

FACILITY CONDITION ASSESSMENT

R. C. Icabone Swimming Pool
1131 College Ave.
Cañon City, CO

Terracon Project No. BE186084



Prepared For:
Cañon City Area Recreation and Park District,
575 Ash Street
Cañon City, CO

Prepared By:
Terracon Consultants, Inc.
Colorado City, CO

terracon.com

Terracon

Environmental



Facilities



Geotechnical



Materials

Facility Condition Assessment

R. C. Icabone Swimming Pool ■ Cañon City, CO
December 5, 2018 ■ Terracon Project No. BE186084



December 5, 2018

Attn: Mr. Kyle Horne
Phone: (719) 275-1578
Email: khorne@ccrec.org

Re: Facility Condition Report
R. C. Icabone Swimming Pool
1131 College Ave.
Cañon City, CO
December 5, 2018
Terracon Project No. BE186084

Dear Mr. Horne:

Terracon is pleased to provide this Facility Condition Report. This work was performed in general accordance with the scope of services outlined in the Terracon Proposal Number PBE186084 dated October 23, 2018, as identified in the scope section of this Report.

We appreciate the opportunity to be of service to you on this project. In addition to Facilities Services, our professionals provide geotechnical, environmental, construction materials services on a wide variety of projects locally, regionally and nationally. For more detailed information on all of Terracon's services please visit our web site at <http://www.terracon.com>. If you have any questions concerning this Report, or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.

Travis Stensby
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1.0 EXECUTIVE SUMMARY

Terracon completed a site visit on November 2nd, 2018 to the existing R.C. Icabone Swimming Facility in Cañon City, CO. This report with detailed analyses is based on staff interviews, visual observations during the site visit, and information provided in the form of reports, drawings, and/or specifications.

The pools and pool equipment were evaluated based on current regulatory agency requirements along with current industry standards. See section 1.1 for a list of referenced regulatory codes. Typically, large or major renovations to the pool shell or pool equipment require that the entire pool and pool systems be brought up to current standards. Recommended replacement is determined based on the actual condition of the equipment, how well it appears to have been maintained, and how much longer it could continue to function if proper maintenance is provided. Additional consideration was given when providing recommendations based on the manufacturer's warranty period and the remaining life expectancy.

This report has been divided up into three main sections. Section 1 is a quick introduction to the codes used to create this report. Section 2 is a full review of the swimming and wading pools. Section 3 is a conclusion with a brief review of all the necessary pool improvements at each facility.

1.1 Codes and Regulations

- Virginia Graeme Baker Pool & Spa Safety Act (VGB)
Regulations regarding suction outlets and suction entrapment prevention.
- Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADA)
Regulations regarding accessibility to buildings and facilities by individuals with disabilities.
- National Electric Code (NEC) Article 680: Swimming Pools, Fountains, and Similar Installations
Regulations regarding the construction and installation of electrical wiring for bodies of water.
- Code of Colorado Regulations: Department of Public Health and Environment – Water Quality Control Division – Swimming Pools and Mineral Baths 5 CCR 1003-5
- USA Swimming Rule Book 2018 (USAS) Article 103: Facilities Standards
Standards regarding swimming pool construction and programming for swimming.

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2.0 EXISTING FACILITIES ASSESSMENT

2.1 Purpose

The purpose of this Facility Condition Assessment is to observe and evaluate the current condition of the existing bodies of water, decks, pool related equipment, and the mechanical and sanitization systems and equipment; and determine if conditions exist which may have a significant impact on the operation of the facility during the evaluation period.

2.2 Scope

This work was performed in general conformance with the agreed-upon Scope of Services as described in contract under Terracon Proposal Number PBE186084 dated October 23, 2018, and under the terms of the Services Agreement between Terracon and the Cañon City Area Recreation and Park District.

The scope included a site visit, limited interviews with Owner's representatives and management personnel. The swimming pool assessment included visual observations of the following system components: the swimming pool, the wading pool, pool deck, pool equipment, pool equipment/chemical rooms, and swimming pool ADA compliance.

This report does not include structural analysis of the pool shell or a structural analysis of the water slide tower, causes of water loss, geotechnical testing and analysis, water table elevations and locations of aquifers at the site, locate electrical currents and their sources, verify equipotential bonding and grounding of the pool, and geophysical and destructive testing. This report does not include an assessment of the aquatic facility / bath house, including Architectural, MEP/LS, and Civil assessments. This report does not confirm the presence or absence of items such as mold, asbestos, environmental conditions or hazardous substances on this property.

