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March 9, 2021

Original via Electronic Submittal  
Via <http://wq.ecology.commentinput.com/?id=aiK7u>

Eleanor Ott, P.E.  
Washington State Department of Ecology  
PO BOX 47696  
Olympia, WA 98504-7696

RE: Puget Sound Nutrient General Permit  
Preliminary Draft Comments

Dear Ms. Ott:

This letter provides comments from Alderwood Water & Wastewater District on the preliminary draft of the Puget Sound Nutrient General Permit (PSNGP) dated January 2021. This cover letter addresses general concerns related to this preliminary draft of the PSNGP. Attached are specific concerns, questions, or requests for clarification to specific language and sections of the preliminary draft PSNGP.

The District shares the concerns about water quality in Puget Sound and recognizes Ecology's responsibility to maintain compliance with water quality standards. We appreciate the efforts being taken by Ecology to examine how nutrients, and specifically anthropogenic sources of nutrient loading, contribute to DO reductions. However, significant uncertainties and gaps in the scientific information and disputed science regarding the relative impact of anthropogenic sources on DO levels still exist. There are many scientific uncertainties associated with the understanding of DO depletions in Puget Sound and the use of the Salish Sea Model (SSM) as a tool to support the proposed regulatory requirements. A full understanding of local and regional impacts has not been explained. The District is concerned about the impacts of implementing new regulatory requirements prior to verifying modeling results with sampling and data analysis or fully exploring the effectiveness and costs of available treatment technology.

The preliminary draft PSNGP relies on the statistical method "bootstrapping" to develop actions levels for each POTW covered under the permit. Additionally, Ecology's staff are using assumed loading numbers when sampling data isn't available to create datapoints that are loaded into the bootstrapping calculator tool. This process uses inaccurate data to statistically generate additional assumed data which is used to generate action levels to be used to determine permit compliance or required actions. This method does not accurately characterize a facility's nutrient load.

Example: Quarter 1 (Jan – March)

- Nutrient sampling and analysis are performed on January 15
- Analysis results and flow from January 15 are used to calculate loading data point for January.
- Analysis results from January 15 and flow from February 1 are used to calculate loading data point for February.
- Analysis results from January 15 and flow from March 1 are used to calculate loading data point for March.
- All 3 data points are entered into the data set used in the bootstrap tool for calculation of action level.
- Data points calculated for February and March are not an accurate characterization of the loading for those months.

In addition to the artificially generated data set, in Alderwood's case, the data set used to develop the  $AL_0$  is non representative of typical and intended plant use. The  $AL_0$  in the preliminary draft of the PSNGP Table 4 for Alderwood STP (aka Picnic Point WWTF) is 54,800. The dataset used for this calculation included data submitted by facility staff from 10/1/2013 – 3/1/2020. The District is requesting that Ecology reconsider the data set used for the calculation of the  $AL_0$  for Alderwood STP in Table 4 – Proposed Action Levels by Facility for the following reasons:

1. The District put a second aeration basin online on 3/21/17 as a process control decision to manage mixed liquor suspended solids to the MBR tanks. This additional aeration basin is intended to be used for treatment of flows more than 3 MGD. Current average flow is below 3 MGD. This process control decision had an unintended outcome of reducing effluent nitrogen concentrations. Use of the data after 3/21/17 artificially reduces the  $AL_0$ .
2. The NPDES Permit issued to Alderwood STP effective December 2018 reduced the sample frequency for nitrogen and ammonia to quarterly. The calculated loads for the intervening months used the flow reported on the 1st of each intervening month to calculate a load. This calculated load was used in the bootstrap calculation. This decision to use a flow not associated with the sample date to calculate loading is not representative of the loading for the months where this method is used. It artificially impacts the results of the bootstrapping method.

We would like to request that the  $AL_0$  for Alderwood STP be recalculated using data available from 10/1/2013 – 3/20/2017 that more accurately represents baseline Picnic Point plant effluent performance prior to our initiation of optimization efforts which utilize reactor volume intended for future growth. This data set has been run using the Ecology tool and tool settings described during a remote meeting with our Permit Manager Stephanie Allen. The  $AL_0$  calculated on this data set is 60,100.

