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September 23, 2022

Ms. Janet Bartnik
Executive Director
Mountain Recreation
1700 Bull Pasture Road
Eagle, CO 81631

Phase II Report - Geotechnical Subsurface Investigation

WJE No. 2022.4162

Dear Ms. Bartnik:

At your request and per our July 11, 2022, proposal, Wiss, Janney, Elstner Associates, Inc. (WJE) is pleased to deliver this report related to the geotechnical subsurface investigation of Mountain Recreation's Eagle Pool located at the above address in Eagle, Colorado.

BACKGROUND

Based on our previous conversations with you, we understand that ground movements began affecting the Eagle pool prior to 2014, and an attempt to re-level the pool and multiple leak repairs have been performed since that time. More recently, significant water losses on the order of 13,000 to 16,000 gallons per day have been detected, and relative elevation measurements indicate that the pool is three to four inches out of level. To help Mountain Recreation, the board, and the council decide the future of the Eagle pool, WJE conducted an initial evaluation (Phase I) of the pool during a site visit on June 29, 2022. During the site visit, we met with you, your staff, and the Eagle town engineer, and we performed a level survey of the pool deck. After this initial visit, you approved our July 11, 2022, proposal to perform Phase II invasive investigations of the subsurface nearby and immediately adjacent to the pool.

WJE PHASE II INVESTIGATION

As stated in our July 11, 2022, proposal, WJE's Phase II investigation included excavation of three test pits under the concrete pool deck, drilling of five exploratory boreholes in the grassy areas around the pool, video scoping of the pool drain line, and laboratory testing of soil samples retrieved from the exploratory borings. Each item is addressed separately below.

Bedrock Geology

The Eagle Pool site is underlain by bedrock of the Pennsylvanian-age (estimated to be 320 to 286 old) Eagle Valley Evaporite (Tweto and others, 1978). During this time, mineral salts and sediments associated with the erosion and weathering of the Ancestral Rockies were deposited in large, arid basins (playas) between the ancestral Uncompahgre Plateau and Front Range uplifts. As water in these basins evaporated, bedded selenite (gypsum), anhydrite, halite (salt), and minor dolomite were deposited along with interbedded layers of silts and clays carried into the basins by local streams. With time, these

originally flat-lying sediments became lithified (turned into rock) and were subsequently deformed under lateral compression associated with uplift of the modern Rocky Mountains. Because gypsum and anhydrite are weak and soluble rocks, they tend to dissolve and flow plastically, resulting in a highly deformed and contorted appearance in outcrop. Continued dissolution of these evaporites throughout the Holocene Period is responsible for the formation of sinkholes from the Minturn/Avon area to Glenwood Canyon. Evaporitic bedrock is present and well-exposed in the steep slopes located north and east of the Eagle Pool site.

The Eagle Valley Evaporite is a white to dark grey evaporitic sequence composed primarily of gypsum and anhydrite, with interbedded shale and siltstone. Due to its tendency to dissolve in the presence of water, exposures of the Eagle Valley Evaporite exhibit an irregular, yet distinct topographic signature, marked by weathered, rounded slopes and locally-formed collapse features. The lower slopes below evaporite outcrops are commonly covered by a veneer of gypsum-rich, silty alluvium that assumes a "popcorn-like" appearance due to wetting and drying. The Eagle Valley Evaporite is known to produce collapsible soils and form sinkholes up to several meters deep. (Lidke, 2002). Three sinkholes were reported north of the Eagle Pool & Ice Rink during the original geotechnical investigation by HP Geotech in 2001, and several more have also reportedly been discovered in the Haymeadow development currently under construction east of the Eagle Pool & Ice Rink. No sinkholes, however, are known to exist within the Eagle Pool site, although collapsible soils are likely to be present. Laboratory results (discussed below) indicate that local soils at the site are collapsible.

Surficial Geology

According to the Geologic Map of the Eagle Quadrangle (Lidke, 2002), the Eagle Pool site is situated within Holocene to middle Pleistocene-age alluvium and colluvium described as "*…broad alluvial and colluvial aprons that overlap and cover terrace deposits along [the] Eagle River*."

Bedrock across the site is locally overlain by unconsolidated alluvial and colluvial materials which primarily comprise sandy silts and limited fine to medium gravels. Deposition of coarser alluvial materials from hillslopes north of the site, related to slopewash and colluviation on steep slopes uphill, and deposition of alluvial/debris fans from other smaller steep ravines, interfinger with and mantle the fine-to-medium-grained alluvial deposits of sandy silts at the site. Limited lenses of eolian (wind-transported) fine-grained deposits are present within samples taken during the subsurface investigations.

Test Pit Excavation

On July 13, 2022, WJE was present along with the Eagle Town Engineer to observe the excavation of three test pits under the pool deck and immediately adjacent to the concrete pool wall. Mountain Recreation arranged for the excavation to be performed by Nottingham Excavation and Trucking (Nottingham). Nottingham removed the concrete pool deck prior to WJE's arrival on site, with the Test Pit 3 (TP-3) deck removed on the afternoon of July 12, 2022, and the decks at the other two test pits removed between approximately 7 am and 8 am on the morning of July 13, 2022. Upon arrival of a WJE geotechnical engineer and the Eagle Town Engineer, excavation of the test pit soil was initiated. The locations of the test pits are included in Appendix A, and the test pit logs are included in Appendix B.

At each pit, we encountered a gray silty gravel base course below the pool deck that varied in thickness between approximately 6 inches and 1 foot. Immediately adjacent to the pool wall, this gravel base course extended to the termination depth of the excavations. At a distance of approximately 2-8 feet away from the pool wall (depending on the test pit), the gravel base course was underlain by a tan to brown sandy silt that extended to the termination depth of the excavations. Both layers of soil were moist to wet, with the highest moisture contents near the pool wall and plumbing lines. In TP-1 and TP-2, the pool supply and return lines were exposed during excavation, and these lines were supported by either gravel base or what appeared to be Controlled Low Strength Material (CLSM), often referred to as flowable fill. The deepest excavation, TP-1, was terminated at 8 feet below the pool deck.

Around noon on July 13, 2022, Mountain Recreation personnel began filling the pool vessel to raise the water level above the joint between the concrete pool wall and the gutter system and allow observation of the joint performance during normal operating conditions. At approximately 1:30 pm, WJE observed water running down the concrete wall exposed in TP-2 near the northwest corner of the pool. This water ran down the wall and into a large void exposed below the pool deck at the northwest corner and appeared to extend around the corner to the east side of the pool. Consequently, Nottingham expanded the size of TP-2 to extend around this corner. After TP-2 was expanded, we observed water coming out of the joint between the pool wall and gutter. Over the next few hours, additional water leaks at this joint were observed at TP-1 and TP-3, although the flow rate was not as large as observed in TP-2. Mountain Recreation personnel stopped filling the pool and took a water level reading at approximately 4 pm, the test pits were left open, and the pool was allowed to equilibrate overnight. No water was observed at the discharge point of the pool underdrain system on July 13, 2022.

Mountain Recreation personnel performed another water level reading at about 7 am on July 14, 2022, and noted that the water surface had dropped roughly 4 inches overnight. Additionally, Mountain Recreation observed water dripping from the underdrain discharge point at approximately the same time. After the WJE engineer arrived on site, Mountain Recreation again raised the water level to a safe operating level, and then pressurized the supply and return lines to circulate water within the pool plumbing system. No water leaks were observed from the pool supply and return lines located within TP-1 and TP-2. Leaks were observed at the joint between the concrete pool wall and gutter (in the same locations as on July 13, 2022) and at broken joints within the gutter's pressurized distribution system. After approximately 30 to 45 minutes, the test was terminated and Mountain Recreation turned off the pool circulation.

Exploratory Boreholes

Four exploratory borings were completed in order to investigate the ground conditions in the areas immediately adjacent to the pool, and one additional boring (B-5) was completed a short distance away from the pool to the north to provide context and reference to conditions that are unlikely to have been affected by the influence of water lost from the pool. Ager Drilling was engaged as the drilling contractor to complete this work. These borings were located in the grassy areas surrounding the pool to avoid having to access the subsurface materials through the concrete pool deck. Drilling of the five borings occurred on August 4th and 5th, 2022. Borehole explorations were observed and logged by Dr. Wilcox.

Standard Penetration Testing (SPT) and sampling was executed at intervals of one foot every two-and-a-half feet (e.g. 2.5-3.5, 5-6, 7.5-8.5, etc.) for the upper 20 feet of each primary boring (i.e. B-1 through B-4), and less frequently at B-5. Samples were sent to Advanced Terra Testing in Golden, CO, for detailed analyses, discussed below. The boring logs are included in Appendix C.

Drain Line Scoping

Based on our initial site visit at the Eagle Pool in June 2022, we recommended video scoping of the pool drain line to help identify the presence and approximate location of potential breaks, if any, in the drain line that could be introducing water into the soil around/underneath the pool. Mountain Recreation contracted with Plumbing Systems Inc. (PSI) to perform this service on August 11-12, 2022. WJE was not present to observe the video scoping, but Mountain Recreation provided us with a copy of PSI's report and video recording for review.

PSI was able to extend the video scope approximately 270 feet (the maximum length of the scope) up the drain line towards the pool. Based on drawing sheet C 2.1, Drainage Plan and Profiles (dated September 3, 2002, by Alpine Engineering Inc.), this location of the camera was about 50 feet southwest of the southwestern edge of the pool. The technician did not observe any breaks in the drain line, but the recording showed several low spots along the length of the line where standing water was present. In some locations, the standing water in the line was deep enough to completely obscure the camera.

Laboratory Testing

WJE assigned laboratory testing on samples retrieved from the exploratory borings which included gradation, moisture content, dry density, and swell/collapse potential. The lab testing was performed by Advanced Terra Testing, and the results are included in Appendix D as well as on the boring logs (Appendix C).

One-dimensional swell/collapse tests ("Denver swell") were performed on three soil samples obtained from the boreholes closest to the pool deck (one sample per borehole from B-1, B-2, and B-3). The depth of samples varied between 7.5 and 15 feet below the ground surface. Each sample was inundated with water at a confining pressure approximately equal to the overburden pressure in the field and allowed to equilibrate under this confinement until deformation of the sample was complete. None of the three samples swelled during the tests, but rather exhibited collapse/compression potential which ranged from 0.06% to 0.36%.

ANALYSIS

Figures 1 through 3 are plots of SPT blow counts, moisture content, and dry density vs. elevation for the five borings we drilled, as well as the HP Geotech (HP) pre-construction borings from 2001. Note that HP drilled one boring within the pool footprint, but three more are reasonably close to the pool, so we plotted data from these four HP borings (2001) along with our (2022) borings. A number of observations are apparent from review of these plots and our boring logs (Appendix C):

1. The fine-grained soils (sandy silt) encountered within the Eagle Valley alluvium are potentially collapsible soils. At B-1, B-2, and B-3, this layer of collapsible soil has a thickness that varies between about 30 and 36 feet, although at B-4 this layer is only about 17 feet thick.
2. As is apparent on Figure 1, SPT blow counts in our 2022 borings B-1 through B-4 are distinctly lower than our B-5, which was drilled outside of the pool area to the north, as well as the 2001 HP borings. This pronounced decrease in the SPT blow counts is consistent with collapsible soil behavior. These soils lose strength and volume when their moisture contents increase. The lower blow counts represent a significant loss of strength. This comparison of "before and after" blow counts indicates, in our opinion, that to some degree, the soil profile around and under the pool, as represented by borings B-1 through B-4, has indeed been subject to increased moisture content and collapse behavior.
3. Figure 2, which depicts moisture content vs. elevation, also confirms that moisture contents have increased profoundly in and under the pool area in the roughly 21 years since HP's borings were drilled. Like Figure 1, this plot also confirms that the soil profile around and under the pool has been subject to moisture infiltration and collapsible soil behavior.
4. Figure 2 specifically indicates that boring B-3 exhibited significantly higher moisture contents, particularly at elevations below 6700 feet (the approximate bottom of the pool), than borings B1, B-2, and B-4. Note that B-3 was drilled at the corner of the pool that has settled the most, where the greatest pool leakage was observed (at TP-2), as discussed above.
5. In our opinion, it is not a coincidence that the wettest soil profile correlates very well with the location of the greatest pool leakage, as well as the lowest point of the pool perimeter (i.e., point of greatest settlement). The collapse behavior has progressed further at B-3 than at the other borings around the pool.
6. There is no guarantee that the collapse behavior has "run its course" at B-3; some degree of collapse potential may yet remain, but clearly some collapse potential remains in the soils at the other borings around the pool (B-1, B-2, and B-4).
7. The plot of dry density vs. elevation (Figure 3) is less informing. The plot does not appreciably indicate a change in density from 2001 to 2022. One would expect dry density to increase as soil collapse occurs, but the plot does not particularly indicate this. We attribute this largely to sample disturbance. It is difficult to get truly undisturbed samples in collapsible soils (because they are collapsible), and so this particular plot is less informative. By contrast, the SPT blow count and moisture content plots are not affected by sample disturbance, and in this case are more informative.