2.3 Personnel Interviewed

In conjunction with our on-site visit and while attempting to gather pertinent information on this property, the following personnel were interviewed or have provided information, which we have relied upon in the assembly of this Report. These individuals were designated as knowledgeable about the site and related improvements.

Name	Title / Organization
Kyle Horne	Executive Director / Cañon City Area Recreation and Park District
Jon Dickson	Facility Maintenance / Cañon City Area Recreation and Park District

2.4 Documentation

Terracon was not provided with any documentation for this property outside of the observational site visit and photos of the facility received from the district prior to the site visit.

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2.5 General Pool Information

Large Pool:

Surface Area: 4,400 SF (Estimated on Google Earth)
Perimeter: 308 FT (Based on field measurements)
Dimensions: 82 FT x 42 FT (Plus a 32 FT x 30 FT Diving Well)
Depth Range: 3 FT 0 IN to 10 FT 0 IN
Volume: 190,000 GAL (Reported by owner)

Minimum Observed Suction Pipe Size: 4 IN PVC
Maximum Allowable Flow Rate (due to suction pipe size): 275 GPM
Minimum Required Flow Rate (per CO State Code): 528 GPM

Original Construction Type: Concrete pool shell with tile finish that has been covered with a pool liner with painted markings
Overflow System: Shallow gutters with two skimmers/site wells observed
Sanitizer: Sodium Hypochlorite (Liquid Bleach)
pH: CO2
Filtration System: Two (2) High Rate Sand Filter, Neptune Benson Steel Filter Tanks
Heating System: One (1) Teledyne Laars Mighty Therm

**Estimations based on Site Visit measurements, observations from provided information and Google Earth Measurements*

Wading Pool

Surface Area: 600 FT (Estimated on Google Earth)
Perimeter: 110 FT (Estimated on Google Earth)
Dimensions: 15 FT x 40 FT (Estimated on Google Earth)
Depth Range: 1 Ft
Volume: 4488 GAL (Approximately)

Minimum Suction Pipe Size: 2" PVC
Minimum Required Flow Rate (per CO State Code): 35 GPM (1 HR turnover)

Original Construction Type: Concrete Pool Shell with Fiberglass shell and Tile Trim
Overflow Skimmer System: Skimmer System
Sanitizer: Sodium Hypochlorite (Liquid Bleach)
pH: CO2
Filtration System: Pentair TR140 Filter

2.6 Items Non-Compliant with Code and Regulations

See Appendix B for related photos.

Per Colorado Code: "ARTICLE III DESIGN CRITERIA: Public pools or semi-public pools built or remodeled after the effective date of these regulations shall conform to these minimum design criteria."

Item	Comment
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Item	Comment
<p>Recirculation Rate – Large Pool CCR 3.10 requires a pool to have a minimum turnover of six (6) hours. Current pool turnover rate is approximately twelve (12) hours.</p>	<p>If the pool systems are replaced, they should be brought up to meet current code with pump, filter(s), piping and chemical treatment systems capable of the six (6) hour turnover rate.</p>
<p>Diving Area – Large Pool CCR 3.1 requires a minimum depths and lengths provided in section. General water depth required is 10'. Due to water conditions, only the general water depth could be observed. General water depth was observed to be at 10'.</p>	<p>While diving area meets CCR regulations, diving area does not meet industry standard for safety by meeting NCAA and National High School Federation regulations. This would be a depth of 12'.</p>
<p>Primary Means of Access – Wading Pool ADA 15.8.3 requires at least one accessible means of entry to be provided in the form of a sloped entry (ramp).</p>	<p>The wading pool was not equipped with a sloped entry, either a ramp or a beach entry.</p>
<p>Primary Means of Access – Large Pool ADA 15.8.3 requires two forms of accessible means of entry for pools with a perimeter of 300 linear feet.</p>	<p>The large pool was only equipped with one means of entry, ADA lift. Regulations require a second form of entry. Second form may be either a sloped entry, secondary lift, or ADA stairs.</p>
<p>Piping Labels CCR 3.16 requires the direction of flow for the recirculation equipment shall be clearly labeled with direction symbols such as arrows on all piping in the equipment area. Valves and plumbing lines shall be labeled clearly with the source or destination descriptions.</p>	<p>No labels were found on the pool piping. Most valves and pipes were untagged and not clearly labeled. as to source or destination descriptions.</p>
<p>Turnover Time - Large Pool CCR 3.16 requires the recirculation system to have the capacity to provide a complete turnover of pool water in six hours or less for pools.</p>	<p>The pool turnover rate was observed near 275 GPM during the visit. The minimum required flow rate for a 6-hour turnover based on a pool volume of 190,000 gallons is 528 GPM.</p>

