

Health Protection

Environmental Health Services

Pool Safety Plan

Guide for Pool Operators

>Ubi Ufm201&











The working group members included:

Sandra Gill, EHS Practice Consultant, Fraser Health Shelley Beaudet, Senior Environmental Health Officer, Vancouver Coastal Health Alice Munger, Environmental Health Officer, Interior Health

Layout & design support was provided by Patricia Buchanan and staff from Fraser Health, Health Protection.

Disclaimer

The contents of this document are intended to be used as a guide to create a Pool Safety Plan as required by the Pool Regulation (BC Reg.296/2010). This document should be used in conjunction with other reference materials such as the Pool Regulation, the BC Guidelines for Swimming Pool Operations and the BC Guidelines for Swimming Pool Design and other information, some of which is provided in the Appendices. The guide is designed for commercial pools and public pools.

This document cannot address every situation that may occur in a pool facility. Whether an issue is addressed in the pool safety plan or not it is necessary to comply with the Pool Regulations and always operate the pool facility in a safe manner. Failure to do so may result in legal actions.

Note: When there is a discrepancy between the Pool Regulation and any other document the Pool Regulation shall prevail.

Table of Contents

Background	: k		5
Section 1 -	Pool	Characteristics	7
	1.1 1.2	Pool Administration / Information Pool Details	9
	1.3	List of Equipment and Amenities	10
		edures in the Event of a Serious Injury, gency of Incident Report Form	13
	2.1	Emergency Response Phone Numbers	
	2.2	Emergency Response Procedures	
_	2.3	Emergency Equipment	
	2.4 2.5	Evacuation Procedures	
4	2.5	Facility Signage	20
Section 3 –	Pool	Operation and Maintenance	29
	3.1	Operating Permit	29
	3.2	When to Close the Pool to Swimmers	-
	3.3	Pool and Hot Tub Water Chemistry	
	3.4	Pool and Hot Tub Test Kit and Reagents	
	3.5	Pool and Hot Tub Water Chemical Adjustment	
	3.6	Safe Handling of Chemicals used in Water Chemi	
	3.7	Maintenance of Mechanical Equipment	
	3.8	General Pool Maintenance	
	3.9	Pool Cleaning Schedule	
	3.10	Pool Construction, Repair, Renovation or Alteratio	n39
Section 4 –	Lifeg	uarding	42
2	4.1	Qualifications	42
	4.2	Training	
2	4.3	Lifeguard to Patron Ratios	
	4.4	Lifeguard Procedures	

Appendices – Index

Appendix 1 – Web Links: General Resources	7
Appendix 2 – Bather Load Calculations 4	.9
Appendix 3 – Pool Data Sheet: Flow Rate Location	0
Appendix 4 – Diagram: Flow Meter Location	3
Appendix 5 – Training Examples	4
Appendix 6 – Sample Forms: Incident Reporting	5
Appendix 7 – Reagent Shelf Life	7
Appendix 8 – #2 First Aid Kit Contents	8
Appendix 9 – Pool Water Testing and Maintenance Log	9
Appendix 10 – General Maintenance Checklist	3
Appendix 11 – Pool and Hot Tub Signs	4
Appendix 12 – Fecal / Vomit / Body Fluid Response Protocol	7

Background

The Pool Regulation (BC Reg. 296/2010) requires all pool operators to create clearly written, detailed pool safety plans. Additional information has been included in the Appendices of this document which can help you write your pool safety plan and may be used as a future resource for you.

Web links are provided to the Pool Regulation, BC Guidelines for Swimming Pool Design and BC Guidelines for Pool Operation in the Appendix 1.

What is a Pool Safety Plan?

- It is a written plan specific to each facility / pool that provides information and describes actions to protect the health and safety of pool users.
- It is intended to provide clear, written procedures for:
 - Staff training
 - Ongoing maintenance and upkeep of the facility
 - Reducing the chance of harmful events
 - Helping respond to events and/or incidents that may affect health and safety of pool patrons and staff

What do I need to do as a Pool Operator?

- Write a pool safety plan that is specific to my facility.
 - It is a good idea to involve maintenance technicians and pool staff to help create these plans, as they are familiar with how the pool runs on a day to day basis.
- Train my staff in accordance with this written plan.
- Review and update the plan at least annually and make required changes as needed.
- Have the pool safety plan reviewed by my Environmental Health Officer.

Remember:	You may already have a lot of this information in place for your pool. The pool safety plan simply helps you to bring it all together in a single location.				
	Make the plan easy to use by keeping it in a binder with tabs for each section.				

Section 1 – Pool Characteristics

Index

1.1	Pool Administration / Information	7
1.2	Pool Details	9
1.3	List of Equipment and Amenities	10

Section 1 – Pool Characteristics

The intent of this section is to provide easy access to specific details of each pool in your facility.

Check all boxes that apply to your facility and fill in the missing information. If you do not have an up to date data sheet, you may need to do calculations.

Date:

Date:

1.1 Pool Administration / Information

Facility Name:

Facility Address:

Pool Safety Plan Prepared by:

Last Reviewed / Updated by:

Pool data sheets, engineered plans and/or pool drawings should be included if available. (Your Environmental Health Officer may be able to provide some of these documents)

(Required to be done at least once a year)

Location of Pool Data Sheets: (It is recommended that a laminated copy be posted in the filter room)

Location of Engineered Plans and/or Pool Drawings:

Additional Information (if required)

Staff Trained in Pool Safety Plan (Update as required) By initialing below I acknowledge that I have reviewed the pool safety plan and understand the sections relevant to my duties.					
Staff Name	Title	GYWIJcb Relevant to 8 uties	Initials		

1.2 Pool Det	ails (Provide details for	each pool in the facility)			
Pool Name or Description	Pool 1:	Pool 2: N/A	Pool 3: 🗋 N/A		
(e.g. main pool, hot tub)	Name	Name	Name		
	Facility/Premises#	Facility/Premises#	Facility/Premises#		
	Date Constructed:	Date Constructed:	Date Constructed:		
Pool Type	Indoor 🗌 Outdoor 🗌	Indoor 🗌 Outdoor 🗌	Indoor 🗌 Outdoor 🗌		
		n 170m² (1830 ft²) and at least 61cm nal, recreational, business enterprise			
	physiothe	1 cm (2ft) deep, available for swimm rapy and is not a commercial pool.			
	Choose one of the following:	Choose one of the following:	Choose one of the following:		
	Public Pool	Public Pool	Public Pool		
	Commercial Pool	Commercial Pool	Commercial Pool		
	Hot Tub	Hot Tub	Hot Tub		
	Spray Pool (<i>Recirculating</i>)	Spray Pool (Recirculating)	Spray Pool (<i>Recirculating</i>)		
	Wading Pool (< 61 cm depth)	Wading Pool (< 61 cm depth)	Wading Pool (< 61 cm depth)		
Months of	12 months or	12 months or	12 months or		
Operation	List months of operation:	List months of operation:	List months of operation:		
	to	to	to		
Bather Load (refer to Appendix 2)					
Area of Pool					
Volume					
Depth	Minimum	Minimum	Minimum		
	Maximum	Maximum	Maximum		
Flow Rate Refer to Appendix 3 for Data Sheet Flow Rate Location	Correct flow meter readings confirm flow through the main drain will not create a suction hazard and is adequate for the correct turnover rate. The flow rate can be found on the pool data sheet.				
Refer to Appendix 4 for typical flow meter	 All pools should have at le Hot tubs should have at le 				
locations		may have additional flow meters.			
	Pool recirculation:	Pool recirculation:	Pool recirculation:		
	Water features:	Water features:	Water features:		
	or	or	or		
	Hot tub recirculation:	Hot tub recirculation:	Hot tub recirculation:		
	Hot tub hydro air:	Hot tub hydro air:	Hot tub hydro air:		

1.3 List of Equipment and Amenities <i>Maintenance and/or Prevention sections in further detail.</i>					<i>'</i>
Pool 1		Pool 2		Pool 3	
Choose all that apply (\checkmark) :		Choose all that apply (\checkmark):		Choose all that apply (\checkmark) :	
Diving Board(s) Starting Blocks Slides over 10 ft. height Slides under 10 ft. height Portable Stairs Ladder(s) # Rope Swing(s) Climbing Wall Chair Lift Ramp Entry Sauna Steam Room Inflatable Play Equipment Spectator Seating Underwater Lighting Underwater Platforms Bulkhead		Diving Board(s) Starting Blocks Slides over 10 ft. height Slides under 10 ft. height Portable Stairs Ladder(s) # Rope Swing(s) Climbing Wall Chair Lift Ramp Entry Sauna Steam Room Inflatable Play Equipment Spectator Seating Underwater Lighting Underwater Platforms Bulkhead		Diving Board(s) Starting Blocks Slides over 10 ft. height Slides under 10 ft. height Portable Stairs Ladder(s) # Rope Swing(s) Climbing Wall Chair Lift Ramp Entry Sauna Steam Room Inflatable Play Equipment Spectator Seating Underwater Lighting Underwater Platforms Bulkhead	
Other Features (list):	_	Other Features (list):	_	Other Features (list):	_
			_ 🛯		

This page may be used to record additional information and/or details that are specific to your pool.

