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ROBERTS BANK PORT EXPANSION

A COMPENDIUM OF WRITTEN SUBMISSIONS ON DEFICIENCIES IN THE ENVIRONMENTAL IMPACT STATEMENT

FEBRUARY 13, 1978

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A compendium of written
submissions on deficiencies in
the environmental impact
statement.

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1. H. L. BERGENSTEIN
2. P. L. BIRRELL
3. SANDRA C. BOURQUE
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6. JOHN M. MILLEN

C. SUBMISSIONS FROM GOVERNMENT AGENCIES

FEDERAL

1. FISHERIES AND ENVIRONMENT CANADA

PROVINCE OF BRITISH COLUMBIA

MINISTRY OF THE ENVIRONMENT

2. LAND COMMISSION
3. LAND MANAGEMENT BRANCH, ENVIRONMENTAL SERVICES UNIT
4. POLLUTION CONTROL BRANCH

MINISTRY OF RECREATION AND CONSERVATION

5. FISH AND WILDLIFE HABITAT PROTECTION UNIT (VICTORIA)
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7. MINISTRY OF ECONOMIC DEVELOPMENT

MUNICIPAL AND REGIONAL

8. CITY OF PRINCE RUPERT
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D. SUBMISSIONS FROM COMPANIES

1. GREER SHIPPING LTD.
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A. SUBMISSIONS FROM GROUPS

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JAN 16 1978

EAP PACIFIC

January 12, 1978

Chairman,
Environmental Assessment Panel,
Roberts Bank Outerport Expansion,
Room 1870 - 1050 West Pender Street
Vancouver, B.C.
V6E 3S7

Attention: Mr. J.F. Herity

Dear Sir:

The purpose of our newly formed organization, which supercedes the "Save the Beach Committee", is to monitor developments within the West shore of Boundary Bay and to provide discussion and action for such developments.

The proposed Roberts Bank Port Expansion will occur on the opposite side of the peninsula which will limit most of our involvement. Three potential pollutants which could affect the quality of our area are: spills of toxic materials, dust from coal and/or other materials, and noise from trains passing through the Municipality. All of these points have been discussed in the report and it is hoped that if any environmental problems arise as a result of the port expansion they will be quickly remedied.

We would appreciate being kept on the mailing list and advised of any future meetings.

Yours truly,



Bayside Environmental Society
P.O. Box 1162-Postal Station "A"
Delta, B.C.
V4M 3T3

B.C. WILDLIFE FEDERATION

17633 - 57th Ave., Surrey, British Columbia V3S 1G9

January 17, 1978

J.S. Herity,
Panel Secretary,
Roberts Bank Port Expansion Proposal,
Federal Environmental Assessment Review Office,
1870 - 1050 West Pender St.,
Vancouver, B.C.
V6E 3S7

RECEIVED

JAN 19 1978

EAP PACIFIC

Dear Mr. Herity,

Further to your request for submissions re shortcomings and the environmental impact assessment of the Roberts Bank Port Expansion.

We would submit the following for your consideration.

1. A proper assessment of the environmental impacts and an ability to weigh them against other values cannot be undertaken without the knowledge of the economic ramifications of the project as a whole. We therefore request that the following information not supplied in this vein in the report be submitted. What was the total cost of the present Roberts Bank Port including back-up lands? What are the present operating costs? What is the present income to the National Harbours Board from the Roberts Bank Super Port? The present lease fees paid for backup lands are acceptable as inclusion, we would prefer them shown separately in the income bracket for the Super Port?
2. We understand the federal government is either already building or is committed to building a bulk loading port out of Prince Rupert. What is the present situation with regards to that?
3. What are freight costs from Alberta coal sites to (a) Roberts Bank including interchange and short haul charges (b) to Neptune Terminals, (c) to Port Moody, and (d) to Kitimat and (e) to Prince Rupert?
4. Report indicates protection of eel grass habitat could not be accomplished except with port expansion. No explanation given for technical limitations which preclude protection of eel grass habitat without port expansion. This should be included in the report.

....2



Representing 145 affiliated conservation clubs throughout British Columbia
Contributions to the B.C. Wildlife Federation are Tax Deductible

5. Statement is made several times that opening of water passage through causeway would be detrimental to eel grass beds in general environment. We see no evidence of data to support this statement, and some should be provided or reasoning for the statement should be provided.

6. Report suggests new forest products terminal Prince Rupert 1985. Evidence submitted before Pearce Royal Commission indicated forest industry at or very near the limit of expansion capabilities. The report does not indicate what forest products will be shipped to where and from where these forest products will originate. This information should be provided or classed as pure speculation.

7. We suggest data used to justify need for port is long out of date and more up to date information available that in fact suggests port need not likely. Considering expansion proposed for only two years hence some specific hard proposals should be available and these are not evident in the report and should be.

8. With regards to the specific technological recommendations. Recommendation #6 - no data supplied for statement made. Recommendation #9 - why restriction of aircraft in October and March only? No back-up data supplied. Recommendation #13 - who will pay for crossing separations? Those benefiting from the project or the general taxpayer? If the proponents have the ability to make recommendations, they should indicate fully who will be paying if those recommendations are implemented. Recommendation #15 - where would small boat facility be located? Where is the design for small boat facility in the plans or within the study? What are the environmental impacts of the small boat facility? Recommendation #16 - what kind of recreational access should be allowed where and in what manner etc?

9. Assumptions are made regarding impact of tar sands production with regards to sulphur, and the implication being that with the tar sands production there will be a massive increase in sulphur production therefore requiring additional port facilities for this. Question should be asked - what is present sulphur production and what is present sulphur export? In other words, our information is that presently we have a massive surplus of sulphur far in excess of what we export now.

10. Figure ten in the main report indicates the amount of unharvested timber there is no indication of uncommitted timber and the information should be supplied as to how much of this unharvested timber is already committed to maintain present production.

11. Table six, - What is justification for the rating of Vancouver rail connection being classified as only fair as opposed to Prince Rupert as being classified as good?

12. Boundary Bay is rated to be more sensitive environmentally than Roberts Bank. No explanation for what brought about this observation other than it appears a personal opinion. Specifics should be outlined as to how the assessment of sensitivity and importance of the environmental situation is arrived at for both areas.

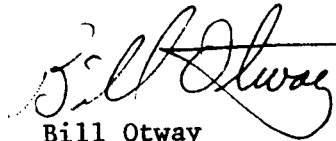
13. Page 48 statement is made that coal dust blowing off the pile if the facility is located on Kitson Island would pose an environmental problem by covering up flora bank. Throughout the submission the situation with coal dust is not looked upon as being a problem at Roberts Bank. An explanation should be given as to what different type of coal, different type of dust, or why the coal will blow off and cover up an environmentally sensitive area in one location and pose no problems in another.
14. Why is no detail information supplied for Kitimat when it is supplied for every other area when the only apparent drawback to Kitimat is the necessity to upgrade the railway line, which is also a requirement for the Prince Rupert line. Considering the port facility at Kitimat was considered superior and less environmentally sensitive with regards to the Oil Port by one of the major components of the report, we feel that the full details and material with regards to Kitimat should be provided within this report.
15. Table seven page 63 - no backup data given for justification for site readings as to impact on various values.
16. Report seems to indicate and in fact states emphatically that Roberts Bank the development of Roberts Bank Super Port will mean that no other port need be developed for some time whereas if any other port is developed in place of Roberts Bank, Roberts Bank will have to be expanded. The end result being two ports rather than one. No basis for this assumption being given in fact the report states in other places that northern coal will be shipped from a northern port which would indicate that in fact the statement and assumptions put forward are fallacious and regardless of what is done with Roberts Bank, a northern port will have to be constructed.
17. Require an overlaying map so that a clear picture can be given as to actual critical environmental areas and exact placement of port proposal upon these. Present situation of numerous maps makes exact impact too difficult to ascertain.
18. No backup data given for the statement that the current between the coal causeway as expanded and the ferry causeway will not persist from that of one point three meters per second as originally supposed.
19. Statement is made re introduction of Fraser River water being harmful to eel grass development. No data given for substantiation of this statement.
20. Statement made that estimates of present air loss of four to five tons per month is low, what is the actual estimated loss? What is the estimate of this loss with the expanded port and where does this amount of coal go to, where is it deposited and what is the impact specifically of the deposit?
21. Statement is made that the failure to expand coal port facilities at Roberts Bank will stop development desirable viable coal mines. Information should be supplied specifically as to which coal mines are referred to.
22. Statement is made that the town of Fernie is in need of being saved and will be saved only with the development of at least one more coal mine in the area and that the development of that coal mine is contingent upon the expansion of Roberts Bank. It should be made clear which coal deposit and mine proposal presently in the planning or otherwise stages will require the facilities of the town of Fernie as its base of operations living accommodations etc. This information should be supplied to substantiate the statement.

We have numerous other areas of concern which we will be bringing up at the time of hearings, some of which may be simply a matter of interpretation and there are probably many other areas of inaccuracy within this report. However, due to time constraints and staff limitations at present, this is the best we can deliver.

We wish to make it clear that we are very dissatisfied with the situation wherein the National Harbours Board Port of Vancouver and others had this report available since early October, 1977, and they have large paid staffs whereas we who are very limited in staff did not receive the report until very late in November and are expected to respond by mid-January with Christmas Holidays intervening.

We would submit that the report is decidedly biased - in fact blatantly to favour the expansion of the Roberts Bank Super Port and charge material and tables loaded to show favourable light on expansion of super port at Roberts Bank.

It is our submission that the justification for the expansion of the port is based on outdated and out moded and no longer applicable information and that new and up to date information should be submitted on a justification side before any decision is made on the project.


Bill Otway
Executive Director

BO/co

DEFICIENCIES IN ENVIRONMENTAL IMPACT ASSESSMENT
OF ROBERTS BANK SUPERPORT

A Critical Review by the B. C. Wildlife Federation
Lower Mainland Branch

January 16, 1978

The conclusions reached by this Impact Assessment are not in harmony with peoples desires to preserve the integrity of the Fraser River Estuary/Delta.

Renewable resources like fisheries, waterfowl, agriculture, tourism, recreation, and culture preservation are being forsaken in order to accommodate a development which will expedite the disgorging of non-renewable resources out of British Columbia.

Coming at a time of avowed government restraint in public spending, there can be no justification to build an enlarged port at Roberts Bank, when the facilities at Prince Rupert, Kitimat, Vancouver, Port Moody, New Westminster and Surrey are not fully utilized.

We recommend that this development be tabled at this time and no further public funds be spent to justify its needs. Our reasons are as follows:

This "ad hoc" E.I.A. does not consider the interactions between existing and proposed developments or the cumulative effects of these on productivity of the estuary.

Presently, there is no rational comprehensive plan to manage the river basin, although the Canada Water Act provides for such integrated management. Consequently, we have an intolerable situation where more than 45 agencies are involved in land use decision making in the Fraser basin.

This proliferation of unco-ordinated management influenced by industrial ties of super powerful agencies like Canada Transport and the Harbours Commissions have amassed environmentally sensitive areas of the Fraser River Estuary/Delta, taken the land/water base out of production and now are consolidating before a rational plan to share and manage the estuary is laid out.

We observe an obvious rush, by single land use agencies, to get as many environmentally incompatible developments sanctioned before the Fed. /Prov. Fraser Estuary Study group brings forward a report on land use policy.

We urge the Environmental Assessment and Review panel to take a broad look and terminate the process until the Fed. /Prov. Estuary Study Team makes its recommendations on integrated resource management in the Lower Fraser basin.

The EARP panel should not make a hurried decision without first waiting for a land use scoring strategy forthcoming from the Estuary study.

1. Therefore, our first major objection to the impact statement is that it considers the superport development in isolation, without reference to interactions between and cumulative effects of present and proposed developments on the short and long term. It does not consider delaying the project until a policy to protect the Fraser Estuary/Delta has been promulgated. A policy which would indicate judicious use of land and resources without impairment to the natural productivity of the Estuary.
2. The E.I.S. does not consider a change of land use order which will result if the development proceeds. It makes no mention of the thousands

of acres which have been taken out of Wildlife Conservation Reserve (by B.C. Order in Council No. 2374.) Neither does it mention the likely conversion of vast acreages of prime agriculture land needed for spin-off developments due to the ports location.

3. The E.I.S. does not consider U.S. Canada Transboundary implications. It does not consider that some damage will result to international resources of waters, fish and birds. For example, herring from the Boundary Bay area constitute a major food source for salmon throughout the boundary waters of the Strait of Georgia. Thus a depletion of the herring population because of the proposed superport development could in turn mean a severe depletion of the salmon population and thus severe losses for both the commercial herring fishing and the salmon fishing industries of both Canada and U.S.A. Water, fish, and birds hold no borders, therefore it would be the duty of the International Joint Commission to study the environmental effects of a major development which will impinge on U. S. resources.

A study done by F. F. Slaney & Co. Ltd. in 1974 called Land Evaluation Component, Vancouver International Airport, mentions that disruption of the ecosystem of Boundary Bay could have serious regional and international repercussions because of destruction of part of the eel grass beds. Therefore, it is not unreasonable to believe that the Roberts Bank development may also have these repercussions, particularly when deterioration of eel grass beds has already been implied.

Furthermore, why was there no consultation with the International Pacific Salmon Fisheries Commission in this assessment. The development is bound to have a negative effect on their sphere of influence.

4. The E.I.S. is based mostly on old data; there has been no effort made to seek new baseline information. For example:
- a) What are the migratory, semi-migratory and resident fish and wildlife species in the area?
 - b) What are the effects of a toxic pollutant spill assessed through dye tracing?
 - c) What is the role of terrestrial organic matter from the upland areas in Tsawwassen bay?
 - d) What is the impact of solid wall jetties?
 - e) What is the productivity index of the Tsawwassen marsh? What is its major energy source?
 - f) Describe the bacterial-fungal-algal community.
 - g) Describe the benthic and drifting invertebrates.
 - h) What has been the impact on fish and wildlife resources from the existing port facility?

**DEFICIENCIES AND DATA GAPS IN THE ENVIRONMENTAL IMPACT STUDY
OF ROBERTS BANK PORT EXPANSION**

1. What will be the effects of WIND BLOWN PARTICULATE MATTER from port activity?
 - * How much will fall out?
 - * Will it impair water quality? aesthetics?
2. What is the magnitude of STORM WATER RUN OFF?
 - * Will it impact on Tsawwassen salt marsh?
 - * Will it impact on eel grass beds?
3. What is the effect of restricting WATER CIRCULATION between the two causeways?
 - * Will it impinge on animal migration?
 - * What will be the effect on fish movements, feeding habits and spawning?
4. What is the effect of LIGHTING FROM LANDINGS AND CAUSEWAYS?
 - * On biological diversity?
 - * On predator-prey relations?
 - * On migration of plankton?
5. What is the effect of altered OCEANOGRAPHIC CONDITIONS?
 - * On current patterns?
 - * On erosion / accretion?
 - * On sediment balance?
 - * Salinity?
 - * On mixing and water exchange?

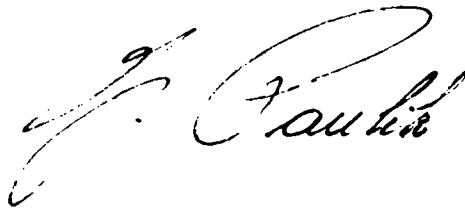
6. Produce the baseline data on which decision was made to classify the TSAWWASSEN SALT MARSH to be a lesser sensitive area as shown in Drawing No. 1-1.
7. What is the CHARACTER OF THE OCEAN BED surrounding WESTPORT Terminal and how will it be changed over time, based on examination of similar facilities?
8. Substantiate positive and negative effects in CULVERTING the Westport and ferry causeways to allow passage of water and animals.
9. What compensation has been offered by National Harbours Board to take away acreage placed in reserve under Order in Council for the purpose of Wildlife Conservation. Why is there no mention of use of the area by the Lesser Snow Geese which is the most important and sensitive waterfowl using the area?
10. Qualify and quantify a complete year of data on resident and migratory animals which use the area for rearing, feeding, and resting, and identify those crossing the international border.
11. Identify the historical significance of the impact site before and after the causeways were constructed.
12. What will be the effects of noise on wildlife, based on examination of similar facilities?
13. Why is there no qualification and quantification of food webs and associated nutrient flows in a complete year? What will the impact be?

14. What are the spin-off developments which can be expected to locate on the farmland - uplands because of port development? What are the impacts?
15. What will the impact of development be on water, fish, and people across the international border and south of the ferry terminal causeway?

In our opinion, the data presented is incomplete and sporadic and has been bent to fit a dubious engineering score.

In light of these uncertainties, we cannot accept the E.I.S. conclusions. We trust you will agree with our urging to call off the process until the Fed. /Prov. Estuary study team brings in their report.

Thank you for this opportunity to respond.

A handwritten signature in cursive script, appearing to read "J. Paulik", with a large, sweeping initial "J".

WILL PAULIK,
Director
B.C. Wildlife Federation
Lower Mainland Branch
7500 Heather st.
Richmond B.C. V6Y 2P9

Citizen's Association of Delta
Box 1088
St. 'A'
Delta

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JAN 16 1978
FAP PACIFIC

January 15, 1978

Mr. J. F. Herity
Panel Secretary - Environmental Assessment Panel
1870 1050 West Pender Street
Vancouver, B.C.
V6E 3S7

Dear Sir:

re: Environmental Impact Assessment of Roberts Bank Outerport Expansion

On behalf of Citadel, I would like to thank you for coming to our public meeting on January 12th. Although we now know more about what is planned, we like it less!

As requested, I will itemize what we feel to be the report's most serious deficiencies:-

1. The justification of the Roberts Bank site over northern ports by the use of questionable graphs.
2. The minimization of the damage to fisheries and wildlife with spurious claims that the ecology of the area will benefit through an alleged eelgrass increase. The report downplays the role of the Roberts Bank foreshore as a fish, shellfish and wildfowl habitat, relegating its importance to a small fraction of that of Boundary Bay.
3. There is little mention of mainland implications. What will be the fate of the back-up lands owned by the B.C. provincial government? What rail expansion can we expect?
4. In view of recent reports we would seriously question the need for any port expansion either now or in the year 2000 as proposed by the report.

We realise we must accept some responsibility for costs - environmental, social and economic - for the development of the S.E. British Columbian resource extraction industry, but we are concerned about the long term effect of port expansion in this area. What guarantees have we that this is not the beginning of a long term plan to put industry in an area ecologically vital to the whole of British Columbia?