The proposed “tiers and triggers” are confusing in the preliminary draft PSNGP and there is a significant possibility that many POTWs will exceed the calculated  $AL_0$  and/or  $AL_1$  in the first permit term. The tiers and triggers should be more consistently defined in the permit. The requirements for facilities that meet the criteria for dischargers  $<10\text{mg/L}$  is confusing and should be better explained. The actions required under each trigger will cause POTWs and ratepayers to comply with the requirements of the Tier 2 and Tier 3 actions before the water quality based effluent limits (WQBELs) are known which could lead to construction of assets that will be abandoned if future upgrades are required to meet WQBELs. The 5% margin of the  $AL_1$  over the  $AL_0$  for most POTWs is likely insufficient to prevent moratoria on new connections with the growth faced by the region. Setting WQBELs before major investments are required ensures better outcomes for the region.

The preliminary draft PSNGP requires action on extremely aggressive schedules. Significant increases in monitoring one month after the permit effective date will be difficult and costly for POTWs. Most POTWs are not accredited for the parameters being added and it is not possible for a POTW to obtain accreditation through Ecology on the additional parameters in the timeframe allowed. As a result, they will be required to take samples to commercial laboratories for analysis. This will significantly increase costs and staff time for these POTWs. It will be difficult for POTWs to add staff and budget to manage these additional costs. It is unknown whether commercial laboratories (or Ecology staff) can handle the surge in new sampling and data generation. Timelines in the draft for the optimization plans and improvements required under Tier 2 and Tier 3 are not realistic. Facility improvements require five, ten, or more years to plan, design, fund, permit, construct, and put into operation depending on the project scope. This doesn't even take into consideration the backlog of review that Ecology staff will see because of this effort. The District finds the timeline and proposal submitted by the Utility Caucus to the PSNGP Advisory Committee in October 2020 to be more realistic.

This proposed regulation will greatly affect the operation of our permitted wastewater treatment facility at Picnic Point and facilities we have contracted with for treatment of wastewater from areas within our service area without a complete understanding of the improvement these regulations may achieve. As a result, these regulations will significantly affect the costs to our ratepayers, and they may not achieve effective recovery results for Puget Sound. The District recommends that Ecology extend the PSNGP schedule to allow sufficient time to implement the following approach for improving water quality in the Sound:

- Resolve the scientific issues related to the SSM and the local and regional impacts of implementing permit requirements that are not based on a properly developed scientific foundation. Put the permit process on hold until these issues are resolved.
- Establish an independent panel of scientists and engineers to make recommendations on the effectiveness of alternatives and identify solutions that

would achieve the greatest water quality benefit for the investment considering both point and non-point sources;

- Extend the PSNGP schedule to enable other alternatives (i.e. water quality trading and bubble permits); and
- Collaborate with interested parties to develop a regional plan that includes feasibility and affordability.

Attached you will find additional comments that reference specific text or permit conditions in the preliminary draft of the PSNGP.

The District cares about water quality in Puget Sound and has continued to show this by making wastewater treatment decisions that result in discharge of effluent that exceeds permitted requirements. However, this current PSNGP proposal is based on disputed science, unrealistic timelines for compliance, unknown cost to water quality benefit, and apparent disregard for the costs to the public. These comments aim for permit requirements that will produce effective and affordable protection of Puget Sound water quality. Thank you in advance for your consideration.