Section 2 – Index

2.1	Emergency Response Phone Numbers	13
2.2	Emergency Response Procedures	15
2.3	Emergency Equipment	24
2.4	Evacuation Procedures	25
2.5	Facility Signage	26

Section 2 – Procedures in the Event of a Serious Injury, Emergency or Incident

The intent of this section is to:

- Develop written procedures so that you and your staff know how to efficiently and safely handle injuries, emergencies or incidents in your facility.
- Describe the equipment that is required and the emergency procedures for staff to follow for each type of situation.
- Describe preventative measures to reduce the risk of emergencies occurring.

Remember: Staff must be trained in the implementation of the emergency response procedures.

You should post a site plan, diagram or outline of the entire facility in a visible area and by the phone. The site plan should include the locations of:

- Alarms
- Phones
- Exits
- Specialized Emergency Equipment
- The best emergency vehicle access location

Keep a copy in the Pool Safety PlanÈ

2.1 Emergency Response Phone Numbers

It is very important to have easy access to emergency response numbers and to keep the list current.

Emergency Number	 Usually 911

Use the following templates to create Emergency Contact Lists for your facility.

Emergency contact people should include: police, ambulance, fire, etc. as listed below.

Emergency Contact List (Post next to the telephone or in another visible location	if no telephon	e avail	able)			
First Responders						
Ambulance	911 o	or	()		
Fire Department			()		
Police			()		
Building Contacts Trained in First	Aid / Eme	erge	ncy I	Respo	nse / CPR	
	()	-	•	Cell phone ()
	()			Cell phone ()
	()			Cell phone ()
	()			Cell phone ()
	()			Cell phone ()
	()			Cell phone ()
	()			Cell phone ()
	()			Cell phone ()
	()			Cell phone ()
	()			Cell phone ()
Additional Contact Information						
Local Hospital	()				
Poison Control	()				
Public Health Department	()				
Pool Company	()				
Gas Company	()				
	()				
	()				

Above list reviewed and updated by:

Print Name

Print Date (yyyy/mm/dd)

2.2 Emergency Response Procedures

It is important to remember that:

- Emergency response procedures should be easy to follow.
- Incidents should be recorded in the daily log book.
 - Major incidents should be recorded on an Incident Report form. Sample forms are provided in Appendix 6. These forms may be changed to meet your facility needs.

Facilities with 9 mergency Dhone at Dool Gide:

Provide an emergency phone script. Include the facility address and all details required to assist in locating the pool site.

Post in view of the emergency phone.

Complete the emergency phone script as provided on the following page or write your own script.

Exai	nple of emergency phone script
1.	Dial 911 and specify police, ambulance or fire.
2.	State Who You Are along with the address and the phone number you are calling from:
	- Hello, I'm at
	- Hello, I'm at (name) (facility)
	- The address is
	- The address is
	- The swimming pool phone number is
3.	State the nature of the situation. If there is a fire advise of chemical storage room location
4.	Tell them the best way to come to the facility: (<i>Provide directions i.e. front entrance through the parking lot</i>)
5.	Send someone (i.e. front desk staff) to meet and direct emergency personnel to scene.
6.	Ask what their estimated time of arrival is.

Facilities with No Emergency Phone at Pool Side:

Provide a procedure with the location of nearest telephone or individual(s) on duty with a phone, cell phone, satellite phone, or emergency radio (e.g. concierge, manager, front desk, strata member, etc.).

Provide other systems/alternate methods of alerting emergency responders as applicable. (*e.g. location of alarms/horns/intercom devices etc.*)

Write a procedure for facilities with no emergency phone in the box below.

Remember to post procedure in a visible location at the pool.

Facility Emergency Response

The following table provides examples of various types of injuries and/or events that may occur at your facility. Emergency response plans can help you identify practices to reduce risk of emergencies occurring.

As a pool operator, make sure you advise patrons that have been injured to see their doctor, even if they are feeling well. For example, a head injury could be serious.

Note: This list does not cover all possible incidents therefore you may need to change it to meet your facility needs.

Type of Incident		
Medical Emergenci	es	
Near Drowning / Drowning	Facility Procedure (insert procedure)	Additional sheet attached
	Prevention (may include) - Signage posted - Staff Training - Pool Monitoring - Ensure all pool changes are approve - Access points secure (refer to B.C. Guid - Depth markings visible - Water Quality - Other	
 Major Incidents Chest pain Spinal and/or head injury 	Facility Procedure (insert procedure)	Additional sheet attached 🔲
 Broken bones or sprains Seizures Allergic reactions 	Prevention (may include) Signage posted and enforcement Staff Training Other 	

Minor Incidents / First Aid	Facility Procedure (insert procedure)	Additional sheet attached
	Prevention (may include) Signage posted Patron education First aid kit well stocked No glass on deck Other 	
Heat-Related Incidents	Facility Procedure (insert procedure)	Additional sheet attached
	 Prevention (may include) Hot Tub Max 40°C Signage posted Tempering valves and taps on showers Clock to monitor time spent in hot tub Access to tempered water to cool down Staff monitoring of hot tub, sauna, steam root Provide shaded area at outdoor pools Other 	om areas
Illness Prevention		
Fecal/Vomit/Blood Body Fluid Incidents (Refer to Appendix 1 for link to US CDC Protocol)	Facility Procedure (insert procedure)	Additional sheet attached
(Refer to Appendix 12 for Health Authority sample protocols)	 Prevention (may include) Signage posted Patron education Develop procedures for different types of include Other 	cidents

Disease Cutbreaks (e.g. rashes, eye or ear infection, athlete's foot, fungal infections)	Facility Procedure (insert procedure)	Additional sheet attached
Advise the health department if there are 2 or more complaints of the same nature.	 Prevention (may include) Signage posted and enforced Exclude patrons as per required signage (I.e. if patrons are obviously ill; have diarrhea and/or communicable diseases) Minimize dirt from entering pool (i.e. no shoes on pool deck, no dirt draining from planters) At hand sinks / showers ensure soap is provided Follow pool safety plan cleaning procedures Balance pool chemistry Prevent animals from entering pool enclosure Other 	
Patron Felated 9me	ergencies	
Entrapped Derson	Facility Procedure (insert procedure)	Additional sheet attached
	 Prevention (may include) Physical inspection (i.e. no gaps between 3.5 – 9 in Signage Patron education Develop procedures (i.e. provide scissors in first ai Other 	
Suction < azards	Facility Procedure (insert procedure)	Additional sheet attached
	 Prevention (may include) Flow through main drain not to exceed 1½ ft/s Inspection of main drain, skimmers Develop procedures for shutting down pumps Main drain replaced "like for like" (Pool Reg. 10(2 through any drain grate at a speed greater than 46 cm poperating at the design flow rate) Equalizer lines disabled Other 	2)(k) – pool water must not pass

