time of travel upward through stiff clay	**t =**	**4**	**years**	Result of calculation E.5.
Total Pathway Time of Travel	**Tt =**	**27.4**	**years**	

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Approved by: APTM

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