

Gulfof**Mexico**



Operations: HSE

Health and Industrial Hygiene

GoM Region Potable Water Management Policy

A red octagonal sign with the word 'STOP' in white capital letters.	<p>This document is governed by GOO Document Lifecycle process. Changes to this document need to be approved by the GOO GoM Document Governance Board before they can be implemented. Contact IMDC team for additional guidance.</p>
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AMENDMENT RECORD

Amendment Date	Revision Number	Amender Initials	Amendment
04/04/2019	14	CMetzler, VMurray	Updated disinfection procedure (Section 7.2.11) to include laboratory equipment to use as part of the water sample dilution process. Rev 14.
04/23/2018	13	VMurray, CMetzler, DLiu	Revised document using updated document control template. Changed document title from Offshore Production Facilities Potable Water Analysis and Inspection Safe Work Practice to Potable Water Management Policy. Moved site-specific sampling plan and sanitation survey from Purpose/Scope to General Requirements. Added zinc as a parameter for testing, zinc orthophosphate is a corrosion control chemical added to potable water systems. Updated desired operating envelope for chlorine to ensure adequate disinfection of the potable water system. Added desired operating envelope for zinc to ensure adequate corrosion chemical is added to the system. Added procedures for cleaning and disinfection of portable drinking containers and bottled water coolers. Removed the potable water testing spreadsheet and weekly self-verification checklist due to transition to SEMPCheck database tool for data entry. Added H&S Site Lead role. Added acceptance and rejection criteria for boat water delivery by vessel. Added more detail around potable water testing requirements when starting up a new system or following shutdown of the potable water system. Updated the list of approved laboratories for external analysis. Rev. 13
6/20/2016	12	Industrial Hygiene Advisor Health Manager	Updated disinfection procedure. Updated boat water receipt procedure to include process of testing during offloading and associated testing requirements to confirm water quality. Rev. 12
3/16/2015	11	Industrial Hygiene Advisor Health Manager	Changed certified potable water operator to potable water operator. Changed document authority and custodian. Removed requirement to generate annual potable water

			report by 1Q of each year. Removed section 5.3.4 Free Bromine as facilities no longer use bromine to disinfect potable water system. Updated non-microbiological lab name. Rev. 11
3/22/2013	10	Health/IH Team Leader Director Health and Safety	In Section 1.0, modified the dates for when revisions to this document go into effect. In Section 2.0, changed the term Desired Operating Parameter to Desired Operating Envelope. In Section 3.4 Reporting, clearly defined Traction Reportable results require Traction IR. In Section 4.0, added Key Responsibilities Health/Industrial Hygiene Team Leader or designate, OIM and PWO and deleted GoM IH role. In Sections 5.3.1-5.3.5, deleted duplicate information found on Appendix 1 for the desired operating limit, EPA tier Required Reportable, Traction Reportable. In Section 5.3.7, included sections for Self Verification and Assurance. In Section 9.0, added Health/IH Team Leader or designate shall track training through VTA. Deleted Section 11 Attachments. Revised Appendix 1 for Result limits. Revised Appendix 2 for Site Specific Sampling Plan Template. Revised Appendix 3 for Records Spread sheet template. Revised Appendix 4 for Site Sanitation Survey checklist. In Appendix 6 revised to Weekly Site Self-Assessment Checklist. Added new Appendix 7 for Monthly scorecard checklist. Added new Appendix 8 for Annual review checklist.
6/28/2012	9	Health/IH Team Leader Director Health and Safety	Updated 4.0 to Key Responsibilities and Accountabilities: OIM shall oversee the procedure; GoM IH shall be responsible in deeming operator competent. Updated 5.3.7 program assurance to include Site Self-Assurance. Added Appendix 6: Monthly Site Self-Assessment Checklist.
5/30/2012	8	Health/IH Team Leader Director Health and Safety	Updated the document's Authority and Custodian personnel. In Section 1.0: Purpose/ Scope, removed procedure roll out date. In Section 3.0: Definitions, added definitions for HPC, Fecal Coliform, Fresh Water, NPDWR, NSDWR, Desired Operating Parameter, EPA Tier Required Reportable, TT, Non-Traction/Traction Reportable, and BP Best Practice. In Section 4.1: Applicable Regulations, added BP Marine Advisors as contact for reporting to USCG. In Section 4.2: Public Notification, added EPA notification Tier descriptions. In Section 4.4: Reporting, revised reporting requirements. In Section 6.1: Procedures, revised that potable water operating chemicals must be recorded in log books, added Site Specific Operating Procedure example with link. In Section

			<p>6.2: Sampling, added that results must use the Potable Water System Record and upload to OMS Navigator. In Section 6.3: Onsite Testing, added sample frequency, Desired Operating Limit, EPA Tier Required Reportable, and Traction Reportable requirements for onsite water tests. Added Section 6.3.4: Boat Transfer of Water. Added Section 6.3.5: Potable Water Program Assurance. In Section 6.4: Offsite Analysis, added list of Micro and Non-Micro Tests. Section 6.5: Disinfection Treatment was condensed and included reference to Appendix 2 for protocol. Added Section 8.0: Piping Material. In Section 9.0: Storage/Inspection, added PPE must be used for handling chemicals. In Section 10.0: Training, revised to include training by CBT. Updated Attachment 1: Potable Water Quality Test Requirements to reflect new water requirements. Revised Attachment 2: Site Specific Sampling Plan from feedback of offshore personnel (Atlantis, Nakika). Revised Attachment 3: Sampling Record from feedback of offshore personnel (Atlantis). Revised revision date for Attachment 4: Site Sanitation Checklist. Added Appendix 1: Reporting and Investigation with Traction instructions. Added Appendix 2: Disinfection Treatment with procedures to disinfect. Added Appendices 3 and 4: Annual potable water sampling procedures. Added Appendix 5: Potable Water Chemical Record Sheet Template. Effective date of this procedure September 1, 2012 for only Atlantis, and November 1, 2012 for the other remaining facilities.</p>
2/10/2012	7	<p>GoM Health and Safety Manager VP HSSE & Engineering</p>	<p>In Sec. 6.5, added 1:10 bleach directions. Revised Attachments 1, 2, and 4.</p>
9/29/2011	6	<p>GoM Health and Safety Manager VP HSSE & Engineering</p>	<p>In Sec. 6.5, added 1:10 bleach directions. Revised Attachments 1, 2, and 4.</p>
9/30/2010	5	<p>GoM Health and Safety Manager VP HSSE & Engineering</p>	<p>Minor clarification in Attachment 1 by changing “distribution” to “disinfection” in sample location column. Replaced Attachments 5-8 with updated versions.</p>
8/31/10	4	<p>GoM Health and Safety Manager VP HSSE & Engineering</p>	<p>General revision to text and attachments to simplify implementation. Includes additional regulatory requirements in accordance with EPA regulation 40CFR141 National Primary Drinking Water Regulations such as annual and event driven testing</p>

			for organics, inorganics, turbidity, metals, disinfection by-products, and ph. Added tr@ction reporting requirements to section 4.4. Also added new training requirements for PWO's (Section 9.0) and requirements for investigation of exceedances and documentation of corrective actions. Added Attachment 1 as Water Quality Testing and Attachment 2 as Site Sampling plan. Added UL as a Laboratory in section 6.4.
10/31/08	3	GoM HSSE Programs Manager GoM HSSE Director	Updated Authority and Custodian. Added requirement for legionella sampling annually. Removed references to state waters. Added Attachment 3- GoM Potable Water System Site Survey Checklist
03/03/06	2	Jack Kogut Ralph DeLeonardis, Steve Flynn, Stan Garner, Bernie Herbert	Added information for water systems where bromine is used. Changed CD # from 10125 to UPS-US-SW-GOM-HSE-DOC-00001-3 to conform to new numbering nomenclature inside of the new GoM HSSE doc base. Changed 2 authorities. Changed revision date on GoM Monthly Potable (Drinking) Water System Record Form to match revision date of main procedure.
08/18/04	1	Jack Kogut Ralph DeLeonardis, Steve Flynn, Stan Garner, Bernie Herbert	Added suggested procedure for testing for free chlorine and suggested procedure for testing for coliform with Colilert Test Kit; and referenced in Section 6.0, three SDSs for DPD Free Chlorine Reagent, Colilert [®] and Colilert [®] Comparator.
09/17/03	0	Jack Kogut Ralph DeLeonardis, Steve Flynn, Stan Garner, Bernie Herbert	Initial issue.

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1 Introduction

Maintaining a safe, uncontaminated potable water supply is important in protecting the health of personnel who work on BP Gulf of Mexico (GoM) facilities and those who are involved in any element of the potable water system have a vital role in influencing this. It is critical that the risks of contaminating the potable water system be respected, recognized and mitigated.

The purpose of this policy is to verify that potable water monitoring, testing, and treatment is conducted in accordance with the Environmental Protection Agency (EPA) National Primary and Secondary Drinking Water Standards (EPA 40 CFR 141, 142, and 143) and the Occupational Safety and Health Administration (OSHA) Sanitation Standard (1910.141) as well as the BP Operating Management System (OMS) Framework. Additionally, a process is outlined to address corrective measures to be taken when drinking water samples do not meet quality standards.

2 Scope

This Policy applies to both purchased water and manufactured water systems because risks exist with both types of systems. It applies to BP-manned and managed offshore production facilities where BP is responsible for providing potable water. It does not apply to unmanned platforms, mobile offshore drilling rigs, and other vessels under contract to BP because those contract companies are responsible for ensuring safe drinking water for personnel on those facilities.

3 Key Responsibilities

3.1 Offshore Installation Manager (OIM), Person In Charge (PIC) or Designate

- A. Overall responsibility and accountability for implementation of this Policy, including the facility's Site Sampling Plan.
- B. Designate personnel to perform the role of PWO and accountable to assess competency with input from the Health Manager.
- C. Ensure instances where potable water result exceedances or other incidents associated with the potable water system have occurred are investigated and corrective actions are completed per this Policy.

3.2 Potable Water Operator (PWO)

- A. Ensure that the potable water system is operated and maintained in accordance with this Policy. This includes accepting transfers of potable water by boat.
- B. Conduct sampling and testing of potable water as detailed in the facility Site Sampling Plan. Document testing results in the SEMPCheck system.
- C. Notify the OIM and Health Manager of any exceedances (e.g. outside desired operating envelope and IRIS Reportable) immediately. Notification shall also be made to the Health & Safety Site Lead.
- D. Monitor and add chemicals for use in the potable water system such as disinfectant and corrosion control chemicals.
- E. Conduct annual potable water sampling for submission to the external lab. Inform the Health Manager once samples have been submitted to the lab.

- F. Perform and complete the annual Potable Water System Site Sanitation Survey, including obtaining review and sign-off from the Health Manager.

