CHAPTER 15.50 SAMPLING AND ANALYTICAL REQUIREMENTS

15.50.010 General Requirements

All sample preservation procedures, container materials, maximum allowable holding times and analytical techniques to be submitted as part of any application or report required by this division shall be performed in accordance with the procedures and techniques specified in 40 CFR Part 136. Alternatively, a contractor with the required protocols listed in an approved comprehensive Quality Assurance Plan may sample and analyze according to the protocols specified in that document.

15.50.020 Sampling

A. Sampling for Baseline Monitoring Reports (BMR) and 90-day compliance reports must include a minimum of four grab samples for pH, cyanide, total phenols, oil and grease, sulfide and volatile organic compounds for facilities for which historical sampling data do not exist. The City may authorize a lower minimum for facilities with historical sampling data. The numbers of grab samples for Periodic Compliance Reports shall be the number the City determines to be necessary to assess and assure compliance by Industrial Users with Applicable Pretreatment Standards and Requirements.

The City will determine on a case-by-case whether the user will be able to composite the individual grab samples. For all other pollutants, 24-hour composite samples must be obtained through flow or time-proportional composite sampling techniques, depending on circumstances. The City may waive flow-proportional composite sampling for any user that demonstrates that flow-proportional composite sampling is infeasible. Where time-proportional composite sampling or grab sampling is authorized by the City, the samples must be representative of the discharge and the decision to allow the alternative sampling must be documented in the Industrial User file for that facility or facilities. Using protocols (including appropriate preservation) specified in 40 CFR Part 136 and appropriate EPA guidance, multiple grab samples collected during a 24-hour period may be composited prior to the analysis as follows: For cyanide, total phenols, and sulfides the samples may be composited in the laboratory or in the field; for volatile organics and oil & grease the samples may be composited in the laboratory. Composite samples for other parameters unaffected by the compositing procedures as documented in approved EPA methodologies may be authorized by the City, as appropriate. In those cases, samples may be obtained through time-proportional composite sampling techniques or through a minimum of four grab samples where the user demonstrates that this will provide a representative sample of the effluent being discharged.

B. Samples shall be taken immediately downstream from any pretreatment facilities, immediately downstream from the regulated or manufacturing process if no pretreatment exists, or at a location determined by the City and specified in the user's wastewater discharge permit. For categorical users, if other wastewaters are mixed with the regulated wastewater prior to pretreatment, the user shall measure the flows and concentrations necessary to allow use of the combined waste stream formula of 40 CFR §403.6(e) in order to evaluate compliance with the Applicable Categorical Pretreatment

standards. For other SIUs, for which the City has adjusted its local limits to factor out dilution flows, the user shall measure the flows and concentrations necessary to evaluate compliance with the adjusted pretreatment standard(s). In cases where a local limit requires compliance with a Best Management Practice or pollution prevention alternative, the User must submit documentation required by the City to determine the compliance status of the User

C. All sample results shall indicate the time, date and place of sampling and methods of analysis and shall certify that the waste stream sampled is representative of normal work cycles and expected pollutant discharges from the user. If a user sampled and analyzed more frequently than required in its wastewater discharge permit, using methodologies in 40 CFR Part 136, it must submit all results of sampling and analysis of the discharge as part of its self-monitoring report.

15.50.030 Analytical Requirements

All pollutant analyses, including sampling techniques, shall be performed in accordance with the techniques prescribed in 40 CFR Part 136, unless otherwise specified in an applicable categorical pretreatment standard. If 40 CFR Part 136 does not contain sampling or analytical techniques for the pollutant in question, sampling and analyses must be performed in accordance with procedures approved by the EPA**.**

15.50.040 City Monitoring

The City will follow the procedures outlined in Sections 15.50.020 and 15.50.030 when sampling to monitor compliance.

Extra Strength Sewer Charge Program Administrative Rules

November 2011

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The following rules describe the regulatory activities of BES for this program. See the Explanatory Information in Appendix A for applicable code citations, justification and other informational details relating to the rules that follow.

1. Applicability

This rule applies to all sanitary sewer ratepayers or their tenants who discharge or have the potential to discharge wastewater with pollutant concentrations of Biological Oxygen Demand (BOD) or Total Suspended Solids (TSS) over and above average residential strength discharge.

2. Purpose

The purpose of the Extra Strength Charge (ESC) program is to recover the cost of high-strength wastewater treatment from users who discharge into the City of Portland sanitary sewer system. High-strength wastewater discharges are those with loadings of BOD or TSS in excess of those concentrations assumed to occur as part of the City's base sewer user charge. Billing ratepayers responsible for high-strength discharges is necessary for rate equity and to prevent the costs of treatment from being passed on to the other ratepayers. The Extra Strength Charge (ESC) will appear on the City water and sewer bill for discharges with high-strength wastewater discharges.

3. Definitions

These rules use the same definitions found in Portland City Code Section 17.36, 17.34 and the Fats, Oils and Grease (FOG) program administrative rules (ENB-4.26). The definitions below are unique to these rules:

A. **"Batch Discharge**" means a controlled, discrete, intermittent, and contained volume of discharge.

B. **"Class Average"** means the average discharge concentration thresholds of BOD and TSS for a particular business type with and without approved best management practices in place. Class average concentration thresholds are identified in the Class Average Table in Appendix B of these rules.

C. **"Class Average ESC Method"** means an ESC billing method based on a ratepayer's business type and its assumed average discharge concentration per the Class Average Table in Appendix B of these rules.

D. **"Food Grinder"** means any hydromechanical device designed to grind or pulverize solid materials for the purpose of making the material suitable for disposal to the sanitary sewer system.

E. **"High-Strength Wastewater"** means wastewater which has a BOD concentration in excess of 300 mg/L and/or a TSS concentration in excess of 350 mg/L.

F. **"Measured ESC Method"** means an ESC billing method based on rolling average sampling and analysis of individual businesses wastewater discharge volume and pollutant loading to the City's sanitary sewer system.

G. **"Permitted Ratepayer"** means a ratepayer that discharges wastewater to the sanitary sewer system under an industrial wastewater discharge permit issued by the City of Portland.

H. **"Sampling Manhole"** means a manhole in a ratepayer's branch sewer or other monitoring access acceptable to BES that allows for observation, sampling or measurement of all wastes being discharged into the City's sanitary sewer system.

4. Regulatory Authority

The City of Portland, as an operator of a publicly-owned treatment works (POTW), is required to implement a rate structure that fairly distributes the cost of its operation to ratepayers, including contributors of high-strength wastewater (Part 35 of 40 Code of Federal Regulations (CFR) Appendix B to Subpart E). The City has established Portland City Code Chapters 17.34 and 17.36 to regulate, and charge for, high-strength wastewater discharges to the City's combined or separate sanitary sewer system. The following are the code sections most relevant to the regulations found in these rules:

A. Sections 17.36.020 and 17.34.025 authorize BES to establish administrative rules to implement portions of the Portland City Code.