Hostile Derson	Facility Procedure (insert procedure)	Additional sheet attached
	 Prevention (may include) Staff training (i.e. to recognize and handle peop No drinking, no alcohol or drugs Other 	ble influenced by drugs and/or alcohol)
Missing Derson	Facility Procedure (insert procedure)	Additional sheet attached
	 Prevention (may include) Parents supervise children Patron education Other 	
Facility Emergend	cies	
Gas @eak	Facility Procedure (insert procedure)	Additional sheet attached
	Prevention - Know where and how to shut off gas at the - Maintenance (i.e. leak prevention; check for co - Monitoring systems as required (i.e. propare) - Staff training - Other	rrosion)
Chemical Gpill	Facility Procedure (insert procedure)	Additional sheet attached
	 Prevention Staff training and personal protective equ Knowledge of chemicals and chemical in Proper storage Material Safety Data Sheets (MSDS) Other 	• • •

Fire Include: - Evacuation plan - Site plan including the location of alarms, exits, specialized equipment, etc. - Chemical room door clearly marked, inform fire dept. of	Facility Procedure (insert procedure) Prevention - Staff training - Fire alarms and extinguishers - Exit sign clearly marked - Maintenance / inspection checklist - Other	Additional sheet attached	
chemical storage Power : ailure	Facility Procedure (insert procedure)	Additional sheet attached	
	 Prevention Staff training Emergency lighting tested and functioning Emergency generator Other 		
Sewer 6 ack I p	Facility Procedure (insert procedure)	Additional sheet attached	
	Prevention - Staff training - Other	_	
Electrical Discharge	Facility Procedure (insert procedure)	Additional sheet attached	
	Prevention Monthly ground fault circuit interruptor checks Ground wires in good condition Other 	s of underwater lights	

Air Euality (Plan for the worst case scenarios for chemical spills and mixtures of	Facility Procedure (insert procedure)	Additional sheet attached
chemicals)	Prevention - Staff education - Maintain pool chemistry - Clean and maintain ventilation system - Monitor warning signs (i.e. log air quality complaints) - Other	;)
Natural Disasters	·	
Lightning	Facility Procedure (insert procedure) Prevention (Insert procedures for your facility) - Be proactive (i.e. check weather forecast) - Close outdoor pool in thunderstorm - Other	Additional sheet attached
Flood, 9arthquake, Cther	Facility Procedure (insert procedure)	Additional sheet attached
	Prevention (Insert procedures for your facility) - Staff Training - Other	_

2.3 Emergency Equipment

All pool facilities are required to have various types of emergency, safety and first aid equipment to help respond to injuries and/or incidents.

Staff should know where all emergency equipment is located and be appropriately trained to use it. Emergency equipment must be routinely checked as per manufacturer's specifications.

Fill in the following table to record all emergency equipment and its location.

Emergency Equipment (Check all that apply)		LocatiobfgŁ
	A non-conductive reaching pole/hook at least 3.5 meters in length mounted at poolside. *	
	A throwing ring, attached to a line of at least 6 mm in diameter and having a length of at least half the width of the pool plus 3 meters mounted at poolside. *	
	Minimum of a #2 first aid kit or as per WorkSafe BC. * (See Appendix 8 for contents of First Aid Kit)	
	A spine board (with at least 3 straps and a head securing device) **	
	Oxygen equipment (400 litres or greater) with regulator and protective carrying case and a spare oxygen tank **	
	Full set of airways **	
	Automated External Defibrillator (A.E.D.) **	
	Personal protective equipment including pocket mask and gloves.	
	Eye wash stations.	
	Other	

* Required under regulation.

** Lifeguards, assistants or other personnel must be trained in their use.

2.4 Evacuatiob Procedures

A good evacuation procedure is important for all pool facilities. It is important to consider extreme weather conditions when writing the evacuation plan.

For example, include procedures required if you need to evacuate the building when you have:

- patrons in bathing suits in the middle of winter
- special needs patrons
- different age groups (i.e. preschool children or elderly)
- it is also important to know:
 - escape routes, routes to nearest hospital, etc.
 - know the meeting area / Muster station

Staff should be familiar with evacuation procedures. Evacuation procedures should be practiced and dates should be recorded.

Evacuation Procedure	Write clear procedures for evacuating your facility (include where to go, how to keep warm if your facility is open in the winter, etc.)
----------------------	--

2.5 "Facility Signage

The Pool Regulation requires specific signs to be posted in visible locations. Signs can help prevent health risks, injuries, and accidents. Consider the needs of your facility to determine which additional warnings or instructions are required. Pool signs may be available from your Environmental Health Officer.

It is important to know the signs posted in your facility and to keep them in good condition.

The following table provides a checklist for required and recommended signs for pools and hot tubs.

Required Signage (Pool Regulation / Guidelines)	Check all that apply ✓
Pool Rules (Refer to Appendix 11) (must be posted in a prominent position within the pool enclosure)	
Hot Tub Rules (Refer Appendix 11) (must be in easy view of all users of the hot tub)	
No Lifeguard on Duty – children must be supervised by an adult (must be posted at each entrance to the pool)	
Location of Phone	
Location of First Aid Kit	
Location of Exits	
Emergency Numbers and Facility Address Posted by the Phone	
No Animals Allowed Except Guide Animals	
Recommended Signs	
Bather Load	
Diving Area Rules	
Pool Slide Rules	
Emergency Procedures for Patrons	
Chemical Storage Room (sign on the door)	
Do Not Drink Pool Water	
Other Signs	

This page may be used to record additional information and/or details that are specific to your pool.

Section 3 – Index

3.1	Operating Permit	29
3.2	When to Close the Pool to Swimmers	29
3.3	Pool and Hot Tub Water Chemistry	30
3.4	Pool and Hot Tub Test Kit and Reagents	31
3.5	Pool and Hot Tub Water Chemical Adjustment	32
3.6	Safe Handling of Chemicals used in Water Chemistry	34
3.7	Maintenance of Mechanical Equipment	35
3.8	General Pool Maintenance	36
3.9	Pool Cleaning Schedule	38
3.10	Pool Construction, Repair, Renovation or Alteration	39

Section 3 – Pool Operation and Maintenance

The intent of this section is to:

- Provide written operating and maintenance procedures to ensure the health and safety of pool patrons and staff.
- Provide information regarding the equipment and supplies needed and how to handle them correctly and safely.

3.1 Operating Permit

Every pool that is being operated must have a valid operating permit issued under the Pool Regulation. You are required to post the permit in a prominent place on the premises. It is a good idea to keep a copy of the permit in your pool safety plan binder.

3.2 When to Close the Pool to Swimmers

All staff should know when to close a pool. The safety of the swimmers must always be considered when making this decision. When in doubt, close the pool (keep **'POOL CLOSED'** signs handy), assess the situation, seek guidance from other professionals if needed to correct the problem. Only reopen the pool when you know it is safe to do so or you have had it inspected and cleared by your local health officer or other professional.

The following are some of the conditions that require pool closure. Add additional items to meet the needs of your facility.

- In the presence of vomitus or feces (refer to Appendix 12).
- When minimum sanitizer level cannot be maintained.
- When water is too cloudy to see the pattern of the main drain.
- When the recirculation system is not working.
- When there is a power outage.
- When superchlorinating or shocking (free chlorine more than 10 ppm).
- When any hazardous situation exists that could negatively impact the health and safety of swimmers.
- When adding chemicals directly to the pool.
- Other

3.3 **Pool and Hot Tub Water Chemistry**

It is important to check your pool chemistry on a regular basis to maintain pool water parameters within the acceptable ranges. This will help:

- Promote adequate disinfection and good water clarity.
- Keep pool chemistry balanced.
- Reduce corrosion and scaling (i.e. this lowers long term costs).

It is your responsibility as the pool operator to test pool chemistry as required by the Pool Regulation. The table below provides the minimum testing frequencies for each pool chemical.

Remember your pool may need more frequent testing depending on the bather load, temperature, type of use and type of pool.

Record your chemistry tests in a recording log and keep this as a reference. Sample recording logs are provided in Appendix 9.

