



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Northwest Regional Office, 3190 - 160th Ave S.E. • Bellevue, Washington 98008-5452 • (425) 649-7000

July 23, 1998

CERTIFIED MAIL

P 125 952 648

Mr. Ed McDowell, Executive Director
Warm Beach Christian Camps and Conference Center
20800 Marine Drive
Stanwood, WA 98292

Dear Mr. McDowell:

RE: NPDES Permit Issuance
Warm Beach Christian Camps and Conference Center; Permit No. WA-002990-4
Expiration Date: June 30, 2003

Under the provisions of Chapter 90.48 RCW Water Pollution Control Laws as amended and the Federal Water Pollution Control Act (The Clean Water Act) Title 33 United States Code, Section 1251 et seq., the enclosed NPDES Permit No. WA-002990-4 is hereby issued to Warm Beach Christian Camps and Conference Center located at 20800 Marine Drive, Stanwood, WA 98292 (Snohomish County).

The permit authorizes the Permittee to discharge treated secondary and disinfected effluent to a stream tributary to Port Susan subject to the terms and conditions of the permit.

Pursuant to RCW 90.48.465, a permit fee will be assessed. Semi-annual notices for payment will be mailed to you from our office in Olympia.

Any person feeling aggrieved by this NPDES permit may obtain review thereof by application, within 30 days of receipt of this permit, to the Washington Pollution Control Hearings Board, Post Office Box 40903, Olympia, WA 98504-0903. Concurrently, a copy of the application must be sent to the Department of Ecology, Post Office Box 47600, Olympia, WA 98504-7600. These procedures are consistent with the provisions of Chapter 43.21B RCW and the rules and regulations adopted thereunder.

Mr. Ed McDowell, Executive Director
Warm Beach Christian Camps and Conference Center

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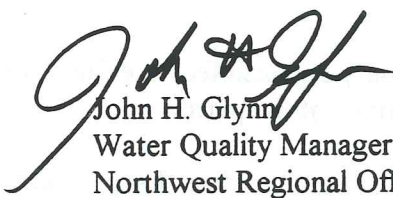
Any appeal must contain the following in accordance with the rules of the hearings board:

- a) The appellant's name and address;
- b) The date and number of the permit appealed;
- c) A description of the substance of the permit, that is the subject of the appeal;
- d) A clear, separate, and concise statement of every error alleged to have been committed;
- e) A clear and concise statement of facts which the requester relies to sustain his or her statements of error; and
- f) A statement setting forth the relief sought.

An application for permit renewal must be made at least 180 days prior to the expiration date of this permit. If at any time during the term of this permit a question should arise regarding the permit or discharge, or if there is a significant change in the discharge or operation, please contact Mike Dawda at (425) 649-7027.

Also enclosed is Ecology's Fact Sheet and a pre-printed Discharge Monitoring Report (DMR) form with a key for codes used. Please note that your permit limits, frequency, and sample type are printed in the shaded areas of you DMR. This is your master copy. Please make copies as needed for your submittals. If no discharge occurs during a monitoring period, you must still submit a DMR with a statement that no discharge occurred.

Sincerely,



John H. Glynn
Water Quality Manager
Northwest Regional Office

JHG:TM:tm

Enclosures

cc: Bev Poston, Permit Fee Unit
Laura Fricke, Municipal Unit Supervisor
Mike Dawda, Facility Manager
Chris Smith, WPLCS
Central Files: WQ 1.1, WA-002990-4

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Permit No. WA-002990-4

Issuance Date: July 23, 1998
Effective Date: August 1, 1998
Expiration Date: June 30, 2003

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
WASTE DISCHARGE PERMIT No. WA-002990-4

State of Washington
DEPARTMENT OF ECOLOGY
Northwest Regional Office
3190 160th Avenue S.E.
Bellevue, Washington 98008-5452

In compliance with the provisions of
The State of Washington Water Pollution Control Law
Chapter 90.48 Revised Code of Washington
And
The Federal Water Pollution Control Act
(The Clean Water Act)
Title 33 United States Code, Section 1251 et seq.

WARM BEACH CHRISTIAN CAMPS AND CONFERENCE
CENTER

20800 Marine Drive
Stanwood, Washington 98292

Plant Location:

20800 Marine Drive
Stanwood, WA 98292

Water Body I.D. No.:

WA-PS-0020

PlantType:

Aerated Stabilization Ponds

Receiving Water:

Stream Tributary to Port Susan

Discharge Location:

Latitude: 48° 11' 19" N

Longitude: 122° 21' 00" W

is authorized to discharge in accordance with the special and general conditions that follow.


John H. Glynn

Water Quality Manager

Northwest Regional Office

Washington State Department of Ecology

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SUMMARY OF SCHEDULED PERMIT REPORT SUBMITTALS

Permit Section	Submittal	Frequency	First Submittal Date
S3.	Discharge Monitoring Report Discharge Summary Report	Monthly, no later than the 15th day of the month following the completed reporting period	
S8.	Engineering Report	1/permit cycle	February 1, 2001
G1.	Notice of Change in Authorization	as necessary	
G7.	Application for permit renewal	1/permit cycle	January 2, 2003

SPECIAL CONDITIONS

S1. DISCHARGE LIMITATIONS

A. Effluent Limitations

All discharges and activities authorized by this permit shall be consistent with the terms and conditions of this permit. The discharge of any of the following pollutants more frequently than, or at a concentration in excess of, that authorized by this permit shall constitute a violation of the terms and conditions of this permit.

Beginning on the effective date of this permit and lasting through the expiration date the Permittee is authorized to discharge municipal wastewater at the permitted location subject to the following limitations:

INTERIM EFFLUENT LIMITATIONS ^a : OUTFALL # 1		
Parameter	Average Monthly	Average Weekly
Biochemical Oxygen Demand ^b (5 day) (BOD ₅)	30 mg/L, 19 lbs/day	45 mg/L, 29 lbs/day
Total Suspended Solids (TSS)	75 mg/L, 47 lbs/day	112 mg/L, 70 lbs/day
Fecal Coliform Bacteria	200/100 MI	400/100 mL
pH ^c	Daily minimum is equal to or greater than 6 and the daily maximum is less than or equal to 9.	
Parameter	Average Monthly	Maximum Daily
Total Residual Chlorine ^{d,f}	-----	2.0 mg/L
FINAL EFFLUENT LIMITATIONS ^a : OUTFALL # 1		
Parameter	Average Monthly	Average Weekly
Biochemical Oxygen Demand ^b (5 day) (BOD ₅)	30 mg/L, 19 lbs/day	45 mg/L, 29 lbs/day
Total Suspended Solids (TSS)	75 mg/L, 47 lbs/day	112 mg/L, 70 lbs/day
pH ^c	Daily minimum is equal to or greater than 6 and the daily maximum is less than or equal to 9.	

FINAL EFFLUENT LIMITATIONS^a: OUTFALL # 1		
Parameter	Average Monthly	Maximum Daily
Fecal Coliform Bacteria	100/100 mL	See footnote ^c below
Total Residual Chlorine ^f	8 ug/L	19 ug/L
Total Ammonia (NH ₃ -N)	1.8 mg/L	3.5 mg/L
Parameter	Average Monthly	Minimum Daily
Dissolved Oxygen	-----	8.0 mg/L
<p>^aInterim effluent limitations are effective until April 30, 2003. Final effluent limitations become effective on May 1, 2003. Please see condition S8. "Compliance Schedule".</p> <p>The average monthly and weekly effluent limitations are based on the arithmetic mean of the samples taken with the exception of fecal coliform, which is based on the geometric mean.</p> <p>^bThe average monthly effluent concentration for BOD₅ shall not exceed 30 mg/L or 15 percent of the monthly average influent concentration, whichever is more stringent.</p> <p>^cIndicates the range of permitted values. When pH is continuously monitored, excursions between 5.0 and 6.0, or 9.0 and 10.0 shall not be considered violations provided no single excursion exceeds 60 minutes in length and total excursions do not exceed 7 hours and 30 minutes per month. Any excursions below 5.0 and above 10.0 are violations if such values are attributable to inorganic chemical addition to the treatment process or to industrial contribution(s). The instantaneous maximum and minimum pH shall be reported monthly.</p> <p>^dTotal Residual Chlorine shall be maintained which is sufficient to attain the interim Fecal Coliform limits specified above. Chlorine concentrations in excess of that necessary to reliably achieve the limits shall be avoided.</p> <p>^eNo more than 10 percent of all samples obtained for calculating the monthly geometric mean value shall exceed 200 colonies/100 mL.</p> <p>^fThe maximum daily value for Total Residual Chlorine is the maximum of the daily values during a calendar month. The daily value is defined as the arithmetic mean of the sample measurements taken during a calendar day.</p> <p>The average monthly value for Total Residual Chlorine is the arithmetic mean of the daily values during a calendar month.</p>		