As noted earlier, we also ran swell/consolidation tests on selected samples, in an attempt to directly measure remaining collapse potential. As with density measurements, these test results are sensitive to sample disturbance. These tests do indicate some remaining collapse potential, which agrees with our interpretation of the moisture profile as discussed above, though we do suspect that these results have been somewhat affected by sample disturbance.

In summary, our analyses indicate that the pool area has indeed been subject to collapsible soil behavior. That mechanism is most apparent in the vicinity of boring B-3, which coincides with the greatest observed

pool leakage and the greatest settlement of the pool perimeter. It is significant that distress correlates well with a known water source. Although the collapse mechanism is further advanced at B-3, there is no guarantee that it has "run its course." In our opinion, this mechanism is present at the other locations around and under the pool (borings B-1, B-2, and B-4), but has not advanced as far as it has at B-3. Consequently, if soil moisture contents continue to increase, the potential for continuing collapse behavior is present over a significant portion of the pool area.

RECOMMENDATIONS

Water Management

As noted in the previous section, past distress (mostly differential settlement) of the pool correlates very well with known water sources, or leaks. Put simply, if all other variables are equal, limiting the water source should limit future collapse behavior and resulting settlement.

In our opinion, limiting the amount of water entering the soil should strongly guide the scope and approach to any rehabilitation or reconstruction of the pool. Redundant measures to prevent, detect, and capture or repair leakage from the pool and related infrastructure and piping are advisable. This should include water supply, circulation, drains, gutters, and overflow components – essentially any component that could leak water into the ground under and around the pool. We are available to consult with your pool designer in this regard, but since we are not pool specialists ourselves, we prefer not to be specific in terms of water management measures.

We also recommend the elimination of any irrigated turf grass within 50 feet of the pool perimeter, and that irrigation throughout the remainder of the site outside of this zone be carefully controlled and managed. We also recommend no "in ground" plantings (trees or shrubs) in this 50-foot zone. Any plantings should be in planter boxes or similar features that are hydraulically isolated from the soil profile around and under the pool. These features should be designed and installed in such a way that leaks or spillage is easily detected and avoided. If these features have drains, those drains should discharge into a watertight (or substantially leakproof) collection system and be conveyed to a suitable outfall.

Surface grading and drainage around the pool should be carefully designed to limit any surface water infiltration. Relatively impervious surfaces are generally desirable (though not fool proof, as discussed below), and slopes or grades should be robust enough that the inevitable ground movements that occur do not compromise drainage or promote infiltration. Because some ground movement is inevitable with time, maintenance to restore or maintain the function of surface grading and drainage is essential. A surface that drains effectively in year one of a facility's life may not do so at year five or ten. Such surfaces and or swales must be checked and maintained. Sometimes they need to be reconstructed.

Finally, there is perhaps a temptation to believe that simply a robust approach to water management will effectively solve this problem. While this thought is understandable, and, at least theoretically, makes sense, it is in our opinion likely to be overly optimistic. This is for two reasons:

1. Despite the best efforts to prevent, detect, and capture any leaks or spillage, leaks and spillage inevitably occur. Most of the surfaces you will consider using, including concrete, are not truly

impervious, and even robust lining or waterproofing systems deteriorate with time and can experience leaks. Joints can and should be sealed, but seals deteriorate, and at best, are often not watertight. Pipe joints leak, and with time, can pull apart, especially where ground movement occurs. Ground movement can compromise any attempt to limit or prevent infiltration. Despite best efforts, some infiltration is still likely.

2. Impervious (or relatively impervious) surfaces effectively cut off the natural evaporation and transpiration that occurs at the ground surface during the warmer months of the year. As a result, as time goes by, moisture contents tend to increase under such surfaces, even when surface drainage is effective. Even if surface drainage is perfect, and it will not be, moisture contents tend to increase under a pool, pavement, or building with time.

We strongly recommend aggressive water management measures at this site. However, even with aggressive water management, some potential for, and therefore risk associated with future collapsible soil behavior will remain. The following sections explore alternatives for reducing the associated risk.

Mitigation of Collapse Potential

In our opinion, for this site, alternatives for mitigation of collapse potential (beyond water management measures) fall into three categories, which are described below. Additional details will likely need to be developed to implement a preferred alternative, which we will proceed with after an alternative is selected.

Removal and Replacement

This alternative simply involves excavating the collapsible soil under the pool area and replacing it with better material. Alternatively, the same soil could be reused if carefully moisture-conditioned to optimum moisture content or above and suitably compacted, though the nature of this soil is such that some settlement risk would remain if the on-site material were re-used. Replacement with a high-quality granular material (for example, a pit run sand/gravel mixture), while expensive, would be more reliable.

The depth of excavation required with this approach will vary based on the thickness of the collapsible alluvial fan material under the pool. Based on our borings, a depth up to about 35 feet below the current ground surface should be anticipated. The excavation should extend laterally beyond the edge of the pool a distance equal to the depth of the excavation. Depending on how the new pool is sited, the excavation might conflict somewhat with the existing building, and therefore require excavation shoring to protect the building foundation.

Obviously, this approach would not be particularly applicable if the desire is to rehabilitate the existing pool, but it would be generally compatible with construction of a new pool. In addition, arguably, if this alternative is selected, extremely aggressive water management might not be necessary.

Ground Improvement

This alternative involves techniques employed by specialty contractors to improve (usually, to densify) the soils under a site, without major excavation. There are various techniques that could be considered. We

expect that compaction grouting is most likely to be appropriate for this situation, but we would consider other ground improvement measures proposed by an appropriately qualified specialty contractor.

Regardless of the technique selected, the details of the ground improvement plan should be designed by an appropriately qualified and experienced specialty contractor. We are available to provide input and review their designs if desired. Whatever technique is selected, the improvement should extend completely through the collapsible soils, which, based on our borings, we expect to be a depth up to about 35 feet below the current ground surface. As with excavation, the improvement should extend laterally beyond the pool edge at least equal to the depth of the improvement. Note, the ground below the pool itself would also need to be improved, which would almost certainly require penetrating through the pool structure itself.

We would expect the contractor to provide an estimate of performance, such as a maximum expected future settlement. In our opinion, limiting future settlement to not more than one inch would be reasonable. We are available to help with identification of appropriately qualified contractors, solicitation of proposals, interviews, bid reviews, selection, and award of contracts, as well as construction administration related services.

This approach could apply to either rehabilitation of the existing pool or construction of a new one. Certain challenges will attend to performing this work around and under an existing pool, but we believe it would be feasible to do. Again, consultation with an appropriately qualified contractor would be very useful, especially in regard to rehabilitation of the existing pool.

Deep Foundations

A new pool could be supported on deep foundations installed through the collapsible soils and bearing within the deeper, more competent underlying materials. We believe drilled micropiles are potentially a good choice, but helical piers or conventional drilled piers could also be considered.

The existing pool could also be underpinned, certainly with micropiles, and possibly with helical piers, all bearing on or within the more competent materials underlying the collapsible soil beneath the pool. Certain complexities would apply to underpinning the existing pool, such as determination of the capacity of the pool itself to span between underpin elements, and possibly the need to strengthen the pool bottom and sides to facilitate such an effort. It is likely that elements would also need to be installed through the pool bottom, which is likely feasible but somewhat challenging.

A potential drawback of this approach, whether for a new or rehabilitated pool, is the potential for future differential settlement between the deep foundation supported pool and any adjacent pool deck, flatwork, or other surfaces, as well as plumbing/piping connections. There are techniques to mitigate these concerns, but they do tend to add complexity and expense.

Whether for a new pool or rehabilitation of the existing one, a deep foundation approach will require development of a considerable number of details, including type(s) of deep foundation, depth or bedrock penetration, capacities, allowable bond strength, end bearing considerations, structural considerations, installation constraints or requirements, etc. If a deep foundation alternative is preferred, we would expect

to develop appropriate recommendations in conjunction with the pool designer. WJE can provide structural engineering support to this effort if needed.

Rehabilitation vs. New Construction Considerations

As can likely be gleaned from the discussion of alternatives above, any approach to rehabilitation of the existing pool is likely to involve complexities and risk. While removal and replacement is not without challenges, in our opinion executing that type of work comes with less challenges and future risk than rehabilitation.

The final decision on new construction vs. rehabilitation of course lies with your team, aided by our recommendations as well as your pool consultant. Certainly, you will want to look carefully at the economics of any approach. But as we have already discussed, there are a number of advantages to complete reconstruction over rehabilitation of the existing pool.

CLOSING

We appreciate this opportunity to be of service. Please do not hesitate to contact us if you have any questions or would like to discuss this report further.

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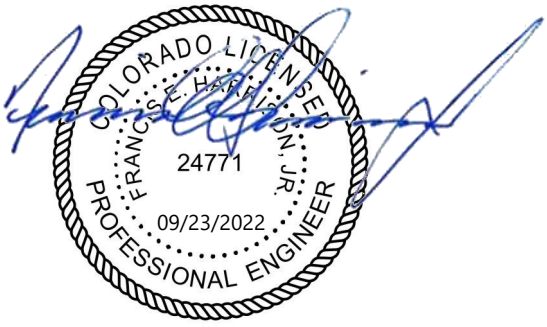
Sincerely,

WISS, JANNEY, ELSTNER ASSOCIATES, INC.



Francis E. Harrison, PE
Project Manager & Principal

Matthew T. LeBlanc, PE
Associate III

Attachments

Figures:

Figure 1 – Subsurface Elevation Profile – Standard Penetration Test (SPT) Blow Count
Figure 2 – Subsurface Elevation Profile – Moisture Content
Figure 3 – Subsurface Elevation Profile – Dry Unit Weight (Dry Density)

Appendices:

Appendix A – Project Site Vicinity and Locations of Test Pits and Boreholes
Appendix B – Test Pit Logs
Appendix C – Boring Logs and Legend
Appendix D – Laboratory Test Results

FIGURES

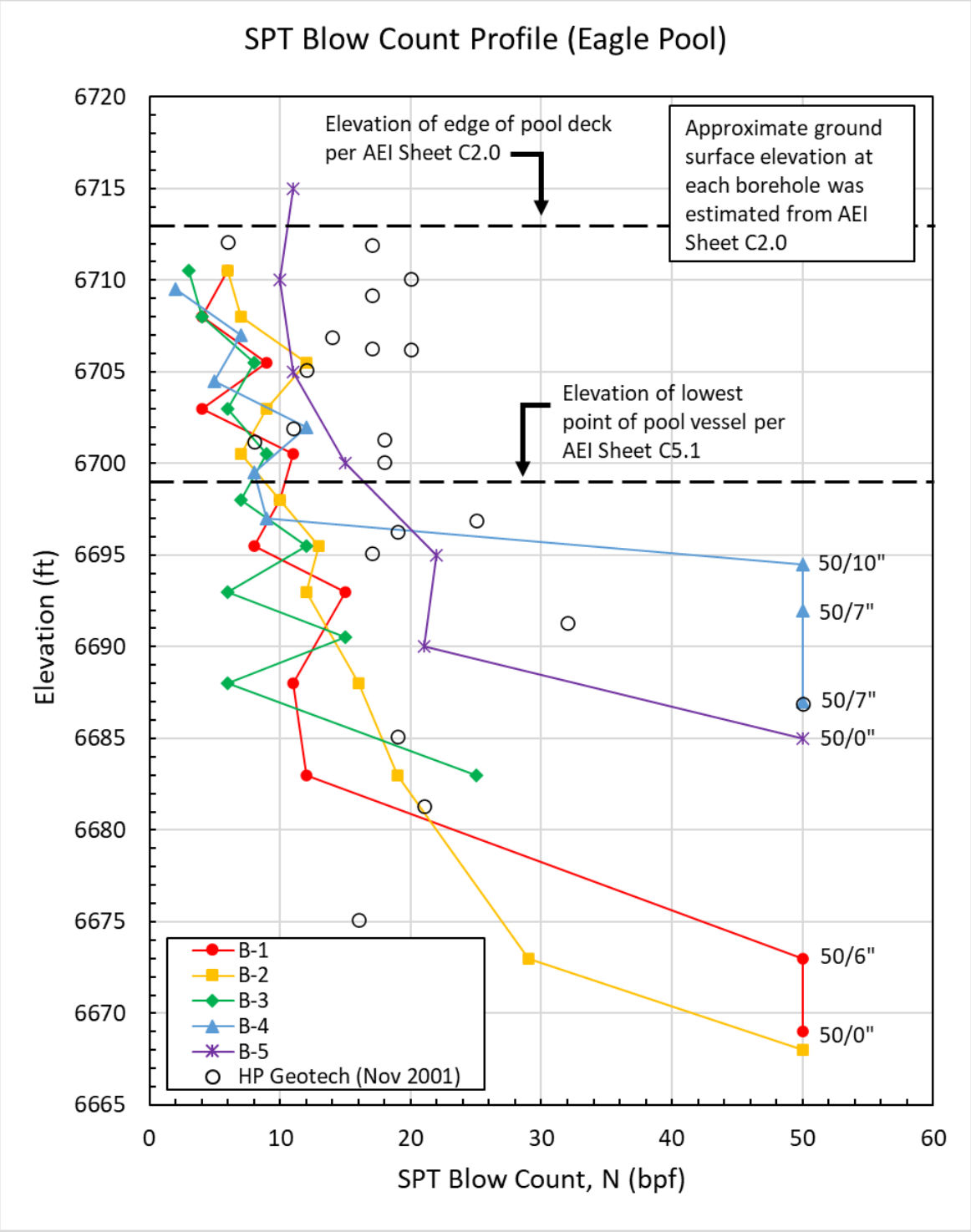


Figure 1. Subsurface Elevation Profile - Standard Penetration Test (SPT) Blow Count