Note: Maintenance activities such as changing filters, cleaning UV lamps, and repairing equipment can be carried out by other personnel; however, it must have oversight by a PWO.

3.3 Health and Safety (H&S) Site Lead

- A. Post public notice when water analysis testing results exceed established limits defined in this Policy.
- B. Determine corrective actions necessary during water contamination events.
- C. Notify the Health Manager of any IRIS Reportable potable water results.

3.4 Health Manager or Designate

- A. Serves as the GoM Potable Water Subject Matter Expert and responsible for the content and update of this Policy.
- B. Provide assistance, coaching, and training to personnel designated as PWOs and facility line management.
- C. Approve laboratories used for offsite testing and specify EPA approved analytical methods. *Note: NELAP (Non-microbiological) and AIHA EMPAT (microbiological) accredited laboratories are preferred.*
- D. Provide monthly and annual potable water results summaries to facility leadership, using the potable water self-verification checklists.
- E. Facilitate and encourage the sharing of lessons learned across the facilities regarding potable water.
- F. Responsible for participating and providing input in assessing competency and performance of the facility's PWO to the OIM.
- G. Assist the OIM and H&S Site Lead to develop public potable water notices when required.
- H. Complete and submit formal verbal and written reports and notifications to applicable government agencies including EPA Region 6 Drinking Water Division and US Coast Guard office with jurisdiction as appropriate and required by regulations (contact BP Marine Advisors).
- I. Monitor the My Learning system to ensure those assigned as PWOs are assigned training.
- J. Evaluate health complaints relating to potable water quality.

4 General Requirements

4.1 Applicable Regulations

The provision of potable water to the offshore working population for BP GoM Operations fixed and floating facilities, are covered by 40 CFR 141 and 142. OSHA requires employers to provide safe potable water for workers in 29 CFR 1910.141 Sanitation. OSHA defines potable water as water which meets the quality standards set forth by EPA's National Primary Drinking Water Regulations in 40 CFR 141 or by state or local authority having jurisdiction.

Potable water treatment chemicals shall be National Sanitation Foundation / American National Standards Institute (NSF / ANSI 60) Drinking Water Treatment Chemicals – Health Effects certified and approved.

Potable water shall be provided for drinking; cooking; washing of the person; washing of foods; cooking or eating utensils; food preparation and processing premises; bathrooms; and eyewash and safety shower stations. Facilities may also use bottled water to satisfy this requirement. Additional state regulations regarding the monitoring and testing of potable water may also be applicable. As EPA and state drinking water regulation amendments are released, this Policy will be updated.

Offshore facilities are considered public water systems and shall meet the requirements of a non-transient, non-community water system (NTNCWS) using non-conventional filtration as defined in 40 CFR 141 and 142. BP also purchases fresh water for offshore facilities from water systems that are subject to the EPA regulations at 40 CFR 141.

Water testing requirements and treatment procedures associated with this practice are designed to maintain water quality in compliance with federal regulations (Section 7.1, Appendix 1 –Potable Water Quality Test Requirements).

Facilities receiving water directly from municipal systems can often rely on testing performed by the municipality to fulfill the requirements of this practice; exceptions are when:

- there is intermediate treatment or storage at atmospheric pressure
- there is an air gap between the municipality and the site storage tank, or
- the site assumes responsibility to disinfect its water prior to potable use.

4.2 Potable Water Site-Specific Sampling Plan (Site Sampling Plan)

The site sampling plan (Section 7.2, Appendix 2 –Site-Specific Sampling Plan Template) is required by the EPA, specifically when performing water quality monitoring, samples should be collected at sample points representative of the water throughout the distribution system (i.e., system distribution endpoint) and the maximum residence time in the distribution system based on a written site sampling plan. The site sampling plan includes procedures directed for the facility's potable water operator (PWO) to sample (e.g. location, frequency), analyze (e.g. test method) potable water, and to manage (e.g. test requirements, disinfection, documentation, notification) potable water related health hazards.

4.3 Sanitation Survey

The EPA also requires that sites conduct a sanitation survey (Section 7.3, Appendix 3 Site Sanitation Survey), which could be a Level 1 or 2 assessment. Level 1 would involve a self-assessment examination of the source water, treatment, distribution system, and operational practices looking for any sanitary defects, whereas Level 2 would include a more detailed assessment conducted by water system experts approved by the State or Local Authority.

4.4 Public Notification of Drinking Water Violations

Exposed personnel will be notified by the OIM as required by 40 CFR 141 Subpart Q Public Notification of drinking water violations. Notification will include specifics about the nature of the exceedance and personnel will be instructed on actions to take and any water usage restrictions. For example, onsite personnel may be advised to switch to bottled water for personal use and consumption. Definitions of the EPA public notice tiers are listed below:

Immediate Notice (Tier 1):

Any time a situation occurs where there is the potential for human health to be immediately impacted, water suppliers have 24 hours to notify people who may drink the water of the situation. Water suppliers must use media outlets such as television, radio, and newspapers, post their notice in public places, or personally deliver a notice to their customers in these situations.

Notice As Soon As Possible (Tier 2):

Any time a water system provides water with levels of a contaminant that exceed EPA or state standards or that has not been treated properly, but that does not pose an immediate risk to human health, the water system must notify its customers as soon as possible, but within 30 days of the violation. Notice may be provided via the media, posting, or through the mail.

Annual Notice (Tier 3):

When water systems violate a drinking water standard that does not have a direct impact on human health, (for example, failing to take a required sample on time: daily turbidity; weekly free chlorine, zinc, and pH; or monthly total coliforms) the water supplier has up to a year to provide a notice of this situation to its customers. The extra time gives water suppliers the opportunity to consolidate these notices and send them with annual water quality reports (consumer confidence reports).

4.5 Management of Change

MOC procedures shall be followed for the installation of new potable water systems or to cover any changes to the potable water system. This includes engineering changes, new water treatment systems, changes in source water, water treatment chemicals, disinfection, etc. The Health Manager shall be listed as a reviewer in the MOC process. It is critical that any materials used in the potable water system do not introduce contaminants, for example, solder in pipes should meet lead restriction requirements.

4.6 Reporting and Investigation

The PWO shall inform the Health Manager, HSE, and the OIM of any exceedances (e.g. outside desired operating envelope and IRIS reportable results) immediately (See Section 7.1, Appendix 1 Potable Water Quality Test Requirements for desired operating envelope and IRIS reportable parameter limits). An investigation into the cause of any exceedances shall be initiated by the Health Manager or OIM.

IRIS reportable potable water results shall be recorded into IRIS and referenced in SEMPCheck. It is important that investigation findings, root causes, corrective actions, and changes to testing schedules be documented in the incident report. In Section 7.2, Appendix 2 - Attachment 3 – Potable Water IRIS Reporting Procedure), a detailed guide is provided for documenting a potable water incident into IRIS.

5 Process

5.1 Site-Specific Operating Procedures

Site-specific documentation shall be in place describing how the potable water system is operated and maintained.

This shall include as a minimum:

- A. How and when to add chemicals such as disinfectant and corrosion control chemicals. How this is documented must be recorded in a chemical logbook on the facility. Section 7.4, Appendix 4 provides a template for documenting potable water operating chemical usages.

- B. Specification and verification requirements of the exact chemicals to be used.
- C. How and where potable water treatment chemicals are stored.
- D. Replacement of water treatment system consumable items, such as filters, as recommended by the manufacturer.
- E. Requirements for proper personal protective equipment (PPE) appropriate for the chemicals being handled. Refer to the safety data sheet (SDS) for guidance.
- F. How potable water transfers from boats are handled.
- G. Start-up procedures shall be developed and documented because the shutdown and start-up of these water systems present additional opportunities for contamination to enter or spread through the distribution system.

The information can be contained in the Site Operating Manuals, Site Operating Procedures, Job Plans within the Work Management System (Maximo) as appropriate, and/or as a designated site-specific operating procedure document.

For PWSs, these documented procedures may need to be submitted to the state for approval.

5.2 Potable Water Sampling and Testing

Sampling and testing requirements are defined Section 7.1, Appendix 1 Potable Water Quality Test Requirements, these detail:

- A. The tests required for offsite-site (municipal) water supply transfer and on-site water generation and storage.
- B. The test method to be used on-site or the laboratory to be used for analysis.
- C. The desired operating envelope.
- D. The frequency of testing. Testing more frequently than required by regulations may be necessary depending on water usage and other conditions.
- E. The locations from which samples shall be taken.
- F. The response to results if the requirements are not met, i.e. outside the desired operating envelope, IRIS Reportable. Refer to Section 4.4 Public Notifications of Drinking Water Violations and 4.6 Reporting and Investigation.

Each facility shall sample according to a Site Sampling Plan developed using the template in Section 7.2, Appendix 2. Once completed or when updated, it must be reviewed and endorsed annually by the facility OIM or designate. It is required that each facility manages scheduled tests through job plans and associated preventative maintenance (PM) plans in the work management system (i.e. Maximo), with condition testing and interventions managed through corrective maintenance work orders/job plans as appropriate.

Additionally, testing as agreed with the Health Manager or designate shall be conducted under certain circumstances:

- A. When potable water contamination is suspected due to a change in taste, smell, appearance or from failed water analysis tests.
- B. When a new water treatment system or water source is used.
- C. When changes are made to an existing treatment system.
- D. System start-up following system shutdown or de-manning of the facility

5.3 Guidance for On-Site Testing

Consult with the Health Manager or designate if any assistance is needed regarding testing equipment selection and/or sampling procedures.

5.3.1 Turbidity

Testing for turbidity indicates if there are particles in the water. High turbidity makes the water unclear and can interfere with the disinfection process. The recommended portable instrument for measuring turbidity is the Oakton T-100 Turbidity Meter with kit or equivalent.

5.3.2 pH

Testing for pH indicates the acidity/alkalinity balance of the water. Staying within the acceptable range ensures the disinfectant works effectively and corrosion is prevented. The Hach Model Pocket Pro pH Tester or equivalent is recommended.

5.3.3 Free Chlorine

The test for free chlorine (the chlorine remaining after reaction with chemicals in the water) is to ensure there is sufficient concentration to disinfect the water, but not so much that it causes problems with excessive levels of disinfectant by-products. The Hach Model Pocket Colorimeter II, Chlorine or equivalent is recommended.

5.3.4 Zinc

The test for zinc is to ensure there is sufficient chemical in the system for corrosion control. The recommended instrumentation for testing for zinc is the Hach Zinc Photometer.

5.3.5 Total Coliforms

Testing for total coliforms will identify if there is bacterial contamination of the water. Total coliforms include bacteria that are found in the soil, in water that has been influenced by surface water, and in human or animal waste. Use the Colilert[®]-18 or Colilert-24[®] presence/absence procedure for testing.