It is important to use an approved test kit to check chemistry.

Name of test kit used:

Parameters requiring testing	Minimum Testing Frequency	Test results required	
рН	2 x / day	Within range of 7.2 – 7	⁷ .8
Combined Chlorine	2 x / day	Less than 1 ppm	
Alkalinity	1 x / week	Within range of 80 – 12	20 ppm
Cyanuric Acid ¹	1 x / week	Less than 80 ppm	
Disinfectant ²		Water temp ≤ 30°C	Water Temp >30°C
Free Available Chlorine or	2 x / day	0.5 ppm or greater	1.5 ppm or greater
Chlorine Cyanurate (stabilized chlorine) or	2 x / day	1.0 ppm or greater	2.0 ppm or greater
Bromine	2 x / day	1.5 ppm or greater	2.5 ppm or greater

¹ Check only if a stabilizer is used.

² Depending upon the product used, one of the listed disinfectant levels must be checked. Although the testing procedures are the same, required levels of disinfectant are higher if stabilized chlorine is used.

3.4 Pool and Hot Tub Test Kit and Reagents

- Have step by step written instructions on how to use the pool test kit used. Keep a copy of your instructions in your pool safety plan and one in your test kit. Water often damages instructions.
- All reagents have a limited shelf life and you need to know what the shelf life is. Complete the shelf life table below. (*Refer to Appendix 7*).
- Write the correct "expiry date" on each bottle (i.e. add 6 months to the date of purchase).
- Store your reagents according to the manufacturer's directions. Do not switch the reagent caps. Store in a cool, dark place, avoiding temperature fluctuations.
- Make sure your color comparator and vials are in good condition with no discoloration or cracks.

Name of Reagent	Shelf Life (Months)

Reagent Shelf Life (*Refer to Appendix 7*)

3.5 **Pool and Hot Tub Water Chemical Adjustment**

Chemicals must be used according to label instructions and in compliance with WorkSafeBC. Knowing your pool volume will help determine how much of each chemical to use. Post the pool volume where the chemicals are stored so that it is handy for calculations.

If an outside company maintains the pool describe when the company should be called to trouble shoot and who should call. This is particularly important on weekends and holidays.

Additional sheet attached	N/A D Maintained by pool company
If maintained by onsite staff, provide step by step written pool chemistry from start up:	instructions on how to adjust

Additional sheet attached	N/A Maintained by pool company
If chemistry is adjusted by a staff member troubleshooting the problems below:	provide product specific procedures for

(Attach additional sheets as required)

Troubleshooting Problem	Product	General Procedures (e.g. describe dilutions and rates of application or use product label information and customize to your pool)
Disinfectant too high (pool volume, chemical name and quantity used)		
Disinfectant too low (pool volume, chemical name and quantity used)		
Combined chlorine too high		
pH too high		
pH too low		
Alkalinity too high		
Alkalinity too low		
Cyanuric acid too high		
Cyanuric acid too low		
Cloudy Water		
Other		

3.6 Safe Handling of Chemicals used in Water Chemistry

Provide step by step written procedures for the safe handling of chemicals and storage. Describe how to safely add chemicals directly to the pool. If you are a small facility with few chemicals on site then only basic information may be needed. The greater the volume of chemicals used, the more detailed this section needs to be. (*Refer to Appendix 1*)

Always read and follow label directions

Use a highlighter to make the important items easier to find on the Material Safety Data Sheet (MSDS).

Chemicals used in water chemistry	Essenital information / precautions
E.g. Sodium hypochlorite	(i.e. Corrosive, causes severe eye injury, skin burns, respiratory burns. Use protective gear to handle, do not mix with muriatic acid, chlorinator tank requires containment.)

3.7 Maintenance of Mechanical Equipment

Record in daily log or ______ when maintenance has been done.

Installation and operating manuals are located _____

Use the following table as a guide to make your own facility Mechanical Maintenance schedule. The list provides examples of equipment that may be found in your facility and is not intended to be a complete list.

Equipment	What Needs to be Checked	Maintenance Frequency	Date Checked
Filters Model # / Type:	 Filter media functioning: No grease building up in sand 	 Replace sand every 2 years 	
	 Backwash gauges 		
Chemical Feeder Model # / Type:	 (i.e. tubing) (i.e. build up of minerals, clogging) 		
Ozone			
Model # / Type:			
Pumps Model # / Type:	 (i.e. hair and lint strainer) Cavitation, unusual noise Leaks 		
Water Heater Model # / Type:	 (i.e. scaling/corrosion) 		
Ventilation Model # / Type:	 (i.e. vents dirty, etc.) 		
Ultraviolet Model # / Type: <i>Ultraviolet Light Tube</i>			
Model # / Type:			
Model # / Type:			

3.8 General Pool Maintenance

Write a detailed maintenance schedule specific to your facility. This can be done by describing the daily and long term tasks associated with a job description or it can be done by outlining the tasks that need to be done in the facility as a whole, as below *(Refer to Appendix 10)*:

Daily	Task	List
-------	------	------

Weekly Task List

Monthly Task List

Yearly Task List

Operation and Maintenance Responsibilities Felated to : acility								
Duties (æ. Clean deck; test pool chemistry; monitor and repair equipment as needed, etc.)	Person, Job Title or Company (ã^. Joe Smith; Building Engineer; housekeeping; ACME Pool Company, etc.)	Backup Person, Job Title or Company	Training Required for Job Duties (Refer to Appendix 5 for examples)					

3.9 **Pool Cleaning Schedule**

Area	Chemical, Cleaner or Other Products Used	How to Handle Safely (refer to MSDS) List all the critical information including personal protective equipment	Cleaning Frequency	Person or Position Responsible
Floors				
Change Room				
Showers/Washrooms				
Halls				
Pool Deck				
Floor/Deck Drains				
Other:				
Surfaces				
Benches/Lockers, etc.				
Shower Walls				
Toilet Bowls				
Sinks/Mirrors				
Other:				
Pool Basin	·			
Tiles at water mark				
Skimmer baskets				
Vacuuming				
Other:				
Supplies				
Toilet paper/towels				
Soap				
Other:				
Other Areas			•	-

More complex pools will require more complex cleaning procedures. Always read and follow label directions.

Material Safety Data Sheets (MSDS) Location ____

3.10 Pool Construction, Repair, Renovation or Alteration

The Pool Regulation defines "construction" as including the design, installation, repair, renovation and alteration of a pool. It also states that a person must not construct a pool unless the person holds a construction permit and complies with the terms and conditions of that construction permit.

Remember

Always contact your local Health Authority *prior to* making any changes or repairs to your pool or hot tub.

In some cases your health officer may waive the requirement for a construction permit if repairs or alterations are:

- Performed for emergency purposes.
- So minor that they do not pose a risk to the public.
 - Some examples would be replacing small areas of floor or deck tiles (i.e. less than 10m², replacing pool fixtures such as flow meters, replacing chlorination systems, replacing or repairing boilers or heaters, installing new or replacement UV or ozone units.

A construction permit will usually be required for:

- New pool construction
- Major renovations including resurfacing the pool basin
- Replacement of main drains and/or their covers, sumps, pumps, filters, chlorinators, etc. that are not "like for like".
- Installation of slides, play equipment and other pool features including railings, ladders or stairs.
- Replacement of pool deck and/or changeroom floor surfaces (i.e. over 10m²).

Construction permits must be applied for by using the appropriate form provided by your local health officer and completed by a P.Eng. or P.Architect. The form must be accompanied by any plans and/or specifications for the construction and a completed Pool Data Sheet that includes all updates.

This page may be used to record additional information and/or details that are specific to your pool.

Section 4 – Index

4.1	Qualifications	42
4.2	Training	43
4.3	Lifeguard to Patron Ratios	43
4.4	Lifeguard Procedures	44

Section 4 – Lifeguarding

Lifeguarding needs are different for every facility. You need to provide details specific to your facility and expand upon this section of the pool safety plan as necessary.