Respectfully,



Dick McKinley  
General Manager

Attachment

- c: The Honorable Derek Stanford, State Senate
- The Honorable Maarko Liias, State Senate
- The Honorable Jesse Solomon, State Senate
- The Honorable Steve Hobbs, State Senate
- The Honorable Davina Duerr, House of Representatives
- The Honorable Shelley Kloba, House of Representatives
- The Honorable Strom Peterson, House of Representatives
- The Honorable Lillian Ortiz-Self, House of Representatives
- The Honorable Cindy Ryu, House of Representatives
- The Honorable Lauren Davis, House of Representatives
- The Honorable John Lovick, House of Representatives
- The Honorable April Berg, House of Representatives
- Ms. Eleanor Ott, Department of Ecology – Hard copy

PDF Page	Document Page	Section	Referenced Text	Comments
8	6	II.E paragraph 3	Permittees identified in Table 1 must submit an eNOI for coverage within 90 days after the issuance date of the general permit.	Application for coverage is allowed up to 90 days following issuance of the permit but monitoring requirements start 30 days following issuance. These conflict. How can Ecology require monitoring if Ecology hasn't provided POTW coverage.
8	6	II.E paragraph 1	Each POTW eligible for coverage,	This language "eligible" reads as though the POTWs listed in Table 1 have an option for coverage. My understanding is that there is not an option. This is confusing.
9	7	II.F Permit Fees	Permit Fees	Is there a planned increase in permit fees to POTWs as a result of this permit? What does that look like and what will it cover? It is difficult to comment on this until there is specific information on increases.
9	7	III.A Paragraph 3	Control Nutrients	This statement opens this up to regulating "nutrients" not just forms of nitrogen. Too Broad.
9	7	III.A Paragraph 1	About 70% of the nutrient load comes from domestic wastewater treatment plants	This should note 70% of anthropogenic sources of nitrogen. Not factual to state 70% of all nitrogen loading comes from WWTPs
10	8	III. A Paragraph 8	Draft allocations for point and non-point sources will be developed with the draft Nutrient Source Reduction Plan in 2023.	How will allocations be used and how will they impact this permit or other permit limits?
11	9	III. C Question on Page	Do reviewers have feedback on whether the 95% UCL or 99% UCL is more appropriate for AL0? Ecology has considered both and would like additional input.	Support for using 99% UCL if this method is used for setting AL0.
11	9	III.C Paragraph 3	Ecology used at least 3 years of data in the baseline action level (AL0) calculation.	Ecology used 10/2013 - 3/2020 for AWWD AL0 calculation. Would like to petition Ecology to reconsider this data set. More information included as separate comment.
11	9	III.C Paragraph 4 Bullet 4	Ecology calculated loads for intervening months using the representative concentration and flow from the intervening month.	For Quarterly Sampling events, the flow for the first day of the month was used to calculate loading for the months when samples were not collected. This is not a representative calculation of the loading for those unsampled months. These data points should not be used in the bootstrapping calculation.
11	9	III.C Paragraph 3	For those 11 facilities that did not have enough data, Ecology proposes requiring those facilities to collect additional data during the first year of the permit to establish a representative data set and calculate the nutrient action level	Why not allow all plants to do this, after covid is over. Plants measuring during covid restrictions likely to have non-representative data sample. All plants should have the ability to elect to do this if they wish.
12	10	III.D Paragraph 1	Fourteen plants in the Puget Sound are already partialIn nutrients by maintaining concentrations below 10 mg/L	This should be clarified that it is based on a annual average including how this average is calculated. It should be confirmed and stated that a sampling event exceeded 10mg/L doesn't impact this designation.
12	10	III.D Question on Page	Do reviewers agree with the approach proposed for calculating AL1 for facilities that have historically been able to maintain their annual average TIN effluent concentration below 10 mg/L?	Yes, agreement with the proposed calculation method based on permitted capacity.
12	10	III.D Question on Page	Do reviewers agree with the approach proposed for calculating AL1 for facilities that have historically been able to maintain their annual average TIN effluent concentration below 10 mg/L?	Agree pending clarification plants cannot be removed from this designation for a single exceedence of 10mg/L