B. Section 17.36.080 authorizes BES to allow use of private meters to apportion, reduce, or apply charges to a ratepayer's bill.

C. Section 17.36.110 authorizes BES to assess an Extra Strength Charge on the sewer bills of ratepayers that discharge high-strength wastewater to the sanitary sewer.

D. Section 17.34.060.E states that the submission to the City of false information or data may constitute fraud.

E. Section 17.34.080 authorizes BES personnel to perform inspections of facilities and to collect samples of wastewater discharged to the City's sanitary sewer system. It also authorizes BES to require a sampling manhole by dischargers wanting to use City systems.

F. Title 17, Exhibit A, Sewer and Drainage Rates and Charges, lists the Extra Strength Charge rates for the current City fiscal year.

5. Billing Methodology

Ratepayers with high-strength wastewater discharges shall be assessed ESCs using one of the following two methodologies at the discretion of BES:

A. Class Average ESC Method. Ratepayers billed using the Class Average ESC Method are assessed surcharges based on the average discharge concentrations of BOD and TSS for their business type. Ratepayers who employ one or more of the BMPs listed in the Class Average Table may be eligible for a rate reduction.

1. *Class Average Table***.** The Class Average Table (Appendix B) establishes:

a. The average discharge concentration for BOD and TSS for each business type; and

b. The pollutant load discount from the average concentration to which a ratepayer is entitled based on the use of approved BMPs as verified by the City.

2. *Class Identification*. Any ratepayer identified by the Class Average Table who believes they are part of a definable sub-class can request the creation of a sub-class through the variance process (Section 8). Such requests must reasonably demonstrate that their sub-class's average discharge concentration is substantially different from the listed class-average concentration. Any sampling and monitoring associated with a sub-class request must comply with the conditions of Section 5.B.6.

3. *Flow Apportionment and Estimation*. In cases where a sewer account serves multiple tenants of multiple business classes, it may be necessary to apportion the

total TSS and BOD loading and flow amongst several different business class averages. Tenants shall be apportioned a percentage of the overall flow and assigned a discharge concentration based on the Class Average Table by BES staff.

a. BES staff will determine the appropriate flow estimation or apportionment percentages to apply to the account based on any of the following methods:

i. Information from private meters and historical tenant water use based on the sewer account holder. Such information shall demonstrate quantification of tenants water use;

ii. Restaurant seat counts to estimate flow or relative size of the tenant;

iii. Plumbing fixture counts to estimate flow or relative size of the tenant; or

iv. Comparison to similar facilities where the City, tenant, or sewer account holder has calculated or measured the amount of water use.

b. Sewer account holders must notify the City of any change in tenant occupancy that may alter the accuracy of established flow percentage apportionments. Sewer account holders may receive retroactive credits for up to three billing periods for late reporting of an occupancy change.

c. Sewer account holders may participate in the credit-meter program to obtain precise measurement and apportionment of ESCs to individual tenants based on private water meters and self-submitted reads. There is an administrative charge for each meter added to an account. Ratepayers that fail to regularly report their meter reads will be dropped from the sub-meter program and generalized ESCs will be restored based on the criteria of Section 5.A.3.a.

4. *Approved Best Management Practices (BMPs) for Rate Reduction*. Ratepayers subject to the Class Average ESC Method may be eligible for the rate discounts in Appendix B based on BES-verified implementation of approved BMPs. Ratepayers may use any of the following approved BMPs for rate reduction.

a. Garbage Grinder Removal. Ratepayers must allow BES staff inspection and verification that garbage grinders have been removed or are not present.

i. Ratepayers may also receive additional rate discounts by diverting their food waste to a verifiable food composting or charitable food donation program.

b. Grease-Management Devices. To qualify, ratepayers must do all of the following:

i. Allow BES staff to inspect the device to determine the type of grease-management device and ensure it is properly sized and installed.

ii. Plumb the facility's priority-FOG fixtures (see Appendix A definitions) to a grease-management device. If only a portion of a facility's priority-FOG fixtures are connected to a grease-management device, the rate reduction will be prorated accordingly.

iii. Maintain grease-management devices and participate in the Preferred Pumper Program which provides BES with maintenance records. If the records show that the frequency of maintenance is inadequate, the rate

reduction for ESC may be revoked and the default higher Class Average discharge volume and the higher ESC rate imposed.

(1) Ratepayers shall be disqualified from receiving this rate discount if they are found to be using any FOG-emulsifying agents (products that clean grease-management devices and upstream or downstream sewer lines.

c. Other BMP Rate Reductions. Ratepayers may request rate reductions based on BMPs other than those applicable to their business class through the variance process (Section 8). Ratepayers must provide documentation that BMPs meet both the following:

i. Result in an immediate and measurable reduction of BOD and/or TSS; and

ii. Continue to produce verifiable reductions of TSS and BOD in a practical and efficient manner.

If a BMP is determined to be inappropriate for inclusion in the Class Average Table based on the above criteria, a ratepayer may still request, and qualify for, a custom rate via the self-monitoring procedure (Section 5.A.5).

5. *Custom Rates*. As an alternative to the Class Average Rate Method, a ratepayer may provide a monitoring study to show that the business class average they are assigned does not accurately characterize their wastewater discharges. The ratepayer must submit a minimum of five consecutive days of sampling collected during hours of operation. The Custom Rate Method differs from the Measured ESC Method (Section 5.B) in that there is no ongoing scheduled sampling or rolling-average assessments. In order to establish a custom rate, ratepayers must do all of the following:

a. Notice. Ratepayers must inform BES in writing of their intention to conduct self-monitoring for the purpose of creating a custom ESC rate. Ratepayers must receive City approval prior to conducting sampling in support of a custom rate.

b. Sample Collection. Samples must be collected from a BES-approved sampling location which allows representative samples of the facility's wastewater. The sampling location must for BES sampling.

i. The ratepayer must notify BES before sampling so that staff can inspect the sampling setup.

ii. Samples must be composite samples collected at intervals no greater than fifteen minutes during the hours of operations of the facility.

iii. Ratepayers can request that the City perform sampling and analysis for the purpose of developing a custom rate by making a written request and reimbursing at the ESC sampling rate. If BES collects samples from the approved sample location, its data may be combined with any of the ratepayer's own sampling data to set the custom rate.

c. Reports. The ratepayer must submit copies of laboratory analytical reports including the Quality Assurance and Quality Control (QA/QC) information and the Chain of Custody (CoC) form used by the laboratory. Reports without

this information or data from laboratories that fail BES required QA/QC or holding times in accordance with 40 CFR 136 will not be accepted.

d. Rate Duration. Custom rates will last remain valid only until updated with new monitoring data or the expiration of a four-year period, whichever comes first. After that, a ratepayer may re-sample their wastewater for the creation of a new custom rate or revert back to the standard Class Average rate. If any significant changes in process, business, or occupancy occur, BES may void the custom rate.