S2. MONITORING REQUIREMENTS

A. Monitoring Schedule

Table 1: Compliance Monitoring

Category	Parameter	Units	Minimum Sampling Frequency	Sample Type
Wastewater Influent	Flow	gpd	continuous	measurement
"	BOD ₅	mg/l	1/week	24-hr composite
Wastewater Effluent	Flow	gpd	continuous	measurement
"	BOD ₅	Mg/l	1/week	24-hr composite
"	TSS	mg/l	1/week	24-hr composite
"	Total Residual Chlorine	mg/l or ug/l	5/week	grab
"	Fecal Coliform (sampled concurrently with a chlorine residual sample)	#/100 mL	1/week	grab
"	pH	Standard Units	5/week	grab
"	Dissolved Oxygen (DO) ^a	mg/l	2/week	grab
"	Total Ammonia (NH ₃ -N) ^a	mg/l	1/week	grab

^aThe Permittee shall measure DO and total NH₃-N in the wastewater effluent beginning May 1, 2003.

Table 2: Process Monitoring

Category	Parameter	Units	Minimum Sampling Frequency	Sample Type
Wastewater Influent	TSS	mg/l	1/week	24-hr composite
Lagoon Cells	pH	Standard Units	1/week	grab
"	Dissolved Oxygen (DO)	mg/l	2/week	grab
"	Temperature	° C	1/week	grab
"	Sludge Depth ^a	Inch	1/year (beginning year 1998)	measurement

^aSludge depth shall be measured in at least 6 locations in each lagoon cell, equally distributed across the lagoon bottoms. The depth measurements in each cell shall be reported on a diagram showing sample locations and sludge depth.

B. Sampling and Analytical Procedures

Samples and measurements taken to meet the requirements of this permit shall be representative of the volume and nature of the monitored parameters, including representative sampling of any unusual discharge or discharge condition, including bypasses, upsets and maintenance-related conditions affecting effluent quality.

Sampling and analytical methods used to meet the water and wastewater monitoring requirements specified in this permit shall conform to the latest revision of the *Guidelines Establishing Test Procedures for the Analysis of Pollutants* contained in 40 CFR Part 136 or to the latest revision of *Standard Methods for the Examination of Water and Wastewater* (APHA), unless otherwise specified in this permit or approved in writing by the Department of Ecology (Department).

C. Flow Measurement

Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the quantity of monitored flows. The devices shall be installed, calibrated, and maintained to ensure that the accuracy of the measurements are consistent with the accepted industry standard for that type of device. Frequency of calibration shall be in conformance with manufacturer's recommendations and at a minimum frequency of at least one calibration per year. Calibration records shall be maintained for at least three years.

D. Laboratory Accreditation

All monitoring data required by the Department shall be prepared by a laboratory registered or accredited under the provisions of, *Accreditation of Environmental Laboratories*, Chapter 173-50 WAC. Flow, temperature, pH, and internal process control parameters are exempt from this requirement. pH shall be accredited if the laboratory must otherwise be registered or accredited.

S3. REPORTING AND RECORDKEEPING REQUIREMENTS

The Permittee shall monitor and report in accordance with the following conditions. The falsification of information submitted to the Department shall constitute a violation of the terms and conditions of this permit.

A. Reporting

The first monitoring period begins on the effective date of the permit. Monitoring results shall be submitted monthly. Monitoring data obtained during the previous month shall be summarized and reported on a form provided, or otherwise approved, by the Department, and be received no later than the 15th day of the month following the completed reporting period, unless otherwise specified in this permit. The report(s) shall be sent to the Department of Ecology, Northwest Regional Office, 3190 - 160th Avenue SE, Bellevue, Washington 98008-5452.

In addition to the monthly report, a monthly summary report form (EPA No. 3320-1) shall be received no later than the 15th day of the following month. This report is limited to the parameters specified in condition S1.A. and the flow.

B. Records Retention

The Permittee shall retain records of all monitoring information for a minimum of three years. Such information shall include all calibration and maintenance records and all original recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit. This period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by the Permittee or when requested by the Director.

C. Recording of Results

For each measurement or sample taken, the Permittee shall record the following information: (1) the date, exact place, method, and time of sampling; (2) the individual who performed the sampling or measurement; (3) the dates the analyses were performed; (4) who performed the analyses; (5) the analytical techniques or methods used; and (6) the results of all analyses.

D. Additional Monitoring by the Permittee

If the Permittee monitors any pollutant more frequently than required by this permit using test procedures specified by Condition S2. of this permit, then the results of this monitoring shall be included in the calculation and reporting of the data submitted in the Permittee's self-monitoring reports.

E. Noncompliance Notification

In the event the Permittee is unable to comply with any of the permit terms and conditions due to any cause, the Permittee shall:

1. Immediately take action to stop, contain, and cleanup unauthorized discharges or otherwise stop the violation, and correct the problem;
2. Repeat sampling and analysis of any violation and submit the results to the Department within 30 days after becoming aware of the violation;
3. Immediately notify the Department of the failure to comply; and
4. Submit a detailed written report to the Department within thirty days (5 days for upsets and bypasses), unless requested earlier by the Department. The report should describe the nature of the violation, corrective action taken and/or planned, steps to be taken to prevent a recurrence, results of the resampling, and any other pertinent information.

Compliance with these requirements does not relieve the Permittee from responsibility to maintain continuous compliance with the terms and conditions of this permit or the resulting liability for failure to comply.

F. Reporting - Shellfish Protection

Unauthorized discharges such as collection system overflows, plant bypasses, or failure of the disinfection system, shall be reported immediately to the Department of Ecology and the Department of Health, Shellfish Program. The Department of Ecology's Northwest Regional Office 24-hr number is 206-649-7000 and the Department of Health's Shellfish 24-hr number is 360-753-5992.

S4. **FACILITY LOADING**

A. Design Criteria

The following flow design criteria for the permitted treatment facility shall not be exceeded:

Average flow for the maximum month: 75,000 GPD

B. Plans for Maintaining Adequate Capacity

When the actual flow reaches 85 percent of the design criteria in S4.A. for three consecutive months, or when the projected increases would reach design capacity within five years, whichever occurs first, the Permittee shall submit to the Department, a plan and a schedule for continuing to maintain capacity at the facility sufficient to achieve the effluent limitations and other conditions of this permit. This plan shall address any of the following actions or any others necessary to meet this objective.

1. Analysis of the present design including the introduction of any process modifications that would establish the ability of the existing facility to achieve the effluent limits and other requirements of this permit at specific levels in excess of the existing design criteria specified in paragraph A. above.
2. Reduction or elimination of excessive infiltration and inflow of uncontaminated ground and surface water into the sewer system.
3. Limitation on future sewer extensions or connections or additional wasteloads.
4. Modification or expansion of facilities necessary to accommodate increased flow or wasteload.
5. Reduction of industrial or commercial flows or wasteloads to allow for increasing sanitary flow or wasteload.

The plan must meet the requirements of WAC 173-240-060, "Engineering Report," and be approved by the Department prior to any construction. The plan shall specify any contracts, ordinances, methods for financing, or other arrangements necessary to achieve this objective.

C. Notification of New or Altered Sources

The Permittee shall submit written notice to the Department whenever any new discharge or increase in volume or change in character of an existing discharge into the sewer is proposed which: (1) would interfere with the operation of, or exceed the design capacity of, any portion of the collection or treatment system; (2) is not part of an approved general sewer plan or approved plans and specifications; or would be subject to pretreatment standards under 40 CFR Part 403 and Section 307(b) of the Clean Water Act. This notice shall include an evaluation of the system's ability to adequately transport and treat the added flow and/or wasteload.

S5. OPERATION AND MAINTENANCE

The Permittee shall at all times be responsible for the proper operation and maintenance of any facilities or systems of control installed to achieve compliance with the terms and conditions of the permit.