2

J. F. Herity
Panel Secretary

It has been admitted by Fisheries and Environment Canada and other respected agencies that, in view of the knowledge we now have as to the catastrophic impact such construction, and the operation of such an industry can have on the fragile ecology, the port should never have been located at Roberts Bank in the first place.

We look forward to hearing the outcome of the Panel's deliberations.

Yours truly,
CITADEL

A handwritten signature in cursive script, reading "Jenny Cromarty". The signature is fluid and elegant, with a large initial "J" and a long, sweeping underline.

Jenny Cromarty (Mrs.)
Chairperson
Research Committee

c.c. Letters to the Editor
Optimist
5020 48th Avenue
Delta, B.C.

COLEBROOK-PANORAMA RIDGE
RATEPAYERS' ASSOCIATION

RECEIVED

JAN 16 1978

EMP PACIFIC

January 16, 1978

Environment Canada
Federal Environmental Assessment Review Office
1870 - 1050 West Pender Street
Vancouver, B. C. V6E 3S7

Attention: Mr. J. F. Herity
Panel Secretary

RE: ROBERTS BANK PORT EXPANSION PROPOSAL
ENVIRONMENTAL REVIEW

Dear Sir:

We enclose a copy of the area map from the "Panorama Ridge Community Policy Plan, 1977" to identify the area represented by our Association. We have read both the summary and full report and wish to note several areas of concern where we feel additional information and study are required.

A question basic to the whole subject which has not been addressed by the consultants is that of the rationale for expanding export of non-renewable resources. Are the projections for export of these bulk commodities consistent with national policy?

The report neglects particularly to adequately evaluate the socio-economic impact of the proposal on our community in particular and on other villages and agricultural communities along the transportation corridor. Our immediate perception of the impact of the expansion of Roberts Bank on our community is negative. Reaction from the community to this proposal has identified several specific areas of concern.

1. Noise
2. Visual pollution
3. Vibration: has been a common complaint of residents of the area since the advent of coal shipments along the present trackage.
4. Coal dust and other commodity spillage
5. Conflict between vehicular and pedestrian traffic, and trains.
6. Limited new employment opportunity for residents of the municipality and the region.

There is no description of possible alternative rail corridors in the lower Fraser Valley. We request further review of this topic in light of the expected heavy increase in trip densities and possible development of

January 16, 1978

additional trackage. The B. C. Harbours Board are particularly noncommittal on this latter point. All alternatives must be explored to minimize adding to existing conflicts between established agricultural communities and the developing urban industrial component of the region.

At the present, we are not convinced expansion of Roberts Bank is in the national interest and the proposal has serious implications for our community, the municipality and the entire region. It is incumbent on the National Harbours Board through its consultants to determine fully both the benefits and the non-benefits of this proposal.

Respectively submitted,



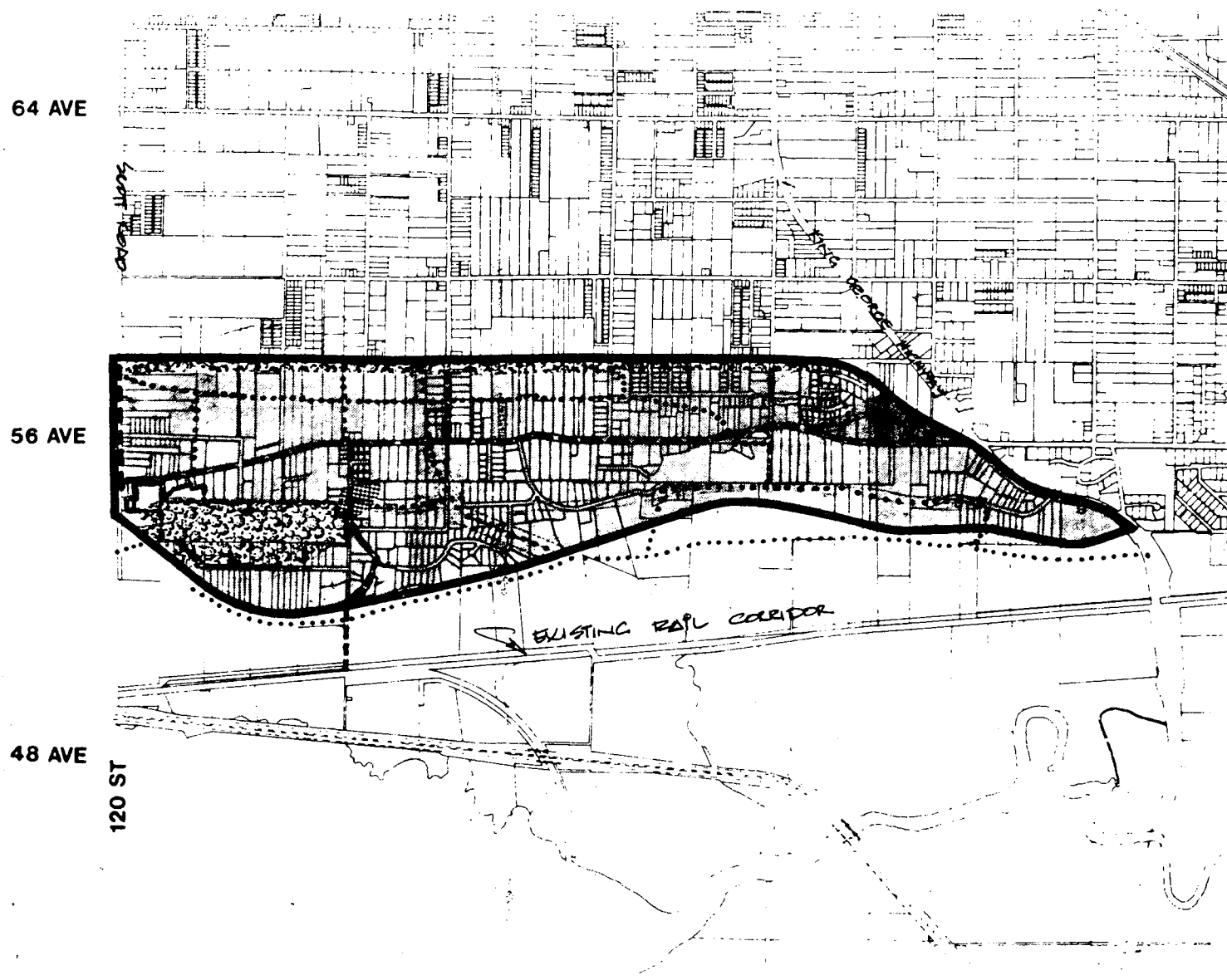
T. S. Annandale

TSA:kc

Encl.

Reply to: 5539 - 125A Street
Surrey, B. C.
V3W 3Z3

PROPOSED COLEBROOK - PANORAMA COMMUNITY POLICY PLAN



LEGEND

- COMMUNITY BOUNDARY
- COLLECTOR ROADS
- SUGGESTED RD. CHANGES
- LINEAR PARK TRAILS
- RESIDENTIAL (FOR DENSITY PERMITTED, SEE SECTION 3)
- COMMUNITY FACILITIES
- PARK
- MUNICIPAL PROPERTY



SCALE : 1" = 2000'
DATE : SEPT. 1977

PLANNING DEPARTMENT
DISTRICT OF SURREY 825-1356

2477 - E. 53rd. Ave.,
Vancouver, B. C.
January 27th, 1978.

Roberts Bank Environmental Assessment Panel,
1870 - 1050 West Pender Street,
Vancouver, B. C. V6E 3S7

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FEB - 2 1978

EAP PACIFIC

Re: Proposed Roberts Bank
Terminal Expansion

Dear Sir:

The proposed extension has been brought to our attention and we are against any type of development that will place additional burden upon our environment.

We are now threatened by super tankers presently operating in the adjoining waters. Further expansion of the bulk can only result in an increase in marine traffic and further increasing the probability of a marine disaster in the area.

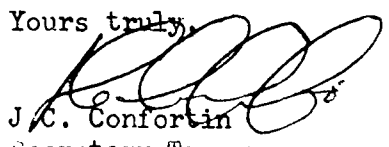
Population projections for the Vancouver - Seattle areas show phenomenal increases and will further add to the pollution of the area as well as creating greater demands for recreational and marine park areas. These ever-increasing public demands will in turn place a greater demand on any industry to do its part in maintaining the environment or to vacate the area.

It is our opinion that such developments should be evenly distributed amongst all the tidewater terminals such as Squamish, Kitimat, Prince Rupert and eventually Stewart. In considering the environmental burden all factors should be considered, including industrial and population pollution, thereby eliminating concentrations of contamination.

We recognize that such facilities are required to meet the demands for such commodities. We also recognize that such facilities are a source of employment and are necessary for the national welfare.

We wish to reiterate that we are opposed to any development that will result in contamination of the environment, which no company has the right to do, regardless of the services provided.

Yours truly,


J.C. Confortin
Secretary-Treasurer
Maple Beach Property Owners
Association Inc.

JCC:ac

RECEIVED

JAN 20 1978

EAP PACIFIC

Musqueam



January 18th, 1978

Environment Canada
Federal Environment Assessment Review Office
1870 - 1050 West Pender Street,
Vancouver, British Columbia
V6E 3S7

ATTENTION: Mr. J. F. Herity,
Panel Secretary

Dear Sir:

Re: Roberts Bank Expansion Proposal
Environmental Review

Musqueam and Tsawwassen Indian Bands are currently preparing a joint presentation regarding the proposed port expansion. This presentation will not be ready for the initial review, therefore we will outline concerns that must be dealt with by your review panel and the National Harbours Board.

It is clear that little consideration has been given of the concerns expressed by the Tsawwassen Indian Band. The report summarizes, "the Indians believe that the present port facility affects their interests adversely, and that expansion of the facility would probably increase the detriment."; but offers no recommendations regarding these vital concerns. The National Harbours Board must identify and offer solutions that can be considered by the Tsawwassen People prior to final review by the Panel. The National Harbours Board must also deal with concerns of the Musqueam Indian Band regarding their Musqueam Indian Reserve #4 within the surrounding area. These concerns have not been considered in the reports.

Because of the lack of consideration by the National Harbours Board of the detrimental effect of the proposed expansion to their communities both Indian Bands are totally opposed to future expansion of the Roberts Bank Port. Musqueam and Tsawwassen Indian Bands will remain opposed and take whatever action is necessary to protect their interests if their concerns remain unresolved.

...../ page two

The concerns of the Tsawwassen Indian Band include a reduction of quality of their life, loss of livelihood, and increased difficulty of preserving traditions in light of further destruction of Tsawwassen Indian Reserve and their foreshore by the proposed expansion. In addition to those defined within the report, the proposed expansion indicates an interference with the Riparian Right of Tsawwassen. The Riparian Right of Access is interfered with in that the project would occupy and prevent access through parts of foreshore tidal lands. We believe that there are other interferences with the Riparian Rights of Tsawwassen however these have not been fully researched at this time.

Musqueam Indian Reserve #4 came as a result of a land exchange of Musqueam Indian Reserve #3 at Sea Island. Our Band was forced to relocate as the expansion of Vancouver International Airport had made this land virtually useless as a community to live in. Our Band plans to build a new community at Musqueam Reserve #4 which would include residential, recreational and community requirements, plus economic development.

It appears that the mode of development of the area would completely isolate our property from roads and utility services thus making very difficult and costly those projects that we are planning. We are now surrounded by many acres of super port back-up lands of which there are no long term plans. It appears that this super port back-up land was purchased only to isolate the Roberts Port Expansion.

Both Bands are concerned about the piecemeal planning that has existed to date, and to the detrimental effects to our communities of this type of planning. The port expansion must not be planned where the concerns of our two communities have been ignored.

The Federal Environmental Assessment Review Panel and the National Harbours Board must act positively to the concerns of Tsawwassen and Musqueam. Further the Roberts Bank Port and its related activities must not act to the detriment of our communities life, livelihood and traditions.

Environment Canada
Federal Environmental Assessment Review Office
Re: Roberts Bank Expansion Proposal
Environment Review
January 18th, 1978
Page Three

We trust that you are now aware of our concerns and will act in a positive manner to communicate with us and hopefully develop solutions to our concerns.

Sincerely,



Mr. Delbert V. Guerin
Chief,
Musqueam Indian Band



Mr. Russell Williams
Chief,
Tsawwassen Indian Band

/sm

10955 80 Ave
Delta V4C 1W4

7300-327

December 29, 1977

J.F. Herity
Panel Secretary
1870 - 1050 West Pender Street
Vancouver, B.C.
V6E 3S7

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JAN - 6 1978
EAP PACIFIC

Dear Sir:

We thank you for a copy of the Environmental Impact Assessment of Roberts Bank Outerport Expansion.

While this study is a welcome improvement over the methods used by the previous government headed by W.A.C. Bennett to ram a railway through Delta's prime farmland and foreshore area, we do still have reservation with the report inasmuch that it appears as if the decision has already been made to expand Roberts Bank, and we are wondering whether exposing deficiencies in the report will achieve much more than adding credibility to the Federal Environmental Assessment and Review Process.

You refer to future expansion of Roberts Bank, and we therefore, must assume that due to its geographical location, eventually all the foreshore land will disappear unless we reverse our way of thinking, as level ground will always be the cheapest and easiest to build on.

We also feel that you have not adequately considered that this marshland is a non-renewable resource, that should have been turned over to an ecological reserve long ago. Perhaps even more valuable than the agricultural land, which is now protected by the B.C. Agricultural Land Act.

We wish to remind you that we have only one Roberts Bank, one Sturgeon Bank and one Boundary Bay, and you also must consider the possibility of a new generation of entrepreneurs with a social conscience, politicians and government officials with enough foresight and courage to put the environment ahead of dollars. The result being elimination of the causeway and shipping forced back into Georgia Strait.

We are concerned that your figures on cost do not go much beyond the initial expenditures, such as construction of the project. Further, you have not considered the cost of possibly having to abandon the port and relocate elsewhere along the coast, where a number of inlets could be utilized, after we have become accustomed to the idea that the export of raw material must pay all the social and environmental costs accrued from the process of handling it. Abandoning the port and not having to pay the social and environmental costs would at least leave B.C. no worse off than if the product had been left in the ground.

Further we would suggest that most of those involved would have a better picture of the situation if the study was presented as economy vs environment. Engineering in general is not an issue as engineers gladly will accept any challenge. It would probably be fair to say that the manpower and know-how is available to build a port anywhere along the coast provided our governments are prepared to steer the funds in the right direction, and we would like to think that the justification for the existence of this impact assessment panel should be to assist our politicians in their deliberations.

Apparently you have failed to consider that sooner or later our abundant mountains will have to be used to provide sites for industry and population. We would like more consideration given to the possibility of bringing the port traffic into Squamish and Bute Inlet from the north, and a tunnel under the North Shore mountains to Howe Sound, where a port could be carved out somewhere along the shore. We understand that the Swedes, the Swiss and the Chinese and no doubt others have for several years experimented with locating essential services and industry under mountains. Such a railway tunnel could be the beginning of such a project, and it would also provide the first effective shelter for this area in case of war.

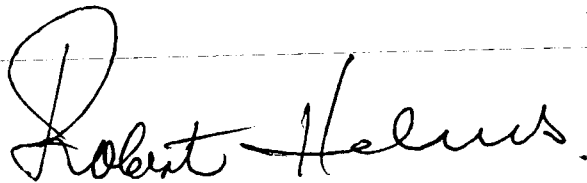
The question of social impact would also fit under the heading of economy. For instance how many overpasses can we afford? Who will pay for the noise buffering berms along the railway right of way? How much will the ordinary taxpayer, who unavoidably must suffer the inconvenience of more trains, have to pay to have level crossings eliminated? Will the taxes be lowered for the residents of Delta? How many, or should we say how few, jobs will a bulk handling facility generate for local people? How many fishermen could loose their jobs? What about liveability? Bedroom communities appear to us to be in general pleasant places to live.

Should we, as you suggest, expand the port to aid the welfare of people in the producing area? That being so we see little hope to save Roberts Bank from being lost completely to a port industry, as there will always be some excuse to open another pit, and build another mining community in the name of progress.

In conclusion we suggest that you must look beyond the year 2000 to assess the cost of losing a source of recreation and a source of protein. Will 100 years be enough or 1000 years? What about perpetuity?

We hope that you will recognize the above to be something more than a parochial attempt to shift the problem elsewhere, but rather a genuine concern for the future of the social, economic, environmental and liveability standards of this continent.

North Delta Ratepayers Association

A handwritten signature in black ink, reading "Robert Helms". The signature is written in a cursive style with a large, looped initial "R".

Robert Helms
Chairman of the Impact
Assessment Review Committee



RICHMOND ANTI POLLUTION ASSOCIATION



S. Bourque
PRESIDENT

TELEPHONE 2747655

RICHMOND, B.C.

S. Elgar
SECRETARY

TELEPHONE _____

f. Herby
Secretary
E.A.R. Process
Dept. of Environment
1870-1050 West Pender St
Vancouver, B.C.

RECEIVED

JAN 23 1978

EMP PACIFIC

Box 204

Richmond, B.C.

January 20, 1978

Sir,

Attached please find comments prepared by Mr. O. Lange for R.A.P.A. on the Environmental Assessment of the Roberts Bank Port Proposal. These comments cover Volumes I, II and IV. Unfortunately, a month and a half is not sufficient time for a group such as ours to adequately review such a voluminous report.

Sincerely,

Sandra C. Bourque

A COMMENT ON DEFICIENCIES
OF THE ENVIRONMENTAL IMPACT
ASSESSMENT OF ROBERTS BANK
PORT EXPANSION AS

PREPARED BY BEAK-HINTON
CONSULTANTS IN OCTOBER, 1977.

COMMENTS PREPARED

by

Otto E. Langer

January, 1978

TYPED BY PANEL STAFF FROM HANDWRITTEN
ORIGINAL

A. GENERAL COMMENTS

Realizing the location and scope of the proposed National Harbours Board expansion on Roberts Bank, it is felt that the Federal Environmental Assessment and Review Process does not adequately represent the concerns and wishes of the public nor may it adequately protect the environment because it appears to be geared towards compromise. It must be realized that much of the biologically productive area of the Fraser River Estuary/Delta has already been compromised to development.

The Federal and Provincial governments are very aware of the biological importance of the area and of the public sensitivity relating to development on Roberts and Sturgeons Bank. The record of environmental credibility and the will of the government to protect such essential biological areas must be seriously questioned should it continue to seriously accept and study such development proposals. It is not reassuring to know that the government is often willing to compromise on almost any controversial issue, and opt for development with "minimized" environmental damage. This is one location where the option of no additional development should be enforced and not further studied at this time.