B. Measured ESC Method.

1. *Measured ESC Method Eligibility*. Ratepayers will be assessed ESCs under the measured ESC method based on any the following criteria:

a. The ratepayer's business type is not included in the Class Average Table;

b. The ratepayer's discharge has the potential for significant extra strength pollutant loads if BMPs or wastewater treatment were discontinued;

c. Average monthly ESC revenue from the ratepayer is greater than the Extra Strength Re-sample rate listed Title 17 Exhibit A., *Sewer and Drainage Rates and Charges*; or

d. The ratepayer has variable wastewater characteristics that make the class average ESC method inappropriate; or

e. The ratepayer has a secure and accessible sampling location that is representative of the discharge from the facility.

2. *Rolling Average.* A ratepayer using the Measured ESC Method are billed based on a rolling average of BOD or TSS analysis averaged from the ten most recent months of monitoring data from their facility. Ratepayers billed using the Measured ESC Method are sampled by BES staff on a scheduled basis with new data refreshing the rolling average. The ratepayer will be notified of each update of the rolling average when it occurs.

a. Rolling Average Start**.** A rolling average is started by the collection of five daily representative collected on different days from the ratepayer's facility. From then on, BES monitoring will be scheduled at the appropriate frequency to refresh the rolling average.

b. Reset.

i. Resets of the rolling average start date are approved only for valid reasons that make historical monitoring data no longer representative of the ratepayer's ongoing discharge.

ii. A ratepayer is eligible for a reset if facility modifications have fundamentally changed the characteristics of its wastewater, such as changing the production line or installing new equipment. Improved equipment maintenance or behavioral BMPs are examples of changes that would not warrant the approval of a reset.

iii. A reset is not an acceptable method of removing monitoring data with high results that does not qualify for removal under the slug load criteria of Section 5.A.8.

iv. A reset requires the removal of all existing data from the rolling average and the start of a new average using a five day sample set as outlined in Section 5.B.2.a. Rolling average resets may be initiated by BES at the City's expense or by the ratepayers request and expense.

3. *Sampling Frequency***.** A ratepayer's sampling frequency will be set by BES so that the annual sampling and analysis costs incurred by the City shall not exceed one fifth ($1/5^{th}$) of the annual ESC revenue paid by the ratepayer. Where a ratepayer's discharge characteristics have been shown to be consistent over time, a reduction in sampling frequency may be implemented by BES. Only in special circumstances (see appendix A) shall the sampling frequency exceed the $1/5^{th}$ rule or be greater than once per month.

4. *Sampling Manholes and Access*.

a. Except as provided in Section 5.B.4.b below, a ratepayer must provide a sampling manhole that:

i. Collects a representative flow of the discrete total discharge from their facility;

ii. Is constructed in accordance with plans approved by BES;

iii. Is secure and able to accommodate BES sampling equipment and monitors; and

iv. Is available to City representatives at all times.

b. An alternative to a sampling manhole may be acceptable if:

i. The alternative sampling location is safe for BES personnel to access;

ii. BES sampling personnel are granted access without delay;

iii. The alternative sampling location enables representative sampling of the high-strength wastewater discharge from the facility; and

iv. The alternative sampling location is secure and prevents tampering with BES equipment or monitors.

5. *Self Monitoring***.** Ratepayers may submit self-monitoring results for inclusion in their rolling average. Results meeting all of the following conditions shall be weighted equally with data collected and analyzed by BES:

a. Samples must be collected from an approved sample location that provides access to wastewater representative of the total discharge from the ratepayers' facility. Samples must be composites of the ratepayer's discharge collected during hours of normal production or business operations.

b. Samples must be analyzed using methods and procedures outlined in 40 CFR 136 and results submitted to the City must include a completed CoC and QA/QC documentation per Appendix D. Any analytical results that have not met hold times or QA/QC standards may not be included in the rolling average.

c. Ratepayers submitting self-monitoring results on randomly-chosen production days and the production day during all production seasons.

d. Ratepayers must submit results for all samples collected and may not selectively withhold results.

6. *Split Samples*. A ratepayer may request in writing to have splits of samples collected by BES staff. The request must include contact names and phone numbers of at least two employees who can meet with the BES personnel and take custody of the split samples within 15 minutes of collection. It is the responsibility of the ratepayer to provide clean sample bottles and CoC forms. BES will only provide a split sample to the ratepayer if there is sufficient sample volume.

i. Analytical results of split samples need to meet the same requirements as self monitoring samples as those listed in Section 5.A.5. Results accepted by BES will be averaged with the BES results and then included in the rolling average.

7. *Private Meters*. Ratepayers may participate in the credit meter program to receive credit against sewer charges based on discharge meter results or proof that incoming water flows such as city water, well water or collected stormwater are not discharged to the city sewer system. Ratepayers must provide, install, maintain and calibrate any private meter used for this purpose and submit meter reads to the City in a timely manner. An administrative charge will be added to the ratepayer's bill for each private meter in use.

8. *Slugload***.** A ratepayer may request removal of a sampling result from their rolling average by declaring the result unrepresentative due to a slugload condition in the discharge.

a. All of the following conditions must be met for BES to approve a slugload determination:

i. The discharge is not representative of the industrial discharge;

ii. The slugload was reported to the City within 24 hours of the incident; and

iii. The sample result from the slugload exceeds the rolling average monitoring result mean plus three times the established standard deviation.

b. The slugload result will only be used to bill for that event's discharge volume and will not be included in the ten-month rolling average.

c. To address an inexplicably high sample result, additional samples can be collected in the same month and averaged with the high sample result for inclusion in the rolling average. The ratepayer may request that BES collect additional samples the ratepayer's expense or the ratepayer may perform self-monitoring per Section 5.B.5.

6. New Development and Redevelopment Control Requirements

A development or redevelopment likely to accommodate businesses subject to ESCs, shall install a sampling manhole at the time of development or redevelopment. Manholes shall be installed per Appendix C. Alternative sampling structures such as a sampling vault or an enclosure with a cleanout/tee may be acceptable in cases where existing conditions make a manhole installation impractical (see Section 5.B.4.b).