A. Certified Operator

An operator certified for at least a Class I plant by the State of Washington shall be in responsible charge of the day-to-day operation of the wastewater treatment plant. An operator certified for at least a Class I plant shall be in charge during all regularly scheduled shifts.

B. O & M Program

The Permittee shall institute an adequate operation and maintenance program for their entire sewage system. Maintenance records shall be maintained on all major electrical and mechanical components of the treatment plant, as well as the sewage system and pumping stations. Such records shall clearly specify the frequency and type of maintenance recommended by the manufacturer and shall show the frequency and type of maintenance performed. These maintenance records shall be available for inspection at all times.

C. Short-term Reduction

If the Permittee contemplates a reduction in the level of treatment that would cause a violation of permit discharge limitations on a short-term basis for any reason, and such reduction cannot be avoided, the Permittee shall give written notification to the Department, if possible, 30 days prior to such activities, detailing the reasons for, length of time of, and the potential effects of the reduced level of treatment. This notification does not relieve the Permittee of their obligations under this permit.

D. Electrical Power Failure

The Permittee is responsible for maintaining adequate safeguards to prevent the discharge of untreated wastes or wastes not treated in accordance with the requirements of this permit during electrical power failure at the treatment plant and/or sewage lift stations either by means of alternate power sources, standby generator, or retention of inadequately treated wastes. The Permittee shall maintain Reliability Class II (EPA 430-99-74-001) at the wastewater treatment plant, which requires at minimum, primary sedimentation and disinfection.

E. Prevent Connection of Inflow

The Permittee shall strictly enforce their sewer ordinances and not allow the connection of new inflow sources (roof drains, foundation drains, etc.) to the sanitary sewer system.

F. Bypass Procedures

The Permittee shall immediately notify the Department of any spill, overflow, or bypass from any portion of the collection or treatment system.

The bypass of wastes from any portion of the treatment system is prohibited unless one of the following conditions (1, 2, or 3) applies:

1. Unavoidable Bypass -- Bypass is unavoidable to prevent loss of life, personal injury, or severe property damage. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass.

If the resulting bypass from any portion of the treatment system results in noncompliance with this permit the Permittee shall notify the Department in accordance with condition S3.E "Noncompliance Notification."

2. Anticipated Bypass That Has the Potential to Violate Permit Limits or Conditions -- Bypass is authorized by an administrative order issued by the Department. The Permittee shall apply to the Department for the administrative order at least 30 days before the planned date of bypass. The written submission shall contain (1) a description of the bypass and its cause; (2) an analysis of all known alternatives which would eliminate, reduce, or mitigate the need for bypassing; (3) a cost-effectiveness analysis of alternatives including comparative resource damage assessment; (4) the minimum and maximum duration of bypass under each alternative; (5) a recommendation as to the preferred alternative for conducting the bypass; (6) the projected date of bypass initiation; (7) a statement of compliance with SEPA; (8) a request for a water quality modification, as provided for in WAC 173-201A-110, and (9) steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass.

For probable construction bypasses, the need to bypass is to be identified as early in the planning process as possible. The analysis required above shall be considered during preparation of the engineering report or facilities plan and plans and specifications and shall be included to the extent practical. In cases where the probable need to bypass is determined early, continued analysis is necessary up to and including the construction period

in an effort to minimize or eliminate the bypass. The Department will consider the following prior to issuing an administrative order:

- a. If the bypass is necessary to perform construction or maintenance-related activities essential to meet the requirements of the permit.
- b. If there are feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, maintenance during normal periods of equipment down time, or transport of untreated wastes to another treatment facility.
- c. If the bypass is planned and scheduled to minimize adverse effects on the public and the environment.

After consideration of the above and the adverse effects of the proposed bypass and any other relevant factors, the Department will approve or deny the request. The public shall be notified and given an opportunity to comment on bypass incidents of significant duration, to the extent feasible. Approval of a request to bypass will be by administrative order issued by the Department under RCW 90.48.120.

3. Bypass For Essential Maintenance Without the Potential to Cause Violation of Permit Limits or Conditions -- Bypass is authorized if it is for essential maintenance and does not have the potential to cause violations of limitations or other conditions of the permit, or adversely impact public health as determined by the Department prior to the bypass.

G. Operations and Maintenance Manual

The approved Operations and Maintenance Manual shall be kept available at the treatment plant and all operators shall follow the instructions and procedures of this Manual.

S6. PRETREATMENT

A. Specific Prohibitions

In accordance with 40 CFR 403.5(b), the following nondomestic discharges shall not be discharged into the Permittee's sewerage treatment system.

1. Pollutants that create a fire or explosion hazard in the Treatment Works (including, but not limited to waste streams with a closed cup flashpoint of less than 140 degrees Fahrenheit or 60 degrees Centigrade using the test methods specified in 40 CFR 261.21).

2. Pollutants that will cause corrosive structural damage to the Treatment Works, but in no case discharges with pH lower than 5.0 standard units, unless the Treatment Works are specifically designed to accommodate such discharges.
3. Solid or viscous pollutants in amounts that could cause obstruction to the flow in sewers or otherwise interfere with the operation of the Treatment Works.
4. Any pollutant, including oxygen demanding pollutants, (BOD, etc.) released in a discharge at a flow rate and/or pollutant concentration which will cause interference with the Treatment Works.
5. Heat in amounts that will inhibit biological activity in the Treatment Works resulting in interference, but in no case heat in such quantities such that the temperature at the Treatment Works exceeds 40°C (104°F) unless the Department, upon request of the Permittee, approves, in writing, alternate temperature limits.
6. Petroleum oil, nonbiodegradable cutting oil, or products of mineral origin in amounts that will cause interference or pass through.
7. Pollutants which result in the presence of toxic gases, vapors, or fumes within the Treatment Works in a quantity which may cause acute worker health and safety problems.
8. Any trucked or hauled pollutants, except at discharge points designated by the Permittee.

S7. RESIDUAL SOLIDS

Residual solids include screenings, grit, scum, primary sludge, waste activated sludge and other solid waste. The Permittee shall store and handle all residual solids in such a manner so as to prevent their entry into state ground or surface waters. The Permittee shall not discharge leachate from residual solids to state surface or ground waters.

S8. COMPLIANCE SCHEDULE

No later than May 1, 2003, the Permittee shall comply with the final effluent limits for Fecal Coliform Bacteria, Total Residual Chlorine, Total Ammonia (NH₃-N) and Dissolved Oxygen, specified in Section S1.A. of this permit. The Permittee shall prepare an engineering report that includes proposal to construct wastewater treatment facilities capable of achieving the final effluent limits for these parameters. The report shall be prepared in accordance with WAC 173-240-060, "Engineering Report", and shall be submitted to the Department for review and approval by February 1, 2001. Construction of wastewater treatment facilities capable of achieving the final effluent limits shall be completed by February 1, 2003.

GENERAL CONDITIONS

G1. SIGNATORY REQUIREMENTS

All applications, reports, or information submitted to the Department shall be signed and certified.

- A. All permit applications shall be signed by either a principal executive officer or a ranking elected official.
- B. All reports required by this permit and other information requested by the Department shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - 1. The authorization is made in writing by a person described above and submitted to the Department, and
 - 2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)
- C. Changes to authorization. If an authorization under paragraph B.2. above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of B.2. must be submitted to the Department prior to or together with any reports, information, or applications to be signed by an authorized representative.
- D. Certification. Any person signing a document under this section shall make the following certification:

"I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

G2. RIGHT OF ENTRY

The Permittee shall allow an authorized representative of the Department, upon the presentation of credentials and such other documents as may be required by law:

- A. To enter upon the premises where a discharge is located or where any records must be kept under the terms and conditions of this permit;

- B. To have access to and copy at reasonable times any records that must be kept under the terms of the permit;
- C. To inspect at reasonable times any monitoring equipment or method of monitoring required in the permit;
- D. To inspect at reasonable times any collection, treatment, pollution management, or discharge facilities; and
- E. To sample at reasonable times any discharge of pollutants.