The Ecological Sub-Committee of the *Not quite EARP of that time* EARP Environmental Impact Assessment of the Vancouver International Airport Expansion Proposals recommended in 1976 that

"1. Moratorium on Further Major Construction;
Estuary/Delta Policy

Effective immediately, construction of all major developments such as those presently proposed for situation on, or use of, the Fraser Estuary or Delta should be deferred for a period to be defined. Specifically included should be the expansion of Vancouver International Airport as presently proposed.

Furthermore, during this moratorium, and before any further major development is permitted to take place, a comprehensive policy should be prepared for both the management and the protection of the Fraser River Estuary/Delta as an ecological unit."

In 1977 the Federal and Provincial governments began a study and development of such a comprehensive management and protection plan. Unfortunately well before this plan is completed and accepted, the Federal Government, or agencies thereof, is actively pushing along a number of major estuary developments that will have an irreversible impact on this ecological unit. In addition to the Federal proposals to expand Roberts

Bank Port and put the Lower Fraser in training walls, there are a large number of on going private developments which are degrading the estuary on an almost daily basis (e.g. Brittain Steel marsh loss, Don and Lion Island development, Tilbury Island developments, etc.).

Up to now neither the EAR Process nor any other government process has been highly successful in protecting the biological resources of the Fraser River Estuary. Regardless of the efforts made, there has been a piece-meal loss of the estuary during the past several years. It must be realized that the proposal to expand the Roberts Bank Port is only another development proposal albeit, a significant one. Examining the Beak-Hinton Environmental Impact Assessment of Roberts Bank Port Expansion out of context of the overall well-being of the Estuary and ignoring the other developments that are degrading the Estuary is a rather misleading exercise and can be interpreted as an attempt (whether knowingly or not) to isolate this impact from others and isolate Roberts Bank from the overall well-being of the ecological unit--the Fraser Estuary.

Once Roberts Bank is isolated from all other concerns, it is easy to rationalize development at that site and accommodate environmental and social concerns so as the Impact Statement will appear to "minimize" most adverse impacts--at least on paper.

Possibly the Beak-Hinton study is misdirected because its terms of reference leaves much to be desired. The report is not a true Environmental Impact Statement because much of it examines development needs and actually recommends types and locations of developments. It appears to be more of a development feasibility study that has taken environmental impacts into account so as to respond to anyone expressing concerns for the ecology of the area.

The report appears to have a programmed bias in it which down-grades environmental concerns at certain sites so as those sites with superior development advantages look very superior from all points of view. The poor terms of reference has allowed this to happen and what should have been an unbiased examination of the impacts at several port sites has been nothing more than a rationalization for development at Roberts Bank. Was any other conclusion expected since the National Harbours Board has been promoting development at that site for many years?

Once the report rationalized Roberts Bank as the development area, it then proceeded to isolate the specific impact area from the rest of Roberts Bank and then tried to show that the specific area was least sensitive. It isolates the impact area as it isolates Roberts Bank from the rest of the estuary. Whenever the rest of the estuary is mentioned, it is always made to look more productive than Roberts Bank. The public and decision makers that read this report may lose sight of the fact that the total estuary is a very productive ecological unit and dissecting out a part and examining it in isolation is totally invalid. It is this approach which will allow continued piece-meal write-off of the estuary. This must therefore be identified as a great deficiency in the philosophy of protecting sensitive ecological units and in preparation of the Beak-Hinton report.

3.

This deficiency gives rise to even greater shortcomings once the site specific reviews in the report are studied closely. A detailed examination of the aquatic concerns is more than adequate to show that the wrong basic approach has given rise to invalid and misleading conclusions.

The most important part of the report is the site ratings which plot the engineering and environmental scores and recommends development at Roberts Bank because of its superior engineering and lack of environmental impact. This is an acceptable approach but it is only as good as the information and judgements that go into it. Unfortunately, the report does a poor job of evaluating impacts and environmental values with the consequence that the scoring plots are in error and the validity of the approach is therefore in doubt. A close examination of Tables 7 and 8 in the Main Report will verify this.

Table 8 presents the environmental values of each port area. The text indicates that the relative intrinsic value of each component is a "highly subjective judgement". Realizing the importance of the rating of these sites, a highly subjective technique is NOT adequate nor acceptable. It is this subjectiveness which allows the authors to bias the report to rationalize development at Roberts Bank.

The environmental data base available to the consultants should have allowed much more than a "highly subjective judgement". The reason it has been a subjective rating is because each ecological unit has been dissected apart and although we know the value of the overall unit (e.g. the Fraser River Estuary) we and especially the consultant does not know nor understand the value of the part (e.g. Roberts Bank or particularly the port area of Roberts Bank).

It is for this reason that it is invalid to isolate the port impact area from the rest of the estuary. What makes this error even more serious is the fact that where the consultant has tried to relate the site specific to the whole, the consultant has made obvious mistakes. An example or two will demonstrate this point.

The report seems to go out of its way to emphasize that Roberts Bank is not as an important fishery area as the rest of the Fraser Estuary. All conclusions are based on the Federal Fisheries 1975 report. For instance the consultant indicates that Sturgeon Bank is more valuable to chinook and coho salmon because many more were caught on the former bank during the Fishery studies. What is overlooked is the fact that most chinook and coho were caught on Sturgeon Bank during a few days when Roberts Bank was NOT sampled. The consultant emphasizes that Roberts Bank is NOT valuable to the production of pink salmon. They neglect to point out that most sampling was done in 1973 which is a year in which pink fry do not exist in the estuary. In 1974, a pink year, some pink fry were taken on Sturgeon Bank by purse seine, however Roberts Bank was NOT sampled. From this the consultants conclude "Once again it is significant that Department of the Environment

Fisheries and Marine Service (1975) found no pink salmon on Roberts Bank." The fishery section has several more errors of this sort in it even though the Fishery Report (1975) notes that the types of comparisons Beak-Hinton have made, can not be made.

I have only selected the fishery section for detailed review because that is my area of expertise and it is the fishery resource that will be highly impacted by the development. Such errors are so obvious it can only be concluded that the consultants were determined to downgrade environmental values at Roberts Bank to give it a better environmental impact-engineering score.

Realizing the serious errors in the assessment of Roberts Bank in the Fraser Estuary one can only cringe when you think how the consultant may have related aquatic values at an isolated area (Roberts Bank) of the Fraser to an isolated area (Ridley Island) of the Skeena Estuary. The technique of comparison is not given in the report but it is known that it is easier to draw comparisons between parts of one estuary than between parts of two totally different estuaries. One can only conclude that the scoring system is not based on fact but on misguided subjective judgement. There appears to be no connection between the fishery information and the scoring system with its associated conclusions.

I am certain many of the other component assessments can be criticized in a similar way. For instance, on the basis of the information presented, how can the terrestrial ecology of Vancouver Harbour have the same value as that at Boundary Bay or Kitson Island? Subjective ratings are very prone to error and when a component is rated as a 2 or a 3 when it should be a 1 the final scoring (engineering x impact) is in error in geometric disproportion.

B. CONCLUSIONS

The Beak-Hinton report appears to have great weaknesses in its environmental section. To call them deficiencies would be too charitable. The terms of reference has encouraged the production of a biased environmental impact statement. Ecological units have been dissected apart so as the least sensitive part of a very sensitive unit can be evaluated in relative isolation and be made accommodating to the port development. Attempts to relate a part of one ecological unit to another part of that same unit has been done with serious error. Attempts to relate the part of one ecological unit to the part of another ecological unit is made in an unknown manner. The relationship between the scoring system and the data base is so subjective that its validity should be questioned very seriously.

It would have been wrong to have done a more detailed critique of this report because the report would probably just have been redrafted to cover each error and yet conclude with the same results. It is hoped that this general deficiency statement will have identified the overall weakness in the biological part of this report. It is sincerely hoped that this impact study was not a smokescreen intended to keep everyone concerned with environmental protection happy by showing that all options had been studied and now we can get on with development at Roberts Bank. Should that be the case, this poor attempt at a comprehensive impact assessment may serve as a condemnation of the EAR Process and an indication that it cannot protect our very sensitive biological resources upon which future generations will depend upon.

.....

43-327

THE UNIVERSITY OF BRITISH COLUMBIA

VANCOUVER, CANADA V6T 1W5

RECEIVED

JAN 16 1978

EAP PACIFIC

WESTWATER RESEARCH CENTRE

January 13, 1977

Mr. J.F. Herity
Environment Canada
Federal Environmental Assessment
Review Office
1870 - 1050 West Pender Street
VANCOUVER, B.C. V6E 3S7

Re: Roberts Bank Port Expansion Proposal
Environmental Review

Dear Mr. Herity:

I found it difficult to read the complete environmental assessment document, however since I am an environmental chemist involved in ecological research in the Fraser estuary I will make some comments on the deficiencies in my area of expertise.

I reviewed two areas namely "water quality" and the "process" for SPEC and the Fraser River Coalition. Rather than repeat the detailed criticism made in their submission I will make a point summary of the deficiencies I found in those areas and make some criticism of the biological component of the study which I also read in detail.

Water Quality Deficiencies

1. no information presented as to how water quality is evaluated in the umbrella term "environmental score".
2. the elutriate studies were very incomplete and I question some of the analytical values presented in Table 13, Volume 2.
3. much of the information presented on toxicity in Table 14, Volume 2 is at least 10 years out of date and very little mention is made about chronic sublethal effects.
4. inadequate attention is paid to the chemical characteristics of the sediments in the proposed dredge area.
5. very careless referencing in which references cited in the text are omitted from the reference list - one wonders if they exist at all?

Process Deficiencies

Many of the deficiencies in this report are basic deficiencies in the EARP process.

1. The terms of reference are very vague especially regarding a time frame for the studies.
2. The environmental assessment should be conducted by an iterative process. This would involve periodic review by the panel during various stages of the assessment in which the emphasis placed on various components of the study can be changed to provide a more detailed or a shorter investigation.
3. Such an involvement by the panel will require a larger commitment by the panel members.
4. Public involvement in the EARP process is inconsistent which is inadequate.

Biological Study Deficiencies

1. The review of the literature on emergent and submergent macrophytes (section B2 and B3 in Volume 4) is very well done. It is unfortunate that this information has been cribbed from two undefended thesis. The weakness in the aquatic vegetation section is that the literature information is poorly related to possible impacts of the proposed development.
2. It is quite obvious that aquatic vegetation will be destroyed by the project. Some areas that are not destroyed physically will effectively be removed from use by avifauna due to activity at the terminal. Therefore, more study is needed on aquatic vegetation rehabilitation and studies should be done to determine where similar marsh communities can be established to provide compensation for the alienated areas.
3. The statement is made that deflection of sediment laden river water from the area between the two jettys will create clearer water conditions thus allowing better photosynthetic activity of the macrophytes. This is true, however the suspended sediment which is deposited on the banks also acts as a nutrient source for the plants so one is effectively robbing the plant community of their annual fertilization.
4. All of the biological field work conducted during this study was done between April and July. This is completely inadequate where the reproductive cycles and migratory behavior of organisms are tied to the seasonal cycles. If the literature review was inadequate as was stated, for example for avifauna utilization of the area, then studies should be organized to fill these data gaps rather than doing a couple of days of fair weather science and wasting taxpayers money.
5. The information presented on fish utilization of the area is incomplete. All it does is review the life histories of many of the species. There is very little good data on their use or dependence on the foreshore area especially south Roberts Banks. No field studies were conducted to determine detailed utilization of the area by fish.
6. How were all of the biological resources in this area evaluated to

Mr. J.F. Hertiy

-3-

include in the catch all term "environmental score"? Where is the biological information from the alternate sites that was used to develop their respective environmental scores?

I hope that this information is of some use to your panel in providing the National Harbors Board with a deficiency statement on this study. If I can be of any further use in clarifying the statements I have made please feel free to contact me at 228-6474 (office) or 433-4304 (home).

Yours truly,

A handwritten signature in cursive script that reads "Ken J. Hall." The signature is written in dark ink and is positioned above the typed name.

Ken J. Hall
Sierra Club

jp

DEFICIENCY STATEMENT ON
ENVIRONMENTAL IMPACT ASSESSMENT
OF ROBERTS BANK PORT EXPANSION

SUBMITTED BY SPEC ON BEHALF
OF THE FRASER RIVER COALITION
JANUARY 16TH, 1978



DEFICIENCY STATEMENT FOR THE ENVIRONMENTAL IMPACT
ASSESSMENT OF PROPOSED ROBERTS BANK SUPERPORT

Submitted by SPEC on behalf of the Fraser River Coalition

THE PROCESS

Many of the deficiencies of this impact assessment are directly related to inadequacies of the whole EARP process.

Therefore SPEC requests that the whole EARP process be reviewed with special attention to the following points and suggestions drawn from the Roberts Bank Environmental Impact Assessment.

1. The terms of reference for the study are much too general leaving important decisions regarding focus and analysis to the consultant. The terms of reference for the Roberts Bank E.I.A. were accepted in 1975 and since that time the E.I.A. standards have changed notably due to the Airport Report; which recommends a moratorium of all developments until a comprehensive management plan is drawn up for the Fraser estuary.
2. Since the frame work and terms of reference of the E.I.A. report are vague; the report becomes a cumbersome assortment of descriptive, inventory material much of which is irrelevant and obscures the important information.
3. The panel should be allocated sufficient time to oversee the study and should have closer control over the study, in the following areas;
 - i) The panel should have several interim reviews with the consultants to ensure they maintain the proper focus on the study.
 - ii) Also to point out existing literature gaps which would require field investigations by the consultant who would then be granted sufficient time to carry out necessary investigative studies.
4. The EARP process is also deficient with regards to public involvement, as no definite frame work is provided for public involvement. In fact with the Roberts Bank study the public had no opportunity to review the terms of reference, no funds were allocated for public involvement and no time frame was fixed for public participation or hearings.

There is therefore no consistency in the process as the public was involved much more closely with the E.I.A. of the proposed airport expansion.

THE FOLLOWING DEFICIENCIES HAVE BEEN IDENTIFIED
FOR VOLUME 2, AND VOLUME 6 APPENDIX D

1. The need for expansion of Roberts Bank has not been proven by the commodity projections. In fact the report states; (Vol.6, D.5)

"As this review of commodity trade is a subordinate part of an environmental study and not in any way a detailed investigation of feasibility, no in depth forecasts were attempted."

2. The definition of "definite need" in the report is totally inaccurate and misleading. Conventional uses of the term would not conclude that there is a definite need for a new coking coal terminal in 1980 based on the data presented. This type of misleading language is used numerous times in the report, for example with statements like; there is a "definite probability of requirement" (Vol.1, P.4) and underlines the fact that the report does not prove a definite need for port expansion at Roberts Bank in the immediate future.
3. The commodity projections that are presented show great discrepancies between high and low ranges and do not prove that additional facilities are required.
4. The report does not adequately deal with the possible increments of terminal expansion. It is not evident that four new terminals and a tank farm is the next best increment in terminal capacity, and the advantages of this expansion over smaller increments in capacity have not been demonstrated. Expansion plans for the range of possible scenarios should be developed to examine their costs and benefits, and to determine what are the economies of scale.
5. The consultants have not demonstrated that the proposed expansion plan is the best trade off between the expected costs of constrained development and excess capacity with its associated environmental costs and loss of planning time.
6. The report does not examine the question of market competition of Kootenay coal with the Northeast coal, based on world market trends and other existing coal exporting countries.
7. The report does not explain that development of a coal mine would require four years, which leaves a lot of leadtime before any port development would be required which is in contradiction to the consultants statement that export facilities are needed before the exports are there.

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8. The section on alternative sites is totally inadequate for the following reasons;

- i) NHB commissioned an environmental, social, economic, and engineering study of the expansion of Roberts Bank not of alternative sites.
- ii) No field studies were conducted in regard to assessing possible alternative sites, and therefore these site proposals were generally presented without any careful intensive examination of their potential.
- iii) The scoring system for alternative sites does not equate environmental and engineering considerations, but is weighted heavily towards engineering costs.
- iv) The scoring system is based on subjective judgement; and another subjective opinion could produce radically different conclusions regarding the optimum site.

THE FOLLOWING DEFICIENCIES, PROBLEMS AND DATA GAPS
HAVE BEEN IDENTIFIED FOR VOLUME 3, APPENDIX A

SEDIMENT DISTRIBUTION AND TRANSPORT

1. The effects of the proposed dredging (which would remove bedload) on the Delta have not been outlined.
2. What is the effect of the salt wedge on sediment transport?
3. The report does not examine how the ocean bed surrounding the port will be altered by the proposed expansion.

OCEANOGRAPHIC CONDITIONS

1. The effects of altered oceanographic conditions on
 - i) erosion and accretion
 - ii) water salinity
 - iii) current patterns
 - iv) mixing and water exchangehave not been outlined.
2. The effects of restricted water circulation between the Westshore and Ferry causeways on marine life have not been examined.
3. The report does not adequately outline the positive and negative effects of culverting the causeway.

AIR QUALITY

1. The effects of wind blown particulate matter from the proposed commodities on aesthetics and air quality have not been postulated.

DEFICIENCIES IN VOLUME 3, APPENDIX A
THE EXISTING PHYSICAL ENVIRONMENT

WATER QUALITY

1. There is no indication of how the water quality information is weighted or incorporated with the other environmental elements to produce the final "environmental score".
2. The water quality information relates strictly to the existing water flow and does not examine changes that might occur at Roberts Bank caused by other developments such as the proposed River Training Program and the proposed McGregor Diversion.
3. The elutriate test, to determine the potential for contaminate release during dredging operations, should be performed under a range of salinity conditions before any significant results could be presented.
4. Table 13 in Volume 2 produced disturbing results in the high concentrations of lead, nickel and vanadium in the filtered samples which indicate either contamination in the seawater sample, or poor analytical techniques. These tests should therefore be repeated and the techniques checked.
5. Table 13 in Volume 2 does not indicate what specific compounds were investigated, or the concentration units for the pesticides.
6. Table 14 in Volume 2 on the toxic effects of potential products on a variety of organisms is based on outdated material and does not mention long term chronic effects of toxicity.
7. Very little information is provided regarding the sediment characteristics in the proposed dredge area. What are the trace metals, pesticides and nutrient concentrations in the sediments?
8. The report does not consider the important link of sediment supply to eelgrass beds, or explain that by removing the source of sediment we would effectively decrease the eelgrass productivity which would consequently effect all marine and wildlife populations of the area.