A. Applicability. Businesses are required to install a sampling manhole at the time of development if:

1. The businesses is identified in the Class Average Table in Appendix B.

a. A ratepayer who's business discharges or is likely to discharge less than 1000 gallons of high-strength wastewater per day can request a waiver from the sampling manhole requirements per the Variance process in Section 8.

b. A ratepayer whose business is undergoing redevelopment may request a waiver from the sampling manhole requirement when existing conditions make it impossible or unduly expensive to provide a sampling structure per the Variance process in Section 8.

c. Any waiver from the sampling manhole requirements also waives any future ability to request a custom rate.

2. The business or facility is engaged in food processing, beverage manufacturing, industrial waste treating, chemical manufacturing; or

3. The business will house tenants that reasonably may be expected to generate high-strength waste water.

i. Business parks or other tenant facilities that may contain multiple businesses identified by the Class Average Table are required to provide sampling manholes regardless of volume discharged by individual tenants.

7. Inspection

Ratepayers are required to allow entry to BES staff to determine compliance with these rules. Inspection includes access to all parts of a facility that discharges to or has the potential to discharge to the sanitary sewer system. Inspection may include sampling or other verification that BMPs are present and operational. BES staff shall comply with all business safety requirements as provided by the ratepayer at time of entry but shall not be required to sign a release as a condition of entry. Inspections may occur at any time without warning. Denial of access may require BES to seek an administrative warrant to obtain access to a business for inspection or sampling.

8. Variance Requests.

Any ratepayer can request a use of alternative measures such as sampling waivers, alternative rate-reduction BMPs or other measures or a variance from the requirements of these rules using the process outlined in this section.

A. Alternative Methods.

1. **Class Average ESC Method Ratepayers** may request variance from any of the following:

   a. Sub Metering under Section 5.A.4.

   b. Creating of BMP Rate Reduction under Section 5.A.5.c.

   c. Self-monitoring and Custom Rates under Section 5.A.6.

2. **Measured ESC Method Ratepayers** may request variance from any of the following:

   1. Self Monitoring under Section 5.B.5.

   2. Split Samples under Section 5.B.6.

3. Private Meters under Section 5.B.7.

B. Variance Requests.

1. A ratepayer with no applicable wastewater discharges may request a variance if:

a. The ratepayer's wastewater discharge is comprised solely of domestic water from uses such as restrooms and hand washing, and

b. The ratepayer's facility has no infrastructure capable of generating wastewater such as kitchens, processing or production areas, or priority-FOG fixtures.

2. Class Average ESC Method Ratepayers may request variance from any of the following:

a. Class Identification under Section 5.A.2.

3. Measured ESC Method Ratepayers may request variance from any of the following:

a. Rolling Average Reset under Section 5.B.2.b.

b. Slug Load under Section 5.B.8.

C Submittal. Variance requests shall be submitted with associated documentation to:

ESC Program Manager
City of Portland Bureau of Environmental Services
6543 N Burlington Ave.
Portland, OR 97203-5452.

D. Evaluation of Alternative Method and Variance Requests. BES shall review variance requests against the following criteria:

1. *Proper Billing Method Used*. Requests to use alternative methods for billing shall be judged against the criteria presented in Section 5 of these rules.

2. *Self Monitoring Data Submission*. Self-monitoring reports submitted by ratepayers for use in a rolling average, or custom rate will be reviewed against all of the following criteria:

a. Complete CoC forms.

b. QA/QC reports indicating the analysis was performed within specifications and accurately.

c. Samples must be collected from a sampling location that is representative of the total flow from the facility. Plumbing plans and diagrams should be used to document sampling locations.

9. Enforcement on Fraud and False Statements

Any violation of these rules may subject a ratepayer to enforcement under City Code 17.34.110 or 17.36.140, as applicable. In addition, any instances of fraud or false statements in the submission of results, reports, or other documentation required by BES

may violate other local and state laws and regulations, potentially resulting in civil penalties, cost recovery, or referral for criminal investigation.

10. Administrative Review and Appeals

Ratepayers shall have two opportunities at the City level to challenge decision making related to the ESC program: an internal BES Administrative Review and a formal appeal before the City Code Hearings Officer.

A. Allowable Review and Appeal Items. Ratepayers may appeal BES regulations and decisions on any of the following matters:

1. Incorrect classification of the ratepayer's business according to the Class-Average Table.
2. Inaccurate characterization of specific site wastewater characteristics.
3. Revocation or denial of a BMP rate reduction request.
4. Denial of a request to establish a custom rate.
5. Accuracy of flow estimates, allocations and apportionments.
6. Denial of high-strength monitoring data removal based on slug load conditions.
7. Accuracy of a rolling-average methodology.
8. Refusal of a Sampling Manhole Waiver under as described in Section 6.A.1.

B. Non-Appealable Items. Ratepayers may ***not*** request a BES Administrative Review or appeal to the City Code Hearings Officer regarding the City's designation of:

1. Extra strength charge rates.
2. The amount of discount for a BMP.

C. Administrative Review Submittal to BES. Requests for BES Administrative Review shall be submitted to the Extra Strength Program Manager and must include all of the following items:

1. The name and contact information of the facility or property owner filing the request and the date of submittal; and
2. The address of the business that is the subject of the request;
3. The specific issue requested to be reviewed from the allowable list in Section 10.A; and
4. Substantive documentation to support an assertion that BES erred in evaluating one or more of the review criteria (see Section 10.D below). Review requests shall specifically identify and address each issue of concern incorrectly evaluated by BES staff.

D. BES Administrative Review Evaluation. BES ESC Program and Pollution Prevention Group managers shall use all of the following criteria to make a final determination regarding the issues raised in the administrative review request:

1. The type of business use triggering these rules.
2. The actual facility TSS and BOD loadings based on specific facility data, if applicable.

3. The likelihood that the City will receive fair compensation for all identified past, present, and future high-strength wastewater discharges.

4. The availability of data or other evidence to determine definitively the amount of ESCs owed.

E. BES Final Determination. BES shall make a final determination within 14 days based on the applicability of the review criteria to the written documentation provided by the ratepayer. Extensions of this timeline are allowed if agreed to by all parties. BES shall send a written notice of final determination to the ratepayer after the decision is made. The notice shall provide a detailed description of the final determination and information about filing an appeal to be heard to the City Code Hearings Officer.

F. Appeals to the City Code Hearings Officer. Appeal to the Code Hearings Officer shall include a $250 fee for processing. BES staff will forward a request to the Code Hearings Officer within 15 days of the date on the request. The Code Hearings Officer shall then schedule and hold a hearing.

Review of the final order of a Code Hearings Officer by any aggrieved party, including the City of Portland, shall be by writ of review to the Circuit Court of Multnomah County, Oregon, as provided in ORS 34.010-34.100.