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13	11	Table 4	Alderwood STP Alo calculated number.	<p>AWWD requesting some data be removed from the data set used to create Alo  ALO Calculation for Alderwood STP (Picnic Point WWTF)  ALO Data Set Reconsideration Request</p> <p>The ALO in the preliminary draft of the PSNGP Table 4 is 54,800lbs per year. This level was calculated using the calculator tool developed by Ecology staff. The dataset used for this calculation included data submitted by facility staff from 10/1/2013 – 3/1/2020. The District is requesting that Ecology reconsider the data set used for the calculation of the ALO for Alderwood STP (aka Picnic Point WWTF) in Table 4 – Proposed Action Levels by Facility for the following reasons:</p> <ol style="list-style-type: none"> <li>1.The District put a second aeration basin online on 3/21/17 as a process control decision to manage mixed liquor suspended solids to the MBR tanks. This additional aeration basin is intended to be used for treatment of flows more than 3 MGD. Current average flow is below 3 MGD. This process control decision had an unintended outcome of reducing effluent nitrogen concentrations. Use of the data after 3/21/17 artificially reduces the ALO .</li> <li>2.The NPDES Permit issued to Alderwood STP effective December 2018 reduced the sample frequency for nitrogen and ammonia to quarterly. The calculated loads for the intervening months used the flow reported on the 1st of each intervening month to calculate a load. This calculated load was used in the bootstrap calculation. This decision to use a flow not associated with the sample date to calculate loading is not representative of the loading for the months where this method is used. It artificially impacts the results of the bootstrapping method.</li> </ol> <p>We would like to request that the ALO for Alderwood STP be recalculated using data available from 10/1/2013 – 3/20/2017 that more accurately represents baseline Picnic Point plant effluent performance prior to our initiation of optimization efforts which utilize reactor volume intended for future growth. This data set has been run using the Ecology tool and tool settings described during a remote meeting with our Permit Manager Stephanie Allen. The ALO calculated on this data set is 60,100.</p>
15	13	IV.A Paragraph 1	must use analytical methods approved under 40 CFR 136 for all permit required compliance monitoring.	Are these analytical methods required for "Report only" parameters and/or analysis conducted for process control? Do all of the sampling events for report only and process control need to be conducted by an accredited lab?
16	14	IV.A Paragraph 4	monitoring beginning one month after the effective date of the proposed general permit	Most plants are not accredited for the newly required analysis. Accreditation takes significant time (6 months or longer) including purchase of equipment and supplies, development of SOPs for each test, completion of PE testing, and final accreditation from Ecology. More time should be allowed for labs to obtain accreditation.
16	14	IV.A Paragraph 4	monitoring beginning one month after the effective date of the proposed general permit	This time line conflicts with Section 2.E. which states that POTWs have up to 90 days following issuance of the permit to apply for coverage using the eNOI process. How will this work? Can the Web DMR be set up to accept the sample results before the POTW gets the official notice of coverage under the permit?
16	14	IV.A Paragraph 4	monitoring beginning one month after the effective date of the proposed general permit	Are plants equipped to do this or can be be within one month of permit issuance? Recommend more time for plants to get testing plan for changed frequency.
18	16	Table 6 footnote A	If taken after, dechlorinate and reseed the sample	This statement assume disinfection is done using chlorine. If sample taken after UV disinfection process - is dechlorination required? This may need clarification.
18	16	Table 6	Table 6 - Monitoring Schedule: Medium treatment plants, 3-10MGD	Most POTW labs are not accredited for these additional parameters. Annual cost to add these minimum testing requirements using a contract lab is approx. \$15,000 per year plus over 100 hours of staff time to transport samples to the lab (or payment for courier services). For a small utility, this is almost 3 time more than existing budget for lab professional services.

