

FACILITY CONDITION ASSESSMENT

Discovery Bay Swimming Pool
1601 Discovery Bay Blvd
Discovery Bay, CA
January 16, 2019
Terracon Project No. BE186102



Prepared For:

Town of Discovery Bay
1800 Willow Lake Road
Discovery Bay, CA 94505

Prepared By:

Terracon Consultants, Inc.
Concord, CA

terracon.com

Terracon

Environmental



Facilities



Geotechnical



Materials

Facility Condition Assessment

Discovery Bay Swimming Pool ■ Discovery Bay, CA
February 6, 2019 ■ Terracon Project No. BE186102



February 6, 2019

Attn: Mr. Mike Davies
General Manager
Town of Discovery Bay
1800 Willow Lake Road
Discovery Bay, CA 94505
(925) 634-1331
mdavies@todb.ca.gov

Re: Facility Condition Assessment Report
Discovery Bay Swimming Pool
5672, 801 Heartwood Ave,
Vallejo, CA
Terracon Project No. BE186016

Dear Mr. Davies

Terracon is pleased to provide this Facility Condition Assessment Report of the subject improvements. This work was performed in general accordance with the scope of services outlined in the Terracon Proposal Number PBE186102 dated November 30, 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.

Matt Cappello, P.E.
Senior Engineer
Facilities Engineering Services / Aquatics

Ron Bravo
Project Manager
Aquatic Design and Swimming Pool Engineering

Facility Condition Assessment

Discovery Bay Swimming Pool ■ Discovery Bay, CA
February 6, 2019 ■ Terracon Project No. BE186102



TABLE OF CONTENTS

| | <u>Page</u> |
|--|-------------|
| 1.0 EXECUTIVE SUMMARY | 1 |
| 1.1 Codes and Regulations..... | 1 |
| 1.2 Swimming Pool Repair Option Recommendations..... | 2 |
| 2.0 Existing Facilities assessment | 3 |
| 2.1 Purpose | 3 |
| 2.2 Scope | 3 |
| 2.3 Documentation | 3 |
| 2.4 General Pool Information | 4 |
| 2.5 Existing Conditions Notes | 5 |
| 2.6 Aquatic Improvement Probably Costs | 7 |
| 2.7 Pool Replacement..... | 8 |
| 3.0 Conclusion..... | 11 |
| 3.1 Scopes of Repair..... | 11 |
| 3.2 Reliance | 12 |
| 3.3 Limitations | 13 |

Appendix A – 2016 California Code of Regulations, Title 22 Ch 20

Appendix B – Photographic Documentation

1.0 EXECUTIVE SUMMARY

Terracon completed a site visit on January 15, 2019 to the existing Discovery Bay Swimming Pool in Discovery Bay, CA. 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 pool 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. Special consideration will be given to the current state of the pool, being as it has already been stripped down and re-piped.

This report has been divided up into three main sections. Section 1 is a quick introduction to the codes used to create this report and recommendations. Section 2 is a full review of the swimming pool at the time of the site visit and a brief cost estimation for associated items. Section 2 also includes a cost estimate for replacing the existing pool with a new pool, several options are presented. Section 3 is a conclusion including limitations and reliance statements.

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.
- 2016 California Building Code (CBC) Title 24 Ch 31B: Public Pools
Regulations per the construction, installation, and renovation of any public pool, ancillary facilities, mechanical equipment and related piping.
- 2016 California Code of Regulations (CCR) Title 22 Div. 4 Ch 20: Public Swimming Pools
Regulations regarding the operational health and safety of a public swimming pool.
- 2016 California Fire Code (CFC)
Regulations regarding the fire codes in California.

Facility Condition Assessment

Discovery Bay Swimming Pool ■ Discovery Bay, CA

February 6, 2019 ■ Terracon Project No. BE186102



- 2016 California Building Code Title 24 Part 6: Building Energy Efficiency Standards (CEC)
Regulations regarding the operation of facilities in relation to energy efficiency.
- USA Swimming Rule Book 2018 (USAS) Article 103: Facilities Standards
Standards regarding swimming pool construction and programming for swimming.

1.2 Swimming Pool Repair Option Recommendations

- **Leaking**
If the cause of the leak has not been determined, a hydrostatic water test is recommended to ensure water to help determine if the pool shell is the cause of the leakage.
- **Hydraulically Balanced Main Drain**
Further inspection is recommended to determine if there are two main drains that are hydraulically balanced with properly sized drain covers and piping.
- **Black Mold**
Replacing the media in the sand filter is recommended in regard to the black mold issue.
- **Electrical**
The existing electrical box should be inspected by a professional, licensed electrician. All breakers should be checked. At a minimum, the existing enclosure protected with an outdoor rated enclosure, until the panel can be moved into the new shed.
- **Signage**
All pool signage designated in CBC 31B-3120B shall be affixed in a visible location on the site.

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 pool, deck, pool related equipment, and the mechanical and sanitization systems and equipment, and clubhouse; and determine if conditions exist which may have a significant impact on the operation of the facility during the evaluation period. This work has been performed in anticipation of a planned renovation of the facility.

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 PBE186102 dated November 30, 2018, and under the terms of the Services Agreement between Terracon and the town of Discovery Bay.

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, pool deck, pool equipment, pool equipment/chemical rooms, and swimming pool ADA compliance. Site civil and access requirements were also considered. Repair/replacement items of less than \$3,000.00 may not be identified or be designated as routine maintenance in the narrative of the Report if mentioned.

This Report does not include structural analysis of the pool shell, 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 confirm the presence or absence of items such as mold, asbestos, environmental conditions or hazardous substances on this property.