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Item	Comment
<p>Pipe Sizes CCR 3.16 requires pipes to be sized such that flow velocity of piping systems shall not exceed 7 feet per second in any suction piping and 10 feet per second in any portion of the return system.</p>	<p>The pool suction piping in the room was 4” diameter, which has a capacity of 275 GPM to meet the 7-fps suction velocity. The pool currently meets code for velocity, however if the system is upsized to meet required turnover, the pipe system will have to be replaced all the way back to the pool.</p>
<p>Mechanical Room Storage CCR 3.18 outlines that miscellaneous equipment, chemicals, and appurtenances shall not be stored in the pool mechanical room. Industry standards require chemicals to be stored separately. Industry standards require chemicals to be stored in separate (locked) rooms with limited access. These rooms typically have access via exterior doors for ease and safety of delivery. Chemicals should be stored with secondary containment measures. Chemical injection into the system should occur in the chemical rooms.</p>	<p>Chemicals were stored in the pool mechanical room. The pool mechanical room did not have sufficient space around equipment. See below for industry standard comments on mechanical room. Equipment room had no separate chemical storage areas and the point of injection was within the main equipment area.</p>
<p>Waterslide Pump System The Virginia Graeme Baker Pool and Safety Act (VGBA) requires all pumps meet certain safety requirements for suction grating.</p>	<p>The suction fitting for the waterslide pump is not VGBA compliant. A VGBA fitting shall be needed to run the waterslide pump.</p>
<p>Waterslide Pump System CCR does not address waterslides specifically. CCR 3.7 states that supports, platforms and steps for diving boards/towers shall be substantial construction and of sufficient structure strength to safely carry loads.</p>	<p>The waterslide tower does not appear to have the structural integrity to carry the intended load. The tower appears to be a safety hazard and should be further studied by a structural engineer prior to reopening.</p>
<p>Main Drain System The Virginia Graeme Baker Pool and Safety Act (VGBA) requires all pumps meet certain safety requirements for suction grating.</p>	<p>The suction fitting for the recirculation pump was brought into compliance with VGBA in 2008. These covers typically are compliant for 10 years. The covers shall be with new VGBA compliant covers.</p>

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2.8 Items Non-Compliant with Current Industry Standards and Life Expectancy

See Appendix B for related photos.

Item	Comment
Pool Filter The high rate sand filter used to filter the swimming pool is believed to be the original equipment, installed in 1966 (52 years ago). Corrosion was noted on the exterior of the filters. The assumed life expectancy is 20 years. These filters have reached their expected life and should be replaced soon.	High rate filters should be replaced as they reach the end of their useable life.
Pool Pump VFD No VFD was observed for this pool pump during the site visit.	It is industry standard to put a Variable Frequency Drive (VFD) on a pump for full size pools with pumps 5 HP or greater.
Chemical Room Storage Chemicals were stored in the pool mechanical room. Equipment room had no separate chemical storage areas (with limited access) and the point of injection was within the main equipment area.	Industry standards require chemicals to be stored in separate (locked) rooms with limited access. These rooms typically have access via exterior doors for ease and safety of delivery. Chemicals should be stored with secondary containment measures. Chemical injection into the system should occur in the chemical rooms.
Pool Finish Degrading pool finish was observed on site.	The pool finish on both bodies of water has exceeded its lifespan. The finishes were believed to be installed in 2002 (16 years ago). The assumed life expectancy for a pool liner is 10 years.

2.9 Items Compliant or Unknown to be Compliant with Code and/or Industry Standards

Item	Comment
Equipotential Bonding NEC 680.26 requires all fixed metal parts within 5 feet of the inside walls of the pool to be bonded to reduce voltage gradients.	It is unknown as to whether all anchors at the pool deck are bonded and to verify is considered costly and/or intrusive to the pool deck.

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2.10 Repair Probable Costs

The Repair Cost Analysis Table includes estimated costs for expected repair work. The list includes swimming pool systems or components that have far exceeded their expected useful life and can be expected to fail in the next 1-3 years. The table gives anticipated values replacement of each piece of equipment if it should fail. The district can anticipate repair costs happening each season.