THE FOLLOWING DEFICIENCIES, PROBLEMS AND DATA GAPS
HAVE BEEN IDENTIFIED FOR VOLUME 4, APPENDIX B

AVIFAUNA

1. The discussion on waterfowl is based on field work collected in late May and June; which is not an optimum or representative time of the year for waterfowl in this area.
2. The section on waterfowl is based on information collected at only six sightings, which included largely juvenile birds whose behavior is not typical of adult birds.
3. The report does not mention what habitat would be lost to avifauna as a result of the proposed development, nor does it mention that approximately three-quarters of the original habitat has already been lost due to other developments in the Fraser estuary and delta.

MARINE MAMMALS

1. The report does not discuss the behavior and activities of the harbour seals and porpoises in the Roberts Bank area; (for example are these mammals in the area for feeding, breeding etc.) nor does it discuss the impact of increased ship movements on these populations.
2. The report does not describe killer whale activities in the area or killer whale behavior related to ship movement.

SUBMERGENT AND EMERGENT VEGETATION

Extensive studies should be done in this area as there has already been a significant loss of eelgrass habitat due to the present terminal facilities.

This section is unacceptable for the following reasons:

1. The statistical facts regarding the eelgrass beds in Roberts Bank are contradictory; with the total loss area of eelgrass beds in Roberts Bank given as less than the total loss for just Tsawwassen Bay. For example: (All figures from Beak/Hinton Report).

Former area of eelgrass in Roberts Bank - Total	602 Hectares
Present area of eelgrass in Roberts Bank - Total	<u>477 Hectares</u>
LOSS	125

TSAWWASSEN BAY

Former area:	Continuous eelgrass 1966	276 Hectares
Present area:	Continuous eelgrass 1975	<u>336</u> Hectares
	GAIN	60 Hectares continuous eelgrass.

Former area:	Discontinuous eelgrass 1966	257
Present area:	Discontinuous eelgrass 1975	<u>66</u>
	LOSS	191 Hectares discontinuous eelgrass.

This leaves a net loss of 131 hectares in Tsawwassen Bay alone. This is a very significant figure as a decline in eelgrass beds can be correlated almost directly with declines in fish and wildlife numbers.

2. The report states that the amount of continuous eelgrass has actually increased by 89 hectares, and that this is a result of decreased turbidity due to less Fraser River water inside the jetty. (Vol. 2, p. 83) However no study to support this was ever conducted, and no data is given to support this claim.
3. The report ignores the significance of the loss of discontinuous eelgrass habitat, which is very important to the marine ecology.
4. The statistical projections on the percent of eelgrass beds that could be recovered by recolonization techniques after dredging and filling procedures of the expansion are totally ludicrous for the following reasons:
 - i) The eelgrass beds here are unique as they occur in almost pure sand; the report even states that:

"After removal or disappearance of eelgrass, changes which occur in the substrate often make recolonization impossible. For example, eelgrass has been unable to successfully re-colonize the removal site (borrow pit) in the seven years since its excavation at Roberts Bank". (Vol. 2, P. 138)
 - ii) There have been no other known successful recolonization of beds to date in this area.
 - iii) The borrow pit is now 2½ times its original size. (Vol. 2, p. 138)
 - iv) The consultants state themselves that Terminal #4 would affect the eelgrass beds significantly with a loss of 5% the total in Tsawwassen Bay, along with 10% loss in wildlife habitat.
 - v) To ameliorate the damage, the consultants propose building a jetty which would prevent further hydraulic erosion of the beds. However to build the jetty they would have to further encroach on the beds themselves, with no assurance that it would help. In fact narrowing the gaps between the jetties (Westshore & Ferry) would increase the flow rate considerably which is the reason for the present erosion of the eelgrass beds.

FISH

1. The report does not analyse the effect of restricted water circulation between the two causeways on fish movements, or feeding and spawning habits.
2. It is not explained how the fishery data is included in the environmental score.
3. There is no presentation of data in regards to fishery resources of alternative sites.
4. Some of the conclusions reached are inaccurate and based on incomplete data. For example the report states that no pink salmon were found at Roberts Bank; but it does not explain that 1973 was a non pink year and that in 1974 only Sturgeon Bank not Roberts Bank was sampled by Fisheries Canada.

THE FOLLOWING DEFICIENCIES, PROBLEMS AND DATA GAPS
HAVE BEEN IDENTIFIED FOR VOLUME 5, APPENDIX C
"THE EXISTING SOCIO-ECONOMIC ENVIRONMENT"

GENERAL

1. There is much descriptive inventory material that is irrelevant and masks the important issues.
2. No attempt has been made to evaluate the existing economic activities and resources of the area (other than the coal industry and related port activities) nor to assess the possible impacts the proposal could have on these resources (which include important agricultural lands, extensive commercial and recreational fishing industries, plus important wildlife and recreational resources) and what these impacts would represent in dollar value and social impacts.
3. No attempts have been made to cost the proposal and its related developments (for example: municipal services - water, sewage, fire protection and railway lines that would be required) nor to determine what percentage of these costs would be carried by the public.

More specifically the following problems and deficiencies have been found under the respective subsections of this volume.

ARCHAEOLOGICAL RESOURCES

1. It has not been explained if a systematic archaeological assessment has been done of the whole Roberts Bank area, exactly how many sites are located in the area nor how they would be affected by the proposed development.
2. The report includes a contradiction as it states that there are no apparent conflicts with archaeological sites; but that the curator and Tsawwassen Indian Chief feel various sites would be destroyed by construction projects.

RAIL CORRIDOR COMMUNITIES

The report does not outline the possible impacts of increased trains along the entire rail corridor or how the communities along the corridor feel about these increases.

WATER DISTRIBUTION

1. The report does not state what the water requirements would be for the proposed port expansion.

2. The report does not state if the existing facilities would be sufficient for all operations, or
3. What the costs would be to the municipality of providing the necessary increases.

SEWAGE

1. The report does not explain the existing policy of the municipality in regards to degrees of treatment and re tension facilities etc. at Westshore Terminals.
2. The problem of runoff with suspended coal particles and its impact on shellfish and wildlife has not been assessed.

RECREATIONAL RESOURCES

1. No attempt has been made to estimate the value of the recreational resources in the area, and how these resources could be affected by the port expansion.
2. No attempt has been made to assess what resources (crabs, waterfowl, fish etc.) have already been negatively affected by the existing port facilities, as reported by UFAWU and Tsawwassen Indian Band.
3. It has not been stated what constraints against recreational use would be imposed by the port expansion and its related developments.

LONG RANGE PLANNING AND DEVELOPMENT CONTROL

1. The report does not state what specific changes would have to be made in land classification, zoning by-laws, sub-division control by-laws or formal land use contracts for the development to proceed.
2. It does not estimate the costs to the municipality of Delta and the Province and other sources of providing the necessary municipal services such as water, sewage treatment and fire protection, or of constructing other related developments such as rail lines.

COMMUNITY GOALS AND ATTITUDES

This section is inadequate for the following reasons:

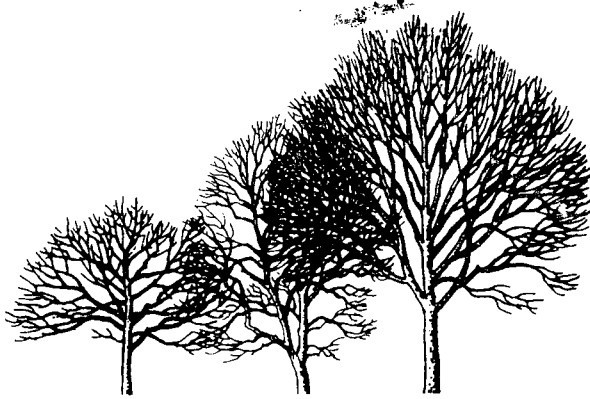
1. Public participation and analysis of community goals was not originally included in the terms of reference of the report and therefore funds were insufficient to provide statistically reliable quantifiable data.

2. No definite frame work was provided for public involvement.
3. The consultants conclusions were based on very limited survey results (61 returned questionnaires, from a population base of 66,000 in Delta) which were considered inadequate by them.
4. The public was given only vague information on the proposed development and therefore they were unable to adequately respond to the questionnaires.

ECONOMIC CONSIDERATIONS

1. No assessment is made of the costs of increasing and improving rail lines and of providing maintenance due to increased frequency of train units.
2. Canada's coal reserves are not examined in relation to existing world coal reserves.


Executive Director, SPEC



436 72 P
RECEIVED

JAN - 9 1978

EAP PACIFIC

SOUTH TSAWWASSEN
BEACH PROPERTY
OWNERS ASSOCIATION

MAILING ADDRESS: 164 TSAWWASSEN BEACH - DELTA B.C.

V4M 2J2

January 6, 1978.

Environmental Assessment Panel,
(Roberts Bank Port Expansion)
Room 1870
1050 West Pender Street,
Vancouver, B.C.
V6E 3S7

Dear Sirs:- Re: Environmental Impact Assessment
 Roberts Bank Outerport Expansion

Thank you kindly for your letter dated November 18, 1977, and the interesting material which accompanied it.

Our executive has studied the Environmental Impact Assessment of the proposed Roberts Bank Port Expansion which you gave us, and our members are quite concerned about the impacts the proposed developments will have on our members. We are particularly concerned with the adverse impacts which will obviously adversely affect the large investments which our members have put into their homes as well as their life style and enjoyment of living on the beach under its present environmental conditions.

From past studies made by the G.V.R.D. we have proof that we homeowners on the beach have already been adversely affected by coal dust from the existing coal facilities at Roberts Bank. If you wish we are prepared to supply proof of same. It would seem to logically follow that any increased "coal export facilities" are bound to compound this hazard to the further detriment and devaluation of our homes. We are also apprehensive that any development involving bulk shipping of sulphur would further compound our discomfort and occasion pecuniary loss, not to mention the hazards of oil spills etc.

We home owners living on the beach have historically enjoyed fishing and crabbing and they, along with good air quality, constituted a goodly part of our reasons for having heavily invested in the homes we have built or acquired on the waterfront. Now it appears that these basic attractions will be deteriorating, to what extent we are in the dark.



SOUTH TSAWWASSEN
BEACH PROPERTY
OWNERS ASSOCIATION

MAILING ADDRESS: 164 TSAWWASSEN BEACH · DELTA B.C.

- 2 -

From the Federal Environmental Assessment we would also gather that the proposed development may adversely affect the water quality and bird life in the area.

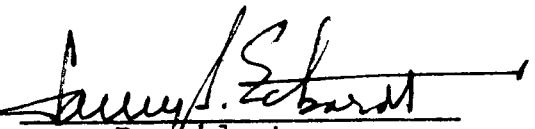
A growing number of our members have heavy financial investments in their properties along the beach, especially those who live there permanently, and we cannot help but foresee a substantial financial loss in their investments for the foregoing reasons.

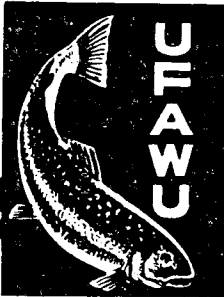
Accordingly we would like to be assured that we will be equitably and adequately compensated for the adverse environmental impact which we anticipate will befall us if the proposed development is proceeded with.

Would you be so good as to acknowledge receipt, and oblige.

Yours very truly,

SOUTH TSAWWASSEN BEACH
PROPERTY OWNERS' ASSOCIATION

Per: 
President



UNITED FISHERMEN AND ALLIED WORKERS' UNION

Telephone
684-3254

Headquarters: The Fishermen's Hall, 138 East Cordova Street
VANCOUVER, B.C. V6A 1K9

January 19, 1978.

RECEIVED

JAN 20 1978

EAP PACIFIC

COMMENTS ON THE ENVIRONMENTAL IMPACT
ASSESSMENT OF ROBERTS BANK PORT EXPANSION

Submitted by:

UNITED FISHERMEN AND ALLIED WORKERS UNION

STANDING COMMITTEE ON THE ENVIRONMENT

COMMENTS ON the Environmental Impact
Assessment of Roberts Bank Port Expansion

Public Involvement:

Serious consideration should be given to funding public groups with serious concerns related to specific projects so that they are able to adequately assess project proposals and environmental impact statements without suffering unfair financial burdens in addition to the burdens on their time and energy which they willingly shoulder. In addition to funding, specific ways and means of public involvement must be spelled out within an adequate time frame. Failure to do so will lead inevitably to token involvement rather than meaningful public participation in the assessment and review process.

Terms of Reference and the Environmental Impact Statement (E.I.S.)

We find it reasonable to suppose that an E.I.S. should provide a clear statement of what the environmental consequences of a project would be with a summary of that statement in laymen's language. The Beak-Hinton report, due both to its structure and the terms of reference on which it is loosely based, is instead an attempt to justify the proposed expansion of Roberts Bank. The report is such that one is unable to dredge from it an account of the environmental consequences of the project. The use of laymen's language in the report leads only to imprecise statement and sloppy argument, certainly not to greater understanding.

The so-called combined environmental and engineering scoring system which ranks Roberts Bank and Ridley Island, first and second as port development sites, is, perhaps, the most glaring example of these general faults. The space wasted on this so-called scoring system would have been better used in providing some facts on the environmental costs associated with port development in the major salmon river estuaries of the province.

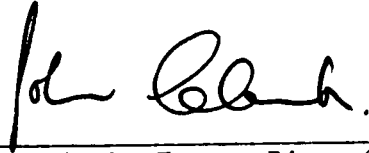
Data Gaps:

- 1.- In volume 2 the elimination of crab and herring habitat is assumed to result in a linear reduction in crab and herring populations and the biological appendix implies that the reduction may be less. This is not clear on the basis of the data; e.g. the reduction could be much greater if the destruction of habitat put the crabs at a competitive disadvantage in the community.
- 2.- In discussing eel grass re-establishment in dredged areas no estimate is given of the time span involved, nor is any estimate given of the potential loss to the commercial crab fishery or the time - span involved in newly created habitat becoming utilized.
- 3.- While it is acknowledged that fish such as herring will be vulnerable to sedimentation caused by dredging there is no estimate of how extensive this impact will be.

- 4.- Scuba surveys on the adverse effects of coal dust noted in the biological appendix are an inadequate basis on which to conclude that coal dust is not a problem. What are the long term effects of coal dust settling on the bottom?

In conclusion we draw to the E.A.R. Panel's attention our endorsement of the deficiency statement submitted by SPEC on behalf of the Fraser River Coalition of which we are a member organization.

UNITED FISHERMEN & ALLIED WORKERS UNION



per: John Clark, Fraser River Organizer,
on behalf of STANDING COMMITTEE ON ENVIRONMENT

JC/mim.
oteu 15.

B. SUBMISSIONS FROM INDIVIDUALS

RECEIVED

JAN 17 1978

EAP PACIFIC

882 Tsawwassen Beach
Delta, B.C.
V4M 2J3

1978-01-12

Environmental Assessment Panel
Roberts Bank Project
1870 - 1050 West Pender Street
Vancouver, B.C.
V6E 3S7

Dear Sirs:

As you can see from the above address, Roberts Bank and B.C. Ferry Terminals are my immediate neighbors. The attached correspondence is my initial contact with reference to the manifestations of dust problems evident only when the wind blows. There are others, none of which are mentioned in your Beak - Hinton summary.

The first is noise. It may be apparent to only a few residents that, when there is no wind blowing, a steep inversion can form over the water under which sound can travel great distances with little attenuation. At all times there is at least one coal train on the causway, each having five large diesel locomotives operating at idling speed, control of which is within a few RPM of each other. It would also appear that this cold layer of air acts as a resonant cavity which, when stimulated by synchronized diesel exhaust, causes a low frequency booming beat that shakes the house, rattles the dishes and prevents sleep. Ear plugs do not help as the sound is felt as much as it is heard. To assure myself that this is not a personal problem I have had my hearing checked by a specialist and found it to be normal. I well remember Christmas Day when two trains, i.e. 10 locomotives, rent the air without relief. It was abject misery for us. Similarly, the high speed diesels on the stacker-reclaimer can be heard, but only when they emerge from behind the coal pile itself.

The second problem is that of unwanted light. The principal offender at this time is the Ferry terminal and causeway. The very high intensity of lighting through the

night is excessive unnecessary and expensive during the hours of 11 pm to 5 am. Although this offender is outside of your immediate terms of reference it does point to a problem that you could add to, if not made aware.

The number of persons affected by the above noted manifestations are few and do not present a powerful lobby. Our land is assessed under the new system at \$1,000 per waterfront foot. Adding more bad neighbors by insensitive port construction can only reflect on our values. Much consideration is directed to the flora and fauna of the port area. Please divert some of this attention on the human residents as well.

I wish to extend an invitation to your research staff to use my domicile as a base for measurements to quantitate the above listed deleterious effects.

Yours truly,



H.L. Beegenstein

HLB/djp
Enclosure

882 Tsawwassen Beach,
Delta, B.C.
V4M 2J5

May 2, 1977

Dr. I. K. Birtwell,
Acting Chief - Water Quality Division,
Habitat Protection Directorate,
Environmental Protection Service DFE,
OTTAWA, Ontario K1A 0H3

Dear Sir:

Thank you for your discourse on dust abatement at the Roberts Bank coal facility. This may read well on paper or when viewed from Ottawa but in actual fact the coal pile does emit huge clouds of black dust such as April 13th and April 17th. On both occasions one could be convinced that the pile was on fire.

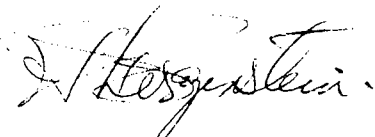
Your words and photograph may make a good press release for the general public but please don't B.S. the troops. We who live with this coal port daily know that there is an unsolved dust problem.

Be it toxic or not, I am sure that a thick layer of coal dust on the sea bed must be more inhospitable to marine life than normal sediment.

Can you give any assurance that the coal port will confine its waste material to its own property?

Yours truly,

C.C. Mr. M. ITO



H.L. Bergenstein

HLB:oe

P.S. DUST PROBLEMS MAY 8th AND MAY 10th
-HES.

This letter did not reach Dr. Birtwell.
1977-05-10



Your file: Votre référence

February 14th, 1977

Our file: Notre référence

5900-85-R84

Mr. H. Bergenstein
882 Tsawwassen Beach
TSAWWASSEN, B.C.

Dear Sir:

RE: Coal Dust -- Roberts Bank

Please find enclosed information on the above-mentioned topic, which I just received from the Environmental Protection Service.