At the time of the site visit, the pool was stripped of its finish down to the shell. The surrounding deck had been removed and the pool appeared to be in the process of re-piping. Due to the current state of the pool, this report will not address the cost to repair the existing pool. It is assumed that the Town of Discovery Bay already has a cost estimate to complete the ongoing renovation. Rather, it will focus more heavily on the cost of replacing the existing pool with a new facility, as well as measures necessary to bring the current facility into ADA compliance

2.3 Documentation

Terracon was provided with the following documentation for this property, which we have relied upon in the assembly of this Report.

| Documentation | Author |
|----------------------------|---|
| Terracon PCA Questionnaire | Terracon: Corresponded by Chris Laswell |

Facility Condition Assessment

Discovery Bay Swimming Pool ■ Discovery Bay, CA
February 6, 2019 ■ Terracon Project No. BE186102



2.4 General Pool Information

*Many of these values are rough estimations due to the state of the pool at the time of the site visit

- Surface Area: 2,600-SF
- Perimeter: 220-FT
- Footprint: 70-FT x 55-FT
- Depth Range: 3-FT - 6-IN to 9-FT - 0-IN
- Volume: 115,000-GAL
- Max Bather Load: 129-Bathers
- Minimum Observed Suction Pipe Size: 6" Sch 40 PVC
- Maximum Allowable Flow Rate (due to suction pipe size): 540-GPM
- Minimum Required Flow Rate (per CA State Code): 317-GPM (6-HR turnover)
- Observed Flow Rate: Pool non-operational at time of site visit
- Original Construction Type: Concrete pool shell with plaster finish, tile trim and lane line markings
- Recirculation System: Six Skimmers, Two Main Drains, Fourteen Return Inlets
- Sanitizer: Sodium Hypochlorite
- pH: Muriatic Acid
- Filtration System: 3 X Triton TR140C High Rate Sand Filters. 7.06 SF of filtration area each, 21.18 SF of filtration area total
- Heating System: Two (2) Raypak Heaters. Model unknown, covered at the time of the site visit
- Pump: Pentair EQK750, 7.5HP pump. Capable of 317 GPM (6-HR turnover) at 70 FT of head. Controlled by a Danfoss VLT Aqua Drive VFD
- Electrical: 3PH 4-Wire, 90 Amp, 120/208V to the pool equipment room

Facility Condition Assessment

Discovery Bay Swimming Pool ■ Discovery Bay, CA
February 6, 2019 ■ Terracon Project No. BE186102



2.5 Existing Conditions Notes

See Appendix B for related photos.

| Item | Comments / Recommendations |
|---|--|
| Pool Shell The existing pool shell has been stripped of all finishes, tile and coping. The shell shows no major cracking. However, it may still be suspect for the ongoing leaking described below. | No action needed. |
| Leaking The pool was reported to be leaking 2"-4" per day before the ongoing remodel. No testing was reported to have been done. Therefore, it is not known if the leaking was a result of piping, equipment, or the pool shell. | If the cause of the leak has not been determined, a hydrostatic water test is recommended to ensure water to help determine if the pool shell is the cause of the leakage. |
| Pool ADA At the time of the site visit the deck and ADA lift had been removed. In order to be ADA compliant, a second means of entry must be introduced. | The existing ADA lift may be reinstalled to meet this criterion. The ADA lift shall be installed in accordance with ADA Guidelines 1009.2 |
| Piping At the time of the site visit the pool was in the process of being re-piped. The new pipe is 6" SCH 40 PVC | The piping is appropriately sized, no action needed. |
| Hydraulically Balanced Main Drain VGB Code requires main drain grates to be placed at least 3-FT apart and be hydraulically balanced. At the time of the site visit the pool was partially full of opaque water, the main drains could not be observed | Further inspection is recommended. If there are two main drains that are hydraulically balanced with properly sized drain covers and piping, disregard this comment. |
| Equipment Selection The existing equipment is properly sized for a pool of this volume and surface area. All equipment appears to be in working condition. There was an issue with black mold in the system in the past. | Replacing the media in the sand filter is recommended in regard to the black mold issue. |
| Equipment Room The current equipment shed does not cover all the pool equipment. Additionally, it provides poor cover to the electrical equipment. | A new 24 FT x 30 FT Tuff shed is scheduled to be used as a new equipment room. The issues stated here will be remedied once the new shed is installed. |

Facility Condition Assessment

Discovery Bay Swimming Pool ■ Discovery Bay, CA
February 6, 2019 ■ Terracon Project No. BE186102



| Item | Comments / Recommendations |
|--|--|
| <p>Electrical The existing electrical panel is a 3 PH, 4 Wire, 120/208V regulated by a 90 Amp Breaker.</p> | <p>The existing electrical box was not very well protected from the elements and shows signs of minor rust and corrosion. A new electrical panel is recommended. The main breaker for this panel may need to be increased if the pool size is increased and heavier equipment is needed.</p> <p>The existing electrical box should be inspected by a professional, licensed electrician. All breakers should be checked. At a minimum, the existing enclosure protected with an outdoor rated enclosure, until the panel can be moved into the new shed.</p> |
| <p>Signage CBC 31B-3120B requires the following pool signage to be placed on site such that it is visible to all pool users:</p> <ul style="list-style-type: none">• Pool User Capacity Sign• Artificial Respiration and Cardiopulmonary Resuscitation Sign• Emergency Phone Numbers Sign• Diarrhea Sign• "Keep Gate Closed" Sign | <p>These signs were not observed at the time of the site visit. All of these signs shall be permanently installed onsite in a location that all pool users can observe, per CBC 31B-3120B.</p> |