APPENDICIES

APPENDIX A –Explanatory Information

Applicability

The City has operated an Extra Strength Charge (ESC) program for many years. The existing ESC program requires BES sampling of each ratepayer's discharge on an ongoing basis and is only practical for ratepayers with large accounts, like industries. These rules expand the existing program to allow alternative methodologies to efficiently bill smaller ratepayers with high strength discharges without sampling. This program expansion adds new businesses subject to the ESC rates based on a class average concentration of high strength wastewater based on previous City and ratepayer sampling efforts.

The rules do not change the basic structure of ESC rates but will result in rate relief for current sewer use charge ratepayers. The program expansion is revenue neutral and will result in reductions in the residential and commercial sanitary sewer volume rates of around 3-4% and existing Biological Oxygen Demand (BOD) and Total Suspended Solids (TSS) rates should decrease around 21% and 12% respectively.

Purpose

BOD and TSS are the two main pollutant parameters on which the City develops pollutant removal costs that comprise the City's residential and commercial sanitary sewer monthly user charges. These base charges assume an average discharge concentration for BOD and TSS. The new program allows the City to bill the ratepayers responsible for high-strength wastewater discharges rather than spreading that cost to the average residential or commercial ratepayer.

Definitions

Section 3.E. "High Strength Wastewater" The definition of the term is new but the concentration cutoffs are defined in Portland City Code Title 17. Exhibit A., *Sewer and Drainage Rates and Charges*.

Section 3.F. "Measured ESC Method" This is a new definition for use in this rule but describes the existing ESC method of using a rolling average to bill ratepayers. The new title is to clarify the distinction between it and the new class average ESC method.

Section 3.H. "Sampling Manhole" This definition is new but the language is straight from existing City Code Section 17.34.080.C.

The following definitions are provided for general reference. Please note that the actual code definitions in use at the time of use of these rules shall supersede if there are differences. The Code or rules reference is provided in parenthesis.

"Biochemical Oxygen Demand (BOD)" means the quantity of oxygen utilized in the biochemical oxidation of organic matter over a period of 5 days at a temperature of 20 Celsius (as approved in Guidelines Establishing Test Procedures for the Analysis of

Pollutants, contained in 40 CFR 136 and amendments thereto, as published in the Federal Register). (17.36)

"**Composite sample**" is a series of individual discrete samples taken at selected intervals based on either an increment of flow or time. The samples are mixed together to approximate the average composition of discharge to the public sewer system. A composite for one day must consist of a pool of samples, collected over the period of expected discharge during the production day. Where special conditions warrant, the Director may designate an alternative procedure that is acceptable. (17.36)

Hydromechanical Grease Interceptor" (aka Grease Trap or HGI)" means a plumbing device designed to collect, contain or store FOG from wastewater discharges. These devices use a combination of gravitational, fluid motion, and other materials separation techniques; air entrainment; interior baffling; and other barriers to remove grease flows. These devices are usually located inside and under a specific utility sink. **(**FOG Program ENB-4.26)

"Priority FOG Fixtures" includes dishwasher pre-rinse sinks, pot sinks, wok stations, multi-compartment sinks, and kitchens with only one sink for all washing and cleaning activities. Other fixtures may also produce FOG discharges, such as mop sinks, but are not considered priority FOG fixtures. **(**FOG Program ENB-4.26)

"Ratepayer" is a person who has the right to possession of a property, and who causes or permits the discharge of sanitary sewage from property in their possession into the public sewer system, or whose use of property directly or indirectly benefits from stormwater management services provided by the City. (17.36)

"Slugload" is any discharge that is non-routine or episodic in nature, such as accidental spills, non-customary batch discharges or other non-standard discharges. (17.36)

"Total Suspended Solids (TSS)" is the total suspended matter that either floats on the surface or is in suspension in water or wastewater and that is removable by laboratory filtering (as approved in Guidelines Establishing Test Procedures for the Analysis of Pollutants, contained in 40 CFR 136 and amendments thereto, as published in the Federal Register). This definition applies to the phrase and its abbreviation. (17.36)

Billing Methodology

The City will utilize one of two methodologies to bill ratepayers for ESCs.

Section 5.A. The Class Average ESC Method. The class average ESC method applies the current rate structure to much larger group of ratepayers than is possible using the measured ESC method. Establishing ESCs based on the average discharge concentrations of certain business classes is commonly used by other municipalities nationwide. This method eliminates the need for the City to perform expensive sampling and the need for the ratepayer to construct a sampling manhole.

All of the classes included in the Class average table and subject to the Class average billing method are businesses that perform food service or food processing. BES will use these license lists from the appropriate agencies to identify ratepayers that should be billed using the class average ESC method.

1. **Class Average Table.** The Class Average Table is based on average discharge concentrations for both BOD and TSS for certain existing ESC ratepayers and from sampling studies of additional businesses. The Class Average Table is

intended to be a dynamic document and may be updated to add additional business classes, adjust average concentrations based on new data, or to add or alter approved best management practices.

3 **Flow Apportionment and Estimation.** Many of the small commercial facilities identified by Class Average Table will be tenants on properties with a sewer account serving several businesses and paid by the landlord. The City can assign ESCs based on estimated fractions of the sewer bill that would correspond to the water use from tenant business types identified on the Class Average Table (Appendix B). Flow estimations have no billing overhead to the ratepayer.

The credit meter program uses actual measured flow from individual tenants in their bill calculation for an administrative fee of - see (insert URL) ~$45/month/meter

4 **Approved Best Management Practices (BMPs) for Rate Reduction.** Ratepayers billed using the class average ESC method are not locked into a fixed rate but have the opportunity to implement and certain BMPs that can reduce their ESCs and promote onsite pollution prevention.

a **Garbage Grinder Removal**. It has been shown that facilities that do not have grinders or remove them have lower BOD and TSS discharge concentrations.

b **Grease Management Device Installation.** Fats, oils and grease (FOG) are high in both BOD and TSS. FOG can also be a significant problem it the collection system, blocking sewer lines and causing sewage spills and basement backups. Well maintained and properly installed grease interceptors and grease traps greatly reduce the amount of FOG discharged to the sewer lowering BOD and TSS concentrations and reducing sewer line blockages.

Details about the preferred pumper program can be found at www.preferredpumper.org.

c. **Other BMP Rate Reduction.** Approved BMPs will not be specific to any product, brand, manufacturer or supplier.

5. Custom Rates. Because the Class Average Method is based on average discharge concentrations some rate payers may dispute that their wastewater is accurately characterized. Sampling data can result in a ratepayer having a higher or lower ESC, or prove that a ratepayer has no extra strength wastewater ratepayers and should be out of the program altogether.