Based on our opinion of the state of the facility, a \$50,000 repair budget for the next 3 years should be adequate.

ITEM	UNIT	UNIT COST	QUANTITY	ITEM COST
Mechanical Equipment				
Chemical Controller	LS	\$7,350.00	1	\$7,350.00
Sanitizer	LS	\$7,350.00	1	\$7,350.00
pH Buffer	LS	\$3,675.00	1	\$3,675.00
Filtration	LS	\$52,100.00	1	\$52,100.00
Pumps and Controls	LS	\$9,800.00	1	\$9,800.00
Hair and Lint Strainer	LS	\$3,200.00	1	\$3,200.00
Pool Heating	LS	\$27,600.00	1	\$27,600.00
New Main Drains	LS	\$3,200.00	1	\$3,200.00
Pool Finishes				
Pool Surface	SF	\$15.00	5,961	\$89,415.00

2.11 Renovation Cost Long Term

The following budget numbers are for a full pool mechanical renovation of the existing large swimming pool and wading pool. While the renovation numbers are provided as a breakdown, the renovation entails a much broader scope and requires higher level budgets

This estimate does NOT include a major renovation of the existing bathhouse. A line item (Landscaping and Architectural Upgrades) has been included that allows for an approximate renovation of \$54,000 (or \$25 per sf). New building costs can be assumed at \$200-300 per sf.

ITEM	ITEM COST
Renovation	
Site Costs	\$55,053
Structure	\$7,343
Perimeter Overflow	\$90,038
Pool Piping	\$5,630
Pool Mechanical Equipment	\$117,038
Pool Finishes	\$62,550
Deck Equipment	\$55,333
Loose Equipment	\$556
Maintenance Equipment	\$7,694
Safety Equipment	\$1,439
Wading Pool Repair	\$90,524
Slide Repair - Tower Only	\$27,778
Slide Pump and Piping	\$21,555
<i>Pool Subtotal</i>	\$542,530
<i>Architectural, Permitting, and Testing Fees (10% Budget)</i>	\$54,253
<i>Landscaping and Architectural Upgrades (10% Budget)</i>	\$54,253
<i>Contingency (10% Budget)</i>	\$54,253
<i>Project Costs</i>	\$705,289

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2.12 Pool Replacement, Modifications, and Amenities

The following Opinion of Probable Costs are shown for the purpose of comparison to previous estimates included in this report. These budgets will help the district decide the future of the swimming pools at this facility. The first Opinion of Probable Costs includes replacing the existing facility with a similar type of facility. The second Opinion of Probable Costs includes replacing the current facility with a modern facility.

Opinion of Probable Cost for Pool Replacement

This option includes a Lap Pool that is 6 lanes by the length of 25 meters with an overflow gutter type recirculation system. This layout has one shallow end with two stairs water depths ranging from 3'6" to 12'0" which allows for recreation and a 1-meter diving board. The wading pool is removed and replaced with a sprayground due to cost savings.

This estimate does NOT include a major renovation of the existing bathhouse. A line item (Landscaping and Architectural Upgrades) has been included that allows for an approximate renovation of \$147,000 (or approximately \$75 per sf). New building costs can be assumed at \$200-300 per sf.

ITEM	ITEM COST
Replace	
Pool Costs	\$988,676
Wading Pool Replace with Sprayground	\$300,000
Slide Replacement	\$191,000
<i>Pool Subtotal</i>	<i>\$1,479,676</i>
<i>Architectural, Permitting, and Testing Fees (10% Budget)</i>	<i>\$147,968</i>
<i>Landscaping and Architectural Upgrades (10% Budget)</i>	<i>\$147,968</i>
<i>Contingency (10% Budget)</i>	<i>\$147,968</i>
<i>Project Costs</i>	<i>\$1,923,578</i>

*NOTE: Estimate includes pool structure, pool finish, pool piping, pool mechanical equipment, pool deck and loose equipment.

Opinion of Probable Cost for Pool Replacement with Modern Swimming Pool Design

This option includes a Lap Pool that is 6 lanes by the length of 25 yards with an overflow gutter type recirculation system. This layout has one shallow end with two stairs water depths ranging from 3'6" to 12'0" which allows for recreation and a 1-meter diving board. There is also dedicated square footage for a zero-beach entry with a playstructure feature. The wading pool is removed and replaced with a sprayground due to cost savings.