PDF Page	Document Page	Section	Referenced Text	Comments
21	19	V.A Paragraph 1	and begin implementing them in the first year of the permit	clarify how plants already optimizing will be effected by this. Can those plants state their current optimizations rather than implement them in the first year.
21	19	V.A Paragraph 1	and begin implementing them in the first year of the permit	How will this be separated from our required nutrient report? Recommend allowing first year to identify optimizations, and the second year of permit to implement
22	20	V.B Tier 1 Optimization	Tier 1 optimization actions can include	Tier 1 options section does not address what happens if you exhaust these actions prior to end of permit cycle. How would you report on that?
22	20	V.B Paragraph 1	August (1 year after issuance) that facilities will report their nutrient reduction efforts over the previous year	Disagree with this nutrient reduction efforts report being done in the middle of the summer season. It seems like Ecology would not want to split the reduction effort between reporting periods. This stated requirement does not allow time to prepare and submit the report. A POTW would not be reporting on an entire year. This report should have a report period (i.e. January 1 - December 31 or other seasonally appropriate period with a due date of 30-60 days following end of reporting period. This would allow for collection and evaluation of data and development of a better report.
22	20	V.B Paragraph 1	August (1 year after issuance) that facilities will report their nutrient reduction efforts over the previous year	Ecology consider staggering these submittals to avoid backlog?
22	20	V.B Tier 2 Actions	Tier 2 actions are triggered when a permittee exceeds ALO	need to clarify if this applies to those below 10mg/L
22	20	V.B Question	Do reviewers have suggestions for "reasonable investments" at small (<3 MGD), medium (3-10 MGD) and large (>10 MGD) that could be used to separate the two tiers of optimization actions required by this permit?	reasonable investment shall exceed no more than 5% of the POTW liquid stream equipment maintenance budget? For facilities without a budget reference average of last 2 years of liquid stream maintenance expenses -- something related to annual costs seems fair.
23	21	V.B Tier 2 Optimization	Aeration basin optimizations: Energy efficient blowers	Is ecology considering energy savings an form of optimization, even without measurable reduction in nitrogen?
24	22	V.D Bullet 4	Evaluating nitrogen reduction potential from commercial and residential users.	How would a POTW evaluate and report on this?
24	22	V.D Bullet 4	Developing facility specific nitrogen reduction goals	Will Ecology hold POTW to this reduction goal? What if it is not reached? Will this open up POTWs to possible 3rd party lawsuits?
25	23	V.D.	Nutrient Optimization Plan Submittal and Requirements	This process is confusing. This section states that the Nutrient Optimization Plan is required to be submitted 1 year after the date of permit issuance. However, the Section V.B. states that the POTW will report nutrient reduction efforts 1 year after permit issuance. Is this report based on the plan referenced in this section? If yes, is Ecology expecting POTWs to start this effort before development, review, and approval of the plan? If no, this needs additional clarification.
25	23	V.D. Nutrient Opt. Plan Components. Section d.	Determine or revise a facility specific, annual nitrogen reduction goal (i.e., %removal) utilizing knowledge of the treatment plant	Will facilities be held to this goal? Can the goal be to maintain existing levels if operating under 10mg/L.
26	24	V.E Paragraph 1	Ecology will review each annual optimization plan electronic submittal within 60 days after receipt	If Ecology has 2 months or more to review and approve the Optimization Plan, that reduces the time allowed for facilities to complete the plan and compile data to report on effectiveness of options. This should be considered when finalizing the report due dates.
26	24	V.D. Nutrient Opt. Plan Components. Section f.ii	Most Successful	What is the criteria for determining "most successful"?
26	24	V.F Paragraph 1	Permittees will still be considered compliance with their individual permit limits for BOD5, TSS, and/or pH in the event of an intermittent exceedance of these limits when caused by optimization efforts or pilot studies related to nutrient reduction.	How will POTWs be protected from 3rd party lawsuits when parameters in the individual permits effluent limits table are exceeded due to these efforts?
26	24	V.F	Conventional Limit Exceedances due to Optimization Exercises or Pilot Testing	This Section does not specifically state if Ecology wants the optimization effort to be stopped if an exceedance of these parameters is discovered. There is a statement that the report to Ecology should include "the anticipated time the exceedance is expected to continue" and the final paragraph of the section discusses compliance with adaptive management response and the permittee will be considered in compliance with the individual permit. Please provide additional information and guidance on this.

PDF Page	Document Page	Section	Referenced Text	Comments
26	24	V.D. Nutrient Opt. Plan Components. Section f.ii	baseline	clarify what the baseline year is.
26	24	V.E Paragraph 1	Ecology will review each annual optimization plan electronic submittal within 60 days after receipt	recommend a staggered submittal list to not overload ecology. Possibly those with least amount of nitrogen loading to sound would be last to submit.
34	32	Apendix A: Action Level Flow Chart	Flow Chart	Flow Chart - Include nutrient reduction evaluation in flow chart if possible.