Section 5.B Measured ESC Method. The measured ESC method is the current method employed by the City to bill current ESC ratepayers. There are no significant changes to this process.

1 Measured ESC Method Eligibility. These guidelines are intended to limit the use of the measured method for ratepayers with larger flows, a minimum ESC revenue related to sampling costs, and a sampling manhole.

2 Rolling Average. The rolling average smoothes the ratepayers ESC rate and minimizes potential high swings of rates from month to month. The 10 samples can be over a variety of months and are averages of multiple data points. Those 10 monthly averages are then averaged to obtain the rolling average.

a **Rolling Average Start.** The start date is intended to prevent a ratepayer's bill from being based on a single sample and sets a minimum number of samples with which a bill can be based. Production day is based on the hours of operation (such as 9-5) or a block of 24 hours for continual operation.

b **Reset.** The purpose of the reset is to allow a ratepayer to see immediate benefit of modifying a process or implementing treatment improvements. It is not intended as a process to allow a ratepayer to throw out high level monitoring data

3 Sampling Frequency. The purpose of this language is to ensure that the City is not spending as much or more on sampling and analysis of a ratepayers discharge than will be recovered in ESCs. In special cases where a businesses discharges may vary greatly due to seasonal work, different contracts, or business practices, it may be in the City's best interest to have a sampling frequency greater than the $1/5^{th}$ rule.

7. Private Meters. Private meters are frequently used to measure water not discharged to the sewer system due to evaporation, irrigation, or use in a product. This is existing practice and policy implemented through the Credit Meter Program and is not exclusive to ESCs. The administrative fee is (insert URL) ~$45/month/meter and is shared between Water Bureau and BES.

8. Slugload. This language is based on existing practice, policy, and city code 17.36.110. If a business has a spill or accident that results in very high BOD and TSS monitoring results they may be able to receive some protection of their rolling average. The business must report the discharge to the City, with the quantified volume of the slugload within 24 hours so the City may ascertain whether such a load will have impacts to City treatment systems. If the slugload is confirmed and approved by BES, then and the ratepayer would only be billed a higher ESC for the month of the slugload incident and the data would not effect their rolling average rate.

New and Redevelopment Control Requirements

It is difficult to estimate a proposed facility's discharge volume or wastewater characteristics and accurately predict which ESC billing method will be most appropriate to use for the ratepayer. Because of this uncertainty, all facilities with the potential to generate extra strength discharges are required to provide an adequate sampling location. The building plan review process is the most appropriate time to require a sampling manhole.

Section 6.A. Applicability. The waiver has limited use to only those facility types included in the Class Average Table. BES will grant waivers sparingly.

Inspection

Many site conditions must be verified through BES inspection, such as that BMPs claimed by the ratepayer for rate reduction. It is anticipated that most inspections will be scheduled based on request of the ratepayer and will occur during the hours of business operation. Inspections related to complaint response or enforcement follow up may be unannounced.

Variance Requests

This rule provides a ratepayer with many options to customize the calculation of their extra strength charge. Ratepayers are encouraged to use variances as an early method of resolution for detailed items related to data submittals such as timeline, number or duration of sampling events or class identification.

Variance requests should be submitted to the ESC Program Manager for review and determination. If a ratepayer is not satisfied with the variance determination they can request a more formal administrative review or appeal (See Section 10).

Enforcement on Fraud and False Statements

The rate discount structure and flow estimation language of this rule provide a strong financial tool for compliance in lieu of more traditional enforcement. BES enforcement will likely result in the loss of BMP discounts or discounts for flow reductions, resulting in higher charges to the ratepayer.

There may be cases for more formal enforcement in case such as sample tampering, and submission of false meter reads or data. These issues may constitute fraud or theft of services, and may require civil penalties or referral for criminal investigation.

Administrative Review and Appeals

Section 10.A. Allowable Review and Appeal Items. Ratepayers subject to ESCs may appeal decisions by BES staff first through the Administrative Appeals Process and if dissatisfied with the BES determination they may request to have their appeal heard by the City Code Hearing Officer. Allowable appeal items are those that relate to the accuracy of a particular ratepayers assessed ESCs.

Section 10.B. Non-Appealable Items. Items not eligible for appeal are those that challenge the language and intent of these rules, and the underlying ESC rates.

Section 10.C. Administrative Review Submittal to BES. If BES feels additional information is necessary to make a determination this will be communicated to the ratepayer with the opportunity to provide more evidence supporting their case.

Section 10.D. Evaluation and Final BES Determination. These criteria give the reviewer a perspective to aid in consistent and fair determinations and give the ratepayer and understanding of the review an appeal will receive. The determination should as much as possible resolve the issue and put in place measures to prevent future reoccurrences. Final determination will be provided within 14 days unless additional fact finding is necessary in which case a new deadline will be set by BES.