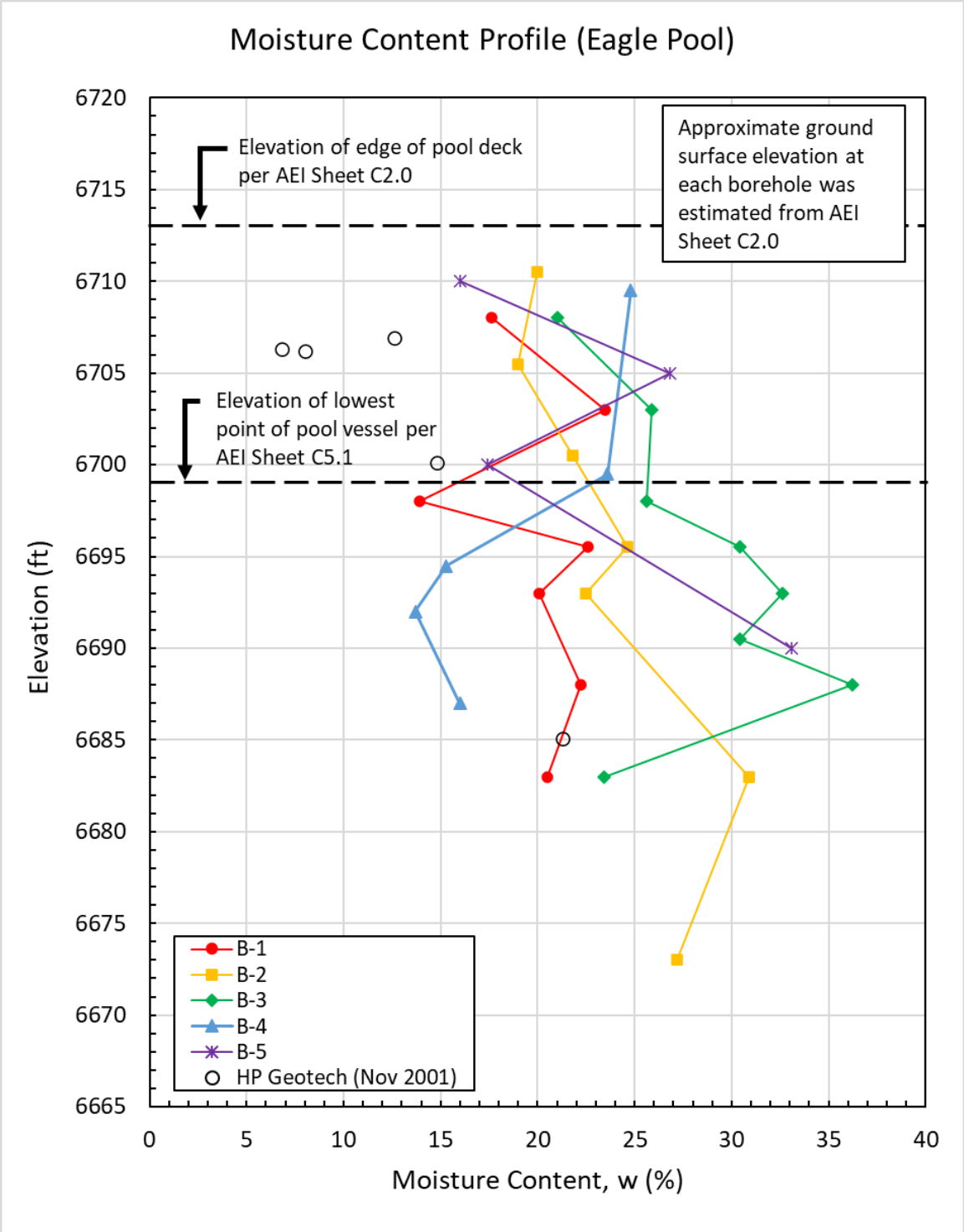


Figure 2. Subsurface Elevation Profile – Moisture Content

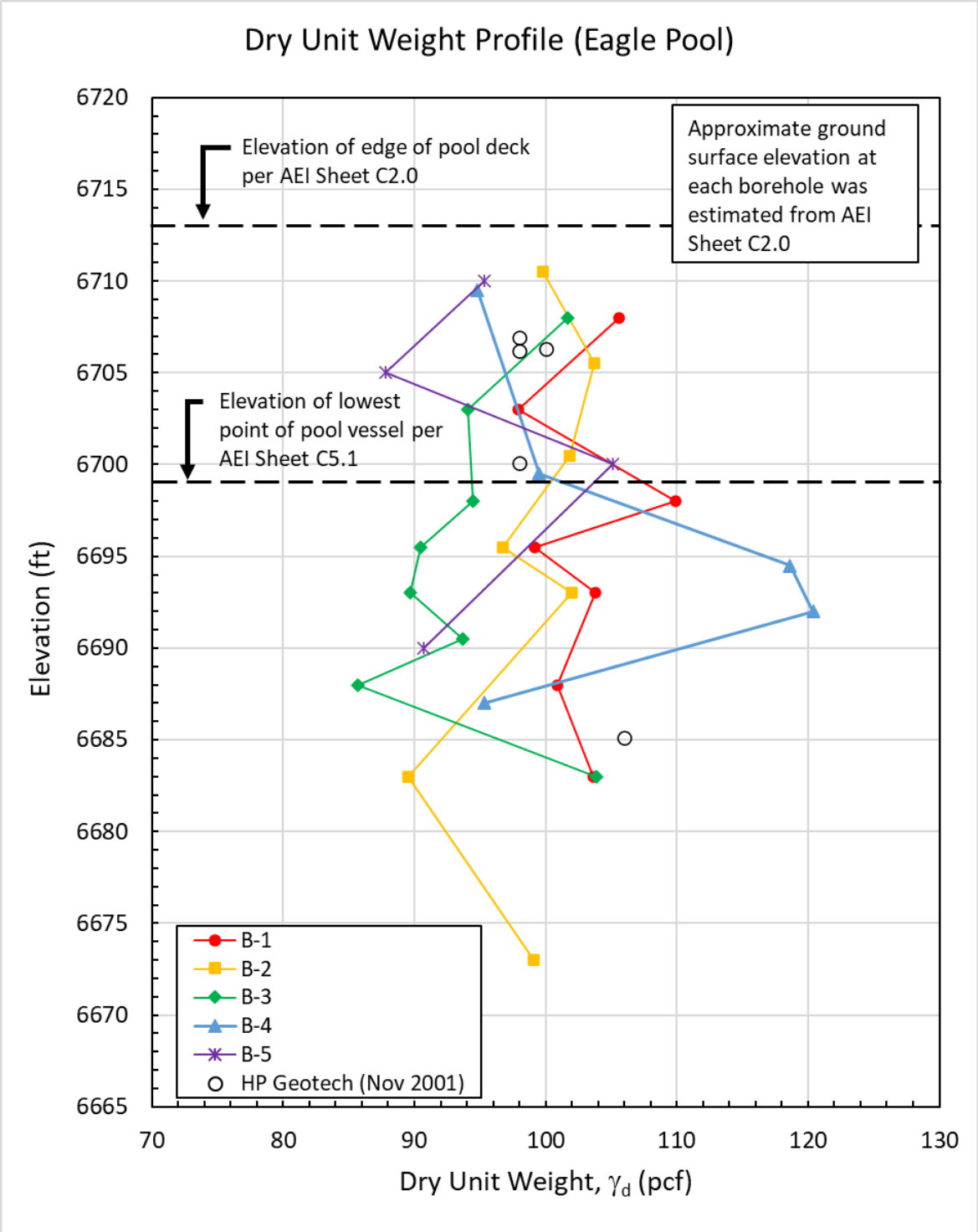


Figure 3. Subsurface Elevation Profile – Dry Unit Weight (Dry Density)

APPENDIX A. PROJECT SITE VICINITY AND LOCATIONS OF TEST PITS AND BOREHOLES

WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS
Wiss, Janney, Elstner Associates, Inc.
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Lakewood, Colorado 80235
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Project
Eagle Pool
1700 Bull Pasture Road, Eagle, Colorado

Figure Title
Site Vicinity Map

Proj. No.	2022.4162.0
Date	Aug 30, 2022
Drawn	MTL
Checked	FEH
Scale	AS SHOWN

Figure No. **A.1**

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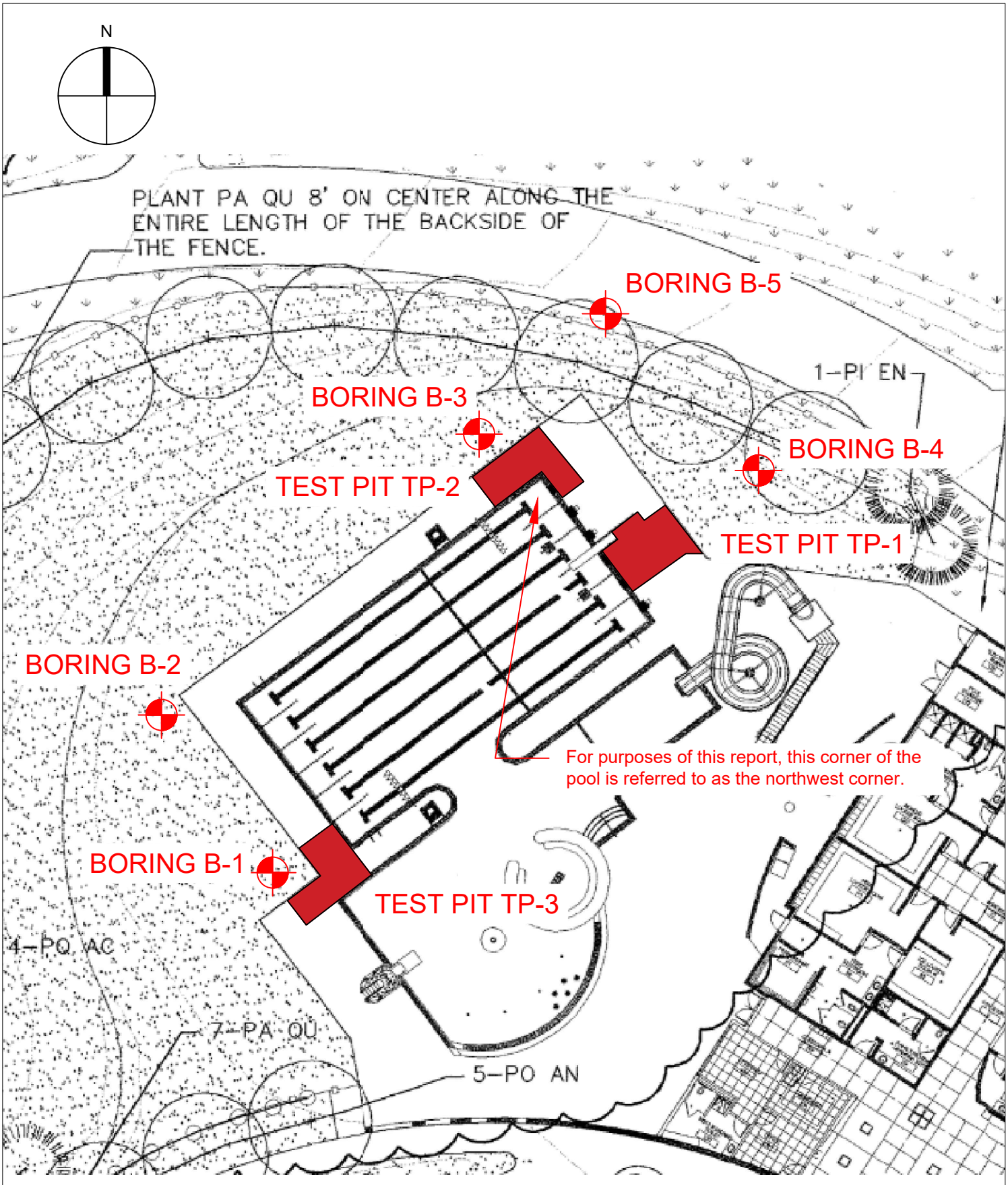

WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS **Wiss, Janney, Elstner Associates, Inc.** 3609 South Wadsworth Boulevard, Suite 400 Lakewood, Colorado 80235 303.914.4300 tel | 303.914.3000 fax www.wje.com	Project Eagle Pool 1700 Bull Pasture Road, Eagle, Colorado Figure Title Borehole and Test Pit Location Map	Proj. No. 2022.4162.0 Date Aug 30, 2022 Drawn MTL Checked FEH Scale NTS	Figure No. **A.2**

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APPENDIX B. TEST PIT LOGS

WJE | ENGINEERS ARCHITECTS MATERIALS SCIENTISTS

TEST PIT: TP-1

CLIENT: MOUNTAIN RECREATION

WJE PROJECT NO.: 2022.4162.0

PROJECT NAME: EAGLE POOL

PROJECT LOCATION: 1700 BULL PASTURE RD, EAGLE, CO

EXCAVATION STARTED: 7/13/2022 COMPLETE: 7/13/2022

CONTRACTOR: NOTTINGHAM

EXCAVATOR TYPE: JOHN DEERE 35G; HAND SHOVEL

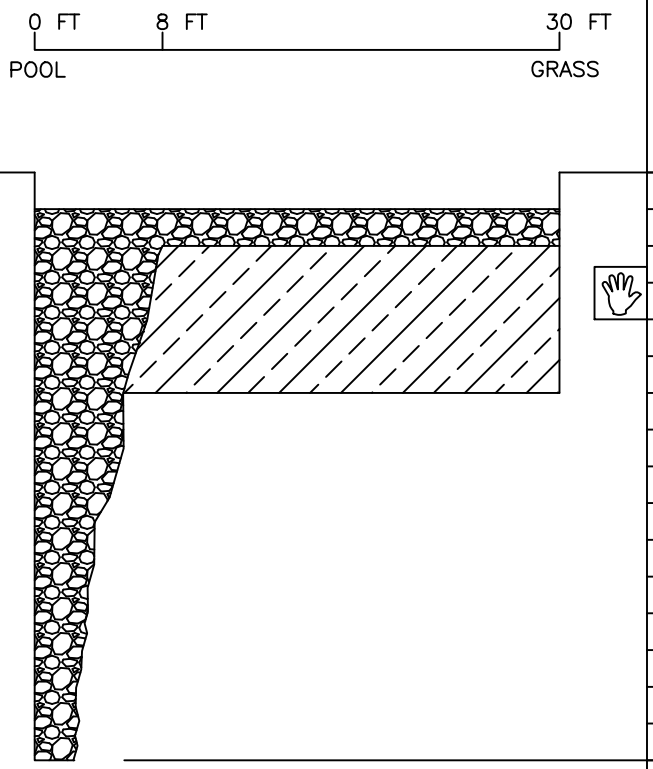
LOGGED BY: M. LEBLANC

GROUND ELEVATION (FT): N/A

COORDINATES: N/A

MAXIMUM DEPTH BELOW GROUND SURFACE (FT): 8

▽ DEPTH TO GROUNDWATER (FT): NOT ENCOUNTERED



DEPTH (FT)	DESCRIPTION OF FACE
0	
1	Concrete pool deck 3–5 inches thick
	GRAVEL base, with silt, wet, grey
2	SANDY SILT, moist, tan and brown with trace calcareous nodules
3	Benched at 3 feet
4	
5	
6	
7	
8	Bottom of test pit at 8 feet below the top of the concrete pool deck.
9	
10	

NOTES

Concrete pool deck removed on 7/13/2022 (7–8 am)

Soil was wetter on north side of pit near the diving board footing and the drain line

Pit was benched at 3 ft; one area near the diving board footing continued to 8 ft termination depth

Encountered fiber board at 6 foot depth; board was parallel to the pool wall and offset about 2 feet

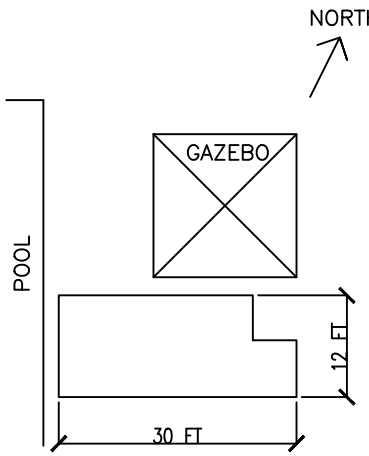
Gravel portion of the underdrain system was not encountered

Pool supply and return lines were exposed in this pit; returned on morning of 7/14/2022 to inspect for leaks; none observed

SAMPLE TYPE(S)

Grab Sample (GS)

PLAN VIEW OF PIT



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WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS

TEST PIT: TP-2

CLIENT: MOUNTAIN RECREATION

WJE PROJECT NO.: 2022.4162.0

PROJECT NAME: EAGLE POOL

PROJECT LOCATION: 1700 BULL PASTURE RD, EAGLE, CO

EXCAVATION STARTED: 7/13/2022 COMPLETE: 7/13/2022

CONTRACTOR: NOTTINGHAM

EXCAVATOR TYPE: JOHN DEERE 135G; HAND SHOVEL

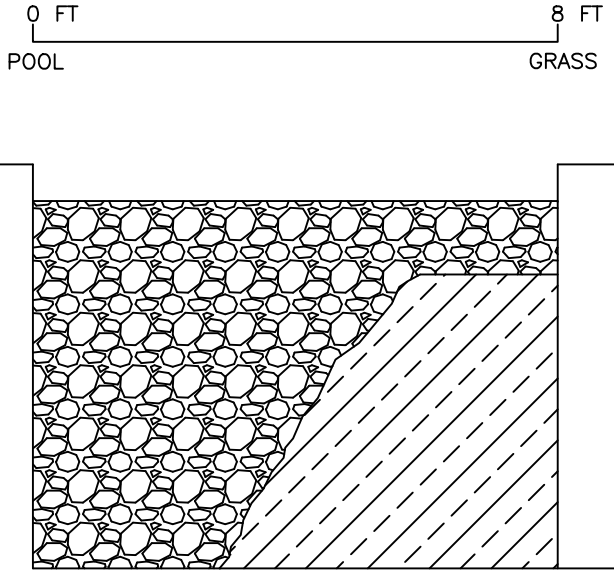
LOGGED BY: M. LEBLANC

GROUND ELEVATION (FT): N/A

COORDINATES: N/A

MAXIMUM DEPTH BELOW GROUND SURFACE (FT): 5.5

▽ DEPTH TO GROUNDWATER (FT): NOT ENCOUNTERED



Bottom of test pit at 5.5 feet below the top of the concrete pool deck.

DEPTH (FT)	DESCRIPTION OF FACE
0	Concrete pool deck 3–5 inches thick
1	GRAVEL base, with silt, wet, grey
2	SANDY SILT, moist, tan and brown
3	
4	
5	
6	
7	
8	
9	
10	

NOTES

Concrete pool deck removed on 7/13/2022 (7–8 am)

Soil wetter near east end of excavation by NW corner of pool

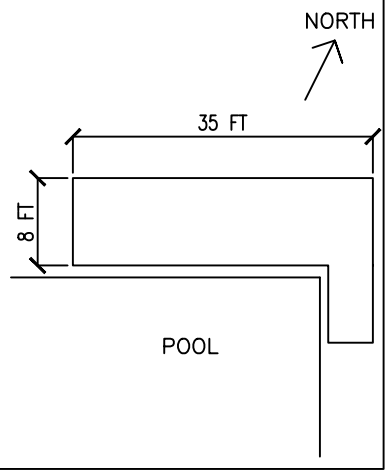
Extended pit around NW corner of pool after observed water running down pool wall and a cavity/void under pool deck near NW corner

Pool supply and return lines were exposed in this pit; returned on morning of 7/14/2022 to inspect for leaks; none observed

SAMPLE TYPE(S)

Grab Sample (GS)

PLAN VIEW OF PIT



P:\2022\2022.4xxx\2022.4162.0 - EAGLE POOL (FEH)\Test Pit Excavations\Test Pit Logs_Eagle Pool_FINAL.dwg

WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS

TEST PIT: TP-3

CLIENT: MOUNTAIN RECREATION

WJE PROJECT NO.: 2022.4162.0

PROJECT NAME: EAGLE POOL

PROJECT LOCATION: 1700 BULL PASTURE RD, EAGLE, CO

EXCAVATION STARTED: 7/13/2022 COMPLETE: 7/13/2022

CONTRACTOR: NOTTINGHAM

EXCAVATOR TYPE: JOHN DEERE 35G; HAND SHOVEL

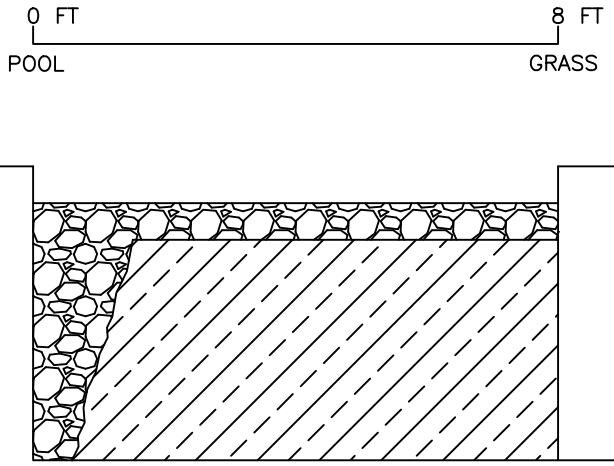
LOGGED BY: M. LEBLANC

GROUND ELEVATION (FT): N/A

COORDINATES: N/A

MAXIMUM DEPTH BELOW GROUND SURFACE (FT): 4

▽ DEPTH TO GROUNDWATER (FT): NOT ENCOUNTERED



Bottom of test pit at 4 feet below the top of the concrete pool deck.

DEPTH (FT)	DESCRIPTION OF FACE
0	Concrete pool deck 3–5 inches thick
1	GRAVEL base, with silt, wet, grey
2	SANDY SILT, moist, tan and brown
3	
4	
5	
6	
7	
8	
9	
10	

NOTES

Concrete pool deck removed during the afternoon of 7/12/2022

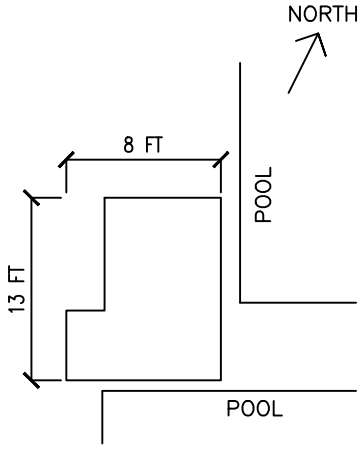
Encountered plastic liner at 2.5 feet oriented parallel to pool wall

Multiple water leaks at joint between gutter and concrete pool wall

SAMPLE TYPE(S)

Grab Sample (GS)

PLAN VIEW OF PIT



APPENDIX C. BORING LOGS AND LEGEND

WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS

DATE: 8/4/2022

BORING: B1
PAGE: 1 OF 2

CLIENT: MOUNTAIN RECREATION
WJE PROJECT NO: 2022.4162

PROJECT NAME: EAGLE POOL
PROJECT LOCATION: EAGLE, COLORADO

DRILLING STARTED 9:00am COMPLETED: 10:50am
DRILING CONTRACTOR: AGER DRILLING
DRILING RIG TYPE: CME-45 ATV HOLE DIAMETER: 4 in
LOGGED BY: ATW REVIEWED BY: MTL / FEH

GROUND ELEVATION (FT): NA
COORDINATES: NA
DEPTH TO BEDROCK (FT): 36
DEPTH TO GROUNDWATER (FT): NOT ENCOUNTERED

DEPTH (FT)	BLOW COUNTS / 6IN	MATERIAL DESCRIPTION	SAMPLE TYPE	POCKET PEN. (TSF)	USCS CLASSIFICATION	DRY UNIT WEIGHT (PCF)	MOISTURE CONTENT (%)	PASSING NO. 200 SIEVE (%)	ATTERBERG LIMITS			ADDITIONAL TESTS AND REMARKS
									LL	PL	PI	
0												
1		FILL: slightly moist med. reddish brown to tannish brown, fine sandy silt (derived from Eagle Valley alluvium) w/ coarse angular to sub-angular gravel.										
2												
3	3		CAL-MOD									
	3											
4												
5												
6	2		CAL-MOD			105.6	17.6					
	2											
7												
8	5	Eagle Valley alluvium: Slightly moist med. reddish brown to tannish brown, fine sandy silt. No coarse gravel present - limited occurrences of fine to medium sub-angular to sub-rounded gravels and limited lenses of light reddish-brown to tannish-gray fine silt, the latter being interpreted as eolian deposits within the Eagle Valley alluvium. Some intervals within this material exhibit gypsiferous veining, observed as white-to-gray 'marbling' within fine sandy silt.	CAL-MOD									
	4											
9												
10												
11	2		CAL-MOD			97.9	23.5	85.5				
	2											
12												
13	5		CAL-MOD									
	6											
14												
15												
16	5		CAL-MOD									Den.Swell%: -0.06
	5											
17												
18	4		CAL-MOD			99.2	22.6					
	4											
19												
20												

WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS

DATE: 8/4/2022

BORING: B1
PAGE: 2 OF 2

CLIENT: MOUNTAIN RECREATION
WJE PROJECT NO: 2022.4162

PROJECT NAME: EAGLE POOL
PROJECT LOCATION: EAGLE, COLORADO

DRILLING STARTED 9:00am COMPLETED: 10:50am
DRILING CONTRACTOR: AGER DRILLING
DRILING RIG TYPE: CME-45 ATV HOLE DIAMETER: 4 in
LOGGED BY: ATW REVIEWED BY: MTL / FEH

GROUND ELEVATION (FT): NA
COORDINATES: NA
DEPTH TO BEDROCK (FT): 36
DEPTH TO GROUNDWATER (FT): NOT ENCOUNTERED

DEPTH (FT)	BLOW COUNTS / 6IN	MATERIAL DESCRIPTION	SAMPLE TYPE	POCKET PEN. (TSF)	USCS CLASSIFICATION	DRY UNIT WEIGHT (PCF)	MOISTURE CONTENT (%)	PASSING NO. 200 SIEVE (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PL	ATTERBERG LIMITS PI	ADDITIONAL TESTS AND REMARKS
20												
21	5 10	Eagle Valley alluvium: Slightly moist med. reddish brown to tannish brown, fine sandy silt. No coarse gravel present - limited occurrences of fine to medium sub-angular to sub-rounded gravels and limited lenses of light reddish-brown to tannish-gray fine silt, the latter being interpreted as eolian deposits within the Eagle Valley alluvium. Some intervals within this material exhibit gypsiferous veining, observed as white-to-gray 'marbling' within fine sandy silt.	CAL-MOD			103.8	20.1					
22												
23												
24												
25												
26	5 6		CAL-MOD			100.9	22.2					
27												
28												
29												
30												
31	6 6		CAL-MOD			103.6	20.5					
32												
33												
34												
35												
36												
37		Auger stem exhibits mild chatterand slowed advance - material hardens. 36 feet interpreted as top of weathered Eagle Valley Evaporite (bedrock). SPT sampling is refused with 50 blows for 6 inches and no further advance.										
38												
39												
40	50/6in		Refusal									

Note: 50/6in at 40-40.5 feet, 50/0in at 40.5feet. Advanced auger to 44 feet. Bottom of hole at 44 feet. SPT attempted, 50 blows / 0 inches: Refusal.

WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS

DATE: 8/4/2022

BORING: B2
PAGE: 1 OF 2

CLIENT: MOUNTAIN RECREATION
WJE PROJECT NO: 2022.4162

PROJECT NAME: EAGLE POOL
PROJECT LOCATION: EAGLE, COLORADO

DRILLING STARTED 11:10am COMPLETED: 12:55pm
DRILING CONTRACTOR: AGER DRILLING
DRILING RIG TYPE: CME-45 ATV HOLE DIAMETER: 4 in
LOGGED BY: ATW REVIEWED BY: MTL / FEH

GROUND ELEVATION (FT): NA
COORDINATES: NA
DEPTH TO BEDROCK (FT): 34
DEPTH TO GROUNDWATER (FT): NOT ENCOUNTERED

DEPTH (FT)	BLOW COUNTS / 6IN	MATERIAL DESCRIPTION	SAMPLE TYPE	POCKET PEN. (TSF)	USCS CLASSIFICATION	DRY UNIT WEIGHT (PCF)	MOISTURE CONTENT (%)	PASSING NO. 200 SIEVE (%)	ATTERBERG LIMITS			ADDITIONAL TESTS AND REMARKS
									LL	PL	PI	
0												
1		Eagle Valley alluvium: Slightly moist med. reddish brown to tannish brown, fine sandy silt. No coarse gravel present - limited occurrences of fine to medium sub-angular to sub-rounded gravels and limited lenses of light reddish-brown to tannish-gray fine silt, the latter being interpreted as eolian deposits within the Eagle Valley alluvium. Some intervals within this material exhibit gypsiferous veining, observed as white-to-gray 'marbling' within fine sandy silt.										
2												
3	3		CAL-MOD			99.8	20					
3	3											
4												
5												
6	3		CAL-MOD									
6	4											
7												
8	5		CAL-MOD									Den.Swell%: -0.14
8	7											
9												
10												
11	5		CAL-MOD									
11	4											
12												
13	4		CAL-MOD			101.8	21.8	89.7				
13	3											
14												
15												
16	5		CAL-MOD									
16	5											
17												
18	6		CAL-MOD			96.7	24.6					
18	7											
19												
20												

WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS

DATE: 8/4/2022

BORING: B2
PAGE: 2 OF 2

CLIENT: MOUNTAIN RECREATION
WJE PROJECT NO: 2022.4162

PROJECT NAME: EAGLE POOL
PROJECT LOCATION: EAGLE, COLORADO

DRILLING STARTED 11:10am COMPLETED: 12:55pm
DRILING CONTRACTOR: AGER DRILLING
DRILING RIG TYPE: CME-45 ATV HOLE DIAMETER: 4 in
LOGGED BY: ATW REVIEWED BY: MTL / FEH

GROUND ELEVATION (FT): NA
COORDINATES: NA
DEPTH TO BEDROCK (FT): 34
DEPTH TO GROUNDWATER (FT): NOT ENCOUNTERED

DEPTH (FT)	BLOW COUNTS / 6IN	MATERIAL DESCRIPTION	SAMPLE TYPE	POCKET PEN. (TSF)	USCS CLASSIFICATION	DRY UNIT WEIGHT (PCF)	MOISTURE CONTENT (%)	PASSING NO. 200 SIEVE (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PL	ATTERBERG LIMITS PI	ADDITIONAL TESTS AND REMARKS
20												
21	6 6	Eagle Valley alluvium: Slightly moist med. reddish brown to tannish brown, fine sandy silt. No coarse gravel present - limited occurrences of fine to medium sub-angular to sub-rounded gravels and limited lenses of light reddish-brown to tannish-gray fine silt, the latter being interpreted as eolian deposits within the Eagle Valley alluvium. Some intervals within this material exhibit gypsiferous veining, observed as white-to-gray 'marbling' within fine sandy silt.	CAL-MOD			102	22.5					
22												
23												
24												
25												
26	7 9		CAL-MOD									
27												
28												
29												
30												
31	8 11		CAL-MOD			89.5	30.9					
32												
33												
34												
35		Auger stem exhibits mild chatter and slowed advance - material hardens. Slight to moderate iron-staining is present and some minor component of medium to coarse sub-angular to sub-rounded gravel present. 34 feet interpreted as top of weathered Eagle Valley Evaporite (bedrock). SPT blow counts at 40-41 feet = 13/16.										
36												
37												
38												
39												
40						99.1	27.2					

Note: Advanced auger to 45 feet, no samples taken. Bottom of hole at 45 feet. SPT attempted, 50 blows / 0 inches: Refusal.

WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS

DATE: 8/4-5/2022

BORING: B3
PAGE: 1 OF 2

CLIENT: MOUNTAIN RECREATION
WJE PROJECT NO: 2022.4162

PROJECT NAME: EAGLE POOL
PROJECT LOCATION: EAGLE, COLORADO

DRILLING STARTED: 2:30pm 8/4 COMPLETED: 9:30am 8/5
DRILING CONTRACTOR: AGER DRILLING
DRILING RIG TYPE: CME-45 ATV HOLE DIAMETER: 4 in
LOGGED BY: ATW REVIEWED BY: MTL / FEH

GROUND ELEVATION (FT): NA
COORDINATES: NA
DEPTH TO BEDROCK (FT): 30
DEPTH TO GROUNDWATER (FT): NOT ENCOUNTERED

DEPTH (FT)	BLOW COUNTS / 6IN	MATERIAL DESCRIPTION	SAMPLE TYPE	POCKET PEN. (TSF)	USCS CLASSIFICATION	DRY UNIT WEIGHT (PCF)	MOISTURE CONTENT (%)	PASSING NO. 200 SIEVE (%)	ATTERBERG LIMITS			ADDITIONAL TESTS AND REMARKS
									LL	PL	PI	
0												
1		Eagle Valley alluvium: Slightly moist med. reddish brown to tannish brown, fine sandy silt. No coarse gravel present - limited occurrences of fine to medium sub-angular to sub-rounded gravels and limited lenses of light reddish-brown to tannish-gray fine silt, the latter being interpreted as eolian deposits within the Eagle Valley alluvium. Some intervals within this material exhibit gypsiferous veining, observed as white-to-gray 'marbling' within fine sandy silt.										
2												
3	1 2		CAL-MOD									
4												
5												
6	2 2		CAL-MOD			101.7	21	86.8				
7												
8	4 4		CAL-MOD									
9												
10												
11	3 3		CAL-MOD									Den.Swell%: -0.36
12												
13	4 5		CAL-MOD									
14												
15												
16	3 4		CAL-MOD			94.5	25.6					
17												
18	6 6		CAL-MOD			90.5	30.4					
19												
20												

WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS

DATE: 8/4/2022

BORING: B3
PAGE: 2 OF 2

CLIENT: MOUNTAIN RECREATION
WJE PROJECT NO: 2022.4162

PROJECT NAME: EAGLE POOL
PROJECT LOCATION: EAGLE, COLORADO

DRILLING STARTED: 2:30pm 8/4 COMPLETED: 9:30am 8/5
DRILING CONTRACTOR: AGER DRILLING
DRILING RIG TYPE: CME-45 ATV HOLE DIAMETER: 4 in
LOGGED BY: ATW REVIEWED BY: MTL / FEH

GROUND ELEVATION (FT): NA
COORDINATES: NA
DEPTH TO BEDROCK (FT): 30
DEPTH TO GROUNDWATER (FT): NOT ENCOUNTERED

DEPTH (FT)	BLOW COUNTS / 6IN	MATERIAL DESCRIPTION	SAMPLE TYPE	POCKET PEN. (TSF)	USCS CLASSIFICATION	DRY UNIT WEIGHT (PCF)	MOISTURE CONTENT (%)	PASSING NO. 200 SIEVE (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PL	ATTERBERG LIMITS PI	ADDITIONAL TESTS AND REMARKS
20												
21	3 3	Eagle Valley alluvium: Slightly moist med. reddish brown to tannish brown, fine sandy silt. No coarse gravel present - limited occurrences of fine to medium sub-angular to sub-rounded gravels and limited lenses of light reddish-brown to tannish-gray fine silt, the latter being interpreted as eolian deposits within the Eagle Valley alluvium. Some intervals within this material exhibit gypsiferous veining, observed as white-to-gray 'marbling' within fine sandy silt. Note: when dropping sampler and drill string before sampling, the assembly sank into soft material approximately 10 inches (per B. Ager, Driller)	CAL-MOD			89.7	32.6					
22												
23	7 8		CAL-MOD			93.7	30.4					
24												
25												
26	3 3		CAL-MOD			85.7	36.2					
27												
28												
29												
30												
31	12 13	Auger stem exhibits mild chatter and slowed advance - material hardens. Some minor component of medium to coarse sub-angular to sub-rounded gravel present. 30 feet interpreted as top of weathered Eagle Valley Evaporite (bedrock).	CAL-MOD			103.9	23.4					
32												
33												
34												
35	50/0											
36												
37												
38												
39												
40												

Refusal at 35', with 50/0". Bottom of hole at 35'

WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS

DATE: 8/4/2022

BORING: B4
PAGE: 1 OF 2

CLIENT: MOUNTAIN RECREATION
WJE PROJECT NO: 2022.4162

PROJECT NAME: EAGLE POOL
PROJECT LOCATION: EAGLE, COLORADO

DRILLING STARTED: 1:45pm COMPLETED: 2:20pm
DRILING CONTRACTOR: AGER DRILLING
DRILING RIG TYPE: CME-45 ATV HOLE DIAMETER: 4 in
LOGGED BY: ATW REVIEWED BY: MTL / FEH

