

## North Totten Inlet Mussel Farm Proposal

### Response of the Thurston County Independent Technical Review Committee (ITRC) to Taylor Resources Regarding Technical Studies Received in September 2007

#### Summary of Independent Technical Reviewer Comments

This summary highlights key comments that are considered by the ITRC to be action items, mandatory for identification and quantification of potential adverse impacts of the proposed project. Our individual review files contain numerous other corrections and suggested modifications that should be addressed before any of the Taylor Resource consultant reports are considered final.

#### Key Remaining Issues to be Resolved

(not a complete list of all issues, comments and needed corrections)

Issue to be resolved	Consultant Report	Reviewer-Page
Calculate effects of the project on dissolved oxygen (D.O.) during summer and early fall and worst-case conditions, especially on subsurface sediments.	NF	JN 1 JR RN 1-2 and 17
Calculate the effect of the project on nitrogen flux during summer and early fall and resultant effect on phytoplankton biomass or productivity; apply Rodhouse model as recommended.	NF	JN 1 JR 8 RN 4-5
Use existing Totten Inlet flushing rate estimates to conduct sensitivity analysis of the above DO and nitrogen/phytoplankton issue; especially focus on worst-case (least flushing, greatest seasonal stratification and low subsurface D.O.)	NF and KB	JN 2 JR 5-7
Revise all physical oceanographic study result descriptions to include and discuss the range of tidal exchange during each type of study (i.e., over-the-side ADCP, drogue work, current meter work)	several	MK JR 8-9
Complete the drogue study at the mussel raft site: cover a complete tide cycle; deploy drogues during average tidal conditions for a sufficient duration to clarify connectivity time scales around the inlet; establish a connectivity map.	EHI	MK 3
Revise supplemental study of dissolved nutrients as per comments if it is to be a relied upon as a reference for the EIS.	KB	JR 11-17
Clarify findings of low DO in field studies.	EHI	RN 1
Clarify choice of subset of years from Washington Dept of Ecology database for D.O. conditions, compare and contrast to results from current studies. NF used fewer years than KB.	NF, KB	JR 9 (C4) RN 2-3

<b>Issue to be resolved</b>	<b>Consultant Report</b>	<b>Reviewer-Page</b>
<b>Use quantitative measures (sigma T density) to characterize vertical stratification in Totten Inlet, not anecdotal descriptions, use these data in the analysis of D.O. effects.</b>	NF, KB	JR 14 RN 2-3
<b>Correct misinformation on <i>Metridium senile</i>.</b>	NF, KB	RN 5 JR 9-10
<b>Missing and incorrect citations</b>	NF, KB	Several, see full reviews
<b>Clarify extent of winter phytoplankton sampling by PSI.</b>	NF	RN 6
<b>Complete risk analysis (section in outline form appears incomplete).</b>	KB	RN 11
<b>Remove personal opinion from risk analysis.</b>	KB	RN 11
<b>Briefly discuss what sulfide measurement techniques were used, provide citation for protocols, methodology and source or modifications. Discuss if partial omission of some of the particulate fraction of sulfide in sediments is an insurmountable problem. Discuss if other measurements that were collected are suitable benchmarks for detecting sediment eutrophication. Resolve contradictory statements as noted on page 18 of RN review.</b>	KB	RN 15 RN 18
<b>Further discuss conclusion that sediments in Totten Inlet are already near to their assimilative capacity and how that may quantitatively relate to low bottom water D.O.</b>	KB	RN 17
<b>Complete genetics paper through editing, corrections and respond to substantive comments.</b>	KB	RE
<b>Discuss implications of use of smaller than optimum drogues.</b>	KB	MK 1
<b>Address comments in Executive Summary regarding interpretation of drogue, current meter and flushing rates.</b>	KB	MK1

Codes:

EHI Evans Hamilton Inc.

NF NewFields Northwest

KB Dr. Kenn Brooks

JN Dr. Jan Newton

MK Dr. Mitsuhiro Kawase

RE Dr. Ralph Elston

JR Dr. Jack Rensel

RN Dr. Roger Newell

See reviewer comment for reference to specific KB report.

Consultant reports reviewed by one or more ITRs for the North Totten Inlet Mussel Farm project included:

NewFields Northwest. 2007. An assessment of potential water column impacts of mussel raft culture in Totten Inlet. Port Gamble, WA.

Brooks, K.M. undated. Measurement of nutrients in bottom water under and adjacent to the Deepwater Point mussel farm in Totten Inlet, Washington Aquatic Environmental Sciences, 644 Old Eaglemount Road, Port Townsend, WA 98368

Brooks, K.M. 2004a. The epibenthic community observed in association with the intensive raft culture of *Mytilus galloprovincialis* in Totten Inlet, Washington. Prepared for the Pacific Shellfish Institute, 120 State Avenue NE #142, Olympia, Washington as part of Department of Commerce Award No. NA16RG1591. 19 pp.

Brooks, K.M. 2003. Measurement of nutrients in bottom water under and adjacent to the Deepwater Point mussel farm in Totten Inlet, Washington. Prepared for the Pacific Shellfish Institute, 120 State Avenue NE #142, Olympia, Washington as part of Department of Commerce Award No. NA16RG1591. 9 pp.

Brooks, K.M. undated. Totten Inlet baseline studies completed by Aquatic Environmental Sciences in 2002 and 2003 (“executive summary also includes reference to studies in later years).

Brooks, K.M. 2004b. The frequency of *Mytilus edulis galloprovincialis* alleles in Washington State marine waters where the species is commercially cultivated. Technical report prepared for Taylor Resources, Southeast 1340 Lynch Road, Shelton, WA 98584. 13 pp.

Brooks, K.M. 2005a. Baseline information describing sediment physicochemistry of Totten Inlet and the macrobenthos of the proposed North Totten Inlet mussel farm. Aquatic Environmental Sciences, 644 Old Eaglemount Road, Port Townsend, WA 98368. 64 pp.

Brooks, K.M. 2005b. Benthic response at the Deepwater Point mussel farm in Totten Inlet, Puget Sound, Washington State, U.S.A. Aquatic Environmental Sciences, 644 Old Eaglemount Road, Port Townsend, WA 98368. 41 pp.

Brooks, K.M. 2006. Supplemental study of dissolved nutrients and particulate organic matter in the waters near the proposed mussel farm in North Totten Inlet, Washington State, USA. Aquatic Environmental Sciences, 644 Old Eaglemount Road, Port Townsend, WA 98368.

EHI. 2006. Evans-Hamilton, Incorporated Totten Inlet Circulation Study Report. EHI Job Number: 5514. Evans Hamilton, Inc. 4608 Union Bay Place NE, Seattle, Washington 98105. Prepared for Taylor Resources, SE 130 Lynch Road, Shelton, WA 98584.

Brooks, K.M. 2005. Baseline information describing sediment physicochemistry of Totten Inlet and the macrobenthos of the proposed North Totten Inlet mussel farm. Aquatic Environmental Sciences, 644 Old Eaglemount Road, Port Townsend, WA 98368.

Brooks, K.M. 2005. Risk analysis for the proposed North Totten Inlet mussel farm  
Aquatic Environmental Sciences, 644 Old Eaglemount Road, Port Townsend, WA 98368.

The ITRs chose not to formally review the Dr. Kenn Brooks literature survey as the document was extremely lengthy, not all the ITRs had the time to review it in detail, and it was not updated with the more recent site-specific studies listed above. Some of the errors or omissions identified by the ITRs in prior reviews or this most recent set of documents are also present in the literature review. We acknowledge that the document is potentially very useful, but we do not endorse its use or validity because of the above.