The Colilert is an 18 or 24 hour test. If there is a color change in the culture media, this indicates a positive total coliforms test. If the test is positive, determine if fecal coliforms (e.g., E. coli) are present by looking for sample fluorescence using a 6-watt, 365 nm UV light within 5 inches of the sample in a dark environment.

5.3.6 Legionella

Potable and environmental water are common sources of Legionella bacteria. Exposure to the bacteria may cause Legionnaires' disease (i.e., pneumonia or lung infection) or Pontiac fever. Exposure occurs when water contaminated with Legionella bacteria is aerosolized into a mist and/or droplets. Water distribution systems, cooling towers, hot water tanks (i.e., boilers and hot water heaters), air conditioning systems and large plumbing systems are areas where the bacteria can be found. Additionally, heat, stagnation, scale and sediment can promote bacteria growth.

If residual chlorine is less than 0.2 ppm or total coliform bacteria is above zero, this indicates that microbiological control may not be achieved, and Legionella testing should be performed. Since

Legionella are reasonably resistant to standard water disinfection, control methods may require multiple treatment techniques. Periodic sampling and testing for the presence of Legionella bacteria should be performed to show that adequate microbiological control is being achieved.

5.4 Boat Transfer of Water

For offshore facilities that receive fresh water by vessel, turbidity, pH, residual chlorine, and total coliforms testing is required on the delivered water prior to use and introduction into the main potable water system to assess water quality. Testing shall be completed on the delivered water while the water is still on the transfer vessel (if possible) or at the loading station.

If the fresh water is determined to exceed 10 ntu for turbidity or pH is outside the desired operating envelope, the water should be not bulk loaded to the facility or loading shall be stopped. The water shall be rejected and/or discharged to avoid potable water system contamination. Contact your environmental specialist prior to discharging water overboard.

Note, since the total coliforms test requires 18 or 24 hours for completion, initiate this testing at the same time as the turbidity, pH, and chlorine testing, the results of the total coliforms must be confirmed negative prior to introduction of the water to the facility's potable water distribution system.

The facility potable water operator will provide sterilized water sample bottles to the vessel for sample collection of the water from the vessel compartments. The sample bottles and disposable nitrile gloves will be provided in a sealed Ziploc bag to the vessel.

- A. Vessel to turn on the water pump and allow the fresh water to flow through the equipment and hose to overboard for 5-10 minutes until the water is clear.
- B. Using nitrile gloves, sampler on vessel to collect 1 water sample using a 1L sterilized sample bottle for each vessel compartment that will supply fresh water to the platform. NOTE: If there are separate lines connected to each water compartment on the vessel, each line needs to be flushed prior to sampling.
- C. Facility potable water operator to perform turbidity, pH, free chlorine and total coliforms testing for each 1L water sample. Document turbidity, pH, and chlorine results. Wait 18 or 24 hours to read the results of the total coliforms test.
- D. If turbidity is equal to or greater than 10 ntu or pH is outside of the desired operating envelope of 6.5-8.5, do not load the water to the facility. Request new fresh water.
- E. If fresh water quality is acceptable, load fresh water to the potable water tank and determine volume of water delivered.
- F. If turbidity is greater or equal to 5 NTU, do not circulate the tank, resample per the Site Sampling Plan.
- G. If the chlorine concentration is not within 0.5 – 1.5 ppm, add disinfectant based on volume of water delivered, circulate contents of tank and resample at the tank (Use Appendix 2, Attachment 2 for specific procedure).
- H. When the fresh water transfer is complete, facility potable water operator to collect a water sample at the tank and perform a total coliforms test which is representative of the entire water volume from all vessel compartments.
- I. If the total coliforms test are negative, no further action is required.

- J. If any total coliforms test is positive which is indicated by a yellow color after 18 or 24 hours, determine if fecal coliforms (e.g., E. coli) are present using a 6-watt, 365 nm UV light within 5 inches of the sample in a dark environment.
- If positive for E. coli, do not use the water. The water shall be discharged to avoid potable water system contamination. Contact your environmental specialist prior to discharging water overboard. Request new fresh water.
 - If negative for E. coli, shock treat the water in the tank by raising the concentration 10 ppm chlorine (Use Appendix 2, Attachment 2 for specific procedure).
 - Following the shock treatment, collect another total coliforms sample at the tank to confirm effective treatment. If the total coliforms test is negative, mix with stored water and distribute when residual chlorine levels have been reduced to 0.5 – 1.5 mg/l. If the total coliforms test is positive at the tank, re-shock the water or consider discarding. Contact your environmental specialist prior to discharging shocked water overboard.
- K. Once transferred water is accepted, include it into the regular on-site potable water testing.

5.5 Potable Water Program Self Verification

Each facility shall maintain its potable water result records. The PWO shall record onsite potable water results in the SEMPCheck system.

Using the Monthly Potable Water Self-Verification in Section 7.5, Appendix 5, the Health Manager shall provide assurance by conducting a review of the facility's onsite potable water results in a scorecard. The Health Manager shall ensure for each calendar year a self-verification is conducted regarding the GoM offshore production facilities potable water using Section 7.6, Appendix 6 Annual Potable Water Self-Verification. The review shall assess the facility's annual potable water system performance in relation to the quality of potable water distributed on the facility and to the degree of conformance to this Policy.

5.6 Guidance for Off-Site Laboratory Analysis

Off-site testing is conducted to provide external verification that the potable water system is meeting the requirements of this policy. Refer to Section 7.1, Appendix 1 Potable Water Quality Test Requirements for more details including the desired operating envelope and responses to exceedances for these off-site water tests. These tests include the following microbiological and non-microbiological water analysis.

Microbiological Tests:

- Total and E. coli
- HPC
- Legionella

Non-Microbiological Tests:

- Disinfectant by Products (TTHM, HAA5) - sample timing for total trihalomethanes and haloacetic acids (applicable for systems using chlorine as a disinfectant) should be during months when water temperature is highest.
- Organic Compounds
- Disinfectant Residuals (Total, Free Chlorine)
- Metals

- Other Miscellaneous and Inorganics (Color, Odor, Cyanide, Nitrate, Nitrite, Total Dissolved Solids)

Only laboratories approved by the Health Manager shall be used. The Health Manager will receive copies of sampling results automatically from the labs. Each facility has an existing annual workorder and job plan with detailed instructions on ordering sampling supplies and containers, collecting samples, the shipping and sample submission process, and the chain of custody form completion. Inform the Health Manager or designate of samples submitted to the labs.

Guidance when shipping samples to a lab:

- Label each bottle and document the specific location of where and when the sample was taken.
- Keep samples out of direct sunlight, and do not overflow the sample bottles as some may contain a preservative.
- Time sampling and shipping/delivery to achieve a maximum hold time of 48 hours, preferably 24 hours.
- Non-microbiological samples need to be stored and transported such that they arrive at the lab at a maximum temperature of 6°C to prevent loss of volatile components. Ice down samples in an ice chest as soon as possible.

The approved Microbiological & Non-Microbiological (ELAP AIHA EMPAT Accredited) laboratory for BP GoM potable water testing is as follows:

Pace Analytical

8 East Tower Circle

Ormond Beach, FL 32174

Contact: Jeff Baylor – Project Manager

Telephone: 386-672-5668

Email: jeff.baylor@pacelabs.com

A complete 40 CFR 141 and 142 drinking water analysis shall be conducted outside of the normal schedule when conditions warrant (i.e., contamination is suspected due to a change in taste, smell, appearance or source of the potable water).

5.7 Maintenance Chlorine and Disinfection Treatment

Appendix 2, Attachment 2 Maintenance and Disinfection Treatment details instructions for maintenance and disinfection treatment processes for water systems and water fixtures.

Perform maintenance chlorine treatment to raise chlorine levels by 0.5 ppm increments.

Perform disinfection treatment in these situations:

- before placing new and temporary potable water tanks and systems in service,
- any time it is suspected that water system contamination has occurred,
- on existing potable water tanks and systems after flushing, cleaning or after repair work and,
- any time a positive test is obtained on total coliform, HPC, or legionella bacteria.

5.8 Performance Standards for Quality Assurance/Quality Control

Laboratory quality standards are important for several reasons, including ensuring the accuracy and traceability of potable water testing results and supporting operational decision-making. All laboratory activities may be subject to errors, e.g. use of faulty equipment, improper use of equipment, substandard or expired reagents, incorrect reagent preparation and storage, incorrect technical procedures, non-adherence to testing procedures (SOPs) or internal quality control (IQC), or inaccurate reporting and recording.

Quarterly analysis of laboratory quality standards prepared by an external lab enable us to test the system end to end, assuring accurate water testing results. Once per quarter, each team receives a set of samples (pH, turbidity, zinc and free chlorine) to run using the same test methods and equipment as their operational samples. The samples are logged into the external laboratory portal and a statistical report comparing the sample results with the known concentrations is provided by the external laboratory.

5.9 Hoses

Hoses for the transfer of potable water shall be dedicated exclusively for that purpose.

- Hoses should be durable, with a smooth, impervious lining. Fittings should be designed to permit connection to the potable water supply ONLY, to prevent using the hoses for any other purpose.
- Hoses for the delivery of potable water should be clearly identified and dedicated exclusively for that purpose. Label hoses or post a sign near hoses: "Potable Water Use Only"
- Hose ends must be capped when not in use. Use keeper chains to prevent misplacement of caps.
- To prevent contamination when handling the hose, do not drop it into surface waters. Do not drag it on the ground or deck surfaces.
- Drain the hose after each use and safely stow it with the ends capped.
- Hose and fittings should be maintained in good condition. If hoses are damaged take out of service and replace.

5.10 Piping Material

Associated piping materials for the potable water system are required to be certified under the following accreditations: NSF61, AWWA, ANSI, or WQA. Checking for certification for existing potable water piping materials can be identified by looking for stamped documentation on the pipe. The following website can be used to gather information regarding acceptable types of potable water components: <http://nsf.org/Certified/PwsComponents/>

5.11 Storage and Inspection

Water reservoirs and associated tanks shall be covered to minimize exposure to ambient air, which can introduce contaminants into the system. This includes treatment chemicals containers. Ensure that interior surfaces of potable water tanks are free of corrosion, algae growth, mold and slime.

Store potable water treatment chemicals in a closable cabinet clearly labeled "Potable water treatment chemical storage ONLY. All other chemicals prohibited." Ensure storage cabinets meet applicable US Coast Guard requirements (i.e. 46 CFR 147.45 Flammable and Combustible Liquids).

The PWO shall inspect the potable water system annually using the Site Sanitation Survey. If inspecting the interior of the storage tank is not practical and introduces additional unacceptable risk, consult with the Health Manager or designate for further advice.