G3. PERMIT ACTIONS

This permit shall be subject to modification, suspension, or termination, in whole or in part by the Department for any of the following causes:

- A. Violation of any permit term or condition;
- B. Obtaining a permit by misrepresentation or failure to disclose all relevant facts;
- C. A material change in quantity or type of waste disposal;
- D. A material change in the condition of the waters of the state; or
- E. Nonpayment of fees assessed pursuant to RCW 90.48.465.

The Department may also modify this permit, including the schedule of compliance or other conditions, if it determines good and valid cause exists, including promulgation or revisions of regulations or new information.

G4. REPORTING A CAUSE FOR MODIFICATION

The Permittee shall submit a new application, or a supplement to the previous application, along with required engineering plans and reports, whenever a material change in the quantity or type of discharge is anticipated which is not specifically authorized by this permit. This application shall be submitted at least 60 days prior to any proposed changes. Submission of this application does not relieve the Permittee of the duty to comply with the existing permit until it is modified or reissued.

G5. PLAN REVIEW REQUIRED

Prior to constructing or modifying any wastewater control facilities, an engineering report and detailed plans and specifications shall be submitted to the Department for approval in accordance with Chapter 173-240 WAC. Engineering reports, plans, and specifications should be submitted at least 180 days prior to the planned start of construction. Facilities shall be constructed and operated in accordance with the approved plans.

G6. COMPLIANCE WITH OTHER LAWS AND STATUTES

Nothing in the permit shall be construed as excusing the Permittee from compliance with any applicable federal, state, or local statutes, ordinances, or regulations.

G7. DUTY TO REAPPLY

The Permittee must apply for permit renewal at least 180 days prior to the specified expiration date of this permit.

G8. REMOVED SUBSTANCES

Collected screenings, grit, solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall not be resuspended or reintroduced to the final effluent stream for discharge to state waters.

G9. TOXIC POLLUTANTS

If any applicable toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Clean Water Act for a toxic pollutant and that standard or prohibition is more stringent than any limitation upon such pollutant in the permit, the Department shall institute proceedings to modify or revoke and reissue the permit to conform to the new toxic effluent standard or prohibition.

G10. OTHER REQUIREMENTS OF 40 CFR

All other requirements of 40 CFR 122.41 and 122.42 are incorporated in this permit by reference.

G11. ADDITIONAL MONITORING

The Department may establish specific monitoring requirements in addition to those contained in this permit by administrative order or permit modification.

G12. PAYMENT OF FEES

The Permittee shall submit payment of fees associated with this permit as assessed by the Department. The Department may revoke this permit if the permit fees established under Chapter 173-224 WAC are not paid.

G13. PENALTIES FOR VIOLATING PERMIT CONDITIONS

Any person who is found guilty of willfully violating the terms and conditions of this permit shall be deemed guilty of a crime, and upon conviction thereof shall be punished by a fine of up to ten thousand dollars and costs of prosecution, or by imprisonment in the discretion of the court. Each day upon which a willful violation occurs may be deemed a separate and additional violation.

Any person who violates the terms and conditions of a waste discharge permit shall incur, in addition to any other penalty as provided by law, a civil penalty in the amount of up to ten thousand dollars for every such violation. Each and every such violation shall be a separate and distinct offense, and in case of a continuing violation, every day's continuance shall be and be deemed to be a separate and distinct violation.

*FACT SHEET FOR NPDES PERMIT WA-002990-4
WARM BEACH WASTEWATER TREATMENT PLANT*

**FACT SHEET FOR NPDES PERMIT WA-002990-4
WARM BEACH WASTEWATER TREATMENT PLANT**

SUMMARY

The Warm Beach Christian Camps and Conference Center is located on a bluff north of the unincorporated community of Warm Beach, overlooking Port Susan Bay in Snohomish County. The camp was developed in the late 1950's and offers accommodation to public and school groups seeking a retreat and conference/recreation site.

The one-acre stabilization lagoon for wastewater treatment, as well as the sewer collection system for the camp was constructed in the early 1960's when the center was first being developed. The existing wastewater treatment facility at the camp consists of biological treatment in two aerated lagoon cells followed by disinfection with calcium hypochlorite solution. The secondary treated wastewater is discharged to an unnamed stream tributary to Port Susan.

The camp has applied for renewal of its NPDES Permit to continue to discharge secondary treated wastewater to the stream tributary to Port Susan. The proposed permit specifies technology-based (secondary treatment) effluent limits for conventional pollutants on an interim basis. The final limits proposed in the permit for conventional pollutants are same (technology-based). The final limits proposed for fecal coliform bacteria, chlorine, ammonia and dissolved oxygen are water quality-based to achieve compliance with the water quality standards of the receiving stream.

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INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System of permits (NPDES permits), which is administered by the Environmental Protection Agency (EPA). The EPA has delegated responsibility to administer the NPDES permit program to the State of Washington on the basis of chapter 90.48 RCW which defines the Department of Ecology's authority and obligations in administering the wastewater discharge permit program.

The regulations adopted by the State include procedures for issuing permits (chapter 173-220 WAC), technical criteria for discharges from municipal wastewater treatment facilities (chapter 173-221 WAC) and water quality criteria for surface and ground waters (chapters 173-201A and 200 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least thirty days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see Appendix A--Public Involvement of the fact sheet for more detail on the Public Notice procedures).

This fact sheet has been reviewed by the Permittee and errors in fact have been corrected. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments (Appendix D) will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Changes to the permit will be addressed in Appendix D--Response to Comments.

GENERAL INFORMATION	
Applicant	Warm Beach Christian Camps and Conference Center
Facility Name and Address	Warm Beach WWTP, 20800 Marine Drive, Stanwood, WA 98292
Type of Treatment:	Aerated Stabilization Ponds
Discharge Location	Stream Tributary to Port Susan Latitude: 48° 11' 19" N Longitude: 122° 21' 00" W.
Water Body ID Number	WA-PS-0020

BACKGROUND INFORMATION

HISTORY

The Warm Beach Christian Camps and Conference Center is located on a bluff north of the unincorporated community of Warm Beach, overlooking Port Susan Bay in Snohomish County.

The camp was developed in the late 1950's and offers accommodation to public and school groups seeking a retreat and conference/recreation site. The camp provides camping/RV facilities as well as cabins and youth camp bungalows to the visitors. A swimming pool, horseback rides, miniature golf facilities and other recreational facilities are offered by the camp. The camp maintains some cabins for the facility staff. A senior community southwest of the camp and conference center includes mobile home park site, assisted living units, a health care center and multiplex apartments. The camp and the senior community do not share any utilities with the unincorporated community of Warm Beach.

The one-acre stabilization lagoon for wastewater treatment, as well as the sewer collection for the camp was constructed in the early 1960's when the center was first being developed. In 1974, a mechanical floating aerator was added to improve the efficiency of the lagoon. A chlorine contact chamber with chlorine feed facility was added at this time for disinfection of lagoon effluent. In 1995, a curtain was installed along the lagoon periphery to prevent short-circuiting from inlet to the outlet structure of the lagoon. At that time, the effluent disinfection system was changed from chlorine gas cylinders to a liquid hypochlorinator. The most recent improvement to the system occurred in July and August 1997. The lagoon was divided into two separate cells with mechanical surface aerators in each cell. In addition, a submergible pump was installed near the outlet to return settled sludge back to the first cell. The curtain arrangement was also changed so that only a portion of the periphery near the lagoon outlet is separated by the curtain. These modifications were implemented to be able to improve reliability in meeting the effluent limitations. Currently, some developed areas on the campsite continue to utilize septic tanks and drainfields.

WASTEWATER SOURCES

Wastewater tributary to the treatment facility consists of domestic sewage from various lodging and boarding facilities at the campsite.

DESCRIPTION OF THE FACILITY

TREATMENT PROCESSES

The wastewater treatment consists of influent flow measurement with a Parshall flume, biological treatment in two aerated lagoon cells followed by disinfection with calcium hypochlorite solution, and effluent flow measurement with a V-notch weir.

The Permittee is currently evaluating various wastewater treatment alternatives, including advanced secondary treatment systems followed by effluent utilization, and moving the discharge point to different receiving waters.

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DISCHARGE OUTFALL

Secondary treated and disinfected effluent is discharged from the facility via a 6-inch outfall pipe into an unnamed stream adjacent to the lagoon. The receiving stream drains to an impoundment inside the Port Susan dike several hundred feet downstream of the discharge point. A similar second stream that receives runoff from the surrounding agricultural area also discharges to this impoundment. Wastewater from the impoundment drains by gravity to Port Susan tidal flats at low tide. The wastewater is pumped into Port Susan at high tide.