Facility Condition Assessment

Discovery Bay Swimming Pool ■ Discovery Bay, CA
February 6, 2019 ■ Terracon Project No. BE186102

**2.6 Aquatic Improvement Probably Costs**

*The total cost of each item in the tables presented below is an estimated of the cost of the contractors' time and materials and does not reflect the final cost to the owner. The "15% Contingency" is an estimating contingency to account for fluctuating prices that may vary with the economy and market at the time of bidding.

| | Item Description | Quantity | Unit Cost | Total |
|---|--|-----------------|------------------|--------------|
| 1 | Hydrostatic Water Test Involves filling the pool, and filling a test basin to compare water loss over a period of time. (Number includes cost to fill the pool) | 1 LS | \$6,000/LS | \$ 6,000.00 |
| 2 | Filter Media Replacement Replacement of the media is recommended to remove any leftover traces of black mold | 3 Tanks | \$160/Tanks | \$ 480.00 |
| 3 | Signage Includes all signage noted in CBC 31B-3120B and section 2.5 of this report | 1 LS | \$500/LS | \$ 500.00 |

| | |
|------------------------|-------------------|
| Items Subtotal | \$6,980.00 |
| 15% Contingency | \$1,047 |
| Total | \$8,027 |

Facility Condition Assessment

Discovery Bay Swimming Pool ■ Discovery Bay, CA
February 6, 2019 ■ Terracon Project No. BE186102



2.7 Pool Replacement

The following cost numbers are shown for the purpose of comparison and budgeting for a swimming pool replacement. The list of items addressed is not intended to list every possible option, but the main items discussed in the report. As an advisory, it is important to note that additional items undiscovered in the depth of this report could affect overall costs and should be discussed with the eventual project designer. Such items may be the presence of potential hazardous materials, original construction products that may have been defective or have a shorter useful life than anticipated for similar or alternative products used for the same purpose, and potential issues associated with budgeting practices.

Opinion of Probable Cost for a New Shallow Water Instructional/Lap Pool

This option includes a Lap Pool that is 6-lanes by the length of 25-yards with a skimmer type recirculation system. This layout has one shallow end with one stair, water depths ranging from 3'-6" to 7'-0" which allows for recreation, instruction, and lap swimming. This pool includes an ADA Accessible lift and is meant as a recreational body of water for lesson teaching, recreation and club level competition.

Our Opinions of Probable Construction Cost include a contingency and standard manufacturer pricing. Soft costs including typical design fees have also been included.

Please refer to the following for the costs associated with building a new pool as described in the above paragraph.

| | | |
|-----------------------------|---|-------------|
| • Pool | = | \$854,900 |
| • Deck Equipment | = | \$75,900 |
| • Loose Equipment | = | \$7,400 |
| • Maintenance Equipment | = | \$8,650 |
| • Safety Equipment | = | \$1,600 |
| • Pool Deck | = | \$117,200 |
| •Pool Project Cost Subtotal | = | \$1,065,650 |

*NOTE: Assuming a skimmer type recirculation system.

Estimated Opinion of Probable Cost for Pool Replacement = **\$1,065,700**

Facility Condition Assessment

Discovery Bay Swimming Pool ■ Discovery Bay, CA
February 6, 2019 ■ Terracon Project No. BE186102



Opinion of Probable Cost for a New Shallow Water Instructional/Lap Pool with a small “L” section for instruction

This option includes a Lap Pool that is 6-lanes by the length of 25-yards with a skimmer type recirculation system. This layout has a small “L” section, approximately 100 square feet, with shallow water and a stair, water depths in the main body of the pool ranging from 4'- 0” to 7'- 0” which allows for recreation, instruction, and lap swimming. This pool includes an ADA Accessible lift and is meant as a recreational body of water for lesson teaching, recreation and club level competition.

Our Opinions of Probable Construction Cost include a contingency and standard manufacturer pricing. Soft costs including typical design fees have also been included.

Please refer to the following for the costs associated with building a new pool as described in the above paragraph.

| | | |
|-----------------------------|---|-------------|
| • Pool | = | \$877,300 |
| • Deck Equipment | = | \$75,900 |
| • Loose Equipment | = | \$7,400 |
| • Maintenance Equipment | = | \$8,650 |
| • Safety Equipment | = | \$1,600 |
| • Pool Deck | = | \$117,500 |
| •Pool Project Cost Subtotal | = | \$1,088,350 |

*NOTE: Assuming a skimmer type recirculation system.

Estimated Opinion of Probable Cost for Pool Replacement = **\$1,088,500**

Facility Condition Assessment

Discovery Bay Swimming Pool ■ Discovery Bay, CA
February 6, 2019 ■ Terracon Project No. BE186102



Opinion of Probable Cost for a New Shallow Water Instructional/Lap Pool with a larger “L” section for instruction

This option includes a Lap Pool that is 6-lanes by the length of 25-yards with a skimmer type recirculation system. This layout has a small “L” section, approximately 400 square feet, with shallow water and a stair, water depths in the main body of the pool ranging from 4'- 0” to 7'- 0” which allows for recreation, instruction, and lap swimming. This pool includes an ADA Accessible lift and is meant as a recreational body of water for lesson teaching, recreation and club level competition.

Our Opinions of Probable Construction Cost include a contingency and standard manufacturer pricing. Soft costs including typical design fees have also been included.

Please refer to the following for the costs associated with building a new pool as described in the above paragraph.

| | | |
|-----------------------------|---|-------------|
| • Pool | = | \$911,000 |
| • Deck Equipment | = | \$75,900 |
| • Loose Equipment | = | \$7,400 |
| • Maintenance Equipment | = | \$8,650 |
| • Safety Equipment | = | \$1,600 |
| • Pool Deck | = | \$117,900 |
| | | |
| •Pool Project Cost Subtotal | = | \$1,122,450 |

*NOTE: Assuming a skimmer type recirculation system.