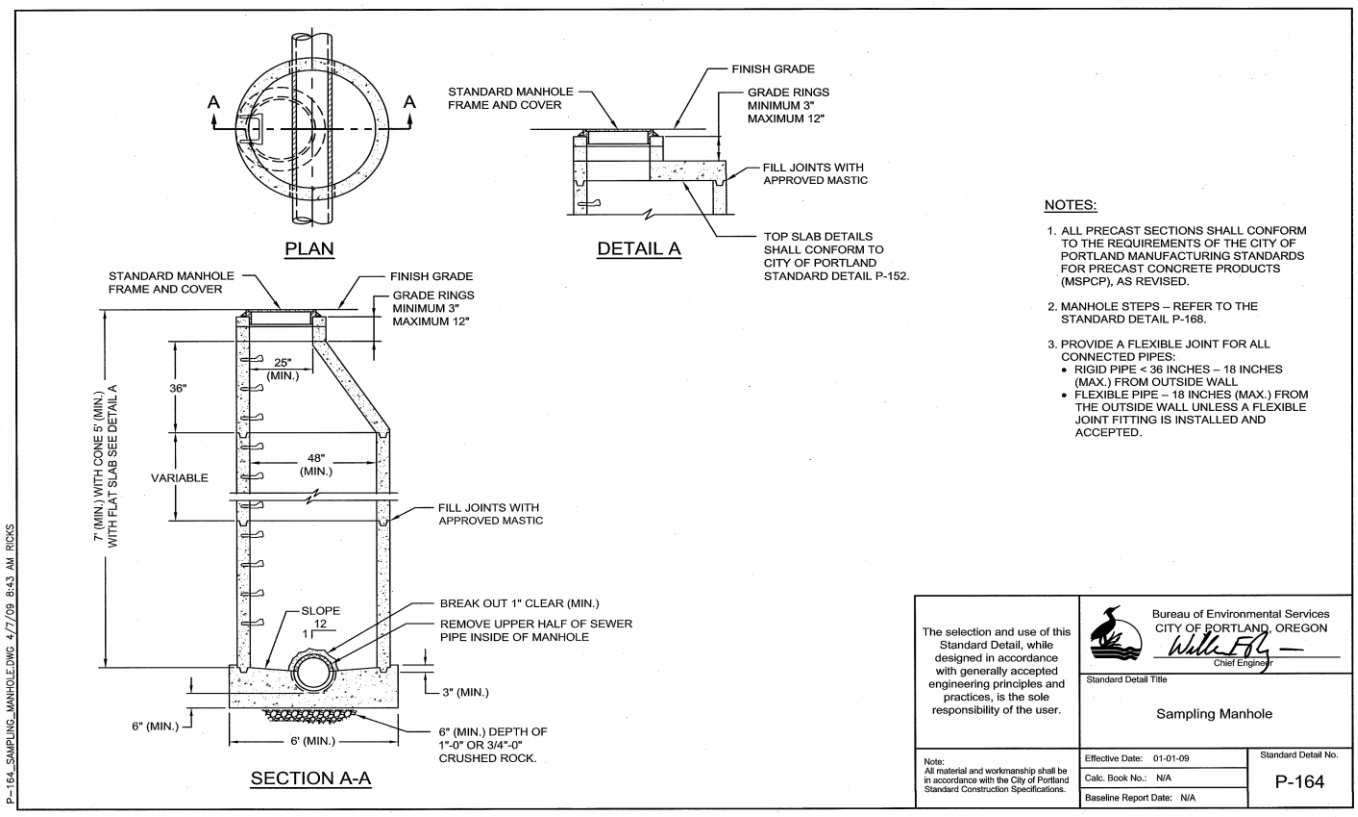
Section 10.E. Appeals to the City Code Hearings Officer If a ratepayer is dissatisfied with the final determination for an appeal they can further pursue their case to the City Code Hearing Officer. An appeal to the City Code Hearing Officer shall be considered the final step in the appeal process.

APPENDIX B Class Average Table.

		Discount %	BOD mg/L	TSS mg/L
Restaurant, Sit Down.	Base	0	1200	500
	with Grease Trap	5	1140	475
	with Grease Interceptor	10	1080	450
	with no Grinders	5	1140	475
	with no Grinders & GT	10	1080	450
	with no Grinders & GI	15	1020	425
	with Grease Trap	5	523	428
	with Grease Interceptor	10	495	405
	with no Grinders	5	523	428
	with no Grinders & GT	10	495	405
	with no Grinders & GI	15	468	383
with bakery, meat cutting, deli, produce, or seafood	with Grease Trap	5	998	618
	with Grease Interceptor	10	945	585
	with no Grinders	5	998	618
	with no Grinders & GT	10	945	585
	with no Grinders & GI	15	893	553
	with Grease Trap	2.5	1658	527
	with Grease Interceptor	5	1615	513
	with no Grinders	2.5	1658	527
	with no Grinders & GT	5	1615	513
	with no Grinders & GI	7.5	1573	500

Meat Market	Base	0	1100	500
	with Grease Trap	30	770	350
	with Grease Interceptor	60	440	200
Bakery, bread	Base	0	1400	1100
cake, pie, cookies	with Grease Trap	5	2185	855
	with Grease Interceptor	10	2070	810
	with Grease Trap	5	1140	333
	with Grease Interceptor	10	1080	315
	with Grease Trap	5	760	333
	with Grease Interceptor	10	720	315
cafeterias, caterers, commissaries	with Grease Trap	5	1045	380
	with Grease Interceptor	10	990	360
	with no Grinders	5	1045	380
	with no Grinders & GT	10	990	360
	with no Grinders & GI	15	935	340

APPENDIX C Sampling Manhole Schematic



STANDARD OPERATING PROCEDURE FOR COMMERCIAL WASTEWATER STRENGTH CLASSIFICATION

OVERVIEW OF ACCOUNT BILLING

User fees are set to correspond to the cost of treatment for the wastewater discharge. This cost of treatment depends on the volume of the wastewater and the types and concentration of the pollutants that must be removed.

Monthly sewer account charges for commercial users are based on the monthly volume of wastewater discharged and a wastewater strength factor, as set by the most current City of Redmond Fee Schedule. This wastewater volume is determined by the average monthly water volume used during the winter months (December-March), unless other methods are approved by the Public Works Director.

This standard operating procedure documents the method to be followed in determining the pollutant concentration in wastewater from commercial accounts. This concentration is hereafter referred to as the wastewater strength. Consistent and accurate assignment of the strength category is an important part of ensuring that user fees represent the ongoing discharge and that such fees are fair for all users.

INITIAL ASSIGNMENT OF CLASSIFICATION

At account setup, commercial users will be assigned a strength category corresponding to their business type as identified below. Specific business types not listed will be assigned based on similarities in the wastewater discharge with those that are listed. There are four categories of wastewater strength: Low, Medium, High, and Very High. These categories are defined as follows:

Strength Classification	Business Type
Low	Antique store, Athletic club, Auto sales (no repair), Bank, Bicycle shop, Chiropractic, Church, Day care, Dental, Electrical contractor, Funeral service (w/o embalming), Hair salon, Office (professional), Optometrist, Pool, Retail sales (general, w/o food), Storage, Thrift store
Medium	Auto body shop, Auto repair, Bed & Breakfast, Bowling alley, Car wash, Convalescent care, Equipment repair, Garbage service (w/ equipment cleanup), Garden shop, Gas station (no convenience store), Hotel, Hospital, Motel, Paint store, Rentals (equipment), School, Veterinary hospital, Wrecking yard
High	Carpet cleaner, Cement/Concrete, Laundry, Manufacturing (using water in process), Stone mill, Wood mill,
Very High	Bakery, Brewery, Butcher (meat processing), Coffee shop, Convenience store, Dairy, Food processor (industrial), Grocery store, Mortuary (w/ embalming), Restaurant, Tavern, Winery

If multiple businesses are operated under a single sewer account, the business type with the highest classification will be used for the entire facility. Alternatively, evidence can be submitted by the users to the City showing the respective discharge volumes of each business at the facility. Subsequently, a business type for the entire facility will be calculated according to the proportions of each of the combined discharges.

The higher value of either COD or TSS will be used to determine the strength classification.

Until sufficient account history is accumulated such that a winter average can be calculated, the wastewater volume will be assumed to be equal to the water usage volume.

CLASSIFICATION ADJUSTMENTS

If the business type is unknown at the time of establishing the account due to subsequent tenant improvements, etc., a designation of Very High strength will be initially assigned. This assignment takes into account the wastewater characteristics of construction activities, construction cleanup, and equipment and process adjustment that may be occurring with new business startup.