The intent of this section is to:

- Describe the training required for Lifeguards in your facility.
- Describe the opportunities for in-service and other training for staff.
- Provide staffing levels and schedules for all times that the facility is in use.
- Develop written lifeguarding procedures for your facility.

4.1 Qualifications

The onus is now on the public pool operator to hire lifeguards that are appropriately trained for their position and nature of responsibilities. This will help ensure the safety of pool patrons.

Lifeguard Qualifications

- o At least 16 years of age
- Familiar with the pool safety plan
- Responsible for the conduct and safety of pool patrons
- o Performs no other duty than pool surveillance

Assistant Qualifications

- At least 16 years of age
- o Familiar with the pool safety plan

Lifeguarding Information

Name	Age	Phone #	Training	Notes

4.2 Training

Training can include but is not limited to, regular in-services, specialized training such as scuba and other training through agencies such as Royal Lifesaving Society, Red Cross or YMCA.

Training and In-service Registry

Staff Name	Phone #	Type of Training / In-service Completed	Date

4.3 Lifeguard to Patron Ratios

Minimum staffing levels in accordance with the Pool Regulation must be maintained at all times. A public pool operator must ensure that, when the pool is open to the public, pool supervision is provided by at least one lifeguard and one assistant.

The lifeguard to patron ratio is to be determined jointly by facility management and senior aquatic staff, based upon the design of the facility, patron activity, patron age group and various other factors.

You must ensure that, when the pool is open to the public, pool supervision is provided by the number of lifeguards and assistants as required in your pool safety plan The number of lifeguards and other employees on duty must be adequate to ensure supervision of all pool patrons.

Number of Swimmers	Number of Lifeguards	Number of Assistants	Notes

Describe the Lifeguard to Patron Ratios for Your Facility

4.4 Lifeguard Procedures

Communication

• Describe any communication protocols between staff, use of public address systems, use of whistles, use of radios, hand signals, etc.

Positions and Rotations

- Describe any procedures for lifeguarding such as, what areas to check.
- Provide guidelines for use and supervision of play equipment (refer to the prevention protocols in Section 2.2 Itemized Incident Response).
- o Describe any restrictions related to age and adult supervision required.

Describe Lifeguard Procedures for Your Facility

This page may be used to record additional information and/or details that are specific to your pool.

Appendices - Index

The following Appendices are provided as a resource to help write your pool safety plan. The Appendices can also be used for future reference.

Appendix 1 – Web Links: General Resources 4	7
Appendix 2 – Bather Load Calculations 4	9
Appendix 3 – Pool Data Sheet: Flow Rate Location	50
Appendix 4 – Diagram: Flow Meter Location 5	53
Appendix 5 – Training Examples5	54
Appendix 6 – Sample Forms: Incident Reporting5	55
Appendix 7 – Reagent Shelf Life5	57
Appendix 8 – #2 First Aid Kit Contents5	58
Appendix 9 – Pool Water Testing and Maintenance Log 5	;9
Appendix 10 – General Maintenance Checklist 6	53
Appendix 11 – Pool and Hot Tub Signs 6	64
Appendix 12 – Fecal / Vomit / Body Fluid Response Protocol 6	57

Web Links: General Resources (Please note this is not an exhaustive list)

Web Link	
Pool Regulation <u>http://www.bclaws.ca/EPLibraries/bclaws_new/door </u>	cument/ID/freeside/296_2010
 BC Pool Guidelines: B.C. Guidelines for Swimming Pool Design <u>http://www.health.gov.bc.ca/protect/pdf/bc-pool-de</u> B.C. Guidelines for Swimming Pool Operations <u>http://www.health.gov.bc.ca/protect/pdf/bc-pool-op</u> 	
BC Ministry of Health Recreational Water <u>http://www.health.gov.bc.ca/protect/ehp_recreation</u> Pool Courses	nal_water_quality.html
 Fraser Health Vancouver Coastal Health Resident Managers Training Institute Certified Swimming Pool Operators Certificate Course Lowry School for Pool and Spa Chemistry Recreational Facilities Association of BC BC Lifesaving Society ALT International 	www.fraserhealth.ca www.vch.ca http://www.rmti.ca/cspo http://www.lowryschools.com http://www.rfabc.com www.lifesaving.bc.ca http://www.leisurerecgroup.com
 BC Ministry of Health - BC Health Link Files #39: Safety Tips for Swimmers #27b: Hot Tubs: Safe Water Quality #27a: Hot Tubs: Health & Safety Tips 	http://www.healthlinkbc.ca/healthfiles/hfile39.stm http://www.healthlinkbc.ca/healthfiles/hfile27b.stm http://www.healthlinkbc.ca/healthfiles/hfile27a.stm

Web Link
WorkSafe BC Resources
 PoolSafe BC
http://www.worksafebc.com/publications/health_and_safety/by_topic/assets/pdf/poolsafebc.pdf
 Emergency Response
http://www.worksafebc.com/publications/health_and_safety/by_topic/assets/pdf/emergency_response_guide.pdf
 Staff Safety
http://www.worksafebc.com/publications/health_and_safety/by_topic/assets/pdf/take_care.pdf
Chlorine Gas
http://www.worksafebc.com/publications/health_and_safety/by_topic/assets/pdf/chlorine.pdf
Confined Space
http://www.worksafebc.com/publications/health_and_safety/by_topic/assets/pdf/bk80.pdf
 WHIMIS
http://www.worksafebc.com/publications/health_and_safety/whmis/assets/pdf/whmis_basics.pdf
 Lockdown
http://www.worksafebc.com/publications/health_and_safety/by_topic/assets/pdf/lockout.pdf
 Working Alone
http://www.worksafebc.com/publications/health_and_safety/by_topic/assets/pdf/BK131.pdf
US Center for Disease Control (CDC)
 Fecal Incident Response
http://www.cdc.gov/healthywater/pdf/swimming/pools/fecal-incident-response-recommendations.pdf
National Swimming Pool Foundation (USA)
 General References <u>http://www.nspf.org/en/resources.aspx</u>

Bather Load Calculations

The bather load for your pool can be found on your Pool Data Sheet and may also be noted on your Pool Permit. If you are not able to find your pool data sheet, then you can calculate the bather load for your pool using the information below.

Imperial: Maximum bathing load = (D/27) + (S/10)

Where D = area of swimming pool in sq ft where the water depth is more than 5 ft Where S = area of swimming pool in sq ft where the water depth is less than 5 ft. Pool depths of less than 2 ft shall not be considered in the calculations.

Metric: Maximum bathing load = (D/2.5) + (S/0.93)

Where D = area of swimming pool in sq m where the water depth is more than 1.5 m. Where S = area of swimming pool in sq m where the water depth is less than 1.5 m. Pool depths of less than 60 cm shall not be considered in the calculations.

Note: Bather load for hot tubs may be determined at a rate of 30 cm (1 ft) of seating per person.

Data Sheet: Flow Rate Locatiob '! GUa d`Y'%

(Metric u	nits may <mark>k</mark>		. DATA SHE ts of measu		ist be shown cle	arly)	For Reference Only:
NAME OF POOL:			Address	of Pool (Civ	/ic):	Example Calculation Jet Suction Velocity	
Lap Pool/ Hot Tub/						<u>(24 + 100) x .385</u>	
Indoor:	Outdo	or:	City or T	own:			2 x 42 = 0.56 cps
Owners (Legal Corporate) : Name: Phone and email: Address:		Designer Name: Phone a Address	nd email:			Recirculation Flow = 24 IGPN Hydro Air Flow = 100 IGPM	
							Note: 1 IGM = 1.2 US GPM (most flow meters are US GA
			Prof. En	g.	Arch.		
Pool Area: sq.ft	Deck sq.ft	Area:	Water Depth (ft.	Min.	Max.		
Maximum Bathing Load:	Shallo	ow (S)	Deep (D))	Total:		
Pool Volume (USGPM	:		Pool Basi	in Colour:			
Turnover (hours) :			Design re	circulation flo	w rate (USGPM / min.)		
Re-circulating Pump	- Make & Mo	odel:		Flow 24	USGPM at	ft. TDH	
Hydro-Air Pump – Ma	ake & Model	:		Flow 10	00 USGPM at	ft. TDH	Flow rate found
Other Pumps (Spray – Make & Model:	Feature, Wa	aterslide Pumps etc)				here
				Flow	USGPM at	ft. TDH	
				Flow	USGPM at	ft. TDH	
				Flow	USGPM at	ft. TDH	
FILTERS: Sand	D.E	E. Pressure	Vacuum (Gravity NS	SF Approved: Ye	es / No	T
Filter Make and Mo	del:		Number	of filters:	Number of eleme	ents:	
Surface area (ea. Fill sq. ft.	er):		Total are sq. ft.	ea (all filters):			
Surface area (ea. Ele	ement):		Total are sq. ft.	a (all elemen	ts):		
Rate of Filtration (USF (≤15 USGPM / sq. ft.)	PM / ft. ²):		Rate of I	B ackwash (US	PM / ft. ²):		
Total Filter Capacity	(Rate of filtra	ation x total area)					