Yours truly,

Dr. I.K. Bortwell, Acting Chief
Water Quality Division

IKB:pla
Enclosure-1

Fisheries - Pacific Region
1090 West Pender Street
Vancouver, B.C.
V6E 2P1

Pêches - Région du Pacifique
1090 rue West Pender
Vancouver (C.-B.)
V6E 2P1



MEMORANDUM NOTE DE SERVICE

DATE

January 13, 1977

FROM: M. Ito, P. Eng.,
DE: Manager, Technical Services,
Environmental Protection Service, DFE,
Kapilano 100, Park Royal,
West Vancouver, B.C. V7T 1A2

Objet: Note de service

4780-6

TO: Dr. I. K. Birtwell,
A: Acting Chief, Water Quality Division,
Habitat Protection Directorate,
Environmental Protection Service, DFE,
Ottawa, Ontario K1A 0H3

Your file Votre référence

SUBJECT: Coal Dust Control at Westshore Terminal
SUJET:

EPS has been involved in coal dust control from unit trains and, as a result, all unit trains reaching the Vancouver terminals carry a protective coating to reduce wind losses.

The problem at each terminal has not been resolved satisfactorily and different companies use different approaches.

In the case of Roberts Bank, Westshore terminal installed thirteen manually controlled water spraying towers (five more will be erected this year) and controls hard to reach slopes with chemical binders using movable units (see attached photograph).

Manual control is practiced to accommodate a shut-down sequence which requires fastening of the stacker/reclaimer.

Since coal is non-toxic, we must prove that fine airborne coal particles have a deleterious effect on marine biota before we require stronger control measures.

M. Ito
M. Ito, P. Eng.,
Manager, Technical Services.

Encl.

DIR. GEN. ☐ DIR. H.P. ☒
DIR. F.S. ☐ DIR. S.S. ☐
DIR. ECON. ☐ FINANCE ☐
DIR. INF. ☐ ADMIN. ☐
EXT. AFFAIRS ☐ LEG. C. ☐

P/K FEB 4 1977

GEO. & MIN. ☐ ☐ ☐
INDUSTRY ☐ ☐ ☐
REG. & TID. ☐ ☐ ☐
MARINE S. ☐ A. 19. ☐
ASST. PLAN. ☐ LEA. P. ☐
N.B.C. & Y. ☐ OTHER ☐

34-5-1-5

1051

L.L. Bergenstein

RECEIVED

JAN 16 1978

EAP PACIFIC

Peter Leslie Birrell,
218 Tsawwassen Beach,
Delta, B. C.
943-8883

January 13, 1978

Environmental Assessment Panel,
(Roberts Bank Port Expansion)
Room 1870
1050 West Pender Street
Vancouver, B. C.
V6E 3S7

Re: Public Meeting January 12, 1978 in Ladner, B. C. concerning the
Environmental Impact Assessment Roberts Bank Port Expansion.

ATTENTION: Mr. J. F. Herity

Dear Mr. Herity...

Thankyou for your contribution to citizen enlightenment with regard to the proposed expansion of the Roberts Bank Port Facilities.

The writer suspects that his concerns, which are quire fundamental in nature, may have already been anticipated and developed in a portion of your Environmental Impact Assessment he has not yet examined in detail.

Since the time is too short for him to do his homework properly he hopes you will forgive the raising of questions that may have already been adequately answered by yourself, and your consultants.

As your fellow panelist of last evening conceded, there is little economic gain to the citizens of Delta, to be realized from offering an expanded rail corridor to the Pacific Rim of Canada to fellow

Canadians, shipping grain and potash from the Prairie Provinces...sulphur and toxic liquid petro-chemical by-products from the oil fields of Alberta, and greatly increased amounts of coal from others parts of British Columbia.

For British Columbians in particular the economic "trade-off" seems to be down to the gain to our people through the mining and export of increasing amounts of coal, (and ultimately forest products) through the Roberts Bank Corridor...against the potential hazard to an important portion of our fishing industry.

In examining drawings 1-1 and D-59 in the pocket of your "Summary" it is apparent that if the construction of the Tsawwassen Ferry Causeway, and the existing Westshore Terminal Causeway have not done irreparable damage to the marine, and wildlife environment in the area...it certainly cannot be argued that they enhanced it.

The area south of the ferry causeway apparently does not make the useful contribution to a healthy marine environment it once did when the (pre-causeway) tides were allowed to cleanse what has increasingly become a stagnant sour smelling pocket during a portion of each summer.

Mr. Hinton tells us that re-designing the Westshore causeway to allow tidewaters to flow into the present basin between the causeways would set up flow patterns injurious to the existing marine environment. He says further that the present ship channel creates a "bathtub" effect at ebb tide that so accelerates the flow of water as to little by little suck

the present marine habitat out to sea.

Anyone, with an understanding of hydraulics, who has observed the rapidity with which the tides rise and fall in the basin, will have little problem understanding, and accepting, Mr. Hinton's analogy of the situation. The difficulty arises when one endeavours to square the analogy ...with the solutions proposed to eliminate, or minimize the problems cited.

Mr. Hinton, and Swan Wooster, surprisingly recommend that the present troublesome ship channel (bathtub) be more than doubled in size... and the entry, and exit, to the basin be reduced by almost 50% through the creation of a dyking system that will enormously accelerate tidal flow into, and out of, the basin.

If we accept Mr. Hinton's thesis that the present dock facilities contribute to erosion when the body of water in the basin between the causeways flows out at ebb tide...then we cannot accept that the same pent up body of water is less likely to cause erosion when it accelerates (as it must) to pass through a substantially diminished gap between the causeways.

At the very least the people of British Columbia, and Canada, have a right to expect that Fisheries and Environment Canada will commission a model of the basin in question, so that we can more accurately ascertain the probable effects of the changes being proposed...it is entirely possible opening the whole ferry terminal causeway to tidal flow would achieve the

Environmental Assessment Panel

Page 4 (con't)

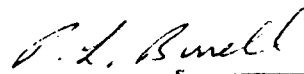
January 13, 1978

objectives being persued, and at the sametime restore marine life to the south side of the causeway.

The writers second concern has to do with the ultimate effect on residential, and commercial buildings in a community where the water table is relatively close to the surface and rail vibrations are so readily transmitted over large areas.

If we can anticipate a three, or four fold increase rail movement of product in transit, and shunting in rail yards adjacent to the area, then we should perhaps have seismic readings of the existing rail activity and a geologic input...the English Bluff escarpment has a history of slide activity and there is understandable concern about increased levels of vibration.

Respectfully,



P. L. Birrell

PLB:dg

John Herity
Secretary
E.A.R. Process
Dept. of Environment
1870-1050 West Pender St.
Vancouver B.C.

6631 Chatterton Rd
Richmond, B.C.
V7C 2V6
Jan. 16, 1978

RECEIVED
JAN 23 1978
EAP PACIFIC

Sir;

Volume 4 of the Environmental Impact Assessment of Roberts Bank Port Expansion presents the thesis that productivity of fish on Roberts Bank is not as great as on Sturgeon Bank. It uses as its major source of information "Fisheries Resources and Food Web Components of the Fraser River Estuary and an Assessment of the Impacts of Proposed Expansion of the Vancouver International Airport and other Developments on these Resources" prepared by D.O.E. in 1975. As the person who wrote pages 44 to 105 of this report presenting and interpreting fish catch statistics and length-weight statistics for samples collected in 1973 and 1974, I am particularly qualified to comment on the presentation and interpretation of my work in the Beak-Hexton report.

On page 57 of the 1975 DOE Report I state: "However, proportionate species compositions and total salmon catches on Roberts and Sturgeon Banks are not directly comparable because the number of nets using each gear type varied..... In addition, sampling dates must be considered because of the timing

of juvenile salmon migrations¹

The Hinton - Beak report ignores these points and as a result makes several grievous errors in trying to back its thesis. I will give two specific examples although there are several more:

1. The Beak - Hinton report states correctly that more chinook and coho were caught on Sturgeon Bank than on Roberts Bank. However, it ignores the fact that most of the chinook and almost all the coho were taken in tow nets from May 7 - 22 and on June 14 on Sturgeon Bank. Yet Roberts Bank was not sampled with tow nets in May or on June 14.

2. The Beak - Hinton report states that no pink salmon were caught on Roberts Bank. It fails to point out that most of the sampling was done in 1973 - a non pink year - and that in 1974 when pink were taken in a few purse seine nets, only Sturgeon Bank was sampled. Roberts Bank was not sampled in 1974.

¹ Footnote: Figures 31 and 32 of the 1975 DOE report did present relative abundance values for fish species on the Banks. However, I did not calculate these values as I considered it to be an artificial manipulation of the data which was scientifically invalid for the following reasons: 1) because three gear types were used on the Banks and the fishing efficiencies of each method were not known (each method sampled different depths, volumes of water and areas), one could not pool data from the different methods to get an average catch per set; 2) because Sturgeon Bank and Roberts Bank were not sampled the same day and were usually sampled alternate weeks by with any one gear type, one cannot compare catch statistics between the Banks. It is just not scientifically valid to do so and the above reasons were presented in the written text of the 1975 report.

There are examples of serious errors in interpretation of data presented in the 1975 report on which Beak-Hinton rely heavily to further their thesis that Roberts Bank is not as productive as Sturgeon Bank. The Beak-Hinton consultants seem to have ignored my written text which describes and limits the data of the 1975 DOE report and they have made several other grave errors in the fish section of their report.

I have personally reviewed only the fish section of Volume 4 but the serious errors in it make me question the validity of the other sections and the conclusions drawn in the report.

Yours truly

Sancho C. Bouique

4300-3241
318 English Bluff Rd.,
Delta B.C. V4M 2M7
January 13, 1978

RECEIVED

Mr. J. F. Herity,
Environment Assessment Panel
Fisheries and Environment Canada
1870 - 1050 W. Pender St. —

JAN 16 1978
EAP PACIFIC

Dear Sir -

Last evening I attended a meeting at the Ladner Community Center, at which the environmental impact of the planned Roberts Bank expansion was discussed. My concerns are as follows —

When the initial phase of the port was launched we were assured that the coal dust would be controlled by spraying, however we now know that although the spraying may to some extent curtail the coal dust, it most certainly does not prevent it. I would therefore like to strongly protest the plan to add two more piers for coal, and especially

the pond for sulphur and potash.

My second concern is related to the aesthetic effect on our property values. We find the existing coal loading facility unsightly and feel this can only be aggravated by the suggested enlargement.

Thirdly I feel disturbed about the impact this development would have on the fish - as described at the meeting by Mr. Birch - representative of the Fishermen and Allied Workers' Union. Surely the Fraser River delta is a poor site to select if the future of the fishing industry is being threatened.

In summary I would like to express my thanks to you for having given us the opportunity to become familiar with and discuss the plans for Roberts Bank, and also to indicate to you that I am very much against the proposed expansion.

Yours truly,

Barbara Gillies

C.C. Mr. Walter Davidson - M.L.A. for Delta
Mr. J. Neilsen - B.C. Minister of Environment
Dr. J. Gillies M.P. Conservative member
Ottawa.

RECEIVED

JAN 23 1978

EAP PACIFIC

W. A. Gohl
1168 Shana Drive
Delta, B. C.

V4M 2L4

January 18, 1978

Mr. John F. Herity, Chairman,
Environmental Assessment Panel,
Roberts Bank Outerport Expansion,
Room 1870,
1050 West Pender Street,
Vancouver, B.C.
V6E 3S7

Dear Mr. Herity;

At the Citadel meeting in Ladner of a week or so ago those attending were invited to submit any thoughts or opinions they might have on the effect(s) on the planned expansion for Roberts Bank port.

The composition of the Panel was questioned. You reviewed the qualifications and background of each member, but because of the poor accoustics and your reluctance to use the speaker system, much of what was said was lost in transmission. However it seemed there were grounds to question the probability of interest conflicts of some panel members. This is very serious; if even one member is so tainted the whole report becomes suspect.

It appears certain commitments made prior to the opening of the port pertaining environmental controls have not been fulfilled. These include such things as (a) coal dust control, (b) bottom erosion, (c) eel grass changes and (d) other things pertaining and contributing to the life support of immature salmon and crabs. It was not disputed that 70% of the river and estuary environmental life support systems has been destroyed in recent years. It was admitted that the planned expansion would likely destroy a further 1%.

Enough is enough. The residents of Delta are against any further port expansion. The government has seen fit to establish an agricultural land bank and certainly no exception should be made when the environment may be further endangered. Land, even right of way, should not be used for sidings, twinning of tracks or roads. Any port expansion should only be made to accommodate larger shipments from Sparwood and then only after previous commitments as outlined in the above paragraph are fulfilled. Further the National Harbours Board should be required now to commence

rectifying damage it has previously caused to the Fraser fisheries, Western coastal and other B.C. Rivers fisheries.

Alternate sites, economically needed and supported locally, are mentioned in the Vancouver Sun issue of to-days date. There is also the Squamish-Britannia site- similarly needed and available. While the cost of such sites may be higher other aspects which are well known in each instance make such sites far more desirable. A political decision made locally is far more acceptable than that which might be made by a beaucrat. Because of recent developments in the Brittannia area, Howe Sound should receive preference for any local port development. Modern technology can find ways and means.

~~The panels~~ findings and decision should be based on a new comprehensive environmental study. While this is underway a parallel study should be undertaken to find new deep water ports between Vancouver and Prince Rupert that can also be serviced by rail and highway. Low cost government land would more than pay for such new town sites. New areas are needed to meet the needs of an expanding economy- in other words new frontiers to avoid stagnation.

Yours very truly,

U. A. Mahy

2531 Nelson Avenue,
West Vancouver, B.C.
V7V 2R5

January 6, 1978

RECEIVED

JAN 11 1978

EAP PACIFIC

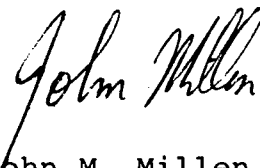
Mr. J. Herity,
Panel Secretary,
Fisheries and Environment Canada,
1870 - 1050 West Pender Street,
Vancouver, B.C.
V6E 3S7

Dear Mr. Herity,

Attached are comments and questions raised by the Environmental Impact Assessment of Roberts Bank Port Expansion. I have prepared these comments in my private capacity and they should not be taken as representing the comment or position of my employer.

The presentation of the findings of the report would be enhanced if the Environmental Sensitivity Map were over-printed or an overlay provided with the first stage expansion plan. This is particularly difficult for the individual to accomplish because of the different map scales used.

Yours truly,



John M. Millen, P.Eng.

JMM/cz

Att.

ROBERTS BANK PORT EXPANSION

1. Rationale and Phasing

It appears from the report that initially the National Harbours Board (NHB) requested an environmental impact assessment of a Roberts Bank expansion of four terminals each with 20 hectares of backup land (p.D-180, D-181) and 7.5 hectares of additional service land (p.D-192). The studies of requirements for handling bulk commodities presented are summarized on p.75 (vol.2). These suggest that up to 3 terminals are possibly required by 1985. The report proceeds to select and recommend a layout for four terminals and on p.152 argues without substantiation, that for economic reasons four sites should be constructed simultaneously.

In the terms of reference provided by the Panel, paragraph 2.1 requests the "lead time required to accommodate forecasted demand" and paragraph 2.5 requests the timetable required for the construction of the proposed expansion to meet projected demands. These requirements of the terms of reference do not appear to have been met. The construction schedules, Figures D-61 and D-62 are part of the data base but do not address the substance of the issue. From an environmental assessment point of view that substance is: when and why do we permit the alienation of productive marine habitat for an industrial purpose? The possible need for a terminal 17 years in the future is an unlikely candidate for such permission.

Given that the recommended layout for four terminals is the best at that level of development, the NHB should provide a plan for staged development of these four sites as they are required. At each stage the commitment to future further development should be minimized. If the Board wishes to argue for simultaneous development of four sites on economic grounds the savings over the cost of phased development, with future expenditures discounted, should be set out. Such savings could then be viewed alongside the environmental costs.

It should be noted that the recommended layout results in the reclamation of 35 hectares instead of the 7.5 hectares identified by the National Harbours Board, p.D192. The need for this additional area should be better substantiated.

2. Silt Dispersal During Dredging

On p.D-172 the assumption is made that there will be a 30% loss of dredged cut material. This figure is used in computing the fill figures. This is broken down on page D-180 - D-181 as 15% loss of silt sized material and 15% of reject material.

On p.119 (vol.2) an expected loss of 15% is used to evaluate the environmental impact. This is further reduced to a figure of 5.7% (0.8 million cubic meters) which will be left in suspension. This last figure is compared to the annual sediment discharge of the Fraser River. On p.D-195 the proposed construction period is given as mid-August to mid-March, generally an lower period of sediment discharge in the Fraser River.

The NHB should:

- Provide a revised comparison of the suspended sediment which would be discharged during construction of the project with the suspended sediment of Georgia Strait waters for the conditions expected in the months of August, December and March.
- Discuss the environmental effects of this silt dispersal.
- Provide an outline description and estimated cost of a sampling program, including core sampling at appropriate depths which would confirm the assumed values for silty reject material.

3. Erosion of Eel Grass Beds

On p.167 (vol.2) it is recommended that a dyke be designed around the dredged area. The intention is "to reduce the peak velocities (of tidal currents) over the eel grass beds and so reduce erosion". Unfortunately as described on p.119 and graphically illustrated in Figure 26 the effect of the dyke is predicted to be to greatly extend the "erosion zone". The new erosion zone is also in a prime eel grass habitat, and the associated Deltas will cover virtually all the remaining such prime habitat in the productive area between the Causeways.

Further the proposed dyke appears likely to create an additional problem of local scour around its eastern elbow of about the same magnitude as the problem it sets out to solve.

On pages B-20 to B-41 an extensive general discussion of eel grass is provided and observations of the effects of the Westshore terminal on eel grass beds are summarized. Pages 131, 132 (vol.2) contain a prediction of temporary destruction of eel grass beds in the area between the proposed dyke and the Tsawassen Causeway.

The NHB should provide a discussion of alternative stabilization measures for the existing erosion problem area which do not have such dire effects elsewhere. It seems likely that a lower level dyke could be just as effective as and cheaper than the proposed high level dyke. Consider a low level, crenelated dyke which would approximate the resistance of an extensive area of mud flat and roughly equalize the current velocities over the full width of the

embayment. Consider the possibilities of staged construction of the four berths as discussed in question 1 above, and identify appropriate patterns of erosion protection which could be integrated with those stages.

The NHB should provide an estimate of the likely time frame to reach a new stable equilibrium of the substrate and for the full colonization of any disturbed areas by eel grass.

Mitigation measures and rehabilitation such as are discussed for this problem are likely to be difficult to carry out successfully. It may be more appropriate in a review report such as this Environmental Impact Assessment to set out the range of possibilities and their expected effectiveness rather than to attempt to define the appropriate mitigation measure and its specific effects. If this approach is followed, then the report should carefully define the objectives of the mitigation measure, e.g.:

- 1) Stabilize existing erosion of eel grass beds.
- 2) Prevent initiation of new erosion by maintaining normal current velocities in the embayment.
- 3) Reclaim existing eroded channels to productive habitat.
- 4) Provide the basis for containment of floating pollutants released from berths.
5. Minimize commitment to future development or to a particular pattern of future development.