GROUND ELEVATION (FT): NA
COORDINATES: NA
DEPTH TO BEDROCK (FT): 17
DEPTH TO GROUNDWATER (FT): NOT ENCOUNTERED

DEPTH (FT)	BLOW COUNTS / 6IN	MATERIAL DESCRIPTION	SAMPLE TYPE	POCKET PEN. (TSF)	USCS CLASSIFICATION	DRY UNIT WEIGHT (PCF)	MOISTURE CONTENT (%)	PASSING NO. 200 SIEVE (%)	ATTERBERG LIMITS			ADDITIONAL TESTS AND REMARKS
									LL	PL	PI	
0												
1		FILL: slightly moist med. reddish brown to tannish brown, fine sandy silt (derived from Eagle Valley alluvium) w/ coarse angular to sub-angular gravel.										
2												
3	1		CAL-MOD			94.8	24.8					
4	1											
5												
6	4		CAL-MOD									
7	3											
8		Eagle Valley alluvium: Slightly moist med. reddish brown to tannish brown, fine sandy silt. No coarse gravel present - limited occurrences of fine to medium sub-angular to sub-rounded gravels and limited lenses of light reddish-brown to tannish-gray fine silt, the latter being interpreted as eolian deposits within the Eagle Valley alluvium. Some intervals within this material exhibit gypsiferous veining, observed as white-to-gray 'marbling' within fine sandy silt.										
9	3		CAL-MOD									
10	2											
11												
12	5		CAL-MOD									
13	7											
14												
15	3		CAL-MOD			99.5	23.6	82.7				
16	5											
17												
18	4		CAL-MOD									
19	5											
20												
	10	Auger stem exhibits mild chatter and slowed advance - material hardens, resembling claystone. 17 feet interpreted as top of weathered Eagle Valley Evaporite (bedrock).	CAL-MOD			118.6	15.3					
	50/5"											

WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS

DATE: 8/4/2022

BORING: B4
PAGE: 2 OF 2

CLIENT: MOUNTAIN RECREATION
WJE PROJECT NO: 2022.4162

PROJECT NAME: EAGLE POOL
PROJECT LOCATION: EAGLE, COLORADO

DRILLING STARTED: 1:45pm COMPLETED: 2:20pm
DRILING CONTRACTOR: AGER DRILLING
DRILING RIG TYPE: CME-45 ATV HOLE DIAMETER: 4 in
LOGGED BY: ATW REVIEWED BY: MTL / FEH

GROUND ELEVATION (FT): NA
COORDINATES: NA
DEPTH TO BEDROCK (FT): 17
DEPTH TO GROUNDWATER (FT): NOT ENCOUNTERED

DEPTH (FT)	BLOW COUNTS / 6IN	MATERIAL DESCRIPTION	SAMPLE TYPE	POCKET PEN. (TSF)	USCS CLASSIFICATION	DRY UNIT WEIGHT (PCF)	MOISTURE CONTENT (%)	PASSING NO. 200 SIEVE (%)	ATTERBERG LIMITS			ADDITIONAL TESTS AND REMARKS
									LL	PL	PI	
20												
21	28	Auger stem exhibits mild chatter and slowed advance - material hardens, resembling claystone. interpreted as top of weathered Eagle Valley Evaporite (bedrock). Sampling refusal at 20.5ft and again at 25ft. Bottom of hole at 25ft, no recovery at 25ft.	CAL-MOD			120.4	13.7					
22												
23												
24												
25	50/7"t.		none									
26												
27												
28												
29												
30												
31												
32												
33												
34												
35												
36												
37												
38												
39												
40												

Note: "50/7"t." refers to a total sampler advance of 7in for 50 blows, which includes the 28 blows for 6in above (e.g. 22 blows for 1in after first 6in)

WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS

DATE: 8/5/2022

BORING: B5
PAGE: 1 OF 2

CLIENT: MOUNTAIN RECREATION
WJE PROJECT NO: 2022.4162

PROJECT NAME: EAGLE POOL
PROJECT LOCATION: EAGLE, COLORADO

DRILLING STARTED: 10:00am COMPLETED: 11:30am
DRILING CONTRACTOR: AGER DRILLING
DRILING RIG TYPE: CME-45 ATV HOLE DIAMETER: 4 in
LOGGED BY: ATW REVIEWED BY: MTL / FEH

GROUND ELEVATION (FT): NA
COORDINATES: NA
DEPTH TO BEDROCK (FT): 32
DEPTH TO GROUNDWATER (FT): NOT ENCOUNTERED

DEPTH (FT)	BLOW COUNTS / 6IN	MATERIAL DESCRIPTION	SAMPLE TYPE	POCKET PEN. (TSF)	USCS CLASSIFICATION	DRY UNIT WEIGHT (PCF)	MOISTURE CONTENT (%)	PASSING NO. 200 SIEVE (%)	ATTERBERG LIMITS			ADDITIONAL TESTS AND REMARKS
									LL	PL	PI	
0												
1		Eagle Valley alluvium: Slightly moist med. reddish brown to tannish brown, fine sandy silt. No coarse gravel present - limited occurrences of fine to medium sub-angular to sub-rounded gravels and limited lenses of light reddish-brown to tannish-gray fine silt, the latter being interpreted as eolian deposits within the Eagle Valley alluvium. Some intervals within this material exhibit gypsiferous veining, observed as white-to-gray 'marbling' within fine sandy silt.										
2												
3												
4												
5												
6	5 6											
7												
8												
9		No sample taken above 10', due to elevation difference from previous 4 borings (B5 is located approximately 10ft above the elevation of the pool).										
10												
11	5 5		CAL-MOD			95.3	16					
12												
13												
14												
15												
16	5 6		CAL-MOD			87.8	26.8					
17												
18												
19												
20												

WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS

DATE: 8/5/2022

BORING: B5
PAGE: 2 OF 2

CLIENT: MOUNTAIN RECREATION
WJE PROJECT NO: 2022.4162

PROJECT NAME: EAGLE POOL
PROJECT LOCATION: EAGLE, COLORADO

DRILLING STARTED: 10:00am COMPLETED: 11:30am
DRILING CONTRACTOR: AGER DRILLING
DRILING RIG TYPE: CME-45 ATV HOLE DIAMETER: 4 in
LOGGED BY: ATW REVIEWED BY: MTL / FEH

GROUND ELEVATION (FT): NA
COORDINATES: NA
DEPTH TO BEDROCK (FT): 32
DEPTH TO GROUNDWATER (FT): NOT ENCOUNTERED

DEPTH (FT)	BLOW COUNTS / 6IN	MATERIAL DESCRIPTION	SAMPLE TYPE	POCKET PEN. (TSF)	USCS CLASSIFICATION	DRY UNIT WEIGHT (PCF)	MOISTURE CONTENT (%)	PASSING NO. 200 SIEVE (%)	ATTERBERG LIMITS			ADDITIONAL TESTS AND REMARKS
									LL	PL	PI	
20												
21	7 8	Eagle Valley alluvium: Slightly moist med. reddish brown to tannish brown, fine sandy silt. No coarse gravel present - limited occurrences of fine to medium sub-angular to sub-rounded gravels and limited lenses of light reddish-brown to tannish-gray fine silt, the latter being interpreted as eolian deposits within the Eagle Valley alluvium. Some intervals within this material exhibit gypsiferous veining, observed as white-to-gray 'marbling' within fine sandy silt.	CAL-MOD									
22												
23												
24												
25												
26	10 12		CAL-MOD									
27												
28												
29												
30												
31	10 11		CAL-MOD									
32												
33		Auger stem exhibits mild chatter and slowed advance - material hardens, resembling claystone. interpreted as top of weathered Eagle Valley Evaporite (bedrock).										
34												
35	50/0in		none									
36		Bottom of hole at 35ft										
37												
38												
39												
40												

APPENDIX D. LABORATORY TEST RESULTS

ADVANCED TERRA TESTING
833 PARFET ST UNIT A
LAKEWOOD, CO
303-232-8308 www.terratesting.com

Tuesday, September 13, 2022

Project Number:	3020-035
Company:	Wiss Janney Elstner
Address:	3609 S Wadsworth Boulevard, Suite 400
City:	Lakewood
State:	CO

RE:	Soil Testing
	Eagle Pool
	2022.4162.0

Dear Tarka Wilcox,

With this letter you will find a report on Soil samples assigned on 8/22/2022.

Testing was performed in accordance with standardized test methods, accepted industry practices as well as specific instructions received from you, our client. Advanced Terra Testing accepts no responsibility and makes no claims to the use or purpose of the material being tested. Furthermore, the results herein are based solely on the material received and tested. Please note that all material will be disposed of after thirty days unless other arrangements are made.

We respectfully request that sample reports be considered proprietary information and are not to be reproduced, except in full and only with prior written approval of Advanced Terra Testing. We are pleased to have been given the opportunity to perform high quality laboratory testing for your project. We sincerely hope the results herein provide you with all the information required. If you have questions or need anything further, please reach out and we will be happy to assist you.

Respectfully,

ADVANCED TERRA TESTING

Moisture and Density
ASTM D 2216 and ASTM D 7263

CLIENT	Wiss Janney Elstner			JOB NO.	3020-035
PROJECT	Eagle Pool			LOCATION	--
PROJECT NO.	2022.4162.0				
BORING NO.	B-1	B-1	B-1	B-1	
DEPTH	5-6'	17.5-18.5'	20-21'	10-11'	
SAMPLE NO.					
DATE SAMPLED					
DATE TESTED	09/07/22	09/07/22	09/07/22	09/07/22	
TECHNICIAN	KR	KR	KR	KR	
DESCRIPTION					
Mass of Wet Soil and Pan (g):	307.65	313.27	386.52	454.28	
Mass of Dry Soil and Pan (g):	262.66	256.85	322.96	390.04	
Mass of Pan (g):	6.76	6.67	6.64	116.39	
Moisture (%):	**17.6**	**22.6**	**20.1**	**23.5**	
Diameter (in):	1.92	1.92	1.93	1.94	
Height (in):	3.20	3.31	3.99	3.63	
Mass of Wet Soil and Ring (g):	301.39	306.94	490.65	338.67	
Mass of Ring (g):	0.00	0.00	109.54	0.00	
Wet Density (lbs/ft³):	**124.2**	**121.6**	**124.6**	**120.9**	
Dry Density (lbs/ft³):	**105.6**	**99.2**	**103.8**	**97.9**	
Wet Density (kg/m³):	**1990**	**1947**	**1997**	**1937**	
Dry Density (kg/m³):	**1692**	**1589**	**1662**	**1568**	
BORING NO.	B-1	B-1	B-2	B-2	
DEPTH	25.26'	30-31'	2.5-3.5'	12.5-13.5'	
SAMPLE NO.					
DATE SAMPLED					
DATE TESTED	09/07/22	09/07/22	09/07/22	09/07/22	
TECHNICIAN	KR	KR	KR	KR	
DESCRIPTION					
Mass of Wet Soil and Pan (g):	296.19	351.97	322.59	470.11	
Mass of Dry Soil and Pan (g):	243.59	293.29	269.98	406.95	
Mass of Pan (g):	6.70	6.67	6.71	117.36	
Moisture (%):	**22.2**	**20.5**	**20.0**	**21.8**	
Diameter (in):	1.93	1.93	1.93	1.92	
Height (in):	3.08	3.59	3.45	3.75	
Mass of Wet Soil and Ring (g):	289.67	345.54	316.11	353.00	
Mass of Ring (g):	0.00	0.00	0.00	0.00	
Wet Density (lbs/ft³):	**123.3**	**124.8**	**119.8**	**124.0**	
Dry Density (lbs/ft³):	**100.9**	**103.6**	**99.8**	**101.8**	
Wet Density (kg/m³):	**1975**	**1999**	**1918**	**1986**	
Dry Density (kg/m³):	**1616**	**1660**	**1599**	**1630**	
NOTES					

Data entry by:	KMS	Date:	09/12/22
Checked by:	KR	Date:	09/12/22
File name:	3020035__Moisture and Density ASTM D7236_0.xlsm		

ADVANCED TERRA TESTING

Moisture and Density
ASTM D 2216 and ASTM D 7263

CLIENT	Wiss Janney Elstner			JOB NO.	3020-035
PROJECT	Eagle Pool			LOCATION	--
PROJECT NO.	2022.4162.0				
BORING NO.	B-2	B-2	B-2	B--2	
DEPTH	17.5-18.5'	20-21'	30-31'	40-41'	
SAMPLE NO.					
DATE SAMPLED					
DATE TESTED	09/07/22	09/07/22	09/07/22	09/07/22	
TECHNICIAN	KR	KR	KR	KR	
DESCRIPTION					
Mass of Wet Soil and Pan (g):	373.48	327.38	364.37	386.38	
Mass of Dry Soil and Pan (g):	301.08	268.51	279.95	305.12	
Mass of Pan (g):	6.81	6.69	6.73	6.71	
Moisture (%):	**24.6**	**22.5**	**30.9**	**27.2**	
Diameter (in):	1.93	1.93	1.93	1.92	
Height (in):	3.99	3.36	3.99	3.99	
Mass of Wet Soil and Ring (g):	478.47	320.96	469.29	490.42	
Mass of Ring (g):	111.40	0.00	111.13	110.21	
Wet Density (lbs/ft³):	**120.5**	**124.9**	**117.2**	**126.1**	
Dry Density (lbs/ft³):	**96.7**	**102.0**	**89.5**	**99.1**	
Wet Density (kg/m³):	**1930**	**2001**	**1877**	**2019**	
Dry Density (kg/m³):	**1549**	**1633**	**1434**	**1587**	
BORING NO.	B-3	B-3	B-3	B-3	
DEPTH	5-6'	15-16'	17.5-18.5'	20-21'	
SAMPLE NO.					
DATE SAMPLED					
DATE TESTED	09/07/22	09/07/22	09/07/22	09/07/22	
TECHNICIAN	KR	KR	KR	KR	
DESCRIPTION					
Mass of Wet Soil and Pan (g):	471.01	345.03	332.30	326.03	
Mass of Dry Soil and Pan (g):	410.63	276.10	256.43	247.59	
Mass of Pan (g):	123.14	6.68	6.73	6.62	
Moisture (%):	**21.0**	**25.6**	**30.4**	**32.6**	
Diameter (in):	1.93	1.94	1.93	1.92	
Height (in):	3.69	3.69	3.58	3.53	
Mass of Wet Soil and Ring (g):	348.03	338.64	325.85	319.74	
Mass of Ring (g):	0.00	0.00	0.00	0.00	
Wet Density (lbs/ft³):	**123.0**	**118.7**	**118.0**	**118.9**	
Dry Density (lbs/ft³):	**101.7**	**94.5**	**90.5**	**89.7**	
Wet Density (kg/m³):	**1971**	**1902**	**1890**	**1904**	
Dry Density (kg/m³):	**1629**	**1514**	**1450**	**1437**	
NOTES					