Pool Data Sheet – Page 2

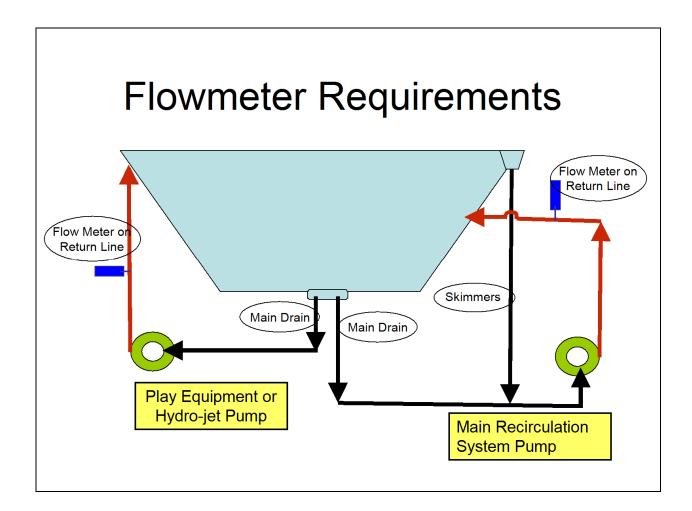
GAUGES:	Pres	sure	Va	acuum		Thermometers	\$		Nos.	
Flow Indicator:	Mak	Make & Model:			Range to (USGPM):					
Backwash Pu	mp					Flow :	Flow : USGPM at ft.			ft. TD
- Make & Model:										
Backwash rat	e per fil	ter (USGPM)								
DISINFECTIO	DN:	Hypochlorite	е		Chlo	rine Gas		Oth	er:	
Make and Model:					Capacity (lbs. / 24 hr.)					
Point of Inject	ion:		Filter	Influent / F	ilter Ef	fluent				
Maximum dos	sing rate	e (ppm):								
FEEDERS:	Chen	nical	SI	urry		Chemicals use	d:			
Make and Mo	del:					Make & Model	:			
Capacity:						Capacity:				
Injection poin	t:					Injection point:				
Depth below (must be deeper	water le than 24" N:			Size: rater depth is ≤ 24	!"; floor ir	Total No.	at	are m	ore than 44	ft. spacin
MAIN DRAI (minimum 2 d per pools)	water le than 24" N: rains	vel (in.) or nearest pool f Make and N	/lodel:		1"; floor ir	ilets must be used if	pool sidewalls			
Depth below (must be deeper MAIN DRAII (minimum 2 d	water le than 24" N: rains -circula pening	vel (in.) or nearest pool f Make and N	/lodel:		t"; floor ir	ilets must be used if	pool sidewalls) (USG		
Depth below v (must be deeper MAIN DRAII (minimum 2 d per pools) Flow from Re Size of free o sq. in. (total of all	water le than 24" N: rains -circula pening drains)	vel (in.) or nearest pool f Make and M ting Pump (Us	/lodel: sgpm)		!"; floor ir	No. Flow from Hydr	pool sidewalls) (USG		
Depth below v (must be deeper MAIN DRAII (minimum 2 d per pools) Flow from Re Size of free o	water le than 24" N: rains -circula pening drains)	vel (in.) or nearest pool f Make and M ting Pump (Us RO-AIR PUM	/lodel: sgpm)			No. Flow from Hydr	pool sidewalls) (USG	GPM)	
Depth below (must be deeper MAIN DRAII (minimum 2 d per pools) Flow from Re Size of free o sq. in. (total of all DRAIN FOR (for Whirlpoor main drain): Size of free o sq. in.	water le than 24" N: rains -circula pening drains) HYDF DI, if se pening	vel (in.) or nearest pool f Make and M ting Pump (Us RO-AIR PUM parate from	Aodel: SGPM)	ater depth is ≤ 24	1odel:	Ilets must be used if No. Flow from Hydr Velocity throug ft / sec	ro-Air Pump h grate ope	No ening	3PM)	4' apart)
Depth below (must be deeper MAIN DRAII (minimum 2 d per pools) Flow from Re Size of free o sq. in. (total of all DRAIN FOR (for Whirlpoor main drain): Size of free o sq. in.	water le than 24" N: rains -circula pening drains) HYDF DI, if se pening	vel (in.) or nearest pool f Make and M ting Pump (Us RO-AIR PUM parate from	Aodel: SGPM)	ater depth is ≤ 24 Make and M	lodel:	No. Flow from Hydr Velocity throug ft / sec	ro-Air Pump h grate ope	No ening	3PM)	4' apart)
Depth below (must be deeper MAIN DRAII (minimum 2 d per pools) Flow from Re Size of free o sq. in. (total of all DRAIN FOR (for Whirlpoor main drain): Size of free o sq. in. Expand an	water le than 24" N: rains -circula pening drains) HYDF DI, if se pening	vel (in.) or nearest pool f Make and M ting Pump (Us RO-AIR PUM parate from	Aodel: SGPM)	ater depth is ≤ 24 Make and M	1odel: p draw itional	Ilets must be used if No. Flow from Hydr Velocity throug ft / sec Velocity throug ft. / sec. rs from more that	ro-Air Pump h grate ope	No ening	SPM) n spaces	4' apart)
Depth below (must be deeper MAIN DRAII (minimum 2 d per pools) Flow from Re Size of free o sq. in. (total of all DRAIN FOR (for Whirlpoor main drain): Size of free o sq. in.	water le than 24" N: rains -circula pening drains) HYDF ol, if se pening d List a	vel (in.) or nearest pool f Make and M ting Pump (Us RO-AIR PUM parate from	Aodel: SGPM)	ater depth is ≤ 24 Make and M han one pum use addi	1odel: p draw itional	Ilets must be used if No. Flow from Hydr Velocity throug ft / sec Velocity throug ft. / sec. rs from more that	ro-Air Pump h grate ope	No No	SPM) n spaces	4' apart)

Data Sheet: Flow Rate Location - Sample 2

SWIMMING POO	OL DATA SHEET	
NAME of POOL	Address Indoor Outdoor DESIGNER	
OPERATOR Address	Address Prof. Eng. Arch	
I. POOL AREA:	Water Depth: Minft, Maxft.	
3. POOL VOLUME I. Gals.	Pool basin colour	
4. TURNOVER hrs. at design flow rate of	l. gpm.	Flow rate found
5. RECIRCULATING PUMP: Make & Model	Flow I. gpm at ft. TDH	
6. FILTERS: Sand Diatomite Pressure Vacuur Make & Model	m Gravity ; NSF approved, Yes No No. of filters No. of elements Total area (all filters) sq. ft. Total area (all elements) sq. ft. Rate of Backwash I.gpm/sq. ft.	
7. GAUGES: Pressure Vacuum Thermometer Flow indicator: Make & Model	rs Nos Range to 1. gpm.	
8. BACKWASH PUMP: Make & Model Backwash rate per filter I. gpm.	FlowI.gpm atft. TDH	
9. DISINFECTION: Hypochlorite Chlorine Gas Make & Model	Other Capacity Ibs/24 hr.	
10. FEEDERS: Chemical Slurry Make & Model	Chemicals used Make & Model	
Capacity Injection point	Capacity Injection point	
11. POOL INLETS: Type Size Depth below W / L in.	Total No at ft. spacing;	
12. MAIN DRAIN: Make & Model	Noft./sec.	
	Vel. through grate openingft./sec. ck levelOther ein. NSF Approved: YesNo Normal flow through overflowsI.gpm.	
14. MAKE-UP WATER Source, Public Private Control: Manual Automatic Backflow preventer Yes No	Size of make-up line in.	
15. WATER PIPING: Copper Galv. Plastic Max. Velocity: return piping (from pool)		
16. REMARKS: (for Health Dept. use)	The foregoing data is a true statement of facts pertaining to this pool as it is to be constructed.	
	Signed(Design Engineer or Architect)	
	Date	

Diagram: Flow Meter Location

The location of flowmeters in a typical hot tub or pool with play equipment.