4. Back-Up Rail Trackage

On p.D-182 a requirement for back-up trackage "near the entrance to the Causeway" is identified.

The NHB should provide a discussion of the areal extent, probable location and present land use of a site for this facility. Identify the nature of the environmental, social and economic impacts of the construction and operation of this facility.

C. SUBMISSIONS FROM GOVERNMENT AGENCIES



MEMORANDUM

NOTE DE SERVICE

RECEIVED
FEB - 3 1978
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TO
A
Mr. J.F. Herity
Manager, Environmental Assessment Panel

FROM
DE
M.J. Romaine
Chairman, D.F.E. Task Force

SUBJECT
OBJET

NATIONAL HARBOURS BOARD (PORT OF VANCOUVER) ENVIRONMENTAL IMPACT
ASSESSMENT OF ROBERTS BANK PORT EXPANSION

Attached please find the Department of Fisheries and Environment Canada
Issues and Deficiencies Statement on the above report.

This statement has been approved by the D.F.E. Regional Board Chairman
for the Pacific and Yukon Region and reflects a consolidation of departmental
inputs to the Environmental Impact Assessment.

M.J. Romaine

M.J. Romaine

Encl.

c.c. D.F.E. Task Force
D.F.E. Executive Committee

SECURITY-CLASSIFICATION - DE SÉCURITÉ
OUR FILE-N/RÉFÉRENCE 17216
YOUR FILE-V/RÉFÉRENCE
DATE 3 February 1978

Department of Fisheries and Environment Canada
Issues and Deficiencies Statement
on
National Harbours Board
(Port of Vancouver)
Environmental Impact Assessment
of
Roberts Bank Port Expansion
(Beak Hinton Consultants Ltd. - October 1977)

February 3, 1978
Vancouver, B.C.

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SUMMARY

As requested by the Environmental Assessment and Review Panel, the Department of Fisheries and Environment has identified the following environmental issues and deficiencies that are associated with the Environmental Impact Assessment (E.I.A.) for the Roberts Bank Port Expansion.

I. ENVIRONMENTAL ISSUES

A. Overriding Issues

- Loss of habitat for fin fish, shellfish and wildlife.
- The necessity of considering the proposed expansion in the context of associated developments in the Fraser Estuary and Delta.

B. Unresolved Issues

- Inadequate comparison of alternative port site combinations and alternative design schemes for expansion on Roberts Bank.
- Justification of needs, timing, and the magnitude of the proposed expansion.
- Increased particulate deposition as a result of increased port activity.

II. DEFICIENCIES

A. Expansion Proposals

- The environmental values of various port sites investigated are not sufficiently substantiated.
- Details respecting both the advantages and disadvantages of the various design proposals are not provided.
- Details on support facilities for the preferred scheme as well as dredging and fill requirements are lacking.

B. Data Collection, Interpretation and Presentation

- Deficiencies in the data collected by the consultant as well as in the analysis and interpretation of existing data have been identified for avifauna, climatology and air quality, fisheries, hydrology and water quality, and physical oceanography.

C. Impacts and Mitigation Measures

- Associated impacts are not adequately addressed.
- Predictions of the environmental impact are conservative.
- The implementation of mitigation measures is not spelled out, nor is the timing and practicality of doing so.
- Recommendations regarding environmental monitoring are missing.
- The effectiveness of many of the recommended measures is questioned.

As a result of the above deficiencies, the Department of Fisheries and Environment Canada questions the validity of some of the report's conclusions and recommendations and considers that further interpretation of existing data as well as the provision of more definitive information is required.

I. INTRODUCTION

On November 18, 1977, the Environmental Assessment Panel issued the review procedures to be followed in the assessment of the Roberts Bank Port Expansion Environmental Impact Statement (E.I.S.). In accordance with these procedures, the Department of Fisheries and Environment submits the following comments on environmental issues and deficiencies. These comments reflect the Department's views on the adequacy of the Environmental Impact Assessment to address those subject areas as identified in the Environmental Assessment Panel guidelines.

Two broad categories of environmental issues and four categories of deficiencies have so far been identified. There is an obvious overlap between environmental issues and deficiencies. For example, deficiencies in the Environmental Impact Assessment (E.I.A.) have either led to the identification of new issues or the non-resolution of current ones.

II. ENVIRONMENTAL ISSUES

A. Overriding Issues

Overriding issues deal with those concerns that are fundamental to decisions respecting future major development proposals for the Fraser River Estuary/Delta Region. While bearing directly on the proposal to expand the Roberts Bank Port Facility, such issues cannot adequately be resolved solely from the assessment and review of a particular development proposal, since they apply to the entire Fraser River Estuary/Delta.

Issues falling into the category include:

1. Loss of Habitat for Fin Fish, Shellfish and Wildlife

Previous environmental studies and supporting public concern have highlighted the national and regional importance of the Fraser River Estuary - which includes Roberts Bank - as extremely valuable habitat for fin fish, shellfish and wildlife. The continued loss of this habitat and the associated reduction in the capacity of the Fraser River Estuary/Delta to support these life forms has raised concerns over the possibility that further proposed developments of the magnitude, such as that proposed for

the Roberts Bank Superport Expansion, may in concert with existing developments destroy the area as an ecological unit. Therefore, the issue is whether or not further alienation of this valuable habitat, which is an integral part of a larger ecological complex, should be allowed to occur. Further, in addressing this issue, consideration must also be given to the potential that this expansion will have on generating subsequent demands for ancillary developments on the resource base.

The E.I.A. does not address these related issues, yet the need to do so is identified in the E.I.S. panel guidelines (see paragraph 2 of Section 3 and paragraph 4, Section 2.5 of the E.I.S. guidelines).

2. The Necessity of Considering the Proposed Expansion in the Context of other Developments Proposed for the Fraser Estuary and Delta

The proposed expansion of the Roberts Bank Superport is only one of several large transportation related developments presently being suggested for location on the Fraser River Estuary/Delta. Each such project will reduce living-resource habitat and further degrade the environment. Together, these developments could result in very large reductions or alterations of land and water habitat for fish and wildlife, and could result in a larger pollution burden for the adjacent air and water to assimilate. A major proposal also being considered by an Environmental Assessment Panel, which is in close proximity both geographically and in time, is the Fraser River Training Wall Program. The specific interface between these two projects in terms of potential accumulated or associated impacts on Roberts Bank must be addressed.

The issue of expansion of the Roberts Bank Superport and, indeed, the decision as to whether or not the proposed project should be allowed to proceed must therefore be addressed in the broader context of the regional environment.

The E.I.A. does not address this issue, yet the need to do so is identified in the E.I.S. panel guidelines (see paragraph 4, Section 2.5 of the E.I.S. guidelines, which states in part, "associated projects, programs or commitments may be influenced by or be dependent upon the proponent's project, but may not be under the proponent's control. In order to assess the total environmental effects on the area it is necessary to have some general concept of associated projects, programs or commitments.")

On February 17, 1977, an announcement on the commencement of the Fraser River Estuary Study was made jointly by the Honourable Romeo LeBlanc, Federal Minister of Fisheries and the Environment, and B.C. Environment Minister, Jim Nielsen.

The Ministers stated that "the aim of the Fraser River Estuary Study is to develop guidelines for the future management of the Fraser River and Estuary. This will involve the determination of which parts of the estuary are best suited for waste water disposal; for the preservation and maintenance of fish, wildlife and waterfowl habitat; for industrial and port development and for recreational use; and most important, the intensity of use and the degree to which these uses can be effectively integrated in the estuary system."

The issue is therefore whether or not the proposed expansion of the Roberts Bank Superport should be considered in isolation from the formulation of policies for the Fraser River Estuary.

B. Unresolved Issues

Unresolved issues deal with those concerns which are more specifically related to the proposed port expansion at Roberts Bank. Issues in this category are very directly related to deficiencies in the Environmental Impact Assessment.

Issues identified under this category include:

1. Inadequate Comparison of Alternative Port Site Combinations and Alternative Design Schemes for Expansion from an Environmental Viewpoint

A number of possible alternative Port Site combinations, as well as alternative design schemes for Roberts Bank were eliminated on the basis of a brief analysis for which limited documentation is provided. To elaborate:

- a) In the analysis of alternative port locations, environmental values attributed to the various localities are unsubstantiated. As a result, the calculations of environmental scores of combinations of port locations are also questionable.

- b) The report does not show what the ratings of "location combinations," for example as shown in Figures 23 and 24, (Volume 2) would appear like if the same numerical range as in engineering (250-500) had been applied to environmental factors (10-80).
- c) Limited documentation on how the scores were derived is provided in the E.I.A. report. Instead, "For a detailed comparison the reader is referred to the original documents."
- d) A detailed analysis should have been provided on combinations such as utilizing the existing Roberts Bank facilities in conjunction with new berths and stockpiling areas at Squamish/Britannia Beach and by better utilizing Vancouver Harbour facilities.
- e) Scheme 11 for the Roberts Bank on the surface appears to have considerable merit from an environmental point of view. In recognition of the major resource values at stake, a thorough analysis of the type and level of trade-offs to be made between environmental and socio-economic costs for each alternative design scheme should have been provided.

The issue is therefore whether or not a decision for expansion of the Roberts Bank Superport can be made in the absence of sufficient analysis of alternative approaches, including advantages and disadvantages for handling the projected needs for additional facilities (see paragraphs 1, Section 2.2 and Section 2.5 of the E.I.S. guidelines).

2. Justification of Needs, Timing and the Magnitude of the Proposed Expansion

The development of the proposed terminal expansion requirements as identified in the proponent's E.I.A. appears to reflect a rationale of expansion of facilities in advance of actual demand. Limited documentation is provided as to the underlying assumptions behind the forecasts, and the basis for apparently selecting the high demand projections for commodities such as grain and potash is not provided.

The desirable time frame required to bring new terminals on stream is not shown nor is the rationale behind the justification for the immediate need for the magnitude of proposed expansion to be undertaken at this time.

Further, from an environmental viewpoint, the ultimate size of the port development that may be considered for Roberts Bank (that is, development beyond the currently proposed four terminals and industrial land) is not adequately assessed or addressed in the Environmental Impact Statement.

To elaborate on the above points:

- a) As a general statement, the commodity projections used to justify the port expansion are not well supported and qualified. Swan Wooster Engineering confirms this viewpoint on Page D5 of the introduction to Appendix D where it states "...no in-depth forecasts were attempted." The absence of such forecasts makes the proposed expansion to four terminals appear highly speculative. This also seems to be confirmed on Page 114 of Volume 2 relating how each alternative and the commodity projection were considered and how the proposed expansion was determined.
- b) One of the terminals is slated for a combination of sulphur and potash. Yet, on Page 18 of Volume 2 the authors state "...Commodities sold in small lots in fluctuating markets, such as sulphur or potash, would likely be shipped from existing terminals to their maximum capacity. Terminal operators would be unwilling to expand physically to handle an increased throughput which may be only temporary, and would accept the operational inefficiency and cost associated with absolute maximum production." The commodity projections shown in Figures 7 and 8 of Volume 2 would suggest that exports beyond the expansion capacity of the existing facilities are very speculative.
- c) One of the terminals is slated for grain. However, only one of the three projections presented indicated that the planned expansions of existing facilities would be exceeded. Furthermore, in the context of Volume 2, Page 20, it is implied that the slow and irregular shipments of grain, identified in the Hall Commission Report as a serious West Coast grain shipment problem, were due mainly to capacity problems. On the basis of the quotation from the Commission report (Page D90) one must conclude that capacity is not a significant contributor to the grain shipping problem. In relation to grain shipments, it is also stated on Page D90

that rail access restricts throughput at Vancouver elevators. This is in direct contradiction to the statement on Page 18 of Volume 2 which states "...Thus there are no longer any restrictions on the expansion of the capacity of the terminals noted above." Both statements cannot be true.

d) With respect to their grain terminal proposal, the consultants recommend the adoption of unproven bulk handling techniques (Page D-166) which may not be feasible.

e) The E.I.A. fails to justify the need for the bulk liquids terminal. If the material can be piped from the industrial land area to the ship berth it can just as easily be piped from onshore. No projections have been presented. Currently, these commodities are shipped by small vessels which are easily accommodated at any number of ports on the coast including Vancouver Harbour.

f) The need for the second coal terminal requires further justification. It would appear that one has to assume a large number of intangibles such as markets, economic trends and sources of the coal to assume the need for this terminal at this site before the turn of the century.

g) With respect to the question of the possible ultimate size of the Roberts Bank Superport, it is stated in point 8.1.2, Page 166 of Volume 2, that, "If west coast bulk loading port development proceeds beyond a four terminal requirement, the next stage of expansion be determined at that time, considering the transportation economics and the environmental acceptability of the specific commodities then envisioned."

In another copy of this same Volume, Section 8.1.2 states that, "If west coast bulk loading port development proceeds beyond a four terminal requirement, the following general order of development be followed: Prince Rupert (Ridley Island) - five terminals

Kitimat - one terminal

Vancouver Harbour - one to two terminals

Roberts Bank - the remainder

If transportation logic or financial feasibility requires deviation from this pattern, a specific environmental comparison between the site desired by developers and the site ranked highest above should be carried out to assess the trade-offs involved."

On the basis of the above two statements, it should be recognized that further expansion of the Roberts Bank Superport is being considered as a strong possibility.

In summary, the decision regarding approval of the proposed Roberts Bank Port expansion raises the following issues:

- a) whether or not the justification for the expansion of terminal requirements should be accepted based upon the limited supporting documentation justifying need; and
- b) whether or not the magnitude of the proposed expansion at this time should be approved, in view of the fact that a commitment now would result in the alienation of highly important fish and wildlife habitat, whose value is bound to further increase significantly in the future.

3. Increased Particulate Deposition as a result of increased Port Activity

It is clear from the E.I.A. (for example, Volume 5, Pages 65-85) that existing and likely coal dust deposition along with the possible additions of sulphur, potash and other particulates constitutes an environmental issue among a considerable cross-section of groups consulted. The E.I.A. provides an analysis of climatological data which indicates that there is no factual evidence that there is a current or potential problem with blowing particulates.

The E.I.S. is inadequate to support this claim in view of:

- a) the failure of the analysis to include and compare differences between wind data from Tsawwassen Terminal and Sandheads Lightstation with that for Vancouver Airport (a geographically different situation) and Roberts Bank (having a short record of wind data);

- b) the failure of the review to include an analysis of measurements obtained from the G.V.R.D. suspended particulate samples during days with northwest winds which would have allowed the effects of only the bulk terminal coal storage to have been better documented;
- c) the fact that it has not been shown that present air quality adjacent to the bulk terminal is good. The G.V.R.D. samplers provided a limited applicable data base from which to forecast concentration of suspended particulates. Further, it is noted that winds from the south, southwest and west can also carry coal particulates onto the mainland; however, there are no samplers located to measure these deposits;
- d) the failure to document the potential accumulated impact of particulate deposition on the marine environment.

In view of the above deficiencies which also bear upon the reliability and effectiveness of proposed mitigating measures, the issue is whether or not the problem of particulate deposition (current situation and predicted for the proposed expansion) has been adequately addressed to allow port expansion to proceed at this time.

III. DEFICIENCIES

The following major deficiencies have so far been identified in the Environmental Impact Assessment.

A. Expansion Proposals

In addition to the previous comments made on the poorly substantiated analysis provided for the various port sites investigated, the following deficiencies have been identified specifically for the proposed expansion of Roberts Bank:

1. Alternative Design Proposals

While the report presented 16 proposed master plans for development at Roberts Bank, 15 of them were not dealt with in detail. It appears that

at least one of the other proposed alternatives, namely proposed Master Plan Scheme 11 deserved more detailed consideration. This scheme consists of a string of berths parallel to the sea bottom contours beyond the intertidal and shallow sub-tidal zone. The stockpile areas would be on existing shore (designated agricultural land) and the bulk materials would be transferred by conveyor to the ships. This proposal would require the least dredging and would have the least impact on the aquatic environment where most of the consequences of a major development are relatively undefined or unknown and probably most critical. However, it would have a major impact on the existing upland area which would be utilized. The value of this area and the acceptability of accommodating future expansion on this land would need to be assessed. Further expansions of the seaward end of the development could be accommodated with minimum impacts on the critical intertidal and shallow sub-tidal zone.

The arguments used by the consultants for discontinuing this proposal center on higher initial capital, operating and maintenance costs, however no indication of these costs were provided. They also suggested an aesthetic impact due to the closer proximity of these upland storage areas to existing roads, residential areas, etc.

Despite the rejection primarily on economic grounds, it was interesting to note that terminals of this sort have been operated successfully, and presumably economically, in Australia. However, according to the report "The Australians can afford this alternative because their net rail transportation cost is much lower than the cost in British Columbia."

Assuming that an expansion plan of the magnitude proposed can be justified, more convincing arguments should be presented before dismissing Alternative 11, as its adoption may represent the most significant mitigating measure which could be taken with respect to protection of the foreshore and nearshore aquatic resources. It is essential that the potential values of these resources and those of the land area to be affected be evaluated as completely as possible, in addition to the concerns of the public, before deciding whether the development should proceed according to the current format or as per Alternative 11.

Similarly, further critical evaluation should have been given to:

- (i) Roberts Bank site with additional stockpiling and storage sites added to existing area by filling only toward deep water;
- (ii) Roberts Bank site with additional stockpiling and storage sites added by building "floats" toward deep water.

2. Design Details

a) Support Facilities

The proposed master plan schemes are lacking in sufficient detail. The schemes do not show, for example, what additional and/or related facilities may be necessary or subsequently proposed to support or complement the proposed expansion. The location of administrative offices, support services, or the positioning of the suggested marina are not identified.

b) Dredging

Insufficient details are provided on dredging requirements.

For example:

- (i) Will the dredgate from the berth areas be used for fill for the terminals? Is this material of adequate quantity and quality for this purpose? If there is a surplus of dredgate materials, where will the spoil be deposited? If the dredgate from the berth basins is insufficient volume or of an unacceptable quality for terminal sites, where will additional fill material be obtained from?
- (ii) Much of the dredging and filling will occur during the annual low run-off period of the Fraser River. The "dredge loss" thus might "locally" represent a temporary but significant increase in water turbidity at the time. Will there be biological problems for example by introduction of toxic materials, associated with fill, into water?
- (iii) Can the assumption be made that the sediments to be dredged do not contain contaminants, for example, heavy-metal concentration, which may influence marsh recolonization?