Always wear protective clothing when handling chemicals. Refer to the SDS for guidance on requirements for proper personal protective equipment (PPE) appropriate for the chemicals being mixed and pumped.

5.12 Non-Potable Water Outlets

Non-potable water outlets shall be clearly labeled to indicate that the water is not to be used for potable water purposes. Non-potable water outlets and lines should be clearly identified using a label with a yellow background and 'Non-potable Water' written in black lettering.

Potable water lines, hoses, containers and tanks should also be identified using a label with a green background and 'Potable Water' written in white lettering.

Measures (i.e., construction or design) shall be taken to prevent backflow and backsiphonage into the potable water system. Utilize Section 7.3, Appendix 3 Site Sanitation Survey to guide an annual review of the water distribution system, cross-connection controls, and backflow prevention.

5.13 Portable Drinking Water Containers & Bottled Water Coolers – Cleaning & Disinfecting

Portable drinking water containers (e.g., Igloo Brand water coolers, etc.) should be cleaned and disinfected using a bleach solution monthly according to the Centers for Disease Control and other public health authorities.

The following steps should be performed to wash and disinfect portable containers:

- A. Wash hands thoroughly prior to cleaning water containers.
- B. Use a long handle brush, dishwashing detergent and hot water to clean inner and outer surfaces of the container thoroughly, then triple rinse with hot water. Give special attention to hard-to-reach areas (e.g., beneath interior and exterior tap/spigot).
- C. Chemical treatment provided by household bleach will disinfect the portable container. Standard household bleaches are 5.25% sodium hypochlorite; those labeled "Ultra" are generally 6% sodium hypochlorite. Bleaches labeled as "scented" may contain fragrances, soaps, surfactants or other additives and should not be used for drinking water container disinfection. The freshest container of liquid chlorine bleach available should be used, preferably not more than three months old.
- D. Cover the container and agitate the bleach solution thoroughly, allowing it to contact all inside surfaces. Cover and let stand for 30 minutes, if possible, then rinse with potable water.
- E. Bleach and water should be added according to Table 1 below.

Table 1: Bleach Disinfection Solution Preparation for Portable Containers

	Bleach	Water
Gallon- or liter-sized container	1 teaspoon (4.9 mL) household bleach (5.25%)	1 cup (240 mL) water
Five-gallon container	5 teaspoons (24.5 mL) household bleach (5.25%)	5 cup (1.2 L) water

Bottled water coolers should be cleaned at least monthly. The following steps should be performed to clean bottled water coolers:

- A. Unplug cord from electrical outlet of cooler. Remove empty bottle. Drain water from stainless steel reservoir(s) through spigot(s).
- B. Prepare disinfecting bleach solution as shown in Table 1 below.
- C. **Table 1** If there is evidence of scale, use a one part vinegar to three parts water solution to clean the reservoir of scale before cleaning with bleach.
- D. Wash reservoir thoroughly with bleach solution and let stand for not less than two minutes (to be effective) and not more than five minutes (to prevent corrosion).
- E. Drain bleach solution from reservoir through spigot(s).
- F. Rinse reservoir thoroughly with clean tap water, draining water through spigot, to remove traces of the bleach solution.
- G. Lift off drip tray located under the spigot. Remove the screen and wash both tray and screen in mild detergent. Rinse well in clean tap water and replace on cooler.

For replacing the bottle in bottled water coolers, the following steps should be performed to replace the bottle in bottled water coolers:

- A. Wash hands with soap and warm water before handling. If you choose to use clean protective gloves (e.g. latex), discard or disinfect after each use and prior to reuse. Protective gloves should never replace proper hand washing and hygiene.
- B. Wipe the top and neck of the new bottle with a disinfecting wipe. Rubbing alcohol may also be used, but shall be completely evaporated before placing the bottle in the cooler.
- C. Remove cap from new bottle. Place new bottle on cooler.
- D. Many bottled water coolers also have air filters for the air that bubbles into the bottle as you withdraw the water. These filters also require regular maintenance.

5.14 Training

Only PWOs shall be authorized to operate and maintain the potable water treatment system. The OIM is accountable for identifying BP employees and contractors for the PWO role. The Health Manager or designate is responsible for participating and providing input in assessing competency and performance of the facility's PWO to the OIM or designate. PWOs shall receive training on this procedure by computer based training (CBT) before starting the position. Refresher training shall be conducted as

updates to this procedure are made or at a frequency no more than 5 years. On an ongoing basis, each PWO shall demonstrate competency in this role by performing the assigned tasks outlined in this Policy correctly and on time. The Health Manager or designate will maintain communication with PWOs to ensure they receive adequate technical support to maintain competency.

Although state water operator certifications are not required per this Policy, the American Water Works Association provides technical assistance to operators and offers coursework/study materials related to operator certification, as applicable.

6 Definitions/Acronyms

Terms	Description
Action Level (AL)	Set by the EPA, the action level is not a health-based value. Instead, exceeding the action level triggers a series of required treatment techniques depending on the contaminant.
Bottled Water	Water that is regulated as a food by the Food and Drug Administration (FDA) under the Federal Food, Drug and Cosmetic Act. Assurance of bottled water quality is not covered under this practice, but a practice to clean coolers used to dispense bottled
Community Water System (CWS)	A public water system regularly serving an average of at least 25 year-round residents or at least 15 service connections used by year-round residents.
Desired Operating Envelope	A desired BP GoM internal target limit for potable water operations.
Drinking Water Standards (DWS)	Lists of potential drinking water contaminants and associated maximum acceptable levels. Primary DWS are synonymous with mandatory Maximum Contaminant Levels (MCLs); DWS protect public health with legally enforceable standards when applied to Public Water Systems. Secondary DWS are non-mandatory, non-enforceable water quality standards covering 15 contaminants; they are established only as guidelines to assist Public Water Systems in managing their drinking water for aesthetic considerations (e.g., taste, color, odor).
EPA Tier Required Reportable	EPA requires owners of the public water system to notify their consumers any time the public water system violates a national primary drinking water regulation or has a situation posing a risk to public health. Reporting requirements are classified as such: Tier 1 (Immediate Notice), Tier 2 (Notice as soon as practical), and Tier 3 (Annual Notice).
Exceedance	When a sample result is above the established MCL, SMCL, MRDL, AL, TT, or when certain parameters are out of the desired operating envelope. See Appendix 1 for more details.
Fecal Coliform	A sub-group of total coliform bacteria that are not from the environment but mostly exist in feces. E. coli bacteria are a sub-group of fecal coliform. Some strains of E. coli can produce illnesses, and the presence of E. coli in drinking water samples almost always indicates recent fecal contamination or a greater risk that pathogens are present.
Fresh Water	Water that is provided by a municipal water treatment plant and is delivered to an offshore facility by vessel.
Heterotrophic Plate Count (HPC)	count of bacteria not necessarily harmful to human health. HPC is an alternative method of determining disinfectant residual levels.

Internal Target Limit	A BP GoM limit for tested water parameters that are not federally regulated and/or provide additional stringent health protection for those water parameters which are federally regulated.
IRIS Reportable	A BP GoM internal classification that has potential health risk associated with potable water. It constitutes corrective actions for the non-conformance potable water results and documentation into IRIS.
Legionella	A gram negative bacterium that can cause Legionnaire's Disease and Pontiac Fever. Legionnaire's disease is the more severe form of infection and can be accompanied by pneumonia. Pontiac Fever is a milder flu-like illness. The bacteria are typically transmitted via aerosols (inhalation of mist droplets) containing bacteria. Common sources include, cooling towers, domestic hot water systems, air conditioning systems, fountains, humidifiers, and hot tubs.
Maximum Contaminant Level (MCL)	Are standards that are set by the United States Environmental Protection Agency (EPA) for drinking water quality. An MCL is the legal threshold limit on the amount of a substance that is allowed in public water systems under the Safe Drinking Water Act. The limit is usually expressed as a concentration in milligrams or micrograms per liter of water.
Maximum Residual Disinfectant Level (MRDL)	A level of a disinfectant set by the EPA which is added for water treatment that may not be exceeded at the consumer's tap without an unacceptable possibility of adverse health effects.
National Primary Drinking Water Regulations (NPDWR)	EPA legally enforceable standards that protect public health by limiting the levels of contaminants in drinking water.
National Secondary Drinking Water Regulations (NSDWR)	EPA non-enforceable guidelines regulating contaminants that may cause cosmetic effects or aesthetic effects in drinking water. EPA recommends secondary standards to water systems but does not require systems to comply.
Non-community Water system	A public water system that is not a community water system. A non-community water system is either a Transient Non-community Water System (TWS) or a Non-transient Non-community Water System (NTNCWS).
Non-public Water System (NPWS)	A water system that operates fewer than 60 days per year, or supplies fewer than 25 persons and fewer than 15 Service Connections (10 in Kansas) independent of how often it operates.
Non-transient Non-community Water System (NTNCWS)	Water system regularly serving at least 25 of the same persons more than 6 months per year but less than year round.

Potable Water	Water that meets the standards for drinking purposes of the state or local authority having jurisdiction, or water that meets the quality standards prescribed by the U.S. Environmental Protection Agency's National Primary Drinking Water Regulations (40 CFR 141), and water that is treated and exclusively used for drinking, soda machines, tea, coffee, ice, bathing, cooking, washing of foods, washing of cooking or eating utensils, washing of food preparation or processing premises, bathrooms, eyewash stations and safety showers.
Public Water System (PWS)	A system for provision of water for human consumption and contact by the public (which includes employees) through pipes if such system regularly serves at least 25 individuals for at least 60 days out of the year or has at least 15 service connections (10 in Kansas). A public water system is either a community water system or a non-community water system.
Potable Water Operator (PWO)	Individual, who has received specific training and demonstrated competency in the operation and maintenance of a potable water system, see Key Responsibilities and Training Sections.
Public Water System	System which regularly serves an average of at least twenty-five individuals daily at least 60 days out of the year or has at least 15 service connections.
Sanitation Survey	On-site review of the water sources, facilities, equipment, operation, and maintenance of a public water system for the purpose of evaluating the adequacy of the facilities for producing and distributing safe drinking water. These can be classified as a Level 1 or 2 assessments.
Secondary Maximum Contaminant Level (SMCL)	The maximum concentration or level of certain water contaminants in public water supplies set by the U.S. Environmental Protection Agency (EPA) to protect the public welfare. The secondary levels are written to address aesthetic considerations such as taste, odor, and color of water, rather than health standards.
Transient Non-community Water System (TNCWS)	Public water system that regularly serves an average of 25 persons less than 6 months per year, but at least 60 days out of the year. Most frequent example is a campground.
Treatment Technique (TT)	An enforced EPA standard requiring corrective actions.
Total Coliforms	Bacteria commonly found in the environment and are generally harmless. Fecal coliform bacteria, including E. coli, are a sub-group of total coliforms that can potentially be harmful.