Training Examples

Examples of staff training that you may require for your pool:

- New staff training regarding pool safety plan and orientation to facility.
- Pool course(s) (refer to Appendix 1 for website links):
 - Recreation Facilities Association of BC Level I and II
 - Health Authority Swimming Pool Training
 - o Resident Managers Training Institute
 - Lowry School of Pool and Spa Chemistry
 - Advanced Lifeguard Training (ALT International)
 - National Swimming Pool Foundation courses
- Lifeguarding
- Swimming Instruction
- First Aid
- Specialization first aid equipment training
- WHIMS
- Injury prevention program (i.e. back care)
- WorkSafe BC training for new and young workers
- PoolSafe BC
- Violence in the Workplace

Minor Accident Report

Individual Information		
Name:	Age:	Sex: 🗌 Male 🗌 Female
Address:		Phone Number:
		()
Date of Accident:	Time of Accident:	Pool Information (location, pool name, etc.)

Location of Accident	Describe Where and What Occurred
Shallow End	
Deep End	
Diving Boards	
Pool Deck / Sidewalk	
Change Rooms	
Outside Pool Grounds	
Open Lawn	
Fence	
Among Trees	
Wading Pool	
Paddling Pool	
Hot Tub	
Other (please specify)	

Action Immediately Taken: (Include equipment used)		
Site and Nature of Injury: (Include condition of subject and first aid)		
Names and Addresses of other Witnesses:	Involved: Witnesses: Other:	
Other Staff on Duty for that Activity or Time Period:	Name: Name: Name: Name:	
Name and Position of Person Mak	g Report:	
Name:	Position:	-
Signature:	Date Signed:	_

Incident Reporting Form							
Date:	Time:						
Person filling out form:							

Individuals involved (attach another sheet if more space is needed)									
Name	Contact # Age								
	()							
	()							
	()							

Description of what occurred (attach another sheet if more space is needed)
Actions taken (attach another sheet if more space is needed)

Follow up needed:	🗌 Yes	🗌 No			
-------------------	-------	------	--	--	--

Follow up completed or incident resolved:(date)									
Notes:									

Manager or person in charge:								
Print name	Signature							

Reagent Shelf List

The tables below list the suggested reagent shelf life for common test kits in use. Please note that one test kit is not endorsed over another and information is simply provided as examples.

Taylor Test Kit Reagents

Name of Reagent	Shelf life (months)
R-0001 DPD #1	6
R-0002 DPD #2	6
R-003 DPD#3	6
R-0008 Total Alkalinity	6
R-0012 Hardness	6
R-0007 Thiosulphate	12
R-0009 Sulphuric acid	12
R-0010 Calcium Buffer	12
R-0011L Calcium indicator Liquid	12
R-0013 Cyanuric Acid	12
R-0854 Total hardness	12
R-0870 DPD Powder	12
R-0871 DPD Titrating Reagent	12
R-0004 Phenol red	12

La Motte Test Kit Reagents

The La Motte website has detailed information on how to determine the reagent shelf life.

http://www.lamotte.com/support/reagent_refills_life.html

#2 First Aid Kit Contents

The following first aid kit items must be kept clean and dry and must be ready to take to the scene of an accident. A weatherproof container is recommended for all items except the blankets. Blankets should be readily available to the first aid attendant.

Quantity	Item
3	Blankets
24	14cm x 19cm wound cleaning towelettes, individually packaged
150	Sterile adhesive dressings, assorted sizes, individually packaged
12	10cm x 10cm sterile gauze dressings, individually packaged
4	10cm x 116.5cm sterile pressure dressings with crepe ties
10	20cm x 25cm sterile abdominal dressings, individually packaged
12	Cotton triangular bandages, minimum length of base 1.25m
2	2.5cm x 4.5m rolls of adhesive tape
2	5cm x 4.5m rolls of adhesive tape
6	7.5cm x 4.5m crepe roller bandages
1	500ml sterile 0.9% sodium chloride solution (saline) in unbreakable container
1	60ml of liquid antibacterial soap in unbreakable container
1	Universal scissors
1	11.5cm stainless steel sliver forceps
1	Penlight or flashlight with batteries
1	7.5cm x 4.5m esmarch gum rubber bandage
6	Pairs of medical gloves (preferably non-latex)
1	Portable oxygen therapy unit consisting of a cylinder (or cylinders) containing compressed oxygen, a pressure regulator, a pressure gauge, a flow meter and a non-rebreathing mask (may be kept in a separate container from the other supplies)
1	Oropharyngeal airway kit (may accompany the portable oxygen therapy unit)
1	Manually operated self-inflating bag-valve mask unit with an oxygen reservoir (may accompany the portable oxygen therapy unit)
6	Patient assessment charts
	First aid records and pen
1	Pocket mask with a one-way valve and oxygen inlet
I	I UURELINASK WILL A UNE-WAY VAIVE AND UXYYEN INNEL

Pool Water Testing and Maintenance Log – Sample %

Dates		Ye	ear								Nan	ne of l	Pool	Location
Date Time	Initials	Free Chlorine	Total Chlorine	Combined Chlorine	Hq	Total Alkalinity	Calcium Hardness	Cyanuric Acid	Flow Rate	Clarity	Temperature			Comments/Notes 1. Chemicals Added / amount 2. Make-up water added 3. Backwashed / cleaned filters 4. Vacummed 5. Mechanical breakdown 6. Swimmer incident or complaint 7. Fecal accidents 8. Other tests / maintenance / issues

Note: Bather load to be based on # of patrons in pool at time of testing.

Pool Water Testing Maintenance Log - Page 2

Parameters	Minimum	Maximum	Test Frequency
Free Chlorine (<30°C)	0.5 ppm	5.0 ppm	Min. 2x/day
Chlorine Cyanurate (<30°C)	1.0 ppm	5.0 ppm	Min. 2x/day
Bromine (<30°C)	F.5 ppm	5.0 ppm	Min. 2x/day
Combined Chlorine	< 1.0 ppm	< 1.0 ppm	Min. 2x/day
рН	7.2	7.8	Min. 2x/day
Total Alkalinity	80 ppm	120 ppm	At least weekly
Calcium Hardness	180 ppm	220 ppm	Weekly
Cyanuric Acid (outdoor pools only)	30 ppm	50 ppm	At least weekly

Recommended Parameters for Swimming Pool and Hot Tub Water Chemistry Parameters:

Notes:

fraserhealth

Pool Record Sheet – Sample &

Name of Pool:						c	Operator:									
Week of:			Year:	Year: Em			mergency Phone Number:									
Day		Chlorine Residual * (<30°) pH Min 0.5 ppm unstabilized Min 1.0 ppm stabilized Chlorine		Alkalinity	Alkalinity Calcium Cyanuric Hardness Acid		Т	Temperature Flow Filt Rate Backwa					Water Clear			
		(7.2 – 7.8)	Free (ppm)	Total (ppm)	(<1.0 ppm)	(80–120 ppm)	(180-220 ppm)	(<80 ppm)		- Max 37ºC Fub-Max 40 ºC	USGPM	minutes	Yes/No	Yes/No	Yes/No	Initial
Monday –	am								am				Yes 🗌 No 🗌	Yes	Yes 🗌 No 🗌	
	pm								pm							
Tuesday	am pm								am pm				Yes 🗌 No 🗌	Yes No	Yes 🗌 No 🗌	
Wednesday	am								am	am			Yes 🗌	Yes	Yes 🔲	
	pm									pm				No 🗌	No 🗌	No 🗖
Thursday –	am pm								am pm				Yes 🗌 No 🗌	Yes No	Yes 🗌 No 🗌	
	am								am				Yes	Yes	Yes 🗌 No 🗌	
	pm								pm				No 🗌	No 🗌		
Saturday	am pm								am pm				Yes 🗌 No 🗌	Yes No	Yes 🗌 No 🗌	
	am			am				Yes 🗌	Yes 🗌	Yes 🔲						
Sunday	p m								pm				No 🗌	No 🗌	No 🗖	

Chemical Record

Date	Chemical Added / Product Name	Amount Added (show units)			

Date	Comments (include accidents, equipment failures, shutdowns, repairs, ground fault tests, closures, etc.)