Estimated Opinion of Probable Cost for Pool Replacement = **\$1,122,500**

3.0 CONCLUSION

3.1 Scopes of Repair

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.

The site will need immediate improvements to be brought up to code. Terracon recommends many auxiliary site improvements, as noted in the body of this report. The necessary Immediate Improvements are as follows, please see the body of this report for code sections, explanations and costs.

Swimming Pool Repair Option Recommendations

- **Leaking**
If the cause of the leak has not been determined, a hydrostatic water test is recommended to ensure water to help determine if the pool shell is the cause of the leakage.
- **Hydraulically Balanced Main Drain**
Further inspection is recommended to determine if there are two main drains that are hydraulically balanced with properly sized drain covers and piping.
- **Black Mold**
Replacing the media in the sand filter is recommended in regard to the black mold issue.
- **Electrical**
The existing electrical box should be inspected by a professional, licensed electrician. All breakers should be checked. At a minimum, the existing enclosure protected with an outdoor rated enclosure, until the panel can be moved into the new shed.
- **Signage**
All pool signage designated in CBC 31B-3120B shall be affixed in a visible location on the site.

Facility Condition Assessment

Discovery Bay Swimming Pool ■ Discovery Bay, CA
February 6, 2019 ■ Terracon Project No. BE186102



3.2 Reliance

This Report was prepared pursuant to the contract Terracon has with the Town of Discovery Bay. This Report is for the exclusive use and benefit of, and may be relied upon by the Town of Discovery 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.

Facility Condition Assessment

Discovery Bay Swimming Pool ■ Discovery Bay, CA

February 6, 2019 ■ Terracon Project No. BE186102



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 the course of 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 considered 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.

Facility Condition Assessment

Discovery Bay Swimming Pool ■ Discovery Bay, CA
February 6, 2019 ■ Terracon Project No. BE186102



**APPENDIX A
EXHIBITS**

CALIFORNIA CODE OF REGULATIONS
TITLE 22. SOCIAL SECURITY
DIVISION 4. ENVIRONMENTAL HEALTH
CHAPTER 20. PUBLIC SWIMMING POOLS

§ 65501. Definitions.

(a) "Ancillary Facility" means any area used in conjunction with or for the operation of a public pool, including, but not limited to, public dressing rooms, lockers, shower or bathroom areas, drinking fountains, equipment rooms, pool deck areas, pool enclosures, or building spaces, that is intended to be used by pool users.

(b) "Clean Pool Water" means public pool water maintained free of dirt, oils, scum, algae, floating debris, or visible organic and inorganic materials that would pollute the water.

(c) "Communicable Disease" means an illness caused by an infectious agent or its toxins that occurs through the direct or indirect transmission of the infectious agent or its products from an infected individual or via an animal, vector, or the inanimate environment to a susceptible animal or human host.

(d) "Clear Pool Water" means public pool water that is free from cloudiness and is transparent.

(e) "Enforcing Agent" means the local health officer, director of environmental health, registered environmental health specialist, environmental health specialist trainee, or an inspector of the State Department of Public Health.

(f) "Pool Operator" means the pool owner or a person the pool owner delegates to conduct public pool operation and maintenance. The public pool owner may delegate pool operator responsibilities to another person, but the pool owner shall retain responsibility for ensuring compliance with these regulations.

(g) "Pool User" means a person using a public pool or ancillary facilities for the purpose of participating in or watching pool users engaged in water activities such as diving, swimming, or wading.

(h) "Public Pool" means any public swimming pool, public bathhouse, public swimming place, and public bathing place that is or includes an artificial basin, chamber, or tank constructed or prefabricated with impermeable surfaces and such pools, bathhouses, and places are used or intended to be used for public swimming, diving, or recreational water activities. "Public

Pool" does not include individual therapeutic tubs or baths where the main purpose is cleaning of the body.

(i) "Public Pool Sites" means all public pools, ancillary facilities, and water treatment systems at the public pool premises.

(j) "Recirculation System" means the system of hydraulic components designed to remove, filter, disinfect, and return water to the public pool.

(k) "Spa" means a public pool that incorporates a water jet system, an aeration system, or a combination of the two systems used in conjunction with heated water.

(l) "Special Purpose Pool" means a public pool constructed exclusively for a specific purpose, such as instruction, diving, or medical treatment.

(m) "Splash Zone" means the maximum distance the water from a spray ground can project horizontally.

(n) "Spray Ground" means a public pool with no standing water in the splash zone and consists of a surge basin with a recirculation system from which water is directed through water features for contact with pool users.

(o) "Surge Basin" means a reservoir or surge trench open to the atmosphere that receives water via gravity flow from the main drain, spray ground, or perimeter overflow system and from which the recirculation system operates.

(p) "Wading Pool" means a public pool intended to be used for wading by small children and having a maximum water depth of 18 inches (457 mm) at the deepest point.

(q) "Water Feature" means an interactive device or structure such as a water fountain, water spray, dancing water jet, waterfall, dumping bucket, or shooting water cannon through which water is directed at the pool user.

(r) "Water Treatment System" means all materials and equipment related to disinfection, water quality, recirculation, and filtration.

Note: Authority cited: Sections 116050, 131052 and 131200, Health and Safety Code.

Reference: Sections 116025, 116035, 116043, 116050 and 116055, Health and Safety Code.

§ 65503. Scope.