RESIDUAL SOLIDS

Biosolids generated from wastewater treatment are stored in the lagoon cells for stabilization, as it is normally done in the processes involving lagoon treatment. When biosolids in the lagoon interfere with the wastewater treatment, they are removed from the system, and utilized or disposed off in accordance with pertinent regulations.

PERMIT STATUS

The existing permit for this facility was issued on November 29, 1974. The permit expired on November 29, 1979. The Department in May 1980 drafted a new permit. The Department conducted a public hearing for the new permit on September 16, 1980. Due to overwhelming response at the public hearing and the administrative backlog on other permits, this new permit did not get issued. It should be noted that Federal and State regulations revised the total suspended solids (TSS) effluent limits for lagoon facilities in 1977. On September 27, 1994, the Department issued an Administrative Order to the Permittee to reflect these new TSS limits.

Under Ecology's Watershed Basin Planning Approach, the Department is in the process of renewing wastewater discharge permits in the Stillaguamish River drainage basin this fiscal year. The Permittee submitted an application for permit renewal on December 31, 1996. The facility is currently operating under the terms and conditions of the expired permit and the Administrative Order No. DE 94WQ-N374.

EXISTING EFFLUENT LIMITS

The existing permit placed effluent limitations on 5-day Biochemical Oxygen Demand (BOD₅), Total Suspended Solids (TSS), pH, and fecal coliform bacteria. The Administrative Order issued by the Department on September 27, 1994 reflects the TSS limits as revised by Federal and State regulations in 1977. The effluent limitations for compliance purposes as stipulated in the existing permit and the order are as follows:

The monthly average quantity of effluent discharged shall not exceed 0.075 MGD.

Parameter	Effluent limitations	
	Monthly Average	Weekly Average
Biochemical Oxygen Demand (5 day)	30 mg/L, 20 lbs/day	45 mg/L, 29 lbs/day

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Parameter	Effluent limitations	
	Monthly Average	Weekly Average
Suspended Solids	75 mg/L, 47 lbs/day	110 mg/L, 69 lbs/day
Fecal Coliform Bacteria	200/100 mL	400/100 mL
pH	shall not be outside the range 6.5 - 8.5	

SUMMARY OF INSPECTIONS

The facility received its last Class I inspection on April 18, 1997. The inspection reports are filed in the record section at the Northwest Regional Office of the Department.

SUMMARY OF COMPLIANCE WITH THE EXISTING PERMIT

The facility's compliance record was evaluated for the months January 1993 through September 1997 based on the Discharge Monitoring Reports (DMRs) submitted to the Department. During this period, the facility was frequently unable to comply with the effluent BOD and TSS concentration limits.

The previous permit for the facility was issued in November 1974 and expired in November 1979. The TSS limits stipulated in that permit were 30 mg/L monthly average and 45 mg/L weekly average. In 1977, Federal and State regulations revised the TSS effluent limits for lagoon facilities. The revised limits are 75 mg/L monthly average and 112 mg/L weekly average (1.5 x monthly average). A new permit was drafted in 1980 by the Department with the revised TSS limits of 75 mg/L monthly average and 110 mg/L weekly average. However, this permit was never issued by the Department due to administrative backlog. As stated earlier, on September 27, 1994, the Department issued an Administrative Order to the Permittee reflecting the 1977 changes in TSS limits. Since January 1993, the facility has exceeded the revised TSS limits only once.

During this period of record evaluation, the facility was out of compliance with the BOD mass emission limits for a total of five times. These violations were related to high BOD concentrations in the effluent.

It should be noted that the Permittee has been working diligently to bring the facility back into compliance with the permit limits. As stated earlier in the History section, the Permittee has been making improvements to the facility in order to improve its reliability in meeting the effluent limitations. The improvements made to the facility 1995 failed to consistently achieve the effluent limits. The most recent improvements to the system occurred in July and August 1997. The monitoring reports subsequent to this improvement show that the facility has not come back into consistent compliance with the BOD limits. As noted earlier, the Permittee is currently evaluating various wastewater treatment alternatives, including advanced secondary treatment systems followed by effluent utilization, and moving the discharge point to different receiving waters.

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The following table summarizes the compliance record based on the monitoring reports submitted to the Department for the months January 1993 through September 1997.

Parameter	Compliance Record
Flow	Facility operated below the permit limit through this period.
Effluent BOD: Monthly Average Limit: Weekly Average Limit:	18 violations of 30 mg/L limit during this period. 19 violations of 45 mg/L limit during this period.
Effluent TSS (Please see note above regarding the revised 75/110 limits): Monthly Average Limit: Weekly Average Limit:	15 violations of 30 mg/L limit during this period. No violation of 75 mg/L limit during this period. 13 violations of 45 mg/L limit during this period. 1 violation of 110 mg/L limit during this period.
Effluent Fecal Coliform: Monthly Average Limit: Weekly Average Limit:	One violation of 200/100 mL limit during this period. Two violations of 400/100 mL limit during this period.
Effluent pH:	Facility operated within the permit limits through this period.

PROPOSED PERMIT LIMITATIONS AND CONDITIONS

Federal and State regulations require that effluent limitations set forth in a NPDES permit must be either technology- or water quality-based. Technology-based limitations for municipal discharges are set by regulation (40 CFR 133, and chapters 173-220 and 173-221 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (chapter 173-201A WAC), Ground Water Standards (chapter 173-200 WAC) or Sediment Quality Standards (chapter 173-204 WAC). The most stringent of these types of limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

DESIGN CRITERIA

In accordance with Washington Administrative Code (WAC) 173-220-130(1)(a), effluent limitations shall not be less stringent than those based upon the design criteria for the facility, which are contained in approved engineering plans, reports, or approved revisions. Also, in accordance with WAC 173-220-150 (1)(g), flows or waste loadings shall not exceed approved design criteria.

The design criteria for this treatment facility are taken from the following sources: (i) The existing permit specifies the maximum design flow 75,000 gallons per day (gpd), (ii) Capacity

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calculations were performed by the Department's permit writing staff during drafting of the permit in 1979. The calculated capacity of the lagoon based on the Department's "Criteria for Sewage Works Design" was 75,000 gpd, and (iii) Engineering Report for Proposed Modifications of Sanitary Sewage Collection and Treatment Facilities for Warm Beach Camp, Lee Johnson Consultants, Inc., September 13, 1984. This report listed the 1974 design flow as 73,000 gpd. This is very close to the permitted design flow of 75,000 gpd.

The design criteria specified in the proposed permit is as follows:

Parameter	Design Quantity
Monthly average flow (max month)	75,000 GPD

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

Municipal wastewater treatment plants are a category of discharger for which technology-based effluent limits have been promulgated by federal and state regulations. These effluent limitations are given in the Code of Federal Regulations (CFR) 40 CFR Part 133 (federal) and in chapter 173-221 WAC (state). These regulations are performance standards that constitute all known available and reasonable methods of prevention, control, and treatment for municipal wastewater.

The following technology-based limits for pH, fecal coliform, BOD₅, and TSS are taken from chapter 173-221 WAC are:

Parameter	Limit
pH	shall be within the range of 6 to 9 standard units.
Fecal Coliform Bacteria	Monthly Geometric Mean = 200 colonies/100 mL Weekly Geometric Mean = 400 colonies/100 mL
BOD ₅ (concentration)	Average Monthly Limit is the most stringent of the following: - 30 mg/L - may not exceed fifteen percent (15%) of the average influent concentration Average Weekly Limit = 45 mg/L (1.5 x Monthly Average Limit)
TSS (concentration)	Average Monthly Limit = 75 mg/L Average Weekly Limit = 112 mg/L (1.5 x Monthly Average Limit)

The following technology-based mass limits are based on WAC 173-220-130(3)(b) and 173-221-030(11)(b).

Monthly average effluent mass loadings (lbs/day) were calculated as maximum monthly design flow (0.075 MGD) x Concentration limit (mg/L) x 8.34 (conversion factor) = mass limit (lbs/day).

Weekly average effluent mass loadings (lbs/day) were calculated as 1.5 x monthly loading = mass limit (lbs/day).