* Upper target for chlorine residual should be 5.0 ppm. Pool should be closed when chlorine > 10.0 ppm * For pool temperatures >30°C Chlorine Residual: Min 1.5 ppm unstabilized; Min 2.0 ppm stabilized

Pool Record Sheet - Revised November 22, 2011.doc

Environmental Health Services, Health Protection



POOL WATER PARAMETERS

Disinfectant	Type of Residual	Temperature (Minimal ppm level)			
Diomootant		\leq 30°C	> 30°C		
Chlorine (Unstabilized) **	FAC	0.5 ppm	1.5 ppm		
Chlorine cyanurate (i.e. pucks) **	FAC	1.0 ppm	2.0 ppm		
Bromine **	Bromine	1.5 ppm	2.5 ppm		

Parameter		Required Range	Ideal Range		
Free Available C	horine (FAC) **	(see above)	Minimum: (see above) Maximum: 5ppm		
Combined Chlori	ne (CAC) **	< 1.0ppm	0 ppm		
Cyanuric Acid *		< 80 ppm	30 - 50 ppm		
pH **		7.2 - 7.8	7.2 - 7.8		
Total Alkalinity (TA) *		80 – 120 ppm	80 – 120 ppm		
Calcium Hardness (CH)		N/A	180 – 220 ppm		
TDS		N/A	200 – 800 ppm		
Temperature	Swimming Pool	≤ 37°C (98°F)	≤ 37°C (98°F)		
	Hot Tub	≤ 40 [°] C (104°F)	≤ 40 [°] C (104°F)		

Adjustment Summary

Parameter	To Increase	To Decrease
ТА	Add Sodium Bicarbonate	Add Muriatic Acid
СН	Add Calcium Chloride	Dilute with soft water
рН	Add Sodium Carbonate (Soda Ash)	Add Muriatic Acid or Sodium Bisulphate

* Pool Regulation requires at least weekly testing

** Pool Regulations requires at least twice a day testing

Revised: July 2011

Environmental Health Services, Health Protection

General Maintenance Checklist

The following are some of the items that should be included in your schedule (add items as required):

	Pool basin
	Checked for entrapment hazard (gap between 3.5 and 9")
	Check water intakes for possible suction hazards
	Check for any safety hazard such as sharp projections
	Main drain is secure and in good repair
	 Checked for signs of deterioration (missing tiles, cracks etc.) Skimmer basket cleaned
	Handrails, ladders, deck equipment secure
	Water level is correct for removal of floating debris
	Depth markings clearly visible
	Steps are clearly marked in a contrasting color
	Floors are in good condition with non slip surfaces, free of pooled water, free of ice in freezing conditions
	Adequate fencing, doors, gates, alarms to prevent unauthorized entry
	Drinking water fountain is operational
	First aid kit well stocked
	Rescue equipment in good condition and easily accessible
	Signage is in place
	Permit posted
	Shower temperature is below 49°C
	Ground fault circuit interrupter for underwater lights functioning
	Backflow prevention devices are functional (i.e. air gap, reduced pressure backflow assembly,
	hose bib vacuum breaker, annual testing or reduced backflow assembly)
	Clock working and in place
	Adequate lighting for pool area
	Pool temperature mto 37°C
	Hot tub ≤ to 40°C
	Flow meters working properly
	Drains secured, not broken
	Floating weirs

Pool Sign Sample

Health & Safety Rules

Before entering our pool YOU MUST:

- Ensure that you are not ill, including diarrhea, vomiting, open sores, bandages, head colds, discharging ears or noses, or infected eyes
- Take a cleansing shower
- Wear clean and appropriate bathing clothes

When in our pool YOU MUST NOT:

- Contaminate or foul the pool (e.g. urinate / defecate)
- Run, fight, or engage in any activities that may cause an injury
- Dive into the pool in water less than 2 metres deep
- Bring glass into the pool area
- Use or be under the influence of alcohol or other intoxicants

Supervision of CHILDREN:

- All children less than 7 years of age must be closely supervised (within arm's reach at all times) by a responsible person who is at least 16 years of age
- A maximum of 3 children less than 7 years of age can be supervised by one responsible person who is at least 16 years of age

Please REPORT to the pool manager or lifeguard:

- · Any injury suffered while in the pool enclosure
- Any contamination or fouling (e.g. urination or defecation) of the pool
- Pool Manager Contact:

Phone Number:

Health Protection | Ensuring Healthy Reople and Healthy E Printshop #256708 August 2011 - Pool Version

Hot Tub Sign Sample

Health & Safety Rules

Before entering our hot tub YOU SHOULD:

- Consult with your doctor if you:
 - Are elderly
 - Have heart disease, diabetes or high or low blood pressure
 - Are taking medication for cardiovascular or nerve disorders
 - Are pregnant

When in our hot tub YOU MUST:

- Always enter and leave the hot tub slowly and cautiously
- Keep long hair out of water, away from all underwater fittings, especially suction fitting

When in our hot tub YOU MUST NOT:

- Dive into the water
- Stay in hot tub for more than 10 minutes at one time Once finished you should:
 - Shower to cool down
 - Then, if you wish, return for another brief stay
 - Long exposure may result in nausea, dizziness or fainting
- Totally immerse your body
- Use when under the influence of alcohol or other intoxicants

Supervision of Children:

- Keep young children under 7 years of age, especially infants, out of hot tubs
 - Young children's small bodies overheat too fast
- Children must be constantly supervised
 - Unsupervised use by children is not allowed
- Water temperature Must not be hotter than $40^{\circ}C (104^{\circ}F)$

Please REPORT to the pool manager or lifeguard:

- Any injury suffered while in the pool enclosure
- Any contamination or fouling (e.g. urination or defecation) of the pool
- Pool Manager Contact:

Phone Number:



Health and Safety Rules

HEALTH AND SAFETY RULES

The following are prohibited:

- entering the pool with an illness, including open sores, bandages, head colds, discharging ears or noses or infected eyes
- entering the pool without taking a cleansing shower
- running, fighting or engaging in any conduct likely to cause injury in the pool enclosure
- contaminating or fouling the pool
- failing to report to management an injury suffered while in the pool enclosure
- failing to report to management the contamination or fouling of the pool
- failing to supervise children for whom one is responsible while in the pool enclosure
- ➤ diving

Fecal / Vomit / Body Fluid Response Protocol

Insert procedures specific to your facility and/or your local health department.

You may also refer to the US Center for Disease Control (CDC) website to help you create your facility response protocol.

Weblink: <u>http://www.cdc.gov/healthywater/pdf/swimming/pools/fecal-incident-response-recommendations.pdf</u>

Note: Clean up Protocol for Tot Pools and Baby Vomit

Vomiting in the very young may not be a sign of illness and therefore may not need to follow the standard clean up protocol for vomit. In such cases the infant's parents should be interviewed to determine if the incident was part of a pattern of illness. If it appears the infant was ill, then standard vomit protocol should be followed.