7 Key Documents/Tools/References

GP 60-11 Potable Water

Section 7.1: Appendix 1 – GoM Potable Water Quality Test Requirements

Section 7.2: Appendix 2 – GoM Site-Specific Sampling Plan Template

Section 7.3: Appendix 3 – Site Sanitation Survey

Section 7.4: Appendix 4 – Potable Water Chemical Record Sheet Template

Section 7.5 – Appendix 5 – Monthly Potable Water Scorecard

Section 7.6 – Appendix 6 – Annual Potable Water Self- Verification

7.1 Appendix 1: Potable Water Quality Test Requirements

Off-site (municipal) Water Supply Transfer

	Test	Test Method	Desired Operating Envelope	Frequency	Sample Location(s)	Response to Exceedance
On-site analysis	Free Chlorine	Hach Colorimeter or equivalent	0.2 - 0.5 mg/L (Internal Target Limit)	Prior to or immediately after transfer from boat On boat or in holding tank before release		Carry out disinfection treatment, refer to Appendix 2, Attachment 2. Repeat testing after each treatment until exceedance is cleared.
	Total Coliform Bacteria	Colilert Test Kit or equivalent	Negative			
	Turbidity	Calibrated nephelometer or equivalent	≤5 NTU (EPA Treatment Technique)			For results >5 NTU, retest to confirm as soon as practical. If retest is confirmed, check the filters, identify possible corrosion issues, and contact Health Manager or designate as soon as practical. Implement corrective actions as appropriate and retest as necessary until ≤5 NTU is met.

Note: Once transferred water is accepted, include in regular monitoring for on-site water generation/storage

On-site Water Generation and Storage

	Test	Test Method	Desired Operating Envelope	IRIS Reportable	EPA Tier Required Reportable	Frequency	Sample Location(s)	Response to Exceedance
On-site analysis	Turbidity	Calibrated nephelometer or equivalent	≤5 NTU (EPA Treatment Technique)	>5 NTU	>5 NTU (Tier 1 or Tier 2)	Daily	After filtration, but before disinfection	For results >5 NTU, retest to confirm as soon as practical. If retest is confirmed, check the filters, identify possible corrosion issues, and contact Health Manager or designate as soon as practical. Implement corrective actions as appropriate and retest as necessary until ≤5 NTU is met.
	pH	Hach Pocket Pro pH meter, pH strips, or equivalent	6.5 - 8.5 (EPA National Secondary Drinking Water Regulation)	<5.5 or >9.5 (Internal Target Limit)	Not Required	Weekly	After filtration, but before disinfection	For results <6.5 or >8.5, retest to confirm as soon as practical. If retest is confirmed, check water flow, filters, membranes and hardeners. In addition, if retest is confirmed <5.5 or >9.5, contact Health Manager or designate as soon as practical. Implement corrective actions as appropriate and retest as necessary until 6.5 - 8.5 is met.
	Zinc	Hach Photometer or equivalent	2.0 - 3.5 mg/L	> 5.0 mg/L (EPA National Primary Drinking Water Regulation)	> 5.0 mg/L	Weekly	After filtration, but before disinfection	Investigate causes such as excess zinc organophosphate corrosion control chemicals. Consult with Production Chemist. Implement corrective actions. Retest as necessary until requirement met.
	Free Chlorine	Hach Colorimeter or equivalent	0.5 – 1.5 mg/L (Internal Target Limit)	<0.10 mg/L or >2.0 mg/L (Internal Target Limit)	>4.0 mg/L (EPA Maximum Residual Disinfectant Level Goal: Tier 2)	Weekly	1 end user point farthest from generation in each accommodation block (e.g. main plus additional living quarters) plus other high volume areas such as galley and communal washrooms. Note: Must be same sample site and date as coliform sample collection.	For free chlorine results <0.5 or >1.5 mg/L, retest to confirm as soon as practical. If retest is confirmed <0.5 mg/L, check potable water system, add chlorine/bromine, and implement corrective actions as appropriate. In addition, if retest is confirmed <0.1 mg/L, conduct a total coliform test and contact Health Manager or designate as soon as practical. If retest is confirmed >1.5 mg/L for free chlorine, check potable water system, check injection rates, reduce/dilute system, and implement corrective actions as appropriate. If retest is confirmed >2.0 mg/L, contact Health Manager or designate as soon as practical. Retest as necessary until 0.5 – 1.5 mg/L for free chlorine is met.

	Total Coliform Bacteria	Coliort Test Kit or equivalent	Negative	Positive (EPA National Primary Drinking Water Regulation)	Positive fecal coliform/E. coli (Tier 1)	Monthly	1 end user point farthest from generation in each accommodation block plus other high volume areas such as galley and communal washrooms. Facility Ice Machines.	<p>If result is Positive, contact Health Manager or designate as soon as practical. Perform onsite fecal coliform presence test. Carry out disinfection treatment, refer to Appendix 2, Attachment 2.</p> <p>Retest as soon as practical at three sample locations: the location of the positive sample plus one upstream and one downstream, if there is no downstream location use a 2nd upstream location.</p> <p>If the retest sample is Positive:</p> <ol style="list-style-type: none"> 1) Continue sampling at the positive location every 24-hour until Negative. 2) The following month collect a minimum of 5 samples from different locations for coliform analysis.
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On-site Water Generation and Storage

	Test	Test Method	Desired Operating Parameter	Frequency	Sample Location(s)	Response to Exceedance
Microbiological lab analysis	Total & Fecal Coliform	Send to approved microbiological lab, refer to section 5.4	Zero MCL	When on-site coliform test is positive	One location for which the on-site test was positive.	Disinfection treatment, refer to Appendix 2, Attachment 2. Repeat testing & treatment until requirements are met.
	HPC		<500 cfu/mL TT			
	Legionella Bacteria	Zero TT	Annually	1 end user showerhead farthest from generation in each accommodation block plus other high volume areas such as galley and communal washrooms.	For levels between 1-100, perform disinfection treatment, refer to Appendix 2 plus flush cold water systems, thermal disinfection (>165 °F) of hot water systems and clean/disinfect contaminated showers, faucets, etc. Retest within 3-7 days of system operation after remedial action. Investigate cause and initiate action to prevent re-occurrence. Continue corrective actions until Legionella results are clear. For levels >100 isolate equipment/area in addition to the above actions.	
	HPC	<500 cfu/mL TT				
Legionella Bacteria	Zero TT	See Legionella Bacteria above.				

	Test	Test Method	Desired Operating Envelope	Frequency	Sample Location(s)	Response to Exceedance	
Non-microbiological lab analysis	Disinfection By-products	Send to approved non-microbiological lab, refer to section 5.4	TTHM	Annually	1 end user point farthest from generation in each accommodation block.	If the AL or MCL is exceeded, investigate and implement corrective actions. Where the MCL for either TTHM or HAA5 is exceeded, take two samples of both TTHM and HAA5 per quarter until running average of four consecutive quarter results are less than the MCL for TTHM and HAA5. Return to annual sampling.	
			HAA5				<0.03 mg/L AL <0.06 mg/L MCL
	Organic Compounds	Send to approved non-microbiological lab, refer to section 5.4	cis-1,2-Dichloroethylene	<0.07 mg/L MCL	Annually	1 end user point farthest from generation in each accommodation block.	If any result exceeds 0.0005 mg/L, an investigation will be conducted and corrective actions implemented. Retest immediately and as necessary until levels go below 0.0005 mg/L. If the level of an organic compound is greater than the MCL, investigate and implement corrective actions. Initiate quarterly monitoring until 4 consecutive quarters of samples meet the requirements, then return to annual sampling.
			1,2-Dichloropropane	<0.005 mg/L MCL			
			Ethyl benzene	<0.7 mg/L MCL			
			Monochlorobenzene	<0.1 mg/L MCL			
			o-Dichlorobenzene	<0.6 mg/L MCL			
			Styrene	<0.1 mg/L MCL			
			Tetrachloroethylene	<0.005 mg/L MCL			
			Toluene	<1 mg/L MCL			
			1,2,4 Trichlorobenzene	<0.07 mg/L MCL			
			1,1,2-Trichloroethane	<0.005 mg/L MCL			
			Vinyl Chloride	<0.002 mg/L MCL			
			1,1 Dichloroethylene	<0.007 mg/L MCL			

Benzene	<0.005 mg/L MCL
Carbon Tetrachloride	<0.005 mg/L MCL
1,1,1-Trichloroethane	<0.2 mg/L MCL
1,2-Dichloroethane	<0.005 mg/L MCL
Trichloroethylene	<0.005 mg/L MCL
p-Dichlorobenzene	<0.075 mg/L MCL
1,2-Dichloroethylene	<0.007 mg/L MCL
Trans-1,2-Dichloroethylene	<0.1 mg/L MCL
Xylenes (Total)	<10 mg/L MCL
Dichloromethane	<0.005 mg/L MCL
1,2 Dichloroethane	<0.005 mg/L MCL

On-site Water Generation and Storage

		Test	Test Method	Desired Operating Envelope	Frequency	Sample Location(s)	Response to Exceedance
Non-microbiological lab analysis	Disinfectant Residuals	Chlorine, Total	Send to approved non-microbiological lab, refer to section 5.4.	<4 mg/mL MRDL	Annually	1 end user point farthest from generation in each accommodation block.	If the MRDL is exceeded, investigate and implement corrective actions to reduce chlorine levels. Retest immediately and as necessary until requirement is met.
	Metals	Antimony	Send to approved non-microbiological lab, refer to section 5.4.	<0.006 mg/L MCL	Annually	1 end user point farthest from generation in each accommodation block.	Investigate and implement corrective actions. Re-sample at the same point as soon as possible (should be within 2 weeks) to confirm. If confirmation sample is above MCL take 3 samples at the same point in one month on different days. If the average of the three sample results exceeds the MCL, initiate quarterly monitoring. Stop monitoring quarterly after 4 consecutive quarterly samples are less than the MCL.
		Barium		<2.0 mg/L MCL			
		Beryllium		<0.004 mg/L MCL			
		Cadmium		<0.005 mg/L MCL			
		Chromium		<0.1 mg/L MCL			
		Copper		<1.3 mg/L AL, TT			
		Iron		<0.3 mg/L SMCL			
		Lead		<0.015 mg/L AL, TT			
		Mercury		<0.002 mg/L MCL			
		Selenium		<0.05 mg/L MCL			
	Thallium	<0.002 mg/L MCL					
	Zinc	<5 mg/L SMCL					
	Miscellaneous and Inorganics	Color	Send to approved non-microbiological lab, refer to section 5.4.	<15 color units SMCL	Annually	1 end user point farthest from generation in each accommodation block.	Investigate causes, check filters, and implement corrective actions. Retest as necessary until requirement is met.
		Odor		<3 Threshold Odor Number SMCL			
		Cyanide (as Free Cyanide)		<0.2 mg/L MCL			
		Nitrate		<10 mg/L as Nitrogen MCL			
		Nitrite		<1 mg/L as Nitrogen MCL			
		Total Nitrate and Nitrite		< 10/mg/L as Nitrogen MCL			
TDS		<500 mg/L SMCL					

7.2 Appendix 2: Site-Specific Sampling Plan Template

GoM Region Potable Water Site Specific Sampling Plan

Facility Name:	Location:
Completed By:	Date:
Average POB:	Max POB:

7.2.1 Introduction

In accordance with Section 5.2 Potable Water Sampling and Testing of the GoM Potable Water Management Policy (CD# UPS-US-GOM-HSSE-DOC-00001-3), the following procedures include the facility's potable water sample testing and frequency for onsite analysis (turbidity, pH, free chlorine, total coliform, and zinc), and for offsite analysis (annual/quarterly microbiological, non-microbiological).