This estimate does NOT include a major renovation of the existing bathhouse. A line item (Landscaping and Architectural Upgrades) has been included that allows for an approximate renovation of \$190,000 (or approximately \$95 a per sf). New building costs can be assumed at \$200-300 per sf. A new modern bathhouse would be approximately 3,000 sf at an assumed cost of \$600,000 - \$900,000. This would add an additional \$410,000 - \$610,000 to the budget for a new bathhouse/pool mechanical building.

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ITEM	ITEM COST
Replace with Modern	
Pool Costs	\$1,220,423
Wading Pool Replace with Sprayground	\$300,000
Waterslide	\$191,000
Playstructure	\$198,000
Pool Subtotal	\$1,909,423
<i>Architectural, Permitting, and Testing Fees (10% Budget)</i>	<i>\$190,942</i>
<i>Landscaping and Architectural Upgrades (10% Budget)</i>	<i>\$190,942</i>
<i>Contingency (10% Budget)</i>	<i>\$190,942</i>
Project Costs	\$2,482,250

*NOTE: Estimate includes pool structure, pool finish, pool piping, pool mechanical equipment, pool deck and loose equipment.

3.0 CONCLUSION

3.1 Repair/Renovation

The services Terracon performed were general in scope and in nature. This Report is intended to provide a general overview of the pools and related systems and our opinion of their overall condition based solely on our visual assessment. The items/issues addressed in this report reflect only the observable conditions during the site visit. It is therefore suggested that the report be amended and/or expanded as necessary by individuals that have been involved with the day-to-day operation of the facility. Their experience and knowledge of the pool's history is vital in preparing a comprehensive appraisal of the facilities shortcomings and specific defects.

Terracon recommends many auxiliary site improvements, as noted in the body of this report. Based on the desire of the District, some short-term repairs (approximately \$50,000) will need to be made as necessary for the facility to last 3 years. Beyond this time period, the district should consider a full renovation or replacement for the pool to last beyond 3 years. This type of renovation will cost approximately \$700,000. Please see the body of this report for items to be address, code sections, explanations and costs.

3.2 Reliance

This Report was prepared pursuant to the contract Terracon has with the District. This Report is for the exclusive use and benefit of and may be relied upon by the District and no other party shall have any right to rely on any service provided by Terracon Consultants, Inc. without prior written consent.

The Report may be relied upon by you as a description of the observed current conditions of the building and site improvements, only as of the date of this Report, and with the knowledge that there are certain limitations and exceptions within the Report that are reflective of the scope of services as defined in our contract. Any unauthorized reliance on or use of the Report, including any of its information or conclusions, will be at the third party's sole risk. For the same reasons, no warranties or representation, express or implied in this Report, are made to any such third party. Reliance on the Report by the client and all authorized parties will be subject to the terms, conditions and limitations stated in the contract Terms and Conditions. The limitation of liability defined in the Terms and Conditions is the aggregate limit of Terracon's liability to the Client and all relying parties.

3.3 Limitations

The services Terracon performed were general in scope and in nature. This Report is intended to provide a general overview of the swimming pool systems and our opinion of their overall condition based solely on our visual assessment. It has been performed using that degree of skill and care normally exercised by reputable consultants performing similar work. The activities of this survey included observations of visible and readily accessible areas. The observations were performed without removing or damaging components of the existing swimming pool systems. Consequently, certain assumptions have been made regarding conditions and operating performance. Comprehensive studies to identify, document, and evaluate every existing defect or deficiency, were not conducted. In some cases, additional studies may be warranted to fully evaluate concerns noted. In addition, system checks or testing of the equipment in the operating mode is beyond the scope of this assessment. It is recommended that contractor's bids be obtained for items that may represent significant expenditures.

The observations, findings, and conclusions within this Report are based on our professional judgment and information obtained during this assessment based on the scope of work authorized. The opinions and recommendations presented herein are based on our observations, evaluation of the information provided, and interviews with personnel familiar with the property. No calculations have been performed to determine the adequacy of the facility's original design. It is possible that defects and /or deficiencies exist that were not readily accessible or visible. Problems may develop with time, which were not evident at the time of this assessment. The opinions and recommendations in this Report should not be construed in any way to constitute a warranty or guarantee regarding the current or future performance of any system identified.

The representations regarding the status of ADA Title III compliance were determined based on visual observation and without any physical measuring and, thus, are intended to be a good faith effort to assist the Client by noting nonconforming conditions along with estimates of costs to correct and are not to be based on a detailed study.