(a) The provisions of this Chapter shall apply to all public pools and public pool sites, including, but not limited to:

- (1) Amusement park pools.
- (2) Apartment house pools.
- (3) Bed and breakfast inn pools.
- (4) Campground pools.
- (5) Club pools.
- (6) Commercial pools.
- (7) Condominium pools.
- (8) Health or fitness club pools.
- (9) Homeowner association pools.
- (10) Hotel pools.
- (11) Licensed day care facility pools.
- (12) Medical facility pools.
- (13) Mineral springs pools.
- (14) Motel pools.
- (15) Municipal pools.
- (16) Public or private school pools.
- (17) Recreational vehicle or mobile home park pools.
- (18) Resort pools.
- (19) Special purpose pools.
- (20) Spray grounds.
- (21) Swim school pools.
- (22) Water park pools.
- (23) Wave pools.

(b) Mineral springs pools that meet the fresh water flow exception standard in section 3123B.1, Title 24, California Code of Regulations (CCR), must comply with all the public pool standards in this chapter except for continuous public pool disinfection requirements in section 65529, if monthly bacteriological water-quality standards are met according to section 65531. Mineral springs pools that do not meet the fresh water flow exception standard in section 3123B.1, Title 24, CCR, shall comply with all public pool standards in this chapter and Title 24, CCR.

(c) The provisions of this Chapter shall apply to all ancillary facilities and equipment provided, operated, and maintained in connection with public pools, including, but not limited to:

- (1) Dressing rooms.
- (2) Drinking fountains.
- (3) Fencing and enclosures.
- (4) Locker rooms.
- (5) Pool decks.
- (6) Safety equipment.
- (7) Shower rooms.
- (8) Toilet facilities.
- (9) Water treatment systems.

(d) A private pool is any constructed pool, permanent or portable, that is intended for use by occupants of not more than three residential units. Private pools are not public pools for the provisions of this chapter.

Note: Authority cited: Sections 116035, 116050, 131052 and 131200, Health and Safety Code. Reference: Sections 116025 and 116043, Health and Safety Code.

§ 65511. Inspection.

Except after seasonal closures, the enforcing agent shall give written approval before a public pool may be placed in operation.

Note: Authority cited: Sections 116050 and 131200, Health and Safety Code. Reference: Sections 116035, 116050 and 116055, Health and Safety Code.

§ 65521. Public Pool Supervision and Operation.

- (a) Every public pool shall be under the supervision of a pool operator.
- (b) The pool operator shall maintain pool operating procedures at the public pool site for use by the pool operator and for inspection by the enforcing agent.
- (c) The pool operator shall maintain manufacturers' instructions for the operation and maintenance for all mechanical and electrical equipment and water treatment systems at the public pool site for use by the pool operator and for inspection by the enforcing agent.

Note: Authority cited: Sections 116050 and 131200, Health and Safety Code. Reference: Sections 116035, 116040 and 116043, Health and Safety Code.

§ 65523. Operation Records.

- (a) Except as provided in Health and Safety Code, section 116048, the pool operator of every public pool open for use at a public pool site shall test the disinfectant residual and pH of the public pool water a minimum of once per day. The pool operator shall also test heated pools' water temperature a minimum of once per day. The pool operator may perform these daily tests using a properly calibrated automatic chemical monitoring and control system if approved by the enforcing agent and in accordance with the manufacturer's equipment specifications for calibration and directions for proper use. The pool operator shall maintain a written daily record of all test results, equipment readings, calibrations, and corrective action taken at the public pool site.
- (b) If the pool operator adds cyanuric acid to a public pool, the pool operator shall measure the cyanuric acid concentration in that pool a minimum of once per month and shall maintain a written record of these test results and all corrective action taken at the public pool site.
- (c) The pool operator shall test combined chlorine at a frequency required to maintain maximum combined chlorine concentrations below 0.4 ppm. The pool operator shall maintain a written record of these test results and all corrective action taken at the public pool site.
- (d) The pool operator shall maintain a written record of routine maintenance and repairs to the public pool at the public pool site.
- (e) If a fecal, vomit, blood contamination, near-drowning, or drowning incident occurs in a pool, the pool operator shall record the incident in accordance with the requirements of section 65546 and shall identify the affected public pool in the incident record if there is more than one pool at the public pool site. This record shall be maintained at the public pool site.

(f) The pool operator shall maintain data and records collected pursuant to subdivisions (a), (b), (c), (d), and (e) for at least two years for inspection by the enforcing agent and shall submit all data and records to the enforcing agent upon the agent's request.

Note: Authority cited: Sections 116048, 116050 and 131200, Health and Safety Code.
Reference: Sections 116035, 116040, 116043, 116050 and 116055, Health and Safety Code.

§ 65525. Recirculation and Water Treatment System Operation.

(a) The pool operator shall operate pumps, filters, disinfectant and chemical feeders, flow indicators, gauges, recirculation systems, disinfection systems, and all parts of the water treatment system whenever the public pool is available for use, and at such additional times and periods as may be necessary to maintain clean pool water, clear pool water, and the disinfection standards required in section 65529.

(b) The variation in flow rate of an operating recirculation system shall be such as not to reduce the flow below 75 percent of the rate required in section 3124B, Title 24, California Code of Regulations.

Note: Authority cited: Sections 116050 and 131200, Health and Safety Code. Reference: Sections 116040, 116043 and 116050, Health and Safety Code.

§ 65527. Water Clarity.

The pool operator shall maintain clear pool water while the public pool is in use. The pool operator shall close the public pool if the bottom of the pool at the maximum depth is not clearly visible from the deck. The pool operator shall not reopen the public pool for use until the pool water is clean and clear, and the bottom of the pool at the maximum depth is clearly visible from the deck. If the bottom of the pool is not visible 48 hours following inspection and closure by the enforcing agent, the enforcing agent may order the pool drained.

