



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

**AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**

NPDES PERMIT NO. GU0020371

In compliance with the provisions of the Clean Water Act (CWA; Public Law 92-500, as amended, 33 U.S.C. 1251 *et seq.*), the following discharger is authorized to discharge from the identified facility at the outfall location(s) specified below, in accordance with the effluent limits, monitoring requirements, and other conditions set forth in this permit:

Discharger Name	Guam Waterworks Authority
Discharger Address	P.O. Box 3010, Hagatna, GU 96932
Facility Name	Ugum Surface Water Treatment Facility
Facility Address	#308 Paulino Heights Road, Talofofo, GU 96932
Facility Rating	Minor

Outfall Number	General Type of Waste Discharged	Outfall Latitude	Outfall Longitude	Receiving Water
001	Clean-in-Place and Chemical Enhanced Backwash Wastewater	13° 19'74" N	144° 44' 57" E	Ugum River

This permit was issued on:	April 26, 2010
This permit shall become effective on:	May 1, 2010
This permit shall expire at midnight on:	April 30, 2015
In accordance with 40 CFR 122.21(d), the discharger shall submit a new application for a permit at least 180 days before the expiration date of this permit, unless permission for a date no later than the permit expiration date has been granted by the Director.	

Signed this 26th day of April, 2010,

For the Regional Administrator,

//s//
Alexis Strauss, Director
Water Division

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PART I - EFFLUENT LIMITATIONS

- A. Guam Waterworks Authority (the permittee) is authorized to discharge treated Clean-in-Place and Chemical Enhanced Backwash Wastewater from the membrane filters of the Ugum Surface Water Facility through Outfall No. 001 to the Ugum River, Guam. Such discharge shall be limited and monitored by the permittee as specified below and in Table 1. The permittee shall maintain compliance with all effluent limitations specified in Table 1 and requirements identified in this permit.
- B. Treated effluent from Outfall No. 1 shall meet the requirements outlined in **Table 1**.

Table 1: Effluent Limitations and Monitoring Requirement for Outfall No. 001

Parameter	Units ⁽²⁾	Effluent Limitations				Monitoring Requirements	
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	Monitoring Frequency	Sample Type
Flow Rate	MGD	(1)	(1)	--	--	Continuous ⁽³⁾	Metered
pH	Std. Units	--	--	6.5	9.0	Continuous ⁽³⁾	Metered
Turbidity	NTU	--	--	--	12.5	4X ^{(5),(6)} /discharge	Discrete
Total Suspended Solids	mg/L lbs/day	30 11.5	45 17.3	--	--	Once ⁽⁵⁾ /discharge	Discrete
TRC	mg/L	.05	.05	--	--	Monthly ⁽⁵⁾	Discrete
Total Dissolved Solids	mg/L lbs/day	1000 384	1000 384	--	--	Monthly ⁽⁵⁾	Discrete
Total Aluminum	µg/L lbs/day	1000 .384	--	--	--	Monthly	Composite ⁴

⁽¹⁾Monitoring and reporting required. No limit set at this time.

⁽²⁾Mass limits based on a design flow of .046 MGD.

⁽³⁾Continuous monitoring only required during discharge.

⁽⁴⁾Composite samples shall be over the course of a single discharge (approximately 8-hour composites)

⁽⁵⁾A discrete sample must be taken during the course of the discharge when the concentrations of pollutants are at their highest. If a peak concentration time is not determined, the sample must be pulled during the first thirty minutes of discharge.

⁽⁶⁾For turbidity, four samples must be taken during the course of the discharge. The samples must be taken at intervals of at least 15 minutes.

- C. Except as authorized in **Table 1** of this permit, the discharge from Outfall No. 001 shall not cause the following conditions in the receiving water of the Ugum River:

1. The discharge shall be free from substances, conditions or combinations that cause visible floating materials, debris, oil, grease, scum, foam, and other floating material which degrades water quality or use;
2. The discharge shall be free from substances, conditions or combinations that produce visible turbidity, settle to form deposits or otherwise adversely affect aquatic life;
3. The discharge shall be free from substances, conditions or combinations that produce objectionable color, odor or taste, directly or by chemical or biological action;
4. The discharge shall be free from substances, conditions or combinations that injure or are toxic or harmful to humans, animals, plants or aquatic life;
5. The discharge shall be free from substances, conditions or combinations that induce the growth of undesirable aquatic life
6. The discharge shall not cause the pH in the receiving water to be outside the range of 6.5 to 9.0 standard units;
7. The discharge shall not cause orthophosphate concentrations in the receiving waters to exceed 0.05 mg/L;
8. The discharge shall not cause nitrate-nitrogen concentrations to exceed 0.2 mg/L;
9. The discharge shall not cause ammonia concentrations to exceed 0.02 mg/L;
10. The discharge shall not cause the concentration of dissolved oxygen in the receiving water to be less than 75% of saturation;
11. The discharge shall not cause alterations of the marine environment that would alter the salinity of marine waters of Guam more than +10% of the ambient conditions, except when due to natural condition;
12. The discharge shall not cause total non-filterable suspended matter any point to be increased more than 10% from ambient at any time, and the total concentration should not exceed 20 mg/L, except when due to natural conditions;
13. The discharge shall not cause the turbidity in the receiving water to exceed 1.0 NTU over ambient conditions, except when due to natural causes;
14. The discharge of any radioactive wastes and contaminated radioactive materials from research facilities is strictly prohibited;
15. The discharge shall not cause the temperature in the receiving water to deviate more than 1.0 degree Centigrade (1.8 of the degree Fahrenheit) from ambient conditions;

16. The discharge shall not cause the concentration of oil or petroleum products in the receiving waters to cause a visible film, or sheen, or results in visible discoloration of the surface with a corresponding oil or petroleum product odor, damage to fish or invertebrates, or an oil deposit on the shore or bottom;
17. The discharge shall not cause concentrations of toxic substances in the receiving waters that produce detrimental physiological, acute or chronic responses in human, plant, animal or aquatic life;
18. The discharge shall not cause concentrations of toxic substances in the receiving waters that produce contamination in harvestable aquatic life to the extent that it causes detrimental physiological, acute or chronic responses in humans or protected wildlife, when consumed;
19. The discharge shall not cause concentrations of toxic substances in the receiving waters that result in the survival of aquatic life subject to the discharge to be less than that for the same water body in areas unaffected by the discharge; and
20. Whenever natural concentrations of any toxic substance shall occur and exceed the limits established in these standards, this greater concentration shall constitute the limit, provided that this natural concentration was not directly affected by human-induced causes.

PART II – RECEIVING WATER MONITORING REQUIREMENTS

A. Table 2: Upstream (UR-1) and Downstream (UR-2) Water Monitoring Requirements

Parameter	Frequency	Type
Total Suspended Solids	Monthly	Discrete
pH	Monthly	Discrete
Temperature	Monthly	Discrete
Orthophosphate	Once/ Quarter	Discrete
Nitrate-Nitrogen	Once/ Quarter	Discrete
Ammonia	Once/ Quarter	Discrete
Dissolved Oxygen	Once/ Quarter	Discrete
Total Dissolved Solids	Once/ Quarter	Discrete
Turbidity	Once/ Quarter	Discrete

- B. The permittee shall conduct the monitoring described in Table 2. The monitoring shall be conducted at two locations: one upstream and one downstream of the outfall.

1. The upstream monitoring location (**UR-1**) shall be a single location immediately upstream of the outfall.
 2. The downstream monitoring location (**UR-2**) shall be a single location at least 200 feet downstream of the outfall.
 3. In-stream monitoring shall be conducted within the duration of a discharge.
- C. UR-2 samples for parameters in **Table 2** shall not exceed concentrations listed in I.C., above. I.C.20. does allow for limits to account for natural conditions. Therefore, limits for receiving water shall be those listed in I.C.6-15, above, or the corresponding background concentration established by samples taken at UR-1, whichever is higher.

PART III - MONITORING AND REPORTING REQUIREMENTS

A. Monitoring and Reporting

1. Effluent Monitoring

The permittee shall conduct effluent monitoring to evaluate compliance with the permit conditions. The permittee shall perform all effluent monitoring, sampling and analyses in accordance with the methods described in this permit and at the frequencies described in **Table 1** and **Table 2**, unless otherwise specified by EPA. Effluent samples shall be representative of the volume and nature of the monitored discharge. Samples shall be taken after any in-plant return flows and the last treatment process and prior to mixing with effluent from the Ugum Water Treatment Facility and the receiving waters, where representative samples of the effluent discharged to the Ugum River can be obtained.