B. Data Collection, Interpretation and Presentation

1. Avifauna

The supporting narrative and the filed program of data acquisition were found to be deficient in several aspects. With specific reference to Section B6 of Volume 4, the following shortcomings have been identified:

- a) The text could have been improved by further editing.
- b) References and quotations are not researched such as:
 - (i) Compilers of information are given as reference rather than consulting the original works (Hoos & Packman, Noble, etc...)
 - (ii) Quoting by author "file information" that usually contains data only of a preliminary nature (properly, information should be quoted as CWS file information, for example, and value and validity of quotation could then be checked with that agency).
 - (iii) No source at all is given for some important statements (see p. B126, B130 for example).
 - (iv) Some reports are double quoted, once by author and other times by company affiliation (Sverre/Entech).
- c) The amount of field work and the methods used are inadequate since:
 - (i) Field work was carried out in time of the year when area is used the least by wildlife.
 - (ii) The methodology was not described, such as length of stay at each observation point, time of day of observation, no indication of time lapse (if any) between arrival at vantage point and commencement of the count.
 - (iii) Data are insufficiently analyzed, such as the lettered and numbered sampling area designations are not analyzed as to their component habitat types.

2. Climatology and Air Quality

Many of the deficiencies of the E.I.A. with respect to this topic have already been discussed previously, under Issue number B.3. "Increased Air Pollution as a result of Increased Port Activity." Details of these deficiencies are presented below:

a) In Volume 3, Para. A2.2.6, wind data for Tsawwassen Terminal and Sandheads Lightstation should have been included in Table A2, and their differences from Vancouver Airport data discussed.

b) The analysis of the short period of wind data collected at Roberts Bank (Volume 3, Fig. A-1) should have been compared to data for the same period from Tsawwassen Terminal and Sandheads Lightstation to show the representativeness of the Roberts Bank data.

c) Strong wind duration analyses for Vancouver Airport, Tsawwassen Terminal and Sandheads Lightstation should have been included and discussed (ref. Volume 2, Page 7, Terms of Reference) in relation to:

- (i) the entrainment and transport of particulate from the bulk terminal;
- (ii) their effect on high tide levels, wind waves and swells;
- (iii) the proposed low-profile dyke (Volume 2, Para. 8.2.1); and
- (iv) the effect on vessel berthing (Volume 6, Para. D4.3.12).

d) In Volume 2, Figures 27, 28, 29 appear to display the increase in suspended coal particulates resulting from the bulk terminal operations rather than ground level concentrations of all particulates, and should be labelled as such.

e) The study of G.V.R.D. suspended particulate data (Volume 3, Table A6) should have included an analysis of measurements obtained during days with northwest winds, in order to document the effects of only the bulk terminal coal storage.

f) In Volume 3, Para. A2.2.5 fog should have been defined as producing a visibility restriction of less than or equal to one half mile.

g) (i) It has not been shown that present air quality adjacent to the bulk terminal is good. The statement (Volume 3, Page A22) that it is quite good is based on measurements from G.V.R.D. samplers #25 and #26, however, these samplers operate simultaneously, for only one 24-hour period every six days. In fact, due to malfunction, etc. they operated only 13.4% and 7.8% respectively, of hours, rather than 16.7% during the period of analysis.

(ii) The strong-wind analysis of Tsawwassen Terminal wind data (1963-72) shows that northwest winds of 20 MPH (8.9 m/sec.) or greater (sufficient to carry coal particulates to the samplers) occurred only 2.4% of hours, annually. On only three occasions in the ten years did these winds persist for 24 hours or more, while the median duration was only three hours. Thus the probability is remote of having northwest winds of at least 20 MPH (8.9 m/sec.) during the entire 24-hour operating periods of the samplers. Even so, the Tsawwassen Terminal sampler recorded annual means of 39 to 45 $\mu\text{g}/\text{m}^3$ suspended particulate, of which 5 to 10% was coal.

(iii) It is further noted that winds from the south, southwest and west can also carry coal particulates onto the mainland, however, there are no samplers located to measure these deposits. The strong-wind analysis shows that winds of at least 20 MPH (8.9 m/sec.) blow from these directions 3.5% of hours, annually. In the ten year period there were also three occasions when these winds persisted for 24 hours or longer from these directions, and the median duration was again three hours.

3. Fisheries

a) The environmental comparison system renders interpretation difficult and requires explanation. The raw evaluation is not only based upon a comparison of studies which had vastly differing degrees of intensity and purpose but which have vastly differing degrees of acceptability. With specific reference to the aquatic ecology components of Tables 7 and 8, (Pages 63-66, Volume 2) the raw score and relative intrinsic value score need explanation. For example, on Table 7, Page 63, Port Simpson has

a lesser value than Ridley Island; Vancouver Harbour, Kitimat, Squamish and Boundary Bay are of equal merit as are Britannia and Port Simpson. In Table 8 on Page 66, Ridley Island ranks equal with Boundary Bay; there is scarcely a difference between Ridley Island and Kitson Island and Port Simpson ranks higher than Kitimat. The yardstick seems elastic. How does the consultant rank: a shellfish bed; a shellfish spawning area; a herring spawning area; an eelgrass bed; a salt marsh used by birds and fish; a salt marsh used only by birds; an eelgrass bed used as a herring spawning area; a tidal mudflat; a heavily used salmon rearing area; a lightly used salmon rearing area; the benthic community on a gravelly, sandy, or bedrock substrate? Why does Roberts Bank rank 4 on the relative intrinsic value scale and -1 on the raw score?

- b) The environmental evaluation scale of 0-2 is so gross that the sensitivity map developed from them has little meaning. (Page 77, Volume 2). The questions identified in point (a) above apply here as well.
- c) The E.I.A. is deficient in that the site evaluation and the comparative evaluations have failed to take into account the resources at risk (existing and potential).
- d) Both the sampling and the analysis of the biological data are inadequate for the problem. For example:
 - (i) The only conclusion that can be drawn from the benthos data collected by the consultants as presented in Volume 4 is that they were dealing with clumped (non-random) distributions of organisms. Therefore, it is not possible to make any kind of assessment on the data.
 - (ii) Micro-fauna such as Harpacticoid copepods and nematods are notable by their absence in the consultant's samples. These species are found to be highly abundant in other parts of the Fraser River Estuary and are a major food component of juvenile fishes. The significance of the absence of these micro-fauna in the consultant's samples should be questioned.
 - (iii) It is questioned how a sensitivity map with detailed 50 meter strips was derived from sampling cross-section and stations that are 500 meters or more apart.

4. Hydrology and Water Quality

- a) In Volume 2, on Page 121 it is stated that, "The addition of 0.8 million cubic meters of sediment to the sediment load in the Strait of Georgia would represent a 5% increase above present levels because the Fraser River introduces an average of 15 million cubic meters of sediment into the strait annually." However, the annual suspended sediment load, averaged over a ten year period, is 8.9 million cubic meters. The re-suspension of 0.8 million cubic meters of sediment would represent a 9%, not a 5% increase above present levels of suspended sediment into the strait annually.
- b) In Volume 3, Appendix A, Pages A32-A32, it is stated that, "The quantity of sand reaching the delta as bed load (rolling and saltating along the river bed) is not well known but it appears to correspond roughly to the total quantity of material dredged from the river to maintain a 10 m navigation channel to New Westminster." This sentence should be rewritten as it is incorrect to equate quantities of bed load with quantities of dredgate. According to estimates, bed load quantities average approximately 5.5 million tons per year whereas quantities of material dredged vary significantly from year to year.
- c) In the same paragraph as described in (b) above, it is stated that, "Spoil from further upstream is generally dumped along the channel margins or is used for the filling of marsh land." This statement is misleading as spoil is used primarily as fill for construction purposes.
- d) With reference to water quality, the resulting values presented in the elutriate tests seem in some cases to be unusually high. The consultants should be requested to submit the actual lab report to confirm the figures given. Also, it would appear that bioassays conducted on the sediments were conducted in fresh water, not saline water.

5. Physical Oceanography

- a) Only a superficial examination of the oceanographic regions has been made and the E.I.A. has not effectively interpreted the existing oceanographic knowledge of the area.

- b) Page A55, Volume 3. The term "absence" of fresh water is misleading. There is definitely far less fresh water south than north of the westshore causeway, but even the "pulses of turbid water" entering the intercauseway area may be somewhat fresh. There is really a relative absence of fresh water in comparison to areas to the north of the causeway.
- c) Page A62, Volume 2. Presumably the interaction with "local" currents is meant.
- d) Page A66, Volume 3. Do wave heights keep decreasing and are they lessened by as much as noted?
- e) Page A67, Volume 3. It would seem that Fraser River water per se would be of more significance, oceanographically, to Roberts Bank than Sturgeon Bank water would.
- f) Paragraph A5,4, Page A70 (bottom) and 72 (top), Volume 3. What does this 280,000 mean? times the values found in seawater?
- g) Paragraph A6.1.2, Page A74, Volume 3. What does "b" refer to?
- h) Page A74, Volume 3. The statement that "much of the western delta front is presently advancing or is in dynamic equilibrium" is incomplete. There is also evidence to indicate that southern Roberts Bank may be in an erosional state.
- i) Page A77, paragraph A6.3.1, Volume 3. A few velocity profiles should have been obtained. For example, there are Hydro Products Meters which could have been used even from a small boat.
- j) Page A88, Volume 3. The statement regarding the "comparable values (0.7 knots) of current," as referenced to Figures A17 and A19, is unsubstantiated.
- k) Where is Section A6.2.3 referred to on Page A91?
- l) Figure A-9, Volume 3. The asymmetry of flow is presumably due to coriolis force and this is not referred to. The diagram is therefore misleading in its present context.
- m) Figure A23, Volume 3. What do the "spot" percentages actually mean? If they are percentages of sand, why so many low percentages, where there is supposed to be greater than 70 percent sand content? Where are the "average moment measure mean grain size" values mentioned on Page A75?

n) Figure A-24. In view of the few readings taken, it can be questioned whether the sediment rates are completely representative.

o) Table A-8, Page A27. Fraser River month (June): is value 321,000 cu.ft./sec. or 521,000 cu.ft./sec. as shown in the Table?

6. Terrain and Land Use

Sections 3.2 "Terrain" and 3.7 "Land and Resource Use" of the Environmental Assessment Panel guidelines identify a number of requirements for information on these topics. A composite map, showing land capability for agriculture, wildlife, and fisheries is not provided, although such information would have been of value, particularly if alternative design proposals, for example Scheme 11, were to have been analyzed in more detail.

C. Impacts and Mitigation Measures

1. Environmental Impacts

a) Associated Impacts

(i) As identified under Issue A2 above, the report includes no consideration of the possible impact and interrelationships between the proposed Fraser River Training Program and the port development. If the Training Wall Program were to proceed, it is submitted that it would result in changes to the hydrology of the Fraser River and the nearshore areas, changes in sediment transport and distribution patterns and rates etc., all of which would affect and may invalidate the predictions developed by the consultants for the superport proposal.

(ii) The consultants report a projected increase in the number of ships arriving at Roberts Bank to be in the order of 500-600/year with the completion of this phase of the superport. Presumably, such a significant increase in ship traffic would tend to increase the statistical probability of having a shipping accident, which could result in fuel oil spills or other chemical spills in the vicinity of Roberts Bank. Detailed statistical projections of this facet are required in order to demonstrate the degree of risks involved.

(iii) In general terms, the aesthetic costs associated with the addition of one berth at Roberts Bank have been identified.

However, the total impact of the proposed expansion on aesthetic values has not been addressed.

(iv) The southward development of the expanded port, through the construction of a dyke around the berthing zone will constrict the entrance to the inter-causeway area, thereby possibly restricting the movement of fish and shellfish into the intertidal area of the Tsawwassen Indian Reserve which is a substantive rearing area for these species. It is noteworthy that the Department of Fisheries and Environment prohibited construction of the Tsawwassen Indian Reserve dyke because of the potential elimination of the marsh areas as a principal food-web component of the area.

b) Predicted Impacts

(i) Coal Dust

- . Northwest winds are a prevailing direction hence the coal piles are oriented to provide a minimum of exposed surface area, and construction of a sloping wall at the northwest end of the piles is proposed. The strong wind duration analysis for Tsawwassen Terminal shows that significant strong winds blow from the south, southwest and west such that these, blowing against the much larger exposed coal pile surface area, may entrain more coal particulates toward the mainland than the northwest winds.
- . The physiological effects of coal dust particles and coal dust leachates on fish and shellfish have not been addressed.

(ii) Habitat

- . The consultant has presumed that enough is known about the habitat requirements for eelgrass production to enable design modifications to the project and to implement eelgrass enhancement technology. The consultants state that the devegetated zone around the original borrow pit continues to expand very rapidly. This is attributed to alteration of drainage patterns (Volume 4, Page B-25). On the basis of Table B-2, it must be concluded that this process is far from stabilized. Yet the consultants speculate that after

- the massive construction proposed is completed, that sufficient stability will be achieved to promote recolonization. No hard evidence is presented on the mechanisms and interrelationships on the existing erosive processes. The lack of this information makes prediction of the future impact of the proposal highly speculative.
- . After construction of the proposed "protective dyke" around the dredged area, the width of the outflow channel will be reduced by one-third. The cross-sectional area will be reduced by an even greater amount. Under present conditions erosion is continuing. The narrowing of the entrance to the intercauseway area can be expected to increase erosion and endanger the continuous eelgrass beds that exist there now. The lack of knowledge identified in the point immediately above makes prediction of the extent of this erosion impossible.
 - . On Page 119, Volume 2, it is stated that, "Deposition would occur in two areas. Mud would be deposited in the area north of the existing Westshore Causeway and inshore of the proposed site of Industrial Land. This should have the form of a prograding mud flat. Another mud flat would form inshore of Terminal 4 between the existing causeway and the proposed dyke. Both flats should form as a result of weak currents in protected areas, and probably grow vertically up to the high tide level." The impact that this sedimentation will have on existing eelgrass beds occurring in both of these areas is not explained, and indeed, this statement appears to be at variance with the predicted impact that the proposed development will have on this habitat.
 - . On Page 131, Volume 2, the consultant makes reference to the fact that "After the bed stabilizes, eelgrass should recolonize the area above -1.0 meters elevation." Figure #26 also shows the anticipated bottom movement. However, the

predicted contours of this area after stabilization are not shown, yet this has a significant influence on the prediction respecting the stabilized area that will be suitable for eelgrass habitat.

- . On Page 132, Volume 2, reference is made to the creation of an ebb tidal delta, and it is stated that, "it is reasonable to assume that this area will eventually be colonized by eelgrass." In addition to the question of the stabilizing of this area, there are other factors which the report does not address but which may influence the recolonization by eelgrass.
- . On Page 152 it is stated that, "It is anticipated that the outflowing Fraser River water and ebbing tide which fills the Brunswick Bay area will cause a current of quite substantial size to flow around the northern corner of the industrial land. Some erosion may be expected here, but can be prevented by armouring the corner. A build-up of sediment could be expected in the inside corner where the causeway adjoins the industrial land. Depending upon the extent of such a build-up, it could raise the level of the land above the habitat of eelgrass just shoreward of the industrial land site. This is not expected to occur, since the tidal action should prevent a very large build-up in the area." The fact that tidal action should prevent a very large build-up in the area is not quantified and is somewhat in variance with the statement in paragraph 2 on Page 119. The impact of erosion on the eelgrass beds is not stated, however, on the basis of the attached composite map, it would appear that the proposed industrial land does indeed encroach on the eelgrass area, and as a result, erosion and/or sedimentation may have an impact on this eelgrass area.
- . On Page 130, Volume 2, reference is made that, "the creation of a new marsh habitat is a possible compensating measure as

an alternative to the dumping of dredge spoils." Insufficient documentation is provided by the consultant to justify that rehabilitation of emergent vegetation is possible or feasible in the Roberts Bank area.

- . The report does not provide an adequate determination of the quantitative value of resources likely to be lost or impacted by the construction and operation of the proposed expanded facility.
- . Page 155, Volume 2. Presumably the maximum currents will not always have the value 1.3 m/sec. Shouldn't they become less as erosion takes place? and the counterclockwise circulation weaken? What about onshore winds (and waves) and high tides for moving (especially) surface-borne materials or "films" over the dyke onto the bank?
- . Page 93, Volume 2. The shape and eventual fate of the ebb-tidal (especially) and flood-tidal deltas for Scheme 3 might be a function also of the effect of the strong erosion upon the general geological stability in the area.

2. Mitigation Measures and Recommendations

a) Coal Dust

- . Recommendation 8.2.12, on Page 169, Volume 2 is incomplete. Construction of a sloping wall to ameliorate the effect of onshore winds from the south, southwest, and west, in addition to those from the northwest, in conjunction with intense spraying when these wind directions occur, will reduce the entrainment of coal particulates.

b) Contingency and Containment Plans

- . Relative to contingency and containment plans associated with accidental spills etc. occurring after the ships are safely moored in the U-shaped harbour, more detailed information is required to demonstrate that these problems can be addressed

in a practical and environmentally satisfactory manner. For example, the practicality of the spill control measures identified on Pages 154 and 155 of Volume 2 must be questioned. The fact is that spills cannot be adequately contained in a sheltered area such as Vancouver Harbour let alone an open exposed area such as Roberts Bank. The U-shaped dyke will not be effective at all tidal phases and it must be assumed that spills will not be effectively controlled under all conditions. The approach for containment of soluble liquids is questionable. How would the contaminated water be treated? Discontinuous treatment plants simply do not work. As a result, the full effect of any spilled soluble liquids would be felt by the local environment.

c) Recommendations

- . On Page 117, Volume 2, it is stated that, "In all cases optimal mitigation measures have been taken and are incorporated in the conceptual design." These measures should be clearly identified in the report.
- . It is stated in 8.1.3, Page 167, Volume 2, that "certain of these (technical recommendations) are critical to the acceptability of the project, and failure to implement them would invalidate conclusion 7.1.2 above (that Roberts Bank is the best site on the west coast)." The implementation of mitigation measures in terms of how and who is to implement them is not spelled out, nor is the timing or feasibility (in economic and technical terms) of doing so.
- . Recommendations regarding the monitoring of environmental conditions after the proposed expansion is in place are missing but should have been addressed. An obvious recommendation for example, would be the positioning of a network of continuous air monitors on the adjacent mainland to monitor the effectiveness of the mitigating measures for coal dust.

Page 168, Volume 2, Recommendation 8.2.6 - Is water flow (culverting) through the causeway as bad as made out? Are there any studies which show definitely that the recommendation is valid?