As tenant infill occurs, the tenant must submit a completed Wastewater Pretreatment Survey describing the business activities and facility equipment. The business owner may also request an adjustment in the strength classification at this time.

It is recognized that by applying pollution prevention practices, a reduction can be made in the amount wastewater pollutants that must be treated. Provision is thus made for those businesses to apply for a reclassification of wastewater strength based on actual sampling and analysis of the waste stream for COD and TSS. A sampling and analysis plan must be submitted to the City for approval prior to sampling. The plan will include the following information:

- MSDSs for all chemicals used on site
- Sample Type
- Number of Samples
- Sampling Locations
- Identity of Sampler
- Time and Dates of Samples
- Sample Preservation
- Laboratory Name and Contact Information
- Analytes
- Test Methods

Such sampling must be representative of the facility discharge, transported using chain-of-custody procedures and analyzed according to CFR 136 test methods by a laboratory holding current NELAP accreditation. The user is responsible for all costs associated with this sampling and analysis. Application for such reclassification shall be made to the Public Works Director.

Any subsequent account adjustments will be made retroactive to the date of application for reclassification.

Such classification reassignments will be made according to the following table:

	Wastewater Strength	
Classification	COD (mg/L)	TSS (mg/L)
Low	≤ 200	≤ 200
Medium	> 200-400	> 200-400
High	> 400-800	> 400-800
Very High	> 800	> 800

If an existing business at a facility is replaced by a different business, the procedure for initial classification assignment will be followed for the new business.

ALTERNATIVE BILLING METHODS

Alternate methods can include calculation based on a subtraction water meter measuring water not discharged to the sewer, or meter readings of the actual wastewater volume discharged. Metering equipment used for such measurements shall be calibrated per the manufacturer's recommendation. Application for such alternate billing methods shall be made to the Public Works Director.

DEFINITIONS

COD: Acronym meaning Chemical Oxygen Demand. A measure of the organic matter content in wastewater and which is the oxygen equivalent of the organic matter that can be oxidized under standard laboratory procedure using a strong chemical oxidizing agent in an acidic medium. This analysis must be performed per the methods listed in 40 CFR 136.3.

Commercial user: Any user that discharges wastewater to the publicly owned sewer system from a source other than a residential dwelling unit. Mobile waste haulers are considered commercial users. Multiple-dwelling units (such as apartments and condominiums) and mobile home parks are considered residential users.

Public Works Director: The director of the City of Redmond public works department or his/her authorized representative.

TSS: Acronym meaning Total Suspended Solids. A measure of the total suspended matter that either floats on the surface or is in suspension in water or wastewater and that is removable by laboratory filtering. This analysis must be performed per the methods listed in 40 CFR 136.3.

User: Any person, corporation, or institution that contributes wastewater into the publicly owned sewer system.

REFERENCE MATERIAL

City of Tucson:

Certain classes of users discharge wastewater that contain higher concentrations of chemical oxygen demand or suspended solids or both when compared to the composite strength of wastewater discharge from all residential users, and that accordingly impose additional costs on the operation and maintenance of the system.

User Class;	Class Name;	High-Strength Factor;	User Fee Rate (Dollars per ccf).
B;	Residential/All other Customer Classes;	1.00;	1.18.
3C;	Auto Body and Fender Repair;	2.10;	2.47.
3K;	Mortuary;	1.09;	1.28.
3N;	Laundromat;	1.09;	1.28.
4E;	Pet Clinic;	1.20;	1.41.
4G;	Restaurant with seating and china;	2.03;	2.39.
4H;	Restaurant, fast food;	2.32;	2.73.
5A;	Car Wash, self-service;	1.19;	1.40.
5C;	Bottling Company;	1.68;	1.98.
5F;	Printing; Copying;	1.01;	1.19.
5G;	Electrical Component Manufacturer;	1.14;	1.34.
5I;	Industrial Laundry;	1.06;	1.25.
5J;	Bakery;	3.63;	4.27.
5K;	Miscellaneous Food Processor;	2.33;	2.74.
5L;	Chemical, Pharmaceutica	l; 1.25;	1.47.
5M;	Meat Packing;	2.38;	2.80.
5S;	Car Wash, full service;	1.23;	1.45.

City of Santa Rosa:

Bakery, Commercial	$11.39	$12.42
Bakery, Industrial	31.05	33.84
Car Wash, Commercial	4.89	5.33
Combined General Commercial/Food	9.03	9.84
Electronics Manufacture	8.23	8.97
Food Processor	13.52	14.74
Garbage and Septic	21.49	23.42
Glass Products	6.59	7.18
Hotel/Motel w/Restaurant	9.03	9.84
Miller	10.94	11.92
Mortuary	9.03	9.84
Newspaper	7.01	7.64
Restaurant	10.38	11.31
Supermarket	10.38	11.31
Water Purifier	8.49	9.25

State of Washington DOH:

Typical composition of untreated domestic wastewater (influent) was defined by one research group using concentration levels of weak, medium, and strong. Weak, medium, and strong levels of BOD_5 (mg/L) were identified as 110, 220, and 400, concentrations of TSS (mg/L) were identified as 100, 220, and 350, and concentrations of FOG (mg/L) as 50, 100, and 150 respectively (Tchobanoglous and Burton, 1991). Another researcher identified the character of household wastewater using average and maximum levels. Average BOD_5 levels were identified as 200 mg/L with a maximum of 400 mg/L, average TSS levels of 200 mg/L with a maximum of 400 mg/L, and average Grease levels of 50 mg/L with a maximum of 150 mg/L (Laak, 1986).

Most researchers apply a range to quantify concentrations of BOD_5, TSS, and FOG for wastewater influent. The most commonly used range is 100-300 mg/L BOD_5 and 100-350 mg/L TSS (NSF Standard No. 40). FOG ranges typically are identified as 50-150 mg/L with 150 mg/L being identified as "strong".

State of Oregon Administrative Rules, 2000, Chapter 340, Division 071:

Defines Residential Strength Wastewater as the primary sewage effluent from a septic tank which does not typically exceed the following parameters: Five-Day Biochemical Oxygen Demand (BOD_5) of 300 mg/L; Total Suspended Solids (TSS) of 150 mg/L; Total Kjeldahl Nitrogen (TKN) of 150 mg/L; and Oil and Grease of 25 mg/L. Other contaminants may also be present in the wastewater, however, they shall not exceed the concentrations or quantities normally found in residential sewage. Effluent parameters are to be measured using approved Standard Method or EPA procedures.

Stuth, WL, 1992, Keys to Understanding High Strength Waste in Residential and Commercial Applications, July, 1992. 26 pages.