Note: Authority cited: Sections 116035, 116050 and 131200, Health and Safety Code.
Reference: Sections 116040, 116043, 116050, 116053, and 116055, Health and Safety Code.

§ 65529. Public Pool Disinfection.

(a) Public pools, when open or in use, shall be disinfected continuously by a chemical that imparts a disinfectant at concentrations consistent with subdivision (b) of this section. If halogens other than chlorine are used, residuals of equivalent strength shall be maintained.

(b) The minimum and maximum concentrations of disinfectant residuals in public pool water shall be:

| | Free-Chlorine Residual | | | | Bromine Residual | |
|---|------------------------|----------|----------|----------|------------------|-----|
| | Without CYA | | With CYA | | | |
| | Min | Max | Min | Max | Min | Max |
| Public Pools* | 1.0 ppm | 10.0 ppm | 2.0 ppm | 10.0 ppm | 2.0 ppm | -- |
| Public Spas, Wading Pools, and Spray Grounds | 3.0 ppm | 10.0 ppm | 3.0 ppm | 10.0 ppm | 4.0 ppm | -- |

CYA = cyanuric acid; Min = minimum; Max= maximum; ppm= parts per million.

*This includes all public pools except spas, wading pools, and spray grounds.

(c) In addition to the requirements in subdivisions (a) and (b), a spray ground and water features with an ultraviolet light disinfection system shall be disinfected continuously at a minimum of 40 mJ/cm² by the ultraviolet light disinfection units while the spray ground and water features are in use. If the ultraviolet dosage rate drops below 40 mJ/cm² the operator shall close the spray ground and water features.

(d) The enforcing agent may accept other disinfecting materials or methods after the pool operator has demonstrated to the enforcing agent that the materials or methods provide a readily measurable disinfectant residual in the public pool. The pool operator shall demonstrate to the enforcing agent that such materials or methods are at least as effective as the required chlorine concentration and do not have adverse physiological effects on pool users.

(e) The pool operator shall maintain a test kit for measuring the disinfectant residual, pH, and, if used, cyanuric acid concentration at the public pool. This test kit shall be available for use by the pool operator and the enforcing agent at all times the public pool is in use. The chlorine or bromine test kit shall be the diethyl-p-phenylenediamine (DPD) type or otherwise be capable of testing free-halogen residual. Chlorine test kits shall be capable of testing for free chlorine and total chlorine, such that combined chlorine concentrations can be determined.

Note: Authority cited: Sections 116035, 116050 and 131200, Health and Safety Code.

Reference: Sections 116035, 116040, 116043, 116050 and 116055, Health and Safety Code.

§ 65530. Public Pool Water Characteristics.

The pool operator shall maintain public pool water characteristics within the following ranges:

| | Minimum | Maximum |
|---------------------------------|----------------|-----------|
| pH | 7.2 | 7.8 |
| Cyanuric Acid Concentration | 0.0 ppm | 100.0 ppm |
| Combined Chlorine Concentration | 0.0 ppm | 0.4 ppm |
| Pool Water Temperature | Not applicable | 104° F |

ppm = parts per million.

Note: Authority cited: Sections 116035, 116050 and 131200, Health and Safety Code. Reference: Sections 116035, 116040, 116043 and 116050, Health and Safety Code.

§ 65531. Public Pool Water and Indoor Air Quality Standards.

(a) The pool operator shall maintain microbiological water quality standards in each public pool at the site as follows:

(1) Standard Plate Count (Heterotrophic Plate): The number of colony forming units (CFU) shall not exceed 200 colonies per milliliter.

(2) Total Coliform:

(A) If the multiple-tube fermentation method is used, the most probable number (MPN) shall be less than 2.2 per 100 milliliters.

(B) If the membrane filtration technique is used, the number of coliform organisms shall be less than one colony per 100 milliliters.

(C) If an enzyme substrate method including Idexx Colilert-18 is used, an MPN shall be less than or equal to one per 100 milliliters.

(b) Chemical quality of public pool water and indoor air quality at the public pool site and ancillary facilities shall not cause adverse physiological effects, such as irritation of the eyes, lungs, or skin of the pool users.

Note: Authority cited: Sections 116035, 116050 and 131200, Health and Safety Code.
Reference: Sections 116035, 116040, 116043 and 116050, Health and Safety Code.

§ 65533. Public Pool Cleanliness.

(a) The pool operator shall maintain clean pool water while the public pool is in use. The pool operator shall not allow debris, including, but not limited to, floating scum, sputum, trash, or leaves, to accumulate in the public pool. The pool operator shall ensure that water levels are maintained and operated to remove such material continuously through the pool skimming system in accordance with section 3136B, Title 24, California Code of Regulations.

(b) The pool operator shall clean the bottom, sides, and other surfaces of the public pool as often as necessary to keep the bottom, sides, and public pool surfaces clean and free of slime and algae.

Note: Authority cited: Sections 116035, 116050 and 131200, Health and Safety Code.
Reference: Sections 116035, 116040, 116043 and 116050, Health and Safety Code.

§ 65534. Animals.

Animals shall not be permitted in the public pool or ancillary facilities except as provided in Civil Code sections 54, 54.1, and 54.2.

Note: Authority cited: Sections 116035, 116050 and 131200, Health and Safety Code.
Reference: Sections 54, 54.1 and 54.2, Civil Code; and Sections 116035, 116040 and 116043, Health and Safety Code.

§ 65535. Public Pool Site Maintenance.