# TIN AL<sub>0</sub> Calculator

## Intro

The action level is displayed on the left side once the data is loaded. Action level is recalculated as controls are adjusted. On the right side, you can find a plot of monthly loads and annual loads compared to the action level. File must be space or tab delimited text with column for load first, and... if desired second column with date in 'YYYY-MM-DD' or 'MM/DD/YYYY' format, will allow distinguishing data by month. See "Help" tab for more detailed instructions

Define a load to determine fraction of estimates that exceed the load

Defined average daily load

Fraction of estimates exceeding 100 = 100%

Data, Controls, Numeric Output  
significant digits to display

165 Daily

 Fix Random number Seed

60,100 Annual

Action Level based on 42 data points Over 1240 days

Please select Data file

Browse... Alderwood\_WA0020826DAYmp1\_DOE Nutrient Data Set\_2021.csv

Upload complete

Earliest Data to consider for calculation

Latest Data to consider for calculation



Samples per month (per year/12)



Thousands of iterations



Confidence Level Needed



If Date is not second field input, data assumed to be sequential months starting in Jan 2015

Alderwood\_WA0020826DAYmp1\_DOE Nutrient Data Set\_2021.csv

DataTable Summary Individual Annual Version Help

Show 25 entries

Search:

load	POS	inwindow	Season	mo	ddays	perLd	Ann	Q2	Qave	AMM	NIT	Ammonia	Flow	Nitrate...Nitrite	TIN	X	X.1
83.00802	2013-10-01	TRUE	1	10	31	2573.249	48754.99	1.85	2.04258	0.080	5.30	0.080	1.85	5.30	5.380		
98.28440	2013-11-01	TRUE	1	11	30	2948.532	50330.81	1.91	2.12000	0.070	6.10	0.070	1.91	6.10	6.170		
127.40684	2013-12-01	TRUE	1	12	31	3949.612	51504.07	2.07	2.07000	0.080	7.30	0.080	2.07	7.30	7.380		
139.92518	2014-01-01	TRUE	1	1	31	4337.681	52580.02	2.14	2.21000	0.160	7.68	0.160	2.14	7.68	7.840		
120.36288	2014-02-01	TRUE	1	2	28	3370.161	53648.37	2.20	2.39000	0.550	6.01	0.550	2.20	6.01	6.560		
185.46826	2014-03-01	TRUE	1	3	31	5749.516	55159.26	2.26	2.70000	0.190	9.65	0.190	2.26	9.65	9.840		
189.04778	2014-04-01	TRUE	1	4	30	5671.434	54726.27	2.44	2.25000	0.280	9.01	0.280	2.44	9.01	9.290		
168.67483	2014-05-01	TRUE	1	5	31	5228.920	53953.63	2.12	2.17000	0.120	9.42	0.120	2.12	9.42	9.540		
149.67548	2014-06-01	TRUE	1	6	30	4490.264	53520.96	1.97	1.97000	0.170	8.94	0.170	1.97	8.94	9.110		
160.68344	2014-07-01	TRUE	1	7	31	4981.187	53247.34	1.97	1.94000	0.060	9.72	0.060	1.97	9.72	9.780		
128.62365	2014-08-01	TRUE	1	8	31	3987.333	51824.97	1.99	1.92000	0.100	7.65	0.100	1.99	7.65	7.750		
48.90326	2014-09-01	TRUE	1	9	30	1467.098	50836.81	1.91	1.91000	0.190	2.88	0.190	1.91	2.88	3.070		
133.84099	2014-10-01	TRUE	1	10	47	6290.526	52527.18	1.86	2.01000	0.028	8.60	0.028	1.86	8.60	8.628		
141.45307	2014-11-17	TRUE	1	11	21	2970.515	53176.93	2.22	2.31000	0.130	7.51	0.130	2.22	7.51	7.640		