Effluent monitoring and analyses must be conducted in accordance with EPA test procedures approved under 40 CFR 136, *Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act*, as amended. (For biosolids analytical methods, please see Part VI of this permit.) For effluent analyses, the permittee shall utilize a Method Detection Limit (MDL)¹ or Minimum Level (ML)² that is lower than the effluent limitations and requirements described in Table 1 of this permit. If all published MDLs or MLs are higher than the effluent limitations,

¹ The Method Detection Limit (MDL) is the minimum concentration of an analyte that can be detected with 99% confidence, as defined by a specific laboratory method in 40 CFR 136, Appendix B.

² The Minimum Level (ML) is the concentration in a sample equivalent to the concentration of the lowest calibration standard analyzed in a specific analytical procedure, assuming that all of the method-specific sample weights, volumes, and processing steps have been followed. Where a promulgated ML is not available, an interim ML is calculated by multiplying the MDL by a factor of 3.18 and then rounding this calculated value to the nearest multiple of 1, 2, or 5×10^n , where n is zero or an integer. Alternatively, interim MLs for metals may be rounded to the nearest whole number.

the permittee shall utilize the test method procedure with the lowest MDL or ML. The permittee shall ensure that the laboratory utilizes a standard calibration where the lowest standard point is equal to or less than the ML. Toxic pollutant analyses for metals shall measure “total recoverable metal,” except as provided under 40 CFR 122.45(c).

2. Effluent Quality Reporting

- a. All monitoring results shall be submitted in such a format as to allow direct comparison with effluent limitations and requirements in this permit. Monitoring results must be reported on a monthly DMR form. Monthly DMR forms shall be submitted quarterly on the 28th of the month following the previous quarterly reporting period. For example, the three DMR forms for the reporting period January through March shall be submitted by the 28th of April.
- b. For samples collected each month of the quarterly reporting period, the permittee shall report on the monthly Discharge Monitoring Report (DMR) the following for each pollutant or parameter:
 - i. The maximum value, if the result is greater than or equal to the ML; or
 - ii. NODI(Q)³, if result is greater than or equal to the laboratory’s MDL but less than the ML; or
 - iii. NODI(B), if result is less than the laboratory’s MDL.
- c. As an attachment to each DMR form submitted during the quarterly reporting period, the permittee shall report for all pollutants or parameters with monitoring requirements specified in Table 1 of this permit the following:
 - i. The analytical method number or title, preparation and analytical test procedure utilized by the laboratory, published MDL or ML, the laboratory’s MDL;
 - ii. The standard deviation from the laboratory’s MDL study;
 - iii. The number of replicate analyses (*n*) used to compute the laboratory’s MDL; and
 - iv. The lowest calibration standard.

³ “NODI” means no discharge/no data; the “Q” designation means not quantifiable; the ‘B’ designation means below the detection level.

- d. In addition to information requirements specified under 40 CFR 122.41(j)(3), records of monitoring information shall include: the laboratory which performed the analyses and any comment, case narrative, or summary of results produced by the laboratory. The records should identify and discuss quality assurance (QA) and quality control (QC) analyses performed concurrently during sample analyses and whether project and 40 CFR 136 requirements were met. The summary of results must include information on initial and continuing calibration, surrogate analyses, blanks, duplicates, laboratory control samples, matrix spike and matrix spike duplicate results, and sample receipt condition, holding time, and preservation.
- e. Report for Average Monthly Limitation (or if no limitation applies but samples are collected during the monthly reporting period):
 - i. The maximum daily value, if only one sample is collected during the monthly reporting period, or
 - ii. The average value of all analytical results where 0 (zero) is substituted for values less than the laboratory's MDL and the laboratory's MDL is substituted for values greater than or equal to the laboratory's MDL but less than the ML if more than one sample is collected during the monthly reporting period.
- f. Duplicate signed copies of DMRs, and all other reports required herein, shall be submitted to EPA and the Administrator of GEPA at the following addresses:

Pacific Islands Office	Administrator
EPA - Region IX	GEPA
75 Hawthorne Street, Mail Code CED-6	P.O. Box 22439 GMF
San Francisco, California 94105	Barrigada, GU 96921

3. Quality Assurance

- a. The permittee shall develop a QA Manual for the field collection and laboratory analysis of samples. The purpose of the QA Manual is to assist in planning for the collection and analysis of samples and explaining data anomalies if they occur. The QA Manual shall be prepared and implemented within 90 days from the effective date of this permit. At a minimum, the QA Manual shall include the following:
 - i. Identification of project management and a description of the roles and responsibilities of the participants; purpose of sample collection; matrix to be sampled; the analytes or compounds being measured; applicable technical, regulatory, or program-specific action criteria; personnel qualification requirements for collecting samples;