Costs and information contained in Draft Reports may be subject to additional input or further analysis prior to the issuance of the final report. This ongoing activity could ultimately alter the conclusions and data contained in the Draft Report. Draft-status information or partial release of a Report should only be utilized by interested parties with the knowledge that minor or substantial changes in the evaluations or recommendations could occur before the final Report is issued. Decisions and actions by the Client based on information contained in a Draft Report, prior to issuance of the final report should be undertaken only after careful review of this cautionary advisory.

3.4 Advisory Notes

The following advisory notes are provided to discuss potential issues associated with budgeting practices, presence of potential hazardous materials, constructions products that may be defective or have a shorter useful life than anticipated for similar or alternative products used for the same purpose. The list of items addressed is not intended to list all such products but includes some that could be present at this type of development.

Product and Material Recalls – The Consumer Product Safety Commission, as well as some manufacturers, will issue alerts or recalls on products or materials that are under review or have been determined to be defective or potentially dangerous under certain conditions.

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Hazardous Materials - This Report does not confirm or deny the presence or absence of items such as mold, asbestos, environmental conditions or hazardous substances on this property.

Swimming Pool/Spa Safety – Commencing January 1, 2009, federal legislation mandates all pools/spas (existing and new) must be retrofitted with anti-entrapment drain covers, as identified in ANSI/APSP-7, “American National Standard for Suction Entrapment Avoidance in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Catch Basins”, a voluntary, federal consensus guideline. No pool/spa can be used when any drain/inlet cover is broken or missing. Requirements governing pool/spa installations vary by state and locality, but typically concern operational safety, protective barriers, health, water circulation systems, and regular inspections, current copies of which are requested to be produced by the property owner/manager.

Additional voluntary entrapment prevention practices are outlined in ANSI/APSP-7, (American National Standards Institute) // (Association of Pool & Spa Professionals), but each state or locality may adopt the guideline in whole or part. Florida has adopted the entire ANSI/APSP-7 guideline, which addresses five recognized suction entrapment hazards (hair, limb, body, evisceration/disembowelment, and jewelry/clothing). No single entrapment mitigation strategy can protect against all five recognized entrapment hazards. The combination of mandatory anti-entrapment drain covers, along with voluntary dual suction inlets spaced 3-feet (minimum) apart, appears preeminently effective; an additive prevention practice is to limit water flow (suction) velocity. Where a pool has only a single line suction drain, an entrapment prevention practice calls for installing an atmospheric vent line or a manufactured single vent relief system (SVRS) component, either method automatically reducing suction on the “blocking” item; however, both the integral atmospheric vent line and the manufactured SVRS defends only against the single entrapment hazard of body suction. Note that both a vent relief line and a SVRS component require regular inspection. Other anti-entrapment remediation options for existing pools/spas having only a single suction drain are identified in the ANSI/APSP-7 guideline. ANSI/APSP-7 also allows the option for a new pool/spa to be built without a main floor drain, with proper circulation accomplished by design and placement of water inlets.

Terracon does not evaluate the design of pools/spas, nor can it choose from among the entrapment strategies in the ANSI/APSP-7 guideline. Implementation of entrapment prevention practices and conformance to all state and local codes are the responsibility of the property owner/management, as is the overall safety of the pool/spa; however, we recommend prompt installation of approved anti-entrapment-type drain covers. Consideration should be given to installing optional safety and entrapment mitigation practices identified by ANSI/APSP-7 where allowed by law, and as suitable. No costs for upgrades were included in this Report unless otherwise noted in Cost Tables.

NOTE: Local and state jurisdictions may have more extensive requirements for pool/spa installations.

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**APPENDIX A
PHOTOGRAPHIC DOCUMENTATION**



Photo #1: Joint between the pool liner and coping and pool deck.



Photo #2: Pool liner failing.



Photo #3: Further detail of pool liner failing. (Continuation of Photo #2)



Photo #4: Location of pool slide entry. Location shows major wear of pool liner at slide entry point.



Photo #5: Corrosion at pool waterslide structure



Photo #6: Diving board locations in diving well.



Photo #7: Overflow skimmer location.



Photo #8: ADA Chair location



Photo #9: Transition from pool piping from mechanical room to below grade.



Photo #10: Further detail of Photo #9.



Photo #11: Backwash holding tank and pool.



Photo #12: Corrosion of pool piping support.



Photo #13: Filter Pressure Gauges



Photo #14: Corrosion at the pool strainer basket.



Photo #15: Chlorine and CO2 injection points



Photo #16: Suction piping