The pool operator shall keep all parts of the public pool site well-maintained, including, but not limited to, the public pools, water treatment systems, ancillary facilities, signs, showers, toilets,

dressing facilities, drinking fountains, diaper-changing stations, floors, walls, partitions, doors, and lockers.

Note: Authority cited: Sections 116035, 116050 and 131200, Health and Safety Code.
Reference: Sections 116040, 116043 and 116050, Health and Safety Code.

§ 65537. Swimsuits, Towels, Caps, and Protective Head Gear.

The pool operator shall have all swimsuits and towels furnished by the pool operator laundered and after each use, and the pool operator shall have all reusable swimming caps and protective head gear furnished by the pool operator cleaned after each usage.

Note: Authority cited: Sections 116035, 116050 and 131200, Health and Safety Code.
Reference: Sections 116040 and 116043, Health and Safety Code.

§ 65539. Lifesaving and Control of Public Pool Users.

(a) If the pool operator provides lifeguard services, they shall be provided in accordance with Health and Safety Code sections 116028, 116033, and 116045. The pool operator shall ensure that written proof of compliance with the certification requirements of Health and Safety Code sections 116028 and 116033 for each lifeguard is available for inspection by the enforcing agent at the public pool.

(b) Where lifeguard service is provided, the pool operator shall ensure lifeguards maintain continuous surveillance of the pool users.

(c) Lifeguards on duty shall only provide lifeguard services as defined in Health and Safety Code section 116028.

(d) Lifeguards shall wear swimming apparel that clearly identifies them as lifeguards to pool users.

Note: Authority cited: Sections 116035, 116050 and 131200, Health and Safety Code.
Reference: Sections 115952, 116028, 116040 and 116043, Health and Safety Code.

§ 65540. Safety and First Aid Equipment.

(a) Except for spray grounds without standing water, the pool operator shall ensure that the following safety and first aid equipment is provided and maintained readily visible and available for use at the public pool at all times:

(1) A 17-inch-minimum (exterior diameter) life ring with an attached throw rope with a minimum 3/16-inch diameter. The throw rope shall be of sufficient length to span the maximum width of the public pool and shall be stored in such a way as to prevent kinking or fouling. When rescue without a life ring can be effected from the perimeter of a spa, the enforcing agent may exempt the spa from the requirements of this subdivision.

(2) A 12-foot-minimum fixed-length rescue pole with a permanently attached body hook. For spas, the enforcing agency may approve a shorter length based on the unique configuration of each spa. For spas, the length of the rescue pole shall be of sufficient length to effectuate rescue.

(b) For public pools with lifeguard personnel on duty, the pool operator of each public pool area shall have the following additional safety equipment:

(1) A Red Cross 10-Person Industrial First Aid Kit or the equivalent.

(2) An operating telephone.

(3) A backboard and head immobilizer.

(c) For public pools that exceed 75 feet in length or 50 feet in width, the pool operator shall provide a rescue pole and a life ring on at least two opposing sides of the public pool at centralized locations.

(d) When, in the opinion of the enforcing agent, any public pool is of such size that unaided swimming by lifeguards performing rescue may not offer sufficient protection to pool users, the pool operator shall provide one or more paddle boards or square-sterned boats equipped with oars, oarlocks and life rings as ordered by the enforcing agent.

Note: Authority cited: Sections 116035, 116050 and 131200, Health and Safety Code. Reference: Sections 115950, 115952, 116028, 116040 and 116043, Health and Safety Code.

§ 65541. Health of Employees and Public Pool Users.

(a) No public pool employee having a communicable disease while in an infectious state shall work in any capacity involving contact with pool users, pool water, or the operation of the pool equipment and ancillary facilities at a public pool unless a current written statement is provided by a licensed physician as prescribed in subdivision (b).

(b) No public pool employee or pool user having a communicable disease while in an infectious state, including, but not limited to, *Cryptosporidium*, giardia, Legionnaires' disease, and *Pseudomonas aeruginosa* infection, or while having any symptoms such as a cough, cold sores,

or nasal or ear discharge or when wearing bandages, shall not enter public pool water unless the public pool employee or pool user submits a current written statement to the pool operator, signed by a licensed physician, confirming that the public pool employee or pool user does not present a health hazard to others using the public pool or ancillary facilities.

(c) If two or more lifeguards or pool users at a public pool report within 5 days of each other to the pool operator that they have had diarrhea, the pool operator shall report this to the enforcing agent.

Note: Authority cited: Sections 116035, 116050 and 131200, Health and Safety Code. Reference: Sections 116040, 116043, and 116050, Health and Safety Code.

§ 65545. Public Pool Closure.

(a) A public pool that is maintained or operated in a manner that creates an unhealthful, unsafe, or unsanitary condition may be closed by the enforcing agent. Unhealthful, unsafe, or unsanitary conditions include, but are not limited to, failure to maintain clean pool water and clear pool water requirements; inadequate disinfection; improper pH; the presence of inhalation hazards; failure to meet microbiological or chemical water-quality standards; missing or broken suction outlet covers; missing or broken pool enclosures, including fencing and gates; hazards to pool users; and any other violation of these regulations identified by the enforcing agent. A public pool shall not be reopened until the unhealthful, unsafe, or unsanitary condition has been rectified and upon specific written approval from the enforcing agent.

Note: Authority cited: Sections 116035, 116050 and 131200, Health and Safety Code. Reference: Sections 116040, 116043, 116050, 116053, 116055, 116060 and 116063, Health and Safety Code.

§ 65546. Fecal, Vomit, Blood Contamination, and Near-Drowning or Drowning Incident Response.