Data entry by:	JT	Date: 09/09/22
Checked by:	KMS	Date: 09/12/22
File name:	3020035__Moisture and Density ASTM D7236_1.xlsm	

ADVANCED TERRA TESTING

Moisture and Density
ASTM D 2216 and ASTM D 7263

CLIENT	Wiss Janney Elstner			JOB NO.	3020-035
PROJECT	Eagle Pool			LOCATION	--
PROJECT NO.	2022.4162.0				
BORING NO.	B-3	B-3	B-3	B-4	
DEPTH	22.5-23.5	25-26'	30-31'	2.5-3.5'	
SAMPLE NO.					
DATE SAMPLED					
DATE TESTED	09/07/22	09/07/22	09/07/22	09/07/22	
TECHNICIAN	KR	KR	KR	KR	
DESCRIPTION					
Mass of Wet Soil and Pan (g):	319.02	304.31	335.85	323.96	
Mass of Dry Soil and Pan (g):	246.16	225.19	273.52	260.98	
Mass of Pan (g):	6.75	6.68	6.72	6.70	
Moisture (%):	**30.4**	**36.2**	**23.4**	**24.8**	
Diameter (in):	1.92	1.92	1.93	1.93	
Height (in):	3.36	3.36	3.35	3.50	
Mass of Wet Soil and Ring (g):	312.81	298.14	329.58	317.64	
Mass of Ring (g):	0.00	0.00	0.00	0.00	
Wet Density (lbs/ft³):	**122.2**	**116.8**	**128.1**	**118.3**	
Dry Density (lbs/ft³):	**93.7**	**85.7**	**103.9**	**94.8**	
Wet Density (kg/m³):	**1958**	**1870**	**2052**	**1895**	
Dry Density (kg/m³):	**1501**	**1373**	**1664**	**1519**	

BORING NO.	B-4	B-4	B-4	B-5	
DEPTH	12.5-13.5'	17.5-18.5'	20-21'	10-11'	
SAMPLE NO.					
DATE SAMPLED					
DATE TESTED	09/07/22	09/07/22	09/07/22	09/07/22	
TECHNICIAN	KR	KR	KR	KR	
DESCRIPTION					
Mass of Wet Soil and Pan (g):	476.43	404.59	431.09	323.11	
Mass of Dry Soil and Pan (g):	412.05	351.88	379.99	279.39	
Mass of Pan (g):	139.24	6.77	6.74	6.80	
Moisture (%):	**23.6**	**15.3**	**13.7**	**16.0**	
Diameter (in):	1.93	1.93	1.94	1.92	
Height (in):	3.58	3.79	4.00	3.77	
Mass of Wet Soil and Ring (g):	337.49	398.17	531.93	316.80	
Mass of Ring (g):	0.00	0.00	106.93	0.00	
Wet Density (lbs/ft³):	**122.9**	**136.8**	**136.9**	**110.6**	
Dry Density (lbs/ft³):	**99.5**	**118.6**	**120.4**	**95.3**	
Wet Density (kg/m³):	**1969**	**2191**	**2192**	**1771**	
Dry Density (kg/m³):	**1593**	**1901**	**1928**	**1526**	
NOTES					

Data entry by:	JT	Date: 09/09/22
Checked by:	KMS	Date: 09/12/22
File name:	3020035__Moisture and Density ASTM D7236_2.xlsm	

ADVANCED TERRA TESTING

Moisture and Density
ASTM D 2216 and ASTM D 7263

CLIENT	Wiss Janney Elstner			JOB NO.	3020-035
PROJECT	Eagle Pool			LOCATION	--
PROJECT NO.	2022.4162.0				
BORING NO.		B-5	B-5	B-5	
DEPTH		15-16'	20-21'	30-31'	
SAMPLE NO.					
DATE SAMPLED					
DATE TESTED		09/07/22	09/07/22	09/07/22	
TECHNICIAN		KR	KR	KR	
DESCRIPTION					
Mass of Wet Soil and Pan (g):		319.28	374.70	315.45	
Mass of Dry Soil and Pan (g):		253.27	320.24	238.74	
Mass of Pan (g):		6.69	6.83	6.68	
Moisture (%):		**26.8**	**17.4**	**33.1**	
Diameter (in):		1.94	1.93	1.90	
Height (in):		3.64	3.88	3.43	
Mass of Wet Soil and Ring (g):		312.96	368.38	309.24	
Mass of Ring (g):		0.00	0.00	0.00	
Wet Density (lbs/ft³):		**111.4**	**123.4**	**120.7**	
Dry Density (lbs/ft³):		**87.8**	**105.1**	**90.7**	
Wet Density (kg/m³):		**1784**	**1976**	**1933**	
Dry Density (kg/m³):		**1407**	**1684**	**1453**	
BORING NO.					
DEPTH					
SAMPLE NO.					
DATE SAMPLED					
DATE TESTED					
TECHNICIAN					
DESCRIPTION					
Mass of Wet Soil and Pan (g):					
Mass of Dry Soil and Pan (g):					
Mass of Pan (g):					
Moisture (%):					
Diameter (in):					
Height (in):					
Mass of Wet Soil and Ring (g):					
Mass of Ring (g):					
Wet Density (lbs/ft³):					
Dry Density (lbs/ft³):					
Wet Density (kg/m³):					
Dry Density (kg/m³):					
NOTES					

Data entry by:	KMS	Date:	09/12/22
Checked by:	KR	Date:	09/12/22
File name:	3020035__Moisture and Density ASTM D7236_3.xlsm		

ADVANCED TERRA TESTING

Percent Minus #200
ASTM D 1140

CLIENT	Wiss Janney Elstner	BORING NO.	B-3
JOB NO.	3020-035	DEPTH	5-6'
PROJECT	Eagle Pool	SAMPLE NO.	--
PROJECT NO.	2022.4162.0	DATE SAMPLED	--
LOCATION	--	DESCRIPTION	--
DATE TESTED	09/08/22		
TECHNICIAN	CK		

Hygroscopic Moisture

Mass Wet Pan and Soil (g):	471.01
Mass Dry Pan and Soil (g):	410.63
Mass of Pan (g):	123.14
Moisture (%):	**21.0**

Sample Data

Total Wet Mass of Sample (g):	347.9
Total Dry Mass of Sample (g):	287.5

Sieve Number	Sieve Size (mm)	Mass of Pan and Soil (g)	Mass of Pan (g)	Mass of Individual Retained Soil (g)	Correction Factor	Percent Passing by Weight (%)
#4	4.75	0.0	0.0	--	--	**100.0**
#200	0.075	161.1	123.1	38.0	1.00	**86.8**

USCS Classification ASTM D 2487

Atterberg Classification:	--
Group Symbol:	--
USCS Classification:	--

NOTES

Data entry by:	JT	Date:	09/09/22
Checked by:	KMS	Date:	09/12/22
File name:	3020035__Percent Minus #200 ASTM D1140_0.xlsm		

ADVANCED TERRA TESTING

Percent Minus #200
ASTM D 1140

CLIENT	Wiss Janney Elstner	BORING NO.	B-4
JOB NO.	3020-035	DEPTH	12.5-13.5'
PROJECT	Eagle Pool	SAMPLE NO.	--
PROJECT NO.	2022.4162.0	DATE SAMPLED	--
LOCATION	--	DESCRIPTION	--
DATE TESTED	09/08/22		
TECHNICIAN	CK		

Hygroscopic Moisture

Mass Wet Pan and Soil (g): 476.43
Mass Dry Pan and Soil (g): 412.05
Mass of Pan (g): 139.24
Moisture (%): **23.6**

Sample Data

Total Wet Mass of Sample (g): 337.2
Total Dry Mass of Sample (g): 272.8

Sieve Number	Sieve Size (mm)	Mass of Pan and Soil (g)	Mass of Pan (g)	Mass of Individual Retained Soil (g)	Correction Factor	Percent Passing by Weight (%)
#4	4.75	0.0	0.0	--	--	**100.0**
#200	0.075	186.3	139.2	47.1	1.00	**82.7**

USCS Classification ASTM D 2487

Atterberg Classification: --
Group Symbol: --
USCS Classification: --

NOTES

Data entry by: JT
Checked by: KMS
File name: 3020035__Percent Minus #200 ASTM D1140_1.xlsm

Date: 09/09/22
Date: 09/12/22

ADVANCED TERRA TESTING

Percent Minus #200
ASTM D 1140

CLIENT	Wiss Janney Elstner	BORING NO.	B-1
JOB NO.	3020-035	DEPTH	10-11'
PROJECT	Eagle Pool	SAMPLE NO.	--
PROJECT NO.	2022.4162.0	DATE SAMPLED	--
LOCATION	--	DESCRIPTION	--
DATE TESTED	09/09/22		
TECHNICIAN	CK		

Hygroscopic Moisture

Mass Wet Pan and Soil (g):	454.28
Mass Dry Pan and Soil (g):	390.04
Mass of Pan (g):	116.39
Moisture (%):	**23.5**

Sample Data

Total Wet Mass of Sample (g):	337.9
Total Dry Mass of Sample (g):	273.7

Sieve Number	Sieve Size (mm)	Mass of Pan and Soil (g)	Mass of Pan (g)	Mass of Individual Retained Soil (g)	Correction Factor	Percent Passing by Weight (%)
#4	4.75	0.0	0.0	--	--	**100.0**
#200	0.075	156.1	116.4	39.7	1.00	**85.5**

USCS Classification ASTM D 2487

Atterberg Classification:	--
Group Symbol:	--
USCS Classification:	--

NOTES

Data entry by:	KMS	Date:	09/12/22
Checked by:	KR	Date:	09/12/22
File name:	3020035__Percent Minus #200 ASTM D1140_2.xlsm		

ADVANCED TERRA TESTING

Percent Minus #200
ASTM D 1140

CLIENT	Wiss Janney Elstner	BORING NO.	B-2
JOB NO.	3020-035	DEPTH	12.5-13.5'
PROJECT	Eagle Pool	SAMPLE NO.	--
PROJECT NO.	2022.4162.0	DATE SAMPLED	--
LOCATION	--	DESCRIPTION	--
DATE TESTED	09/09/22		
TECHNICIAN	CK		

Hygroscopic Moisture

Mass Wet Pan and Soil (g): 470.11
Mass Dry Pan and Soil (g): 406.95
Mass of Pan (g): 117.36
Moisture (%): **21.8**

Sample Data

Total Wet Mass of Sample (g): 352.8
Total Dry Mass of Sample (g): 289.6

Sieve Number	Sieve Size (mm)	Mass of Pan and Soil (g)	Mass of Pan (g)	Mass of Individual Retained Soil (g)	Correction Factor	Percent Passing by Weight (%)
#4	4.75	0.0	0.0	--	--	**100.0**
#200	0.075	147.1	117.4	29.8	1.00	**89.7**

USCS Classification ASTM D 2487

Atterberg Classification: --
Group Symbol: --
USCS Classification: --

NOTES

Data entry by: KMS Date: 09/12/22
Checked by: KR Date: 09/12/22
File name: 3020035__Percent Minus #200 ASTM D1140_3.xlsm

ADVANCED TERRA TESTING

One Dimensional Swell / Collapse

Denver Swell

CLIENT	Wiss Janney Elstner	BORING NO.	B-1
JOB NO.	3020-035	DEPTH	15-16'
PROJECT	Eagle Pool	SAMPLE NO.	--
PROJECT NO.	2022.4162.0	DATE SAMPLED	--
LOCATION	--	SAMPLED BY	--
DATE TESTED	08/23/22	DESCRIPTION	Cal Liner
TECHNICIAN	AC		
RAW FILE	--		