For each of the onsite potable water sampling procedures, the procedure is divided into steps with its respective responsible personnel and accountability. Offsite potable water sampling is required once on an annual basis; however, additional offsite sampling analysis may be necessary by the recommendation of the Health Manager (e.g. quarterly, confirmation).

GoM Region facilities shall review the GoM Potable Water Site Specific Sampling Plan annually and/or when there are any changes to the sampling protocol. Consult with the Health Manager or designate if any assistance is needed regarding these procedures.

7.2.2 Procedure/Process

7.2.2.1 Procedure 1: Onsite Daily Turbidity, Desired Operating Envelope: <5 NTU; 2 Sample Locations

Steps	Responsible Personnel	Accountability
1	PWO	Take turbidity test from two locations (See Table 1 for location details).
2	PWO	Compare results to desired operating envelope (≤ 5 NTU).
3	PWO	If results are out of conformance (> 5 NTU), continue to Step 4. If results are in conformance proceed to Step 10.
4	PWO	Retest for turbidity as soon as practical (<u>Not to exceed 8 hours unless the verbal approval of Health Manager or designate*</u>). Record retest result into SEMPCHECK.
5	PWO	If retest result is confirmed out of conformance (> 5 NTU), it is an IRIS Reportable. Notify OIM or designate and continue to Step 6. If retest result is in conformance proceed to Step 10.
6	PWO/Maintenance	Check filters and identify possible corrosion issues.
7	PWO	Implement corrective actions as appropriate.
8	PWO/Maintenance	Repeat Steps 4 to 7 as necessary until ≤ 5 NTU.

9	PWO/HSE	Notify Health Manager, or designate, of IRIS Reportable retest result as soon as practical (<u>Not to exceed 8 hours</u>) and document incident in IRIS. Note: Consecutive IRIS Reportable results from the same location/incident may be documented under one IRIS Incident Report.
10	PWO	Record potable water results and descriptive comments using SEMPCHECK. Explain causes of non-conformance and status of corrective actions as much as possible.

7.2.2.2 Table 1: Onsite Daily Turbidity

Test	Test Equipment	Specific Sample Locations	Desired Operating Envelope	Response to out of conformance
Turbidity	Oakton T-100 Turbidimeter	Sample at: 1a) Water Maker Room AND 1b) Water Maker Room	≤5 NTU MCL	Follow Steps 4 to 9 of <i>Onsite Daily Turbidity Procedure</i> .

7.2.3 Procedure 2: Onsite Weekly pH, Desired Operating Envelope: 6.5 – 8.5; 2 Sample Locations

Steps	Responsible Personnel	Accountability
1	PWO	Take pH test from two locations (See Table 2 for location details).
2	PWO	Compare results to desired operating envelope (6.5 - 8.5).
3	PWO	If results are out of conformance (<6.5 or >8.5), continue to Step 4. If results are in conformance proceed to Step 10.
4	PWO	Retest for pH as soon as practical (<u>Not to exceed 48 hours unless the verbal approval of Health Manager or designate*</u>). Record retest result into SEMPCHECK.
5	PWO	If retest result is confirmed out of conformance (<6.5 or >8.5), it is outside the Desired Operating Envelope. Notify the OIM or designate and continue to Step 6. If retest result is in conformance proceed to Step 10.
6	PWO/Maintenance	Check water flow, filters, membranes and hardeners.
7	PWO	Implement corrective actions as appropriate.
8	PWO/Maintenance	Repeat Steps 4 to 7 as necessary until 6.5 - 8.5 is met.

9	PWO/HSE	<p>If retest results become <5.5 or >9.5, it is a IRIS Reportable. Notify Health Manager, or designate, of incident as soon as practical (<u>Not to exceed 8 hours</u>) and document incident into IRIS.</p> <p>Note: Consecutive IRIS Reportable results from the same location/incident may be documented under one IRIS Incident Report.</p>
10	PWO	Record potable water results and descriptive comments using SEMPCHECK. Explain causes of non-conformance and status of corrective actions as much as possible.

7.2.4 Procedure 3: Onsite Weekly Free Chlorine, Desired Operating Envelope: 0.5 – 1.5 mg/L; Sample Locations

Steps	Responsible Personnel	Accountability
1	PWO	Take free chlorine tests from three locations (See Table 2 for location details).
2	PWO	Compare result to desired operating envelope (0.5 – 1.5 mg/L).
3	PWO	If any one result is <0.5 mg/L or >1.5 mg/L, proceed to Step 4. If results are in conformance proceed to Step 11.
4	PWO	Retest all failed locations for free chlorine as soon as practical (<u>Not to exceed 48 hours unless the verbal approval of Health Manager or designate*</u>). Record retest result using SEMPCHECK.
5a	PWO	If retest result is confirmed <0.5 mg/L, it is outside the Desired Operating Envelope. Notify the OIM or designate and continue to Step 6. If retest result is in conformance proceed to Step 11.
5b	PWO	If retest result is confirmed >1.5 mg/L, it is outside the Desired Operating Envelope. Notify the OIM or designate and continue to Step 8. If retest result is in conformance, proceed to Step 11.
6	PWO/Maintenance	Check potable water system, implement corrective actions as appropriate. Add chlorine to potable water system per site operating procedure.
7	PWO/HSE	<p>If retest result is confirmed <0.1 mg/L, it is a IRIS Reportable. Notify Health Manager and perform a total coliform test as soon as practical (<u>Not to exceed 8 hours</u>). Document incident in IRIS. Proceed to Step 10.</p> <p>Note: Consecutive IRIS Reportable results from the same location/incident may be documented under one IRIS Incident Report.</p>
8	PWO/Maintenance	Check potable water system, implement corrective actions as appropriate. Check injection rates and reduce as necessary. Drain or dilute water.

9	PWO/HSE	If retest result is confirmed >2.0 mg/L, it is a IRIS Reportable. Notify Health Manager or designate as soon as practical (Not to exceed 8 hours) and document incident in IRIS. Proceed to Step 10. Note: Consecutive IRIS Reportable results from the same location/incident may be documented under one IRIS Incident Report.
10	PWO/Maintenance	Repeat Steps 4 to 10 as necessary until 0.5 -1.5 mg/L.
11	PWO	Record potable water results and descriptive comments using SEMPCHECK. Explain causes of non-conformance and status of corrective actions as much as possible.

7.2.5 Procedure 4: Onsite Weekly Zinc, Desired Operating Envelope: 2 - 3.5 mg/L; 3 Sample Locations

Steps	Responsible Personnel	Accountability
1	PWO	Take zinc test from three locations (See Table 2 for location details).
2	PWO	Compare results to desired operating envelope (2-3.5 mg/L).
3	PWO	If results are out of conformance (<2 or >5 mg/L), continue to Step 4. If results are in conformance proceed to Step 10.
4	PWO	Retest for zinc as soon as practical (Not to exceed 48 hours unless the verbal approval of Health Manager or designate*). Record retest result into SEMPCHECK.
5	PWO	If retest result is confirmed out of conformance (<2 or >5 mg/L), it is an IRIS Reportable. Notify OIM or designate and continue to Step 6. If retest result is in conformance proceed to Step 10.
6	PWO/Maintenance	Check zinc orthophosphate injection system and investigate causes such as excess zinc organophosphate corrosion control chemicals. Injection rates may need to be reduced or increased. Consult with Corrosion Management Team and Industrial Hygiene Team. Implement corrective actions. Retest as necessary until requirement is met.
7	PWO/Maintenance	Repeat Steps 4 to 7 as necessary until zinc is within the desired operating envelope (2-3.5 ppm).
8	PWO/HSE	Notify Health Manager, or designate, of IRIS Reportable retest result as soon as practical (Not to exceed 8 hours) and document incident in IRIS. Note: Consecutive IRIS Reportable results from the same location/incident may be documented under one IRIS Incident Report.
9	PWO	Record potable water results and descriptive comments using SEMPCHECK. Explain causes of non-conformance and status of corrective actions as much as possible.

7.2.5.1 Table 2: Onsite Weekly pH, Free Chlorine, and Zinc Sample Locations

Test	Test Equipment	Specific Sample Locations	Desired Operating Envelope	Response to out of conformance
pH	Hach Pocket Pro pH meter or equivalent	Sample at: Location A or B	6.5 – 8.5 SMCL	Follow Steps 4 to 9 of <i>Onsite Weekly pH Procedure</i> .
Free Chlorine Zinc	Hach Free and Total Chlorine Pocket Colorimeter II or equivalent Hach Zinc Photometer or equivalent	Sample 1: Location A or B Sample 2: Location A or B Sample 3: Location A or B	0.5 – 1.5 mg/L 2-3.5 mg/L	Follow Steps 4 to 10 of <i>Onsite Weekly Free Chlorine Procedure</i> . Follow Steps 4 to 10 of <i>Onsite Weekly Zinc Procedure</i>

7.2.6 Procedure 5: Onsite Monthly Total Coliforms, Desired Operating Envelope: Negative; 4 Sample Locations

Steps	Responsible Personnel	Accountability
1	PWO	Take total coliforms tests from three locations (See Table 3 for location details). Additional samples shall be collected from the facility ice machines for the total coliforms test.
2	PWO	Compare results to desired operating envelope (Negative).
3	PWO	If any one result is positive, indicating presence of total coliforms, it is a IRIS Reportable. Notify the OIM or designate and proceed to Step 4. If results are in conformance proceed to Step 11.
4	PWO	For samples that are positive, determine if the samples fluoresce under 6-watt, 365 nm UV light within 5 in of the sample in a dark room.
5	PWO/HSE	Notify Health Manager or designate as soon as practical (<u>Not to exceed 8 hours</u>).
6	PWO/Maintenance	Carry out disinfection treatment. See Attachment 2.
7	PWO	Retest at three locations (<u>Not to exceed 48 hours unless the verbal approval of Health & IH Team Leader*</u>): positive test location, one upstream location, and one downstream location. If no downstream location, use a 2nd upstream location. Record retest result using SEMPCHECK.
8	PWO	If retest result is positive, continue to sample at positive location every 24 hrs until negative.
9	HSE	Document incident in IRIS. Note: Consecutive IRIS Reportable results from the same location/incident may be documented under one IRIS Incident Report.
10	PWO	The following month, collect a minimum of five samples from different locations.
11	PWO	Record potable water results and descriptive comments using SEMPCHECK. Explain causes of non-conformance and status of corrective actions as much as possible.