(a) In responding to a fecal, vomit, blood contamination, near-drowning or drowning incident, the pool operator shall perform the following disinfection procedures:

(1) After a fecal, vomit, blood contamination, near-drowning, or drowning incident, the pool operator shall immediately close the affected public pool to pool users. If the public pool is one of multiple public pools that use the same filtration system, then all interconnected public pools shall be closed to pool users. No one shall be allowed to enter the public pool(s) until the disinfection procedures have been completed.

(2) The pool operator shall remove contaminating material and discharge the contaminating material directly to the sanitary sewer or other approved wastewater-disposal process in

accordance with State or local requirements. The pool operator shall clean and disinfect the item used to remove the contaminating material.

(3) The pool operator shall ensure that the pH of the public pool water is at 7.5 or lower.

(4) The pool operator shall measure and maintain the public pool water temperature at 77°F (25°C) or higher.

(5) The pool operator shall ensure that the filtration system is operating while the public pool reaches and maintains the required free-chlorine concentration during the disinfection process.

(6) The pool operator shall disinfect the public pool water as follows:

(A) If the contaminating material is a formed fecal stool or vomit, the pool operator shall maintain the free-chlorine concentration in the pool at 2 ppm for at least 25 minutes.

(B) If the fecal material is a diarrheal stool, the pool operator shall raise the free-chlorine concentration in the pool to 20 ppm and maintain that concentration for at least 12.75 hours. If that public pool water contains a chlorine stabilizer such as cyanuric acid, the pool operator shall lower the pH to 6.5 and raise the free-chlorine concentration in the public pool to 40 ppm and maintain that concentration for at least 30 hours.

(C) If the contaminating material is blood, the pool operator shall check the free-chlorine concentration in the public pool at the time of the incident. If it is below the required minimum free-chlorine concentration, the pool operator shall immediately close the public pool until the required minimum free-chlorine concentration is achieved.

(7) The pool operator shall test the free-chlorine residual at multiple points to ensure the required free-chlorine concentration is achieved throughout the public pool water for the entire disinfection time.

(8) The pool operator shall replace any affected cartridge filters and shall backwash noncartridge filters after the disinfection process has been completed. The pool operator shall ensure the effluent is discharged directly to the sanitary sewer or other approved wastewater-disposal process in accordance with State or local requirements. The pool operator shall not return the filter backwash water to the pool. The pool operator shall replace the filter media if necessary.

(9) The pool operator shall not allow pool users back into the public pool until the disinfection process has been completed and the free-chlorine concentration and pH of the public pool water have returned to normal operating ranges in accordance with sections 65529 and 65530.

(b) The pool operator shall immediately document each fecal, vomit, blood contamination, drowning, or near-drowning incident and maintain records in accordance with section 65523 as follows:

(1) The date and time of the incident, the affected pool, the available free-chlorine concentrations, pool temperature, and pH at the time of the incident, and facts known about the circumstances and cause of the incident. This information shall also be documented after the pool operator has completed the disinfection process and again when reopening the pool to pool users.

(2) Whether the fecal stool was formed or diarrheal.

(3) The procedures followed in responding to the contamination incident.

(4) The number of pool users in the public pool and the length of time between the occurrence, detection, and resolution of the incident.

Note: Authority cited: Sections 116035, 116050 and 131200, Health and Safety Code.
Reference: Sections 116040, 116043, 116050, 116053, 116055 and 116063, Health and Safety Code.

§ 65547. Compressed Chlorine Gas Safety Requirements.

All gas chlorination equipment shall be well maintained and operational at all times in accordance with section 3135B, Title 24, California Code of Regulations.

Note: Authority cited: Sections 116035, 116050 and 131200, Health and Safety Code.
Reference: Sections 116040, 116043 and 131200, Health and Safety Code.

§ 65551. Cleaning of Ancillary Facilities.

(a) The pool operator shall keep clean and free of slime, algae, litter, and vermin all ancillary facilities, including, but not limited to, showers, toilets, dressing facilities, drinking fountains, diaper-changing stations, floors, walls, partitions, doors, and lockers.

(b) Except for deck showers, all showers provided for pool users as required by Chapter 31B, Title 24, California Code of Regulations shall have soap in dispensers or containers.

(c) For toilet facilities, toilet tissue, handwashing soap, and paper towels or hot air blowers, shall be provided in permanently installed dispensing devices.

(d) The pool operator shall provide and maintain, in a clean and sanitary condition, a minimum of one waste receptacle in each toilet facility.

(e) Wooden slats, duckboards, and footbaths are prohibited.

Note: Authority cited: Sections 116035, 116050 and 131200, Health and Safety Code.
Reference: Sections 116040 and 116043, Health and Safety Code.

Facility Condition Assessment

Discovery Bay Swimming Pool ■ Discovery Bay, CA
February 6, 2019 ■ Terracon Project No. BE186102



APPENDIX B
PHOTOGRAPHIC DOCUMENTATION

Facility Condition Assessment

Discovery Bay Swimming Pool ■ Discovery Bay, CA
February 6, 2019 ■ Terracon Project No. BE186102



Photo #1 Pool Access Gate



Photo #2 View of the shallow end of the pool



Photo #3 View of trench drains around the stairs



Photo #4 View of the backwash pit and stored ADA lift



Photo #5 View typical new piping, skimmers, and bonding



Photo #6 View of existing pump and filters

Facility Condition Assessment

Discovery Bay Swimming Pool ■ Discovery Bay, CA
February 6, 2019 ■ Terracon Project No. BE186102



Photo #7 View of filter system



Photo #8 View of outdoor electrical panel for pool equipment



Photo #9 View of deep end and typical recessed steps



Photo #10 View of equipment room shed