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PERFORMANCE-BASED INTERIM EFFLUENT LIMITATIONS FOR CHLORINE

The interim effluent limit for chlorine residual is specified in Condition S1.A. of the proposed permit. This limit is based on the facility's performance during the record evaluation period from January 1993 through September 1997.

Lagoon wastewater treatment systems (such as the one at the Warm Beach Camp) tend to produce excessive algae due to long detention times in the treatment system. Due to the presence of algae in the effluent, the Federal and State regulations were revised to increase TSS limits in the effluent from lagoons. Generally, the algae problem gets worse during warm summer months. Due to high suspended (mostly algal) solids in the effluent, the chlorine disinfection system is not as effective in killing fecal coliform bacteria at low chlorine dosage. Since the effluent has to comply with at least technology-based permit limits for fecal coliform, high doses of chlorine may be required at times to achieve these limits. Based on the last five years of performance, the facility should be able to achieve (most of the time) the permitted fecal coliform limits with chlorine residual of a daily maximum of 2.0 mg/L. This is the interim limit proposed in the permit. Since chlorine is a toxicant, the permit requires that chlorine be added only to the extent needed to attain the permitted fecal coliform limits. More stringent water quality-based limits for chlorine are proposed as final limits in the permit. The final chlorine limits are discussed below under Toxic Pollutants under the section "Consideration of Surface Water Quality-Based Limits for Numeric Criteria". The proposed performance-based interim chlorine limit is shown in the following table.

Parameter	Limit
Chlorine Residual	2.0 mg/L (maximum Daily)

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established Surface Water Quality Standards. The Washington State Surface Water Quality Standards (chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin-wide total maximum daily loading study (TMDL).

NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the State of Washington's Water Quality Standards for Surface Waters (chapter 173-201A WAC). They specify the levels of pollutants allowed in a receiving water while remaining protective of aquatic life. Numerical criteria set forth in the Water Quality Standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

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NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the State of Washington.

CRITICAL CONDITIONS

Surface water quality-based limits are derived for the waterbody's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota.

MIXING ZONES

The Water Quality Standards allow the Department of Ecology to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known, available, and reasonable methods of prevention and control (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100.

In accordance with WAC 173-201A-100, the maximum size of a mixing zone in rivers and streams shall comply with the following:

Mixing zones, singularly or in combination with other mixing zones, shall comply with the most restrictive combination of the following:

- not extend in a downstream direction for a distance from the discharge port(s) greater than three hundred feet plus the depth of water over the discharge port(s), or extend upstream for a distance of over one hundred feet;
- not utilize greater than twenty-five percent of the flow; and
- not occupy greater than twenty-five percent of the width of the waterbody.

In accordance with WAC 173-201A-100, the maximum size of a zone of acute criteria exceedance in rivers and streams shall comply with the following:

A zone where acute criteria may be exceeded shall singularly or in combination with other such zones comply with the most restrictive combination of the following:

- not extend beyond 10 percent of the distance towards the upstream and downstream boundaries of an authorized mixing zone, as measured independently from the discharge port(s);

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- not utilize greater than two and one-half percent of the flow; and
- not occupy greater than twenty-five percent of the width of the waterbody.

DESCRIPTION OF THE RECEIVING WATER

The facility discharges to an unnamed stream (tributary to Port Susan) which is designated as a Class A Fresh Water in the vicinity of the outfall.

Water quality of this class shall meet or exceed the requirements for all or substantially all uses which are:

water supply (domestic, industrial, agricultural); stock watering; fish migration; fish rearing, spawning and harvesting; wildlife habitat; primary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation.

SURFACE WATER QUALITY CRITERIA

Applicable criteria are defined in chapter 173-201A WAC for aquatic biota. Criteria for this receiving water are summarized below:

Parameter	Water Quality Criteria
Fecal Coliforms	100 colonies/100 mL maximum geometric mean
Dissolved Oxygen	8 mg/L minimum
Temperature	18 degrees Celsius maximum
pH	6.5 to 8.5 standard units
Turbidity	less than 5 NTU above background
Toxics	No toxics in toxic amounts

The Permittee from February 1996 to January 1997 conducted a one-year monitoring study of the receiving stream. Monitoring included stations upstream and downstream of the effluent discharge location. The lagoon effluent was also monitored for the same parameters during this time period. In addition, water quality monitoring in an irrigation drainage ditch west of the lagoon was conducted. The monitoring results were submitted to the Department in June 1997, in a report "Receiving Water Study and analysis of Effluent Criteria for Future NPDES Permitting".

The following observations are provided based on this study:

- (1) A significant drop in the level of dissolved oxygen (DO) was observed downstream of the discharge in most sampling events. The decrease in DO is not well correlated with the effluent DO or BOD.
- (2) Temperature and pH in the receiving stream were not significantly impacted by the discharge.

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- (3) The clarity in the receiving stream was significantly affected by the discharge on a seasonal basis.
- (4) The fecal coliform count in the receiving stream did not change significantly across the discharge point. Exceedances of Class A standards for fecal coliform in the stream appeared to be impacted by activities in the watershed upstream of the discharge.
- (5) BOD in the receiving stream increased across the discharge point. The increase was significant during low stream flows.
- (6) During the study, the stream depth ranged from 0.5 to 1.0 foot and the width ranged from three to six feet.
- (7) Minimum (instantaneous) stream flow recorded was approximately 30 gallons per minute (gpm) on September 11, 1996. Minimum instantaneous dilution ratio (Receiving stream flow:Effluent flow) of 0.45 during the study was also recorded on this day.
- (8) Based on instantaneous flow monitoring data (one per week for a total of 13 data points) during dry weather period, the report estimated the 7Q10 flow for the stream to be 18 gpm. (Note: 7Q10 flow is defined as the 7-day average low flow with a recurrence interval of 10 years, which is considered the critical condition for flowing freshwater for regulatory purposes).

Based on the monitoring data presented in the report, the width of the receiving stream and the stream flow are insufficient to allow a mixing zone for the discharge. Therefore, a mixing zone in the receiving stream cannot be granted and the effluent from the facility will have to meet the criteria in the Water Quality Standards prior to discharge to the stream.

A mixing zone in the receiving stream may be allowed under the following two circumstances:

- If the Permittee can show through additional monitoring or existing data that a mixing zone can be allowed during the high flow winter months, a request with documentation should be submitted to the Department for review. If after review of the report, a mixing zone is allowed during high flows in the receiving stream, seasonal water quality-based effluent limits will be calculated and revised limits will be placed in the permit.
- The "Mixing Zones" section above discusses the maximum size of an allowed mixing zone and the maximum size of an allowed zone of acute criteria exceedance. These are specified in WAC 173-201A-100 (7) and (8) respectively. As allowed under subsection (12), the Department under certain circumstances may consider exceedances from the numeric size criteria in subsections (7) and (8). The Permittee will have to show compliance with subsections (12) and (13) before exceedances from the numeric size criteria would be allowed. In addition, under subsection (14), any exemptions granted to the numeric size criteria will be reexamined by the Department during each permit renewal for changes in compliance capability. Any significant increase in capability to comply will be reflected in the renewed discharge permit.

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CONSIDERATION OF SURFACE WATER QUALITY-BASED LIMITS FOR NUMERIC CRITERIA

Pollutant concentrations in the proposed discharge exceed water quality criteria with technology-based controls, which the Department has determined to be AKART. As explained above in the mixing zone section, the Water Quality Standards allow the use of mixing zones for establishing surface water quality-based effluent limits for discharges that would otherwise exceed the water quality criteria for aquatic life. This section also describes the maximum size of the allowable acute and chronic mixing zones. As stated above, a mixing zone in the receiving stream cannot be granted and the effluent from the facility will have to meet the criteria in the Water Quality Standards prior to discharge to the stream.

Pollutants in an effluent may affect the aquatic environment near the point of discharge (near field) or at a considerable distance from the point of discharge (far field). Toxic pollutants, for example, are near-field pollutants--their adverse effects diminish rapidly with mixing in the receiving water. Conversely, a pollutant such as BOD is a far-field pollutant whose adverse effect occurs away from the discharge even after dilution has occurred. Thus, the method of calculating water quality-based effluent limits varies with the point at which the pollutant has its maximum effect.

The impacts of dissolved oxygen deficiency, temperature, pH, fecal coliform, chlorine and ammonia, were determined as shown below.