7.2.6.1 Table 3: Onsite Monthly Coliform Sample Locations

Test	Test Equipment	Specific Sample Locations	Desired Operating Envelope	Response to out of conformance
Total Coliform Bacteria**	IDEXX Colilert 18 or 24 Test Kit or equivalent	<p>Sample 1: Location A or B</p> <p>Sample 2: Location A or B</p> <p>Sample 3: Location A or B</p> <p>Additional Samples: Facility Ice Machines</p>	Negative	Follow Steps 4 to 10 of <i>Onsite Monthly Total Coliform Procedure</i> .

7.2.7 Procedure 6: Offsite Annual Microbiological Sampling

HPC Legionella Bacteria Total & Fecal Coliform	Sample Tips: <ul style="list-style-type: none"> • Sample BEFORE Non-Microbiological Samples. • Three bottles PER Location. • Check Helicopter schedule for overnight delivery to the lab. Arrange for local courier to take samples from the heliport to local Fedex or UPS. • Get a thermometer to record sample temperature. • Prior to taking sample, disinfect the sample site before the sample is taken. Wipe the surface of the fixture with alcohol or bleach solution or spraying alcohol or bleach solution onto and into the faucet/sprayer opening. Allow alcohol or bleach to air dry before flushing the faucet. • See Section 3.0: Attachment 1 for Pace Analytical Procedures. 	
	Alternate between Option A and Option B each year	
	Option A Sample 1: Sample 2: Sample 3:	Option B Sample 1: Sample 2: Sample 3:

7.2.8 Procedure 6: Offsite Annual Non-Microbiological Sampling

Organic Compounds Disinfectant Residuals Disinfection By-products Metals Miscellaneous and Inorganics	Sample Tips: <ul style="list-style-type: none"> • Collect HPC, Coliform, and Legionella samples first. • Freeze ice packs the night before sampling. • Check Helicopter schedule for overnight delivery to the lab. Arrange for local courier to take samples from the heliport to local Fedex or UPS. • Wear safety glasses and gloves. • Take aerator off the tap. • Run the water for 10 minutes prior to sample collection. • DO NOT OVERFLOW the bottles or you will lose preservative in sample bottle. • See Section 7.2.11.1 for Pace Analytical Procedures. 	
	Alternate between Option A and Option B each year.	
	Option A Sample 1: Sample 2: Sample 3:	Option B Sample 1: Sample 2: Sample 3:

7.2.9 Procedure 7: Offsite Quarterly Sampling (If Applicable)

7.2.10 Procedure 8: Receipt of Boat Water

For offshore facilities that receive fresh water by vessel, turbidity, pH, residual chlorine, and total coliforms testing is required on the delivered water prior to use and introduction into the main potable water system to assess water quality. Testing shall be completed on the delivered water while the water is still on the transfer vessel (if possible) or at the loading station.

If the fresh water is determined to exceed 10 ntu for turbidity or pH is outside the desired operating envelope, the water should be not bulk loaded to the facility or loading shall be stopped. The water shall be rejected and/or discharged to avoid potable water system contamination. Contact your environmental specialist prior to discharging water overboard.

Note, since the total coliforms test requires 18 or 24 hours for completion, initiate this testing at the same time as the turbidity, pH, and chlorine testing, the results of the total coliforms must be confirmed negative prior to introduction of the water to the facility's potable water system.

- A. Turn on the water pump and allow the fresh water to flow through the equipment and hose to overboard for 5-10 minutes until the water is clear.
- B. Collect 2 water samples, one for the total coliforms test and another for chlorine, pH, and turbidity.
- C. Document turbidity, pH, and chlorine results. Wait 18 or 24 hours to read the results of the total coliforms test.

- D. If turbidity is > 10 ntu or pH is outside of the desired operating envelope of 6.5-8.5, do not load the water to the facility. Request new fresh water.
- E. Repeat A-D for each vessel compartment that is providing fresh water for the facility.
- F. If fresh water quality is acceptable, load fresh water to the potable water tank and determine volume of water delivered.
- G. If turbidity is greater or equal to 5 NTU, do not circulate the tank, resample per the Site Sampling Plan.
- H. If the chlorine concentration is not within 0.5 – 1.5 ppm, add disinfectant based on volume of water delivered, circulate contents of tank and resample at the tank (See Appendix 2, Attachment 2).
- I. If the total coliforms test is negative, no further action is required.
- J. If total coliforms test is positive which is indicated by a yellow color after 18 or 24 hours, determine if fecal coliforms (e.g., E. coli) are present using a 6-watt, 365 nm UV light within 5 inches of the sample in a dark environment.
 - a. If positive for E. coli, do not use the water. The water shall be discharged to avoid potable water system contamination. Contact your environmental specialist prior to discharging water overboard. Request new fresh water.
 - b. If negative for E. coli, shock treat the water by raising the concentration to 50 ppm chlorine (See Appendix 2, Attachment 2). After disinfection (shocking), circulate the contents of tank for at least 6 hours. Take a total coliforms sample to confirm effective treatment. If the total coliforms test is negative, mix with stored water and distribute when residual chlorine levels have been reduced to 0.5 – 1.5 mg/l. If the total coliforms test is positive, re-shock the water or consider discarding. Contact your environmental specialist prior to discharging shocked water overboard.
- K. Once transferred water is accepted, include it into the regular on-site potable water testing.

7.2.11 Attachments

7.2.11.1 Attachment 1: Example Facility Annual Potable Water Sampling Job Plans, includes Microbiological and Non-Microbiological Potable Water Sampling Procedures



AT Job Plan Annual AT Job Plan Annual
Sampling A_0105201Sampling B_0105201

7.2.11.2 Attachment 2: Maintenance and Disinfection Treatment Procedure



Disinfection%20Tre
atment_04042019.doc

7.2.11.3 Attachment 3: Potable Water IRIS Reporting Procedure



IRIS Report
Instructions for a Pot:

7.2.11.4 Attachment 4: Hach Chlorine Meter Procedure



Hach Chlorine Test
Kit Procedure.docx

7.2.11.5 Attachment 5: Hach Zinc Meter Procedure



Hach Zinc Test Kit
Procedure.docx

7.2.11.6 Attachment 6: Hach pH Meter Procedure



pH meter
Procedure.docx

- * Health Manager or Designate contact information (phone: 832-816-7712, email: Valerie.Murray@bp.com)
- ** For situations when the potable water system is turned off for an extended amount of time (generally greater than 24 hours) due to maintenance work, storm evacuation, etc., perform turbidity, pH, free chlorine, zinc, and total coliform tests to confirm parameters are within the desired operating envelope.

7.3 Appendix 3 - Site Sanitation Survey

Facility Name:	
Completed By:	Reviewed / Approved by:
Date:	Date:

	Item	Yes	No	N/A	Comments/Corrective Actions
	Disinfection & Treatment Equipment				
1	Disinfectant Type, Amount, and Rate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2	Water Maker, Pumps, Pumping Controls & Motors, System Pressure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3	Approved Corrosion Control Chemicals (if applicable) with Procedures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4	Valves, Hoses, Chemical Containers and Storage, Lay-Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Water Storage System				
5	Tank Hatches (gaskets, seals)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6	Vent Screens	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7	Overflow Drains & Screens	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8	Piping Condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9	Tank Levels within normal parameters	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10	Tank Condition (interior and exterior: look for signs of rust, particulates, unusual odors, discoloration, algae, mold, slime)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Distribution System				
11	Distribution System Plan & Map	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12	System Flushing Procedures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13	Leak Repair Procedures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14	Cross-Connection Control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15	Backflow Prevention Devices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
16	Back Pressure Controls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
17	Connection Points	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Records				
18	Preventative Maintenance Schedule (i.e. repairs, cleanings)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
19	On-Site and Off-Site Analytical Testing according to plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
20	Potable Water Operator Training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
21	Public Notification Documents of Drinking Water Standard Violations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
22	Testing Records and IRIS Incident Reporting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	General				
23	Housekeeping, PPE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

	Item	Yes	No	N/A	Comments/Corrective Actions
24	Emergency/Contingency Plan for Water Contamination Events	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
25	Water System Deficiency Investigation/ Corrective Actions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
26	Hazard Communications and SDS's Up to Date	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

* On at least an annual basis each facility potable water system shall be inspected using this checklist by the PWO. The Health Manager or designate will review and sign off on the inspection.

** Send completed form copy to the Health Manager or designate.

Note: Lead solder or flux, pipes and pipe fittings can contain lead. Check annually to confirm that no changes to the potable water system inadvertently added lead containing components. The MCL for lead in solder or flux is 0.2% and the MCL for lead in pipes and pipe fittings is 8%.

Additional Comments:

7.4 Appendix 4 - Potable Water Chemical Record Sheet Template

Facility Name:					
Completed By:					
Date:					
Date	Time	Printed Name of Preparer	Name / Manufacturer of Chemical Used	How Much Chemical Used*	Comments

* Specification by weight, volume, or other measurement.

7.5 Appendix 5 - Monthly Potable Water Scorecard – use sempcheck

Facility Name:	
Scorecard Month / Year:	
Completed By:	Reviewed / Approved by:
Date:	Date:

Potable Water KPI Metrics	Yes/No	#	Comments; Date of Completion/ Submittal
Onsite Daily Turbidity Sample Analysis			
1	How many Daily Turbidity tests were conducted?		
2	How many Daily Turbidity tests were Not Tested due to acceptable means (e.g. weather, mechanical)?		
3	How many Daily Turbidity tests were missed, undocumented?		
4	How many required Turbidity retests were required within 8 hours?		
5	How many required Turbidity retests were completed within 8 hours or completed outside 8 hours with Health Manager or designate approval for time extension?		
6	How many missed, required Turbidity retests were identified without Health Manager or designate approval?		
7	How many EPA Reportables from Turbidity tests were identified?		
8	How many IRIS Reportables from Turbidity tests were identified?		
9	Were IRIS Incident Reports created in response to Turbidity IRIS Reportable results?		
10	Do the recorded samplers on the Potable Water System Sampling Record spread sheet have the PWO training course completed by the day of this assessment?		
Onsite Weekly pH Sample Analysis			
11	How many Weekly pH tests were conducted?		
12	How many Weekly pH tests were Not Tested due to acceptable means (e.g. weather, mechanical)?		
13	How many Weekly pH tests were missed, undocumented?		
14	How many required pH retests were required within 48 hours?		