- ii. Description of sample collection procedures; equipment used; the type and number of samples to be collected including QA/QC samples; preservatives and holding times for the samples (40 CFR 136.3); and chain of custody procedures;
 - iii. Identification of the laboratory used to analyze the samples; provisions for any proficiency demonstration that will be required by the laboratory before or after contract award such as passing a performance evaluation sample; analytical method to be used; MDL and ML to be reported; required QC results to be reported (e.g., matrix spike recoveries, duplicate relative percent differences, blank contamination, laboratory control sample recoveries, surrogate spike recoveries, etc.) and acceptance criteria; and corrective actions to be taken in response to problems identified during QC checks; and
 - iv. Discussion of how the permittee will perform data review and reporting results to EPA and GEPA and how the permittee will resolve data quality issues and identify limits on the use of data.
- b. Throughout all field collection and laboratory analyses of samples, the permittee shall use the QA/QC procedures documented in the permittee's QA Manual. If samples are tested by a contract laboratory, the permittee shall ensure that the laboratory has a QA Manual on file. A copy of the permittee's QA Manual shall be retained on the permittee's premises and available for review by EPA or GEPA upon request. The permittee shall review its QA Manual annually and revise it, as appropriate.

B. Twenty-four Hour Reporting of Noncompliance

In accordance with 40 CFR 122.41(l)(6), the permittee shall report any noncompliance which may endanger human health or the environment. An example of noncompliance is an exceedance of an Average Monthly Effluent Limitation. Any information shall be provided orally, within 24 hours from the time the permittee becomes aware of the circumstances, to EPA and GEPA.

The permittee shall notify EPA and GEPA at the following telephone numbers:

Pacific Islands Office, CED-6	Administrator
EPA - Region IX	GEPA
(415) 972-3769	(671) 475-1658

A written submission also shall be provided within five days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; and, if noncompliance has not been corrected, the anticipated time the

noncompliance is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

PART IV – SECTION 401 WATER QUALITY CERTIFICATION CONDITIONS

The following conditions are a paraphrased excerpt from Guam EPA Letter to EPA dated Feb 22, 2010, “Section 401 Water Quality Certification for NPDES (New) for Guam Waterworks Authority, Ugum Surface Water Treatment Facility (Ugum SWTF), 308 Paulino Heights Road Talofoto, GU, NPDES GU020371, 401 WQC 10-02” (Appendix C of the fact sheet).

- A. Facility SOP’s shall address the inventory, storage, and documentation of corrosive acids and strong base oxidizers. Public notice of these chemical’s material safety data sheets shall be required when the quantity thresholds are met.
- B. Certified water treatment plant operators shall be trained on the new proposed treatment processes and pass proficiency tests for these new water treatment process methodologies and ensure initial equipment operations are followed to manufacturer’s operational specifications.
- C. Sludge generated by the permittee shall be analyzed prior to disposal to ensure that there are no other contaminants of concern. The sludge disposal shall be described in the Best Management Practices and SOP’s for the facility and disposed appropriately based on the initial sludge testing analysis. If testing results are clean, no further sludge analysis shall be required.

The permittee is required to comply with all provisions in the Section 401 Water Quality Certification (WQC). All enforcement of and appeals to the WQC provisions and Part VI of this permit are the responsibility of Guam EPA.

PART V - REOPENER PROVISIONS

- A. In accordance with 40 CFR 122 and 124, this permit may be modified by EPA to include effluent limits, monitoring, or other conditions to implement new regulations, including EPA-approved water quality standards; or to address new information indicating the presence of effluent toxicity or the reasonable potential for the discharge to cause or contribute to exceedances of water quality standards.
- B. In accordance with 40 CFR 122 and 124, this permit may be modified to include effluent limitations or permit conditions to address chronic toxicity in the effluent or receiving waterbody, as a result of the discharge; or implement new, revised, or newly interpreted water quality standards applicable to chronic toxicity.
- C. In accordance with 40 CFR 122.62(a)(2) and/or 122.63(b), this permit may be modified, or revoked and reissued based on the results of Endangered Species Act section 7 consultation with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service.