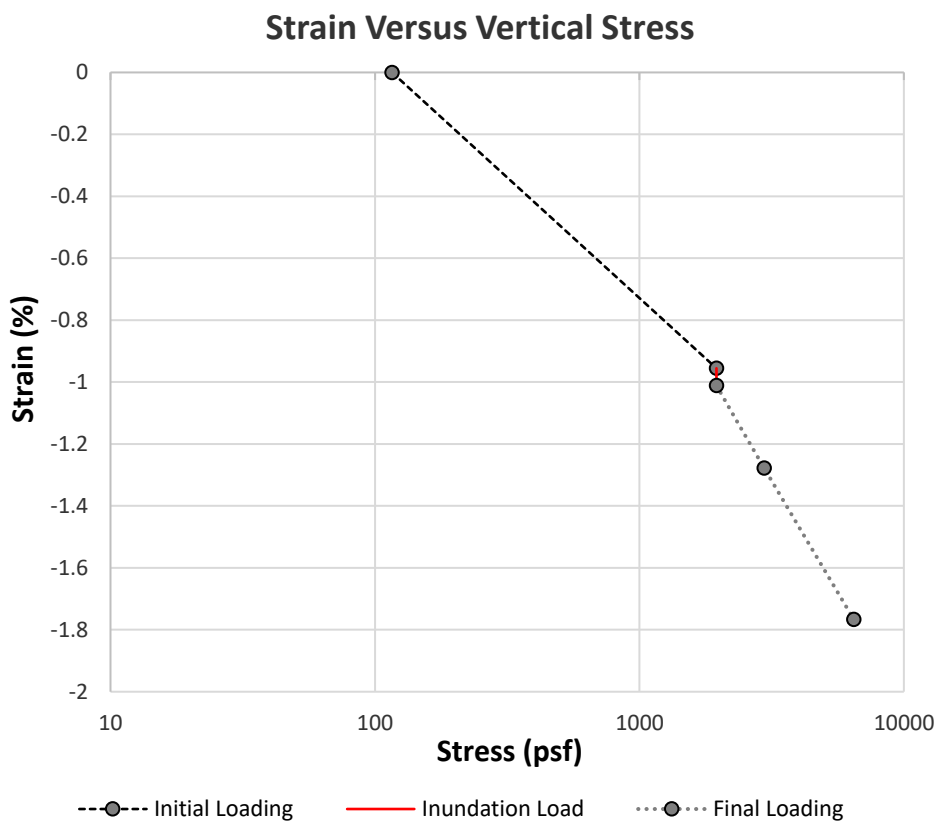
Sample Conditions

Before Test Mass of Wet Soil and Ring (g):	330.57	Initial Wet Density (pcf):	125.2
After Test Mass of Wet Soil and Ring (g):	333.28	Initial Dry Density (pcf):	109.9
Mass of Dry Soil, Ring, and Pan (g):	370.72	Initial Wet Density (kg/m³):	2006
Diameter (in):	1.94	Initial Dry Density (kg/m³):	1760
Initial Height (in):	0.90	Initial Moisture (%):	13.9
Mass of Ring (g):	243.31	Final Wet Density (pcf):	132.2
Mass of Pan (g):	50.82	Final Dry Density (pcf):	112.6
Inundation Load (psf):	1956	Final Wet Density (kg/m³):	2118
Inundation Load (kPa):	94	Final Dry Density (kg/m³):	1803
Oedometer ID:	ATT-2	Final Moisture (%):	17.5

Swell / Collapse Data

Collapse (%):	-0.06	Swell Pressure (psf):	--
		Swell Pressure (kPa):	--

Load (psf)	Deformation (in)	Strain (%)
116	0.0000	0.00
1956	-0.0086	-0.96
Inundated	-0.0091	-1.01
2962	-0.0115	-1.28
6465	-0.0159	-1.77



Data entry by: AC Date: 09/07/22
Checked by: WAR Date: 09/12/22
File name: 3020035__Swell Collapse ASTM D4546_0.xlsm

ADVANCED TERRA TESTING

One Dimensional Swell / Collapse

Denver Swell

CLIENT	Wiss Janney Elstner	BORING NO.	B-2
JOB NO.	3020-035	DEPTH	7.5-8.5'
PROJECT	Eagle Pool	SAMPLE NO.	--
PROJECT NO.	2022.4162.0	DATE SAMPLED	--
LOCATION	--	SAMPLED BY	--
DATE TESTED	08/23/22	DESCRIPTION	Cal Liner
TECHNICIAN	AC		
RAW FILE	--		

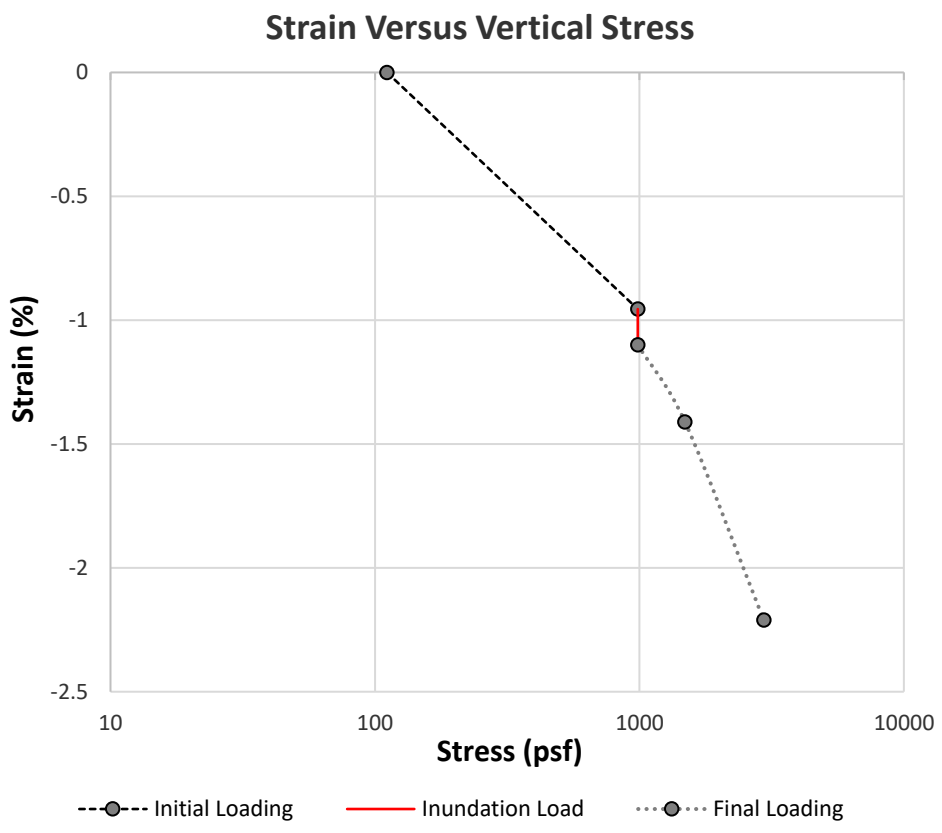
Sample Conditions

Before Test Mass of Wet Soil and Ring (g):	327.53	Initial Wet Density (pcf):	123.4
After Test Mass of Wet Soil and Ring (g):	328.48	Initial Dry Density (pcf):	103.7
Mass of Dry Soil, Ring, and Pan (g):	362.96	Initial Wet Density (kg/m³):	1977
Diameter (in):	1.94	Initial Dry Density (kg/m³):	1662
Initial Height (in):	0.90	Initial Moisture (%):	19.0
Mass of Ring (g):	241.52	Final Wet Density (pcf):	128.1
Mass of Pan (g):	49.15	Final Dry Density (pcf):	106.5
Inundation Load (psf):	986	Final Wet Density (kg/m³):	2052
Inundation Load (kPa):	47	Final Dry Density (kg/m³):	1706
Oedometer ID:	ATT-5	Final Moisture (%):	20.3

Swell / Collapse Data

Collapse (%):	-0.14	Swell Pressure (psf):	--
		Swell Pressure (kPa):	--

Load (psf)	Deformation (in)	Strain (%)
111	0.0000	0.00
986	-0.0086	-0.96
Inundated	-0.0099	-1.10
1487	-0.0127	-1.41
2952	-0.0199	-2.21



Data entry by:	AC	Date:	09/07/22
Checked by:	WAR	Date:	09/12/22
File name:	3020035__Swell Collapse ASTM D4546_1.xlsm		

ADVANCED TERRA TESTING

One Dimensional Swell / Collapse

Denver Swell

CLIENT	Wiss Janney Elstner	BORING NO.	B-3
JOB NO.	3020-035	DEPTH	10-11'
PROJECT	Eagle Pool	SAMPLE NO.	--
PROJECT NO.	2022.4162.0	DATE SAMPLED	--
LOCATION	--	SAMPLED BY	--
DATE TESTED	08/31/22	DESCRIPTION	Cal Liner
TECHNICIAN	AC		
RAW FILE	--		

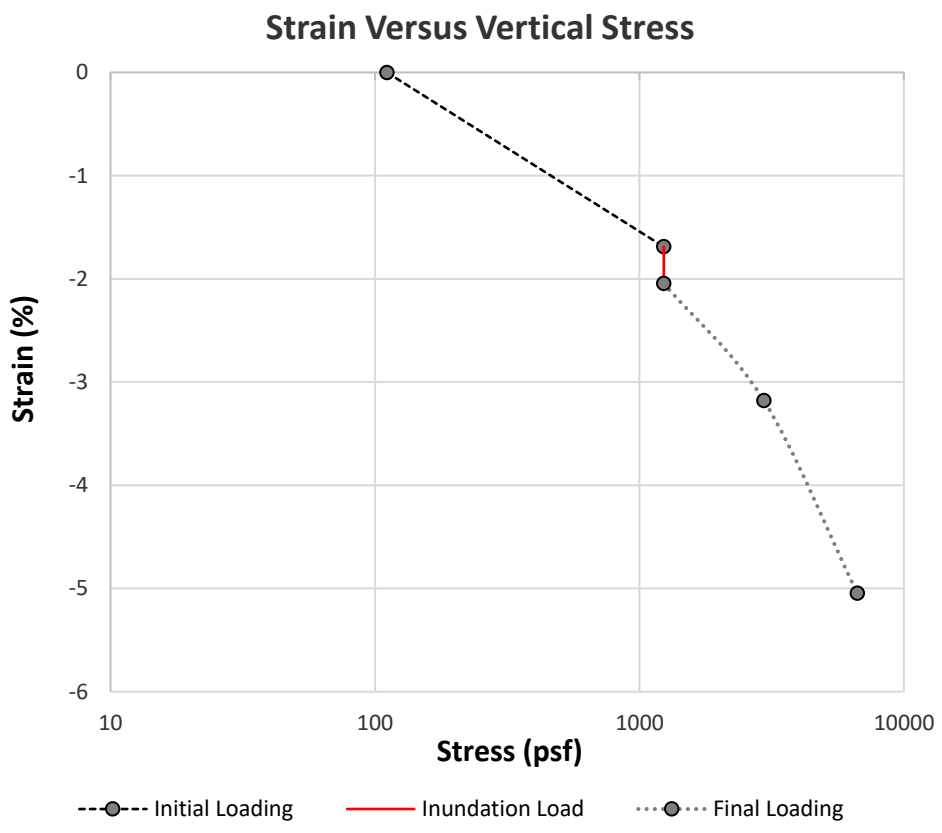
Sample Conditions

Before Test Mass of Wet Soil and Ring (g):	324.18	Initial Wet Density (pcf):	118.5
After Test Mass of Wet Soil and Ring (g):	324.32	Initial Dry Density (pcf):	94.1
Mass of Dry Soil, Ring, and Pan (g):	356.62	Initial Wet Density (kg/m³):	1899
Diameter (in):	1.94	Initial Dry Density (kg/m³):	1508
Initial Height (in):	0.90	Initial Moisture (%):	25.9
Mass of Ring (g):	241.58	Final Wet Density (pcf):	125.9
Mass of Pan (g):	49.44	Final Dry Density (pcf):	99.8
Inundation Load (psf):	1236	Final Wet Density (kg/m³):	2017
Inundation Load (kPa):	59	Final Dry Density (kg/m³):	1599
Oedometer ID:	ATT-5	Final Moisture (%):	26.1

Swell / Collapse Data

Collapse (%):	-0.36	Swell Pressure (psf):	--
		Swell Pressure (kPa):	--

Load (psf)	Deformation (in)	Strain (%)
111	0.0000	0.00
1236	-0.0152	-1.69
Inundated	-0.0184	-2.04
2952	-0.0286	-3.18
6659	-0.0454	-5.04



Data entry by: AC Date: 09/07/22
Checked by: WAR Date: 09/12/22
File name: 3020035__Swell Collapse ASTM D4546_2.xlsm