BOD--The environmental impacts from BOD are generally measured in terms of 5-day biochemical oxygen demand (BOD₅). Based on the monitoring data presented in the receiving water study report submitted by the Permittee, the receiving stream travel time from the discharge point to the impoundment behind the Port Susan dike is estimated to be three hours under average velocity conditions. Therefore, the impact of the effluent BOD is expected to be minimal during the time the stream travels to the impoundment behind the Port Susan dike. Therefore, technology-based effluent limitations for BOD are proposed in the permit

DO--In order to maintain the dissolved oxygen (DO) levels in the stream at Class A standards, the final effluent limits for DO is set at 8.0 mg/L minimum.

Temperature--The impact of the discharge on receiving stream temperature was measured during the receiving water study conducted by the Permittee. As stated earlier, Temperature in the receiving stream was not significantly impacted by the discharge. The highest stream temperature observed during the study was 14° C and the highest effluent temperature observed was 20° C. Therefore, no effluent limitation for temperature was placed in the proposed permit.

pH--The impact of the discharge on receiving stream pH was measured during the receiving water study conducted by the Permittee. As stated earlier, pH in the receiving stream was not significantly impacted by the discharge. During the study, pH in the stream stayed within the Class A water quality standards. Therefore, no effluent limitation for pH was placed in the proposed permit.

Fecal Coliform--As stated earlier, the facility effluent will have to comply with the criteria in the Water Quality Standards prior to discharge to the stream. The interim limits specified in Condition S1:A. of the permit are technology-based permit limits of 200/100 mL average monthly

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and 400/100 mL average weekly. Based on the Class A water quality criteria for fecal coliform, the final limit is monthly geometric mean of 100 colonies/100 mL with no more than 10 percent of all samples obtained for calculating the monthly geometric mean value exceeding 200 colonies/100 mL.

Toxic Pollutants--Federal regulations (40 CFR 122.44) require NPDES permits to contain effluent limits for toxic chemicals in an effluent whenever there is a reasonable potential for those chemicals to exceed the surface water quality criteria. This process occurs concurrently with the derivation of technology-based effluent limits. Facilities with technology-based effluent limits defined in regulation are not exempted from meeting the Water Quality Standards for Surface Waters or from having surface water quality-based effluent limits.

The toxics that were determined to be present in the discharge are chlorine and ammonia. As stated above, the facility effluent will have to meet the criteria in the Water Quality Standards prior to discharge to the stream. The following criteria for chlorine and ammonia are derived based on WAC 173-201A-040.

Parameter	Water Quality Criteria	
	Acute	Chronic
Total Residual Chlorine	19 ug/L	11 ug/L
Total Ammonia as NH ₃ -N	10.5 – 21.6 mg/L	2.1 mg/l

The ammonia criteria are derived based on the monitoring data in the receiving water study report discussed earlier. The calculations for ammonia criteria are shown in a table in Appendix C.

Based on the criteria in the above table, the final limits derived for ammonia and chlorine are:

Parameter	Permit Limits	
	Monthly Average	Daily Maximum
Total Residual Chlorine	18 ug/L	7 ug/L
Total Ammonia as NH ₃ -N	1.8 mg/L	3.5 mg/l

Calculations for these limits are shown in Appendix C.

The final effluent limits are specified in Condition S1.A. of the proposed permit. As discussed earlier, the interim chlorine limit proposed in the permit is based on the facility's past performance. No interim ammonia limits are placed in the permit since no controls exist at the existing facility to reduce ammonia concentration in the effluent.

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EVALUATION OF CONDITIONS NOT INCLUDED IN THE PERMIT

WHOLE EFFLUENT TOXICITY

The Water Quality Standards for Surface Waters require that the effluent not cause toxic effects in the receiving waters. Many toxic pollutants cannot be detected by commonly available detection methods. However, toxicity can be measured directly by exposing living organisms to the wastewater in laboratory tests and measuring the response of the organisms. Toxicity tests measure the aggregate toxicity of the whole effluent, and therefore this approach is called whole effluent toxicity (WET) testing. Some WET tests measure acute toxicity and other WET tests measure chronic toxicity.

In accordance with WAC 173-205-040, the Permittee's effluent has been determined to have the potential to contain toxic chemicals. The proposed permit would ordinarily contain requirements for whole effluent toxicity testing as authorized by RCW 90.48.520 and 40 CFR 122.44 and in accordance with procedures in chapter 173-205 WAC. However, the Permittee will be improving pollution controls in order to meet other regulatory requirements. The results of an effluent characterization for toxicity would not be accurate until after the improvements have been completed.

WAC 173-205-030(4) allows the Department to delay effluent characterization for WET for existing facilities that are under a compliance schedule in a permit to implement technology-based controls or to achieve compliance with surface water quality-based effluent limits. The WET testing requirement will be evaluated during the next permit term.

HUMAN HEALTH

The Department's Permit Writer's Manual contains a two step process to determine whether a reasonable potential determination for Human Health Criteria should be made for any discharger. This process is described in Section 3 (Screening and Prioritization) of Chapter VII, Deriving Water Quality-Based Effluent Limits for Protection of Human Health.

Based on the criteria established in step 2 of this process, the facility is considered a "low priority" facility. Therefore, the discharge from the facility is not considered for human health-based effluent limits during this permit term. The discharge may be evaluated further for possibly requiring a more detail chemical analyses during the next permit term.

SEDIMENT QUALITY

The Department has not yet established freshwater sediment quality standards and therefore, sediment quality in the receiving water is not required to be evaluated.

GROUND WATER QUALITY LIMITATIONS

The Department has promulgated Ground Water Quality Standards (chapter 173-200 WAC) to protect uses of ground water. Permits issued by the Department shall be conditioned in such a manner so as not to allow violations of those standards (WAC 173-200-100).

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This Permittee has no discharge to ground and therefore no limitations are required based on potential effects to ground water.

MONITORING AND REPORTING

Effluent monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved.

The monitoring and testing schedule is detailed in the proposed permit under Condition S2. Specified monitoring frequencies take into account the quantity and variability of discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring. The required monitoring frequency is fairly consistent with agency guidance given in the current version of the Department Permit Writer's Manual for (i) all treatment plants with less than 0.1 MGD Average Design Flow and (ii) sewage lagoons with less than 0.5 MGD Average Design Flow. The frequency of monitoring for compliance is considered to be the minimum frequency to document compliance.

OTHER PERMIT CONDITIONS

PREVENTION OF FACILITY OVERLOADING

Overloading of the treatment plant is a violation of the terms and conditions of the permit. To prevent this from occurring, RCW 90.48.110 and WAC 173-220-150 require the Permittee to take the actions detailed in proposed permit requirement S4. to plan expansions or modifications before existing capacity is reached and to report and correct conditions that could result in new or increased discharges of pollutants. Condition S4. restricts the amount of flow.

OPERATION AND MAINTENANCE (O&M)

The proposed permit contains condition S5. as authorized under RCW 90.48.110, WAC 173-220-150, chapter 173-230 WAC, and WAC 173-240-080. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

RESIDUAL SOLIDS HANDLING

To prevent water quality problems, the Permittee is required in permit condition S7. to store and handle all residual solids (grit, screenings, scum, sludge, and other solid waste) in accordance with the requirements of RCW 90.48.080 and State Water Quality Standards.

The final use and disposal of sewage sludge from this facility is regulated by U.S. EPA under 40 CFR 503. The disposal of other solid waste is under the jurisdiction of the Snohomish County Health Department.

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PRETREATMENT

All of the wastewater discharged to the facility is of domestic nature. The pretreatment condition S6. in the permit is a standard condition derived from the Federal Regulation 40 CFR 403.5.

COMPLIANCE SCHEDULE

Permit condition S8. specifies the schedule of compliance for the facility to comply with the final effluent limitations specified in the permit. The parameters with more stringent final limits include fecal coliform, dissolved oxygen (DO), ammonia and chlorine.

WAC 173-201A-160(4)(a) of the Water Quality Standards provides for inclusion of a schedule for achieving compliance with water quality criteria. Such schedules are to be developed to achieve compliance with water quality-based effluent limits in the shortest practicable time. Schedules of compliance may be issued to allow for construction of necessary treatment capability. The subsection (c) states that schedules of compliance may in no case exceed ten years, and shall generally not exceed the term of any permit.