Potable Water KPI Metrics		Yes/No	#	Comments; Date of Completion/ Submittal
15	How many required pH retests were completed within 48 hours or completed outside 48 hours with Health Manager or designate approval for time extension?			
16	How many missed, required pH retests were identified without Health Manager or designate approval?			
17	How many Outside Desired Envelope pH results were identified?			
18	How many IRIS Reportables from pH Tests were identified?			
19	Were IRIS Incident Reports created in response to pH IRIS Reportable results?			
20	Do the recorded samplers on the Potable Water System Sampling Record spread sheet have the PWO training course completed by the day of this assessment?			
Onsite Weekly Free Chlorine Sample Analysis				
21	How many Weekly Free Chlorine tests were conducted?			
22	How many Weekly Free Chlorine tests were Not Tested due to acceptable means (e.g. weather, mechanical)?			
23	How many Weekly Free Chlorine tests were missed, undocumented?			
24	How many required Free Chlorine retests were required within 48 hours?			
25	How many required Free Chlorine retests were completed within 48 hours or completed outside 48 hours with Health Manager or designate approval for time extension?			
26	How many missed, required Free Chlorine retests were identified without Health Manager or designate approval?			
27	How many EPA Reportables from Free Chlorine tests were identified?			
28	How many Outside Desired Envelope Free Chlorine results were identified?			
29	How many IRIS Reportables from Free Chlorine Tests were identified?			
30	Were IRIS Incident Reports created in response to Free Chlorine IRIS Reportable results?			
31	How many Free Chlorine retest results were <0.1mg/L and require a Total Coliform test?			
32	For Free Chlorine retest result of <0.1 mg/L, how many Total Coliform tests were completed?			

Potable Water KPI Metrics		Yes/No	#	Comments; Date of Completion/ Submittal
33	Do the recorded samplers on the Potable Water System Sampling Record spread sheet have the PWO training course completed by the day of this assessment?			
Onsite Monthly Total Coliform Sample Analysis				
34	How many Monthly Total Coliform tests were conducted?			
35	How many Monthly Total Coliform tests were Not Tested due to acceptable means (e.g. weather, mechanical)?			
36	How many Monthly Total Coliform tests were missed, undocumented?			
37	How many required Total Coliform retests were required within 48 hours?			
38	How many required Total Coliform retests were completed within 48 hours or completed outside 48 hours with Health Manager or designate approval for time extension?			
39	How many missed, required Total Coliform retests were identified without Health Manager or designate approval?			
40	How many EPA Reportables from Total Coliform tests were identified?			
41	Were all positive Total Coliform test samples UV tested for presence of fecal coliform?			
42	How many IRIS Reportables from Total Coliform tests were identified?			
43	Were IRIS Incident Reports created in response to Total Coliform IRIS Reportable results?			
44	Do the recorded samplers on the Potable Water System Sampling Record spread sheet have the PWO training course completed by the day of this assessment?			
Additional Comments:				

7.6 Appendix 6: Annual Potable Water Self-Verification – use sempcheck

Facility Name:	
Scorecard Month / Year:	
Completed By:	Reviewed / Approved by:
Date:	Date:

Potable Water KPI Metrics	Yes/No	#	Comments; Date of Completion/ Submittal
Required Documents			
1	Is the facility's Site Specific Sampling Plan current (i.e. annual review) on the day of this assessment?		
2	Is the facility's Site Sanitation Survey Checklist current (i.e. annual review) on the day of this assessment?		
3	Has the facility completed at least 52 weekly Site Self-Assessment Checklists by the day of this assessment?		
PWO Training			
4	Do the samplers on the Potable Water System Sampling Record spread sheet have completed the PWO training course (i.e. 2 year refresher) by the day of this assessment?		
Potable Water Sample Testing			
5	Has the Offsite annual potable water microbiological survey been completed by the day of this assessment?		
6	Has the Offsite annual potable water non-microbiological survey been completed by the day of this assessment?		
7	How many Daily Onsite Turbidity tests were conducted?		
8	How many Daily Onsite Turbidity tests were Not Tested due to acceptable means (e.g. weather, mechanical)?		
9	How many Daily Onsite Turbidity tests were missed, undocumented?		
10	How many Weekly Onsite pH tests were conducted?		
11	How many Weekly Onsite pH tests were Not Tested due to acceptable means (e.g. weather, mechanical)?		

Potable Water KPI Metrics		Yes/No	#	Comments; Date of Completion/ Submittal
12	How many Weekly Onsite pH tests were missed, undocumented?			
13	How many Weekly Onsite Free Chlorine tests were conducted?			
14	How many Weekly Onsite Free Chlorine tests were Not Tested due to acceptable means (e.g. weather, mechanical)?			
15	How many Weekly Onsite Free Chlorine tests were missed, undocumented?			
16	How many Monthly Onsite Total Coliform tests were conducted?			
17	How many Monthly Onsite Total Coliform tests were Not Tested due to acceptable means (e.g. weather, mechanical)?			
18	How many Monthly Onsite Total Coliform tests were missed, undocumented?			
Potable Water Quality Results				
19	How many EPA Reportables from Offsite Microbiological Tests were identified?			
20	How many IRIS Reportables from Offsite Microbiological Tests were identified?			
21	How many EPA Reportables from Offsite Non-Microbiological Tests were identified?			
22	How many IRIS Reportables from Offsite Non-Microbiological Tests were identified?			
23	How many Outside Desired Operating Envelope results from Offsite Non-Microbiological Tests were identified?			
24	How many EPA Reportables from Onsite Turbidity Tests were identified?			
25	How many IRIS Reportables from Onsite Turbidity Tests were identified?			
26	How many IRIS Reportables from Onsite pH tests were identified?			
27	How many Outside Desired Operating Envelope from Onsite pH Tests were identified?			
28	How many EPA Reportables from Onsite Free Chlorine Tests were identified?			
29	How many IRIS Reportables from Onsite Free Chlorine Tests were identified?			
30	How many Outside Desired Operating Envelope results from Free Chlorine tests were identified?			
31	How many EPA Reportables from Total Coliform tests were identified?			
32	How many IRIS Reportables from Total Coliform tests were identified?			

Potable Water KPI Metrics	Yes/No	#	Comments; Date of Completion/ Submittal
Notification/Reporting			
33	How many missed, undocumented IRIS Reports for IRIS Reportable results were identified?		

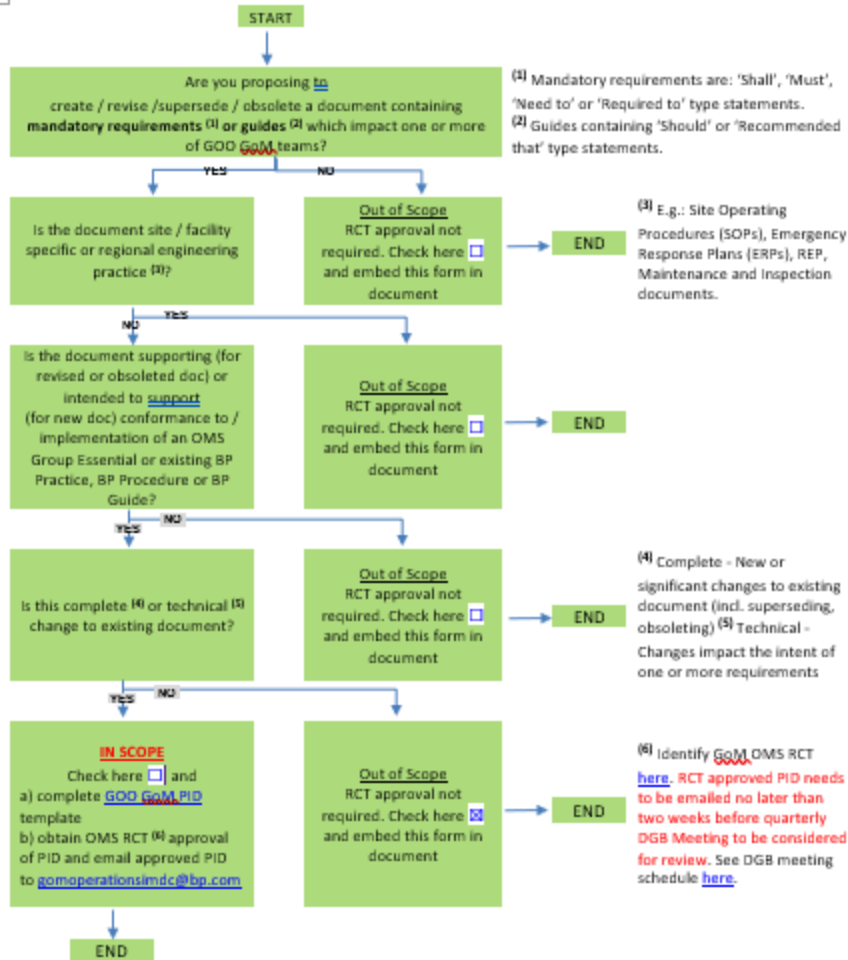
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Document Title	DL- GoM Region Potable Water Management Policy		
Next Review Date	10/20/2021		
Reason for Issue: (check applicable)	<input type="checkbox"/> New	<input checked="" type="checkbox"/> Revise	<input type="checkbox"/> Supersede <input type="checkbox"/> Obsolete
Document Sign Off			
	Print Name & Title	Signature	Date
Reviewer(s) <small>(If not applicable, put N/A in front of Name & Title, then sign and date)</small>	Valerie Murray, Health Manager	<i>Valerie D. Murray</i>	04/04/2019
	Cheryl Metzler, Industrial Hygienist	<i>Cheryl Metzler</i>	04/04/2019
Training Completed <small>(If not applicable, put N/A in front of Name & Title, then sign and date)</small>	N/A, Valerie Murray, Health Manager	<i>Valerie D. Murray</i>	04/04/2019
Communication Completed <small>(If not applicable, put N/A in front of Name & Title, then sign and date)</small>	Valerie Murray, Health Manager	<i>Valerie D. Murray</i>	04/04/2019
Custodian	Diane Liu, Industrial Hygienist	<i>Diane Liu</i>	04/04/2019
Authority	Valerie Murray, Health Manager	<i>Valerie D. Murray</i>	04/04/2019
Document Posted	Debe Edwards, IMDC Document Controller	<i>Debra Edwards</i> DocuSigned by: Debra Edwards	Apr 18, 2019
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