PART VI - STANDARD CONDITIONS

The permittee shall comply with all Standard Conditions included as an attachment to this permit.

PART VII - DEFINITIONS

24-hr Composite. A composite sample means a time-proportioned mixture of not less than eight discrete aliquots obtained at equal time intervals (e.g., 24-hour composite means a minimum of eight samples collected every three hours). The volume of each aliquot shall be directly proportional to the discharge flow rate at the time of sampling, but not less than 100 ml. Sample collection, preservation, and handling shall be performed as described in the most recent edition of 40 CFR 136.3, Table II. Where collection, preservation, and handling procedures are not outlined in 40 CFR 136.3, procedures outlined in the 18th edition of *Standard Methods for the Examination of Water and Wastewater* shall be used.

Average Monthly Effluent Limitation (AML). The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWL). The highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Best Management Practices (BMPs). Best Management Practices or “BMPs” are schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural, and/or managerial practices to prevent or reduce the pollution of waters of the U.S. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may further be characterized as operational, source control, erosion and sediment control, and treatment BMPs.

Daily Discharge. A daily discharge means the discharge of a pollutant, measured during a calendar day or any 24-hour period, that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the average measurement of the pollutant over the day.

Discharge Monitoring Report (DMR). An NPDES form for the reporting of self-monitoring NPDES results by the permittee.

Discrete Sample. Any individual sample collected in less than 15 minutes. The sampling period shall coincide with the period of maximum discharge flow.

Grab Sample. A single individual sample collected at a particular time and place that represents the composition of the discharge only at that time and place. Sample collection, preservation, and handling shall be performed as described in the most recent edition of 40 CFR 136.3, Table

II. Where collection, preservation, and handling procedures are not outlined in 40 CFR 136.3, procedures outlined in the 18th edition of *Standard Methods for the Examination of Water and Wastewater* shall be used.

Maximum Daily Effluent Limitation (MDL). The highest allowable daily discharge of a pollutant or parameter, over a calendar day or 24-hr period. For pollutants with limitations expressed in terms of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day.

Method Detection Limit (MDL). The minimum concentration of an analyte that can be detected with 99 percent confidence that the analyte concentration is greater than zero, as defined by a specific laboratory method in 40 CFR 136. The procedure for determination of a laboratory MDL is in 40 CFR 136, Appendix B.

Minimum Level (ML). The concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed in a specific analytical procedure, assuming that all the method-specific sample weights, volumes, and processing steps have been followed (as defined in EPA's draft *National Guidance for the Permitting, Monitoring, and Enforcement of Water Quality-Based Effluent Limitations Set Below Analytical Detection/Quantitative Levels*, March 22, 1994). If a published method-specific ML is not available, then an interim ML shall be calculated. The interim ML is equal to 3.18 times the published method-specific MDL rounded to the nearest multiple of 1, 2, 5, 10, 20, 50, etc. (When neither an ML nor MDL are available under 40 CFR 136, an interim ML should be calculated by multiplying the best estimate of detection by a factor of 3.18; when a range of detection is given, the lower end value of the range of detection should be used to calculate the ML.) At this point in the calculation, a different procedure is used for metals, than non-metals:

- For metals, due to laboratory calibration practices, calculated MLs may be rounded to the nearest whole number; and
- For non-metals, because analytical instruments are generally calibrated using the ML as the lowest calibration standard, the calculated ML is then rounded to the nearest multiple of $(1, 2, \text{ or } 5) \times 10^n$, where n is zero or an integer. (For example, if an MDL is $2.5 \mu\text{g/L}$, then the calculated ML is: $2.5 \mu\text{g/L} \times 3.18 = 7.95 \mu\text{g/L}$. The multiple of $(1, 2, \text{ or } 5) \times 10^n$ nearest to 7.95 is $1 \times 10^1 = 10 \mu\text{g/L}$, so the calculated ML, rounded to the nearest whole number, is $10 \mu\text{g/L}$.)

NODI(B). The concentration of the pollutant in a sample is not detected. NODI(B) is reported on a DMR when a sample result is less than the laboratory's MDL.

NODI(Q). The concentration of the pollutant in a sample is detected but not quantified. NODI(Q) is reported on a DMR when a sample result is greater than or equal to the laboratory's MDL, but less than the ML.

No Observed Effect Concentration (NOEC). The highest tested concentration of an effluent or test sample whose effect is not statistically different from the control.