It is clear that the Permittee is not going to be able to achieve the final water quality-based permit limits with the existing treatment facility. A new treatment facility may have to be constructed to achieve the final effluent limitations proposed in the permit. In order to allow adequate time for planning, design and construction of the new facility, the compliance schedule proposed in the permit requires the Permittee to achieve the final effluent limits by May 1, 2003. The Permittee is required to prepare an engineering report that includes proposal to construct wastewater treatment facilities capable of achieving the final effluent limits specified in the permit. The report is to be submitted to the Department for review and approval by February 1, 2001. Construction of the new treatment facility is required to be completed by February 1, 2003.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual NPDES permits issued by the Department.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary to meet Water Quality Standards, Sediment Quality Standards, or Ground Water Standards, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

The Department proposes that this permit be issued for the full allowable five years.

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REVIEW BY THE PERMITTEE

A proposed permit was reviewed by the Permittee for verification of facts. Only factual items were corrected in the draft permit and fact sheet.

REFERENCES FOR TEXT AND APPENDICES

Permit Writer's Manual, Department of Ecology, November 1995.

Engineering Report for Proposed Modifications of Sanitary Sewage Collection and Treatment Facilities for Warm Beach Camp, Lee Johnson Consultants, Inc., September 13, 1984.

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APPENDICES

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations, which are described in the rest of this fact sheet.

Public notice of application was published on November 23 and 30, 1997 in Everett Herald to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

The Department published a Public Notice of Draft (PNOD) on May 12, 1998 in the Stanwood/Camano News to inform the public that draft permit and fact sheets are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Water Quality Permit Coordinator
Department of Ecology
Northwest Regional Office
3190 - 160th Avenue SE
Bellevue, WA 98008-5452

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty (30) day comment period to the address above. The request for a hearing shall indicate the interest of the party and the reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

The Department will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (425)649-7201, or by writing to the address listed above.

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APPENDIX B--GLOSSARY

Acute Toxicity--The lethal effect of a compound on an organism that occurs in a short period of time, usually 48 to 96 hours.

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Best Management Practices (BMPs)--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 State. 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 be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD₅--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD₅ is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of a treatment facility.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic Toxicity--The effect of a compound on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

Class 1 Inspection--A walk-through inspection of a facility that includes a visual inspection and some examination of facility records. It may also include a review of the facility's record of environmental compliance.

Class 2 Inspection--A walk-through inspection of a facility that includes the elements of a Class 1 Inspection plus sampling and testing of wastewaters. It may also include a review of the facility's record of environmental compliance.

Clean Water Act (CWA)--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

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- Combined Sewer Overflow (CSO)**--The event during which excess combined sewage flow caused by inflow is discharged from a combined sewer, rather than conveyed to the sewage treatment plant because either the capacity of the treatment plant or the combined sewer is exceeded.
- Composite Sample**--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite" (collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots).
- Construction Activity**--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.
- Critical Condition**--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low; thus, its ability to dilute effluent is reduced.
- Daily Maximum Discharge Limitation**--The greatest allowable value for any calendar day.
- Dilution Factor**--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the effluent fraction.
- Engineering Report**--A document, which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.
- Fecal Coliform Bacteria**--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.
- Grab Sample**--A single sample or measurement taken at a specific time or over as short period of time as is feasible.
- Industrial Wastewater**--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.
- Infiltration and Inflow (I/I)**--"Infiltration" means the addition of ground water into a sewer through joints, the sewer pipe material, cracks, and other defects. "Inflow" means the addition of rainfall-caused surface water drainage from roof drains, yard drains, basement drains, street catch basins, etc., into a sewer.

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Mixing Zone--An area that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in state regulations (chapter 173-201A WAC).

Monthly Average --The average of the measured values obtained over a calendar month's time.

National Pollutant Discharge Elimination System (NPDES)--The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both State and Federal laws.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

Upset--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit--A limit on the concentration of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

*FACT SHEET FOR NPDES PERMIT WA-002990-4
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APPENDIX C--CALCULATIONS FOR CHLORINE AND AMMONIA LIMITS

- (1) CHLORINE LIMITS CALCULATION
- (2) AMMONIA CRITERIA AND LIMITS CALCULATIONS

Water Quality-Based Permit Limits for acute and chronic criteria
 (based on EPA/505/2-90-001 Box 5-2).
WARM BEACH WWTP - CHLORINE LIMITS CALCULATIONS
 Based on Lotus File WQBP2.WK1 Revised 19-Oct-93

WARM BEACH WWTP
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INPUT

1. Water Quality Standards (Concentration)	19.000
Acute (one-hour) Criteria:	11.000
Chronic (n-day) Criteria:	
2. Upstream Receiving Water Concentration	0.000
Upstream Concentration for Acute Condition (7Q10):	0.000
Upstream Concentration for Chronic Condition (7Q10):	
3. Dilution Factors (1/{Effluent Volume Fraction})	1.000
Acute Receiving Water Dilution Factor at 7Q10:	1.000
Chronic Receiving Water Dilution Factor at 7Q10:	
4. Coefficient of Variation for Effluent Concentration (use 0.6 if data are not available):	0.600
5. Number of days (n1) for chronic average (usually four or seven; four is recommended):	4
6. Number of samples (n2) required per month for monitoring:	20

OUTPUT

1. Z Statistics	2.326
LTA Derivation (99%tile):	2.326
Daily Maximum Permit Limit (99%tile):	1.645
Monthly Average Permit Limit (95%tile):	
2. Calculated Waste Load Allocations (WLA's)	19.000
Acute (one-hour) WLA:	11.000
Chronic (n1-day) WLA:	
3. Derivation of LTAs using April 1990 TSD (Box 5-2 Step 2 & 3)	0.3075
Sigma^2:	0.0862
Sigma^2-n1:	6.101
LTA for Acute (1-hour) WLA:	5.802
LTA for Chronic (n1-day) WLA:	5.802
Most Limiting LTA (minimum of acute and chronic):	
4. Derivation of Permit Limits From Limiting LTA (Box 5-2 Step 4)	0.0178
Sigma^2-n2:	
Daily Maximum Permit Limit:	18.069
Monthly Average Permit Limit:	7.163

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WARM BEACH – AMMONIA CRITERIA AND LIMITS

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WARM BEACH WWTP – CALCULATIONS FOR AMMONIA LIMITS: The limits and criteria are for Total Ammonia as $\text{NH}_3\text{-N}$ (mg/L). The calculations show that the limits are more stringent for the "no mixing" scenario. Based on the data in the "Water Quality Analysis Report", most stringent limits are 3.5 mg/L Daily Maximum and 1.8 mg/L Monthly Average. As shown in the table, these limits apply during most of the year. The limits can be raised to 3.8 mg/L Daily Maximum and 1.9 mg/L Monthly Average during November through February as shown by calculations in the table.						
Month (Date)	(Upstream) Stream pH (Site 2)	Effluent pH	(Downstream) Measured Stream pH (Site 4)	(Downstream) Calculated Stream pH	(Upstream) Stream Alkalinity (mg/L) (Site 2)	Effluent Alkalinity (mg/L)
February (2-29-96)	6.6	7.2	6.6		54	
March (3-28-96)	7.8	7.4	7.4	7.54	65	250
April (4-23-96)	7.6		7.3			
May (5-29-96)	8.0	7.1	7.3	7.36	64	130
June (6-12-96)	6.8	6.8	6.5		64	
July (7-10-96)	7.8		7.8		75	210
August (8-14-96)	8.0	7.6	7.4	7.73	67	137
September (9-11-96)	8.0	7.4	7.3	7.5	73	106
October (10-9-96)	7.5	7.2	7.1	7.44	78	112
November (11-6-96)	7.3	7.6	6.9	7.35	69	125
December (12-4-96)	7.1	7.4	7.3	7.26	29	153
January (1-29-97)					53	193

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APPENDIX D—RESPONSE TO COMMENTS

A public notice of the permit draft was advertised in the Stanwood/Camano News on May 12, 1998, for public review and comments. This notice also informed the public of a workshop and a public hearing on June 19, 1998, to discuss and receive comments on the Department's intention to reissue the permit. There were no comments received during the public hearing. Also, no comments were received during the 30-day comment period following the public hearing.