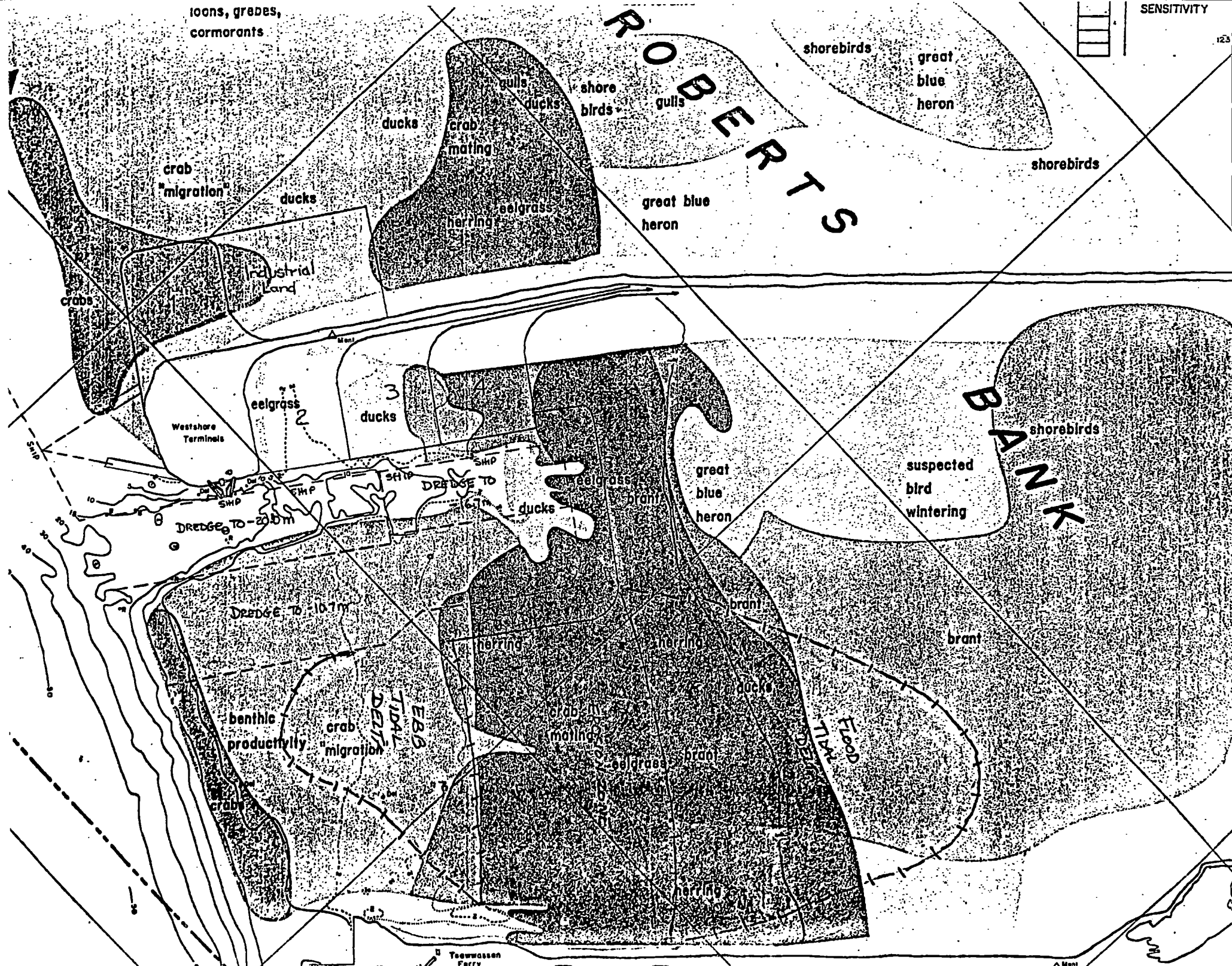
D. E.I.A. Report, Format and Quality

1. Proprietary Statement

The proprietary statement made at the beginning of Volume 2 lays claim to considerable information that has been previously collected and/or published by other organizations or individuals. Only that information which has been either collected or interpreted by the consultant should fall into this category.

2. Maps

The assessment could have been made much easier to undertake if, for example, the relationships between environmental sensitivity, the various engineering proposals and anticipated environmental changes were shown at the same map scale and level of detail (i.e. depth contours). To illustrate - the attached photocopy provides, at a common scale, a composite map showing the "preferred" design, and the anticipated bottom movements overlain on the environmental sensitivity map. Such a composite map gives quite a different impression of the predicted impact that the proposed facility will have on the surrounding environment, particularly as it relates to the future integrity of the eelgrass beds.



British Columbia

Telephone (604) 294-5211

Land Commission

4333 Ledger Avenue, Burnaby, B.C., V5G 3T3

January 11, 1978

Reply to the attention of:
Marius Marsh

Environmental Assessment Panel
(Roberts Bank Port Expansion)
Room 1870
1050 West Pender Street
Vancouver, B.C.
V6E 3S7

RECEIVED

JAN 13 1978

EAP PACIFIC

Dear Sirs:

In reply to your open letter of November 18, we wish to identify some areas in which we feel there are information deficiencies in the environmental impact statement, and upon which we may wish to comment in more detail at a later stage.

Although we are aware that the heaviest impact of such an expansion will be upon the marine environment of the immediate area, our concerns deal primarily with the effects that such a tremendous increase in rail traffic may have on the farming community along the rail line. The report states that "at present 900 trains annually move to Roberts Bank" and "the proposed expansion would increase the train traffic by an estimated 2,600 trains annually" (Vol. 2, P.157). One would then anticipate 3,500 trains moving to Roberts Bank per year by 1995. This would mean, on the average, 19 movements daily (a train which goes to Roberts Bank must return) as opposed to the current average of about 5 trains daily. This increased traffic will certainly be an added inconvenience to all farmers along the line, especially to those whose lands are severed by the railroad and who must frequently cross the tracks. This is an inconvenience that is being added to an increasing burden of the farmers brought on by the location of many utility and transportation corridors through much of the area with very little regard for the needs of agriculture and the impact of such development thereon. Should this be the straw that breaks the camels back and renders farming impractical or intolerable along much of the course of the railway, the implications could be far reaching. The impact of this expansion on the farm community should therefore be examined in greater detail.

The report briefly mentions that additional siding space will be required on shore to accommodate trains in close proximity to the site. Again, as most of the lands in the area are agricultural, it is highly likely that valuable farmland will be affected by the proposal. There would also be some side effects in terms of direction of development and pressures which will emerge from the location of the sidings.

Although there are currently no plans for improvement of the rail-line back to the main-line at Fort Langley, it is possible that double tracking of much of the line may become necessary due to the increased traffic. This would, if it were to be necessary, involve areas of farmland and would then add to the difficulties already experienced by the farmer.

Cont'd

As is stated in the report, the increased rail traffic may necessitate the construction of overpasses, and thus help to overcome some of the rail vs. road traffic problems that currently exist. However, it would also serve to direct increased traffic flows onto the few roads that would benefit by the overpasses. Should these roads be used by farm vehicles, the conflicts between farm traffic and car traffic would increase markedly. Remembering that in much of the area these problems are already quite serious and have never been resolved, factors such as this should be considered at the outset.

In closing, it appears that the impacts of the expansion upon the farming areas along the rail route can be nothing but negative, and that these impacts havenot been adequately examined within the environmental assessment.

Yours truly,

PROVINCIAL AGRICULTURAL LAND COMMISSION



per
G.G. Runka, Chairman

cc: Ministry of Agriculture, Cloverdale, Attn: Ernie Walker

MM/dj



COMMENTS ON THE ENVIRONMENTAL IMPACT ASSESSMENT OF ROBERTS BANK PORT EXPANSION

Summary

Given the time permitted and the enormous array of questions to be answered in assessing the environmental impacts of proposed port expansion at Roberts Bank, it is understood that the consultants could not possibly address every factor involved and, therefore, may have had to shape and direct the focus and content of their report in a goal oriented fashion. Likewise, this review cannot address all of the shortcomings noted in the EIA in order to avoid a unwieldy document and vague position. The major points of the review, which aim to demonstrate that the need, scale, timing and suitability of the port expansion as proposed are not satisfactorily supported by the EIA, are summarized under the following headings.

Commodity Projections/Demand for Expansion

1. This review contends that the commodity projections section of the EIA forms the major basis for project justification in terms of supporting both the demand and scale of proposed expansion at Roberts Bank. This in turn had a strong bearing on the focus and scope of the entire EIA.
2. The review finds that, for the most part, commodity projections varied broadly between high and low and that the high projections tended to be quite optimistic. Rationale for expansion of new terminals was based on a good deal of such speculation supported by questionable interpretation of limited data.
3. Of the 4 new terminals proposed, only a new coal terminal and, to a lesser extent, a new grain terminal seemed to be convincingly supported by the demand forecasts. The need for others (potash/sulphur, bulk liquids and industrial land) are quite questionable due to the highly speculative nature of their respective demand forecasts.
4. Given a reduced scale of expansion justifiable by demand, the questionable urgency for completion and the added variable of expansion in more than one Lower Mainland site (which was not given adequate discussion), the entire scope of the EIA is altered drastically.

Alternative Location Analysis

1. The Fraser River Port as an alternative site for one of the proposed new terminals was not considered fully enough before being eliminated on the grounds of draft limitations. (e.g. the majority of potash/sulphur exports are shipped in 10,000-35,000 dwt vessels which can navigate the Fraser River if the proposed shipping channel improvements proceed. This could offset periods of increased throughput exceeding Inner Harbour terminal capacities which form the basis for supporting a new potash/sulphur terminals at Roberts Bank).
2. The possibility of locating one of the "possible" new terminals at another Lower Mainland site (e.g.) grain at Britannia) in conjunction with smaller scale expansion at Roberts Bank was not satisfactorily discussed.
3. Basic errors in judgement were noted regarding relative intrinsic values for site components which in turn rendered the engineering/environmental site comparisons too subjective to amount to anything more than well-illustrated opinion. (e.g.) Britannia=1, Squamish=2, Vancouver Harbour=2, Roberts Bank=4 values for aquatic ecology are ridiculously disparate values, even as subjective value judgements).
4. The above shortcomings, cited as just one of several cases-in-point, combine to seriously erode the rationale for Roberts Bank as the optimal site for port expansion. Their inclusion could have altered the outcome of the EIA to a very significant degree.

Preferred Site Description

1. Description of the physical environment was generally well done but omitted reference to the organic component of the substrate and discussion of its significance as an indicator for benthic productivity, oxygen demand levels during dredging, and substrate stability.
2. Description of the biological environment was the weakest component of this section, particularly, with respect to benthos and fish.
3. Re: benthos:
 - a) More discussion of the ecological factors influencing benthic community development in terms of depth, slope, exposure and substrate character could have improved the level of understanding of the fundamentals of benthic ecology presented in the EIA.

- b) Despite evidence of extensive literature reviews, field investigation and data presentation, very little discussion followed regarding the qualitative and quantitative significance of the results obtained. Information from literature reviews and field studies were not tied together in a meaningful manner.
 - c) Presentation of data on intertidal and subtidal benthos in terms of the significance of ecological interrelationships regarding net productivity, trophic dynamics, and community zonation was inadequate.
 - d) The validity of averaging summary statistics for the three intertidal transects is questionable since several different zones were traversed, each having different diversity and standing crop values but masked by presenting mean values.
4. Re: fish:
- a) Generally, it was found that this section contained too much "filler" on such things as life history and geographic distribution and not enough specific analysis of significance features of fish ecology.
 - b) The use, presentation and interpretation of data from published research (i.e.) Fisheries and Marine Services data) was inadequate and poorly integrated. The EIA stressed greater habitat utilization of Sturgeon Bank than Roberts Bank as meaning that Roberts Bank was less environmentally sensitive when actually such results were due to disparate sampling between the two areas during a time period that could not account for all fish utilization (i.e.) during a non-pink year). The relative significance of Roberts Bank in terms of the whole ecological unit of the Fraser River Estuary was a serious deficiency.
 - c) Reference to the significance of dietary components of fish habitat utilization was weak and poorly integrated.
5. Description of social characteristics and community attitudes was adequately presented but could have used more insight in interpretation of significance.

Alternative Site Design Analysis

- 1. This section was quite well done in terms of the scale of expansion proposed. However, had consideration been given to a reduced scale of expansion, the outcome of this aspect of the EIA would have been substantially altered.

Impacts

1. A general shortcoming pertains to the serious omission of discussion of the impacts from site expansion in terms of the overall effect upon the entire Fraser River Estuary as a single ecological unit.
2. The statement that newly created solid substrate (rip-rap) is a beneficial offsetting factor by increasing benthic diversity is questionable in terms of significance.
3. Description of the degree of impacts and implications for crabs/ crab fishermen and waterfowl are two examples of where impacts appeared to be underrated.
4. An outstanding example of misuse of value judgements pertains to statements such as failure to expand port facilities at Roberts Bank will cease development of coal mines in the Kootenays and spell doom for coal industry towns like Fernie. Resorting to such emotional pleas places question on professional credibility.

Mitigation

1. Shortcomings of this aspect of the EIA relate to the advocacy of certain mitigation measures which seem to adequately offset impacts from habitat loss but are actually more easily said than done. (e.g.) technologies for transplantation of eelgrass and other submergent vegetation is very embryonic in development and no on-site tests were attempted for the EIA).

Conclusions and Recommendations

1. Further evaluation of the highly speculative nature of the project justification and timing is warranted. Cost/benefit analysis in terms of capital, social and environmental costs versus economic benefits should also be considered as an important determinant in this regard. Such investigations may in turn suggest the need for a supplementary analysis to explore a different expansion scenario involving reduced scale of expansion at more than one Lower Mainland site.
2. Considering the uncertainty of commodity projections and the uncertainty of environmental risks, a reduced scale of expansion should be examined in terms of the demand forecasts presented, together with considering expansion at more than one site on the Lower Mainland which should not have been overlooked to the degree it was. This constitutes a very serious deficiency in the EIA in that such inclusions may have greatly altered the focus of the subsequent sections of the report.

3. Scenarios developed, each involving Roberts Bank expansion to varying degrees, should then be compared at appropriate depth and extent of environmental assessment.

Prepared by

Environmental Services Unit
B.C. Ministry of the Environment
January 1978



To: Mr. J. Sector
Chief, Environmental Services
Land Management Branch
Ministry of Environment
Buildings

Date: January 17, 1978
File: 0262100- Area-Roberts
Bank
From: L.T. Hubbard
Industrial Div.
General Section
P.C.B. - Victoria

Re: Expansion of Port Facilities at Roberts Bank -
Impact Assessment Report

The following comments are made with respect to the subject report. We understand that specified areas of deficiency will be addressed in the second phase of the review process. The main concern and requirements of the Pollution Control Branch are:

1. Permits must be obtained under the Pollution Control Act for all direct and indirect process discharges of effluents, air contaminants and refuse to the receiving environment of the Province.
2. Spill prevention programs and works, and contingency spill response plans for oil and hazardous material spills must be developed and in operation to the satisfaction of the province before operation of the expanded facilities.
3. A commitment should be made by the proponent to undertake appropriate ambient air monitoring and receiving water monitoring to determine the impact of the operation on the receiving environment.
4. The section on ship operation beginning on Page 154, Volume 2, leaves a lot of unanswered questions.
 - a) Will there be a need to discharge ballast water from the ships coming to the expanded port facility?
 - b) If contaminated ballast water is to be discharged, what treatment is proposed?
 - c) It is unlikely that the proposed U-shaped dyke would be successful in containing spills in all situations since the top of the dyke is to be designed to allow 5% of the annual high tides to over top it along the side perpendicular to the causeway and the leg of the dyke parallel to the causeway tapers downwards to zero elevation. Winds may have a much greater impact on slick movement than the projected small currents inside the dyke. A commonly used approximation is that a slick will move at a velocity of 3.4% of the wind velocity.

The report notes that winds that tend to move spilled material out of the U would tend to move it away from the estuary. This fails to acknowledge the possibility of a West or Southwest wind and a high tide which move spilled material over the dyke into the eelgrass area.

- d) The report suggests a sophisticated method of complete closure at the wharf from surface to sea bottom will be necessary to prevent the spread of spills of material which mix readily with the water. Assuming this is a feasible method of containment, the proposal does not deal with subsequent recovery and treatment of this contaminated water.
- 5. The EIS leans strongly to suggesting that a bulk liquid handling terminal will be needed by 1980 without a strong demonstration of projected need. Clearly, the bulk handling of hazardous liquids presents a larger environmental risk than the handling of coal, sulphur, potash and grain. The report attempts to suggest that the proposed design of the terminal makes it intrinsically safe insofar as spills are concerned. While the design may in fact be the best one available the review panel should not be lulled into a false sense of security about the ability to control a large hazardous waste spill at this facility with little environmental damage.

L. T. Hubbard

L. T. Hubbard

LTH:df



YOUR FILE
OUR FILE 0667

January 13, 1978

RECEIVED

JAN 18 1978

EAP PACIFIC

Fisheries and Environment Canada
Environmental Assessment Panel
1870 - 1050 West Pender Street
Vancouver, B. C.
V6E 3S7

Attention: Mr. John Heritz Panel Secretary

Dear Sir:

Re: Roberts Bank Port Expansion

As our regional office has commented in some detail on the Hinton report, the following remarks are a supplement to the regional comments rather than a comprehensive critique.

Some of the logic in assessing the environmental value of the Roberts Bank Port site is inconsistent and tends to de-emphasize the value of the area. Much emphasis is placed on the importance of the Eel grass beds between the two causeways. While these areas are important, the report implies that the Eel grass community are the only areas of ecological significance between the causeways. If this logic were applied to the whole Fraser estuary, it could be concluded that only Boundary Bay is really critical habitat since it contains most of the Eel grass beds in the area.

As a result of this stress on Eel grass the suggestion for culverting the port causeway is dismissed as it would cause increased turbidity thus reducing light penetration to the Eel grass. This ignores the positive aspects of increasing freshwater flow between the causeways, such as increased fertility and the possibility of transforming the area from salt marsh to estuarine marsh, the latter being generally considered more productive.

Comparison of sites did not adequately assess the value of developing certain combinations of ports. For example, Roberts Bank might be developed only as a coal port and other sites such as Britannia Beach which have little biological value but are too small for large scale

development might be developed as a grain port. This approach certainly would reduce environmental impact over complete development at Roberts Bank and have other advantages such as distributing rail traffic more widely.

The general tone of the report seemed to greatly play down overall impacts of the Roberts Bank development on the Fraser Estuary as a whole. This is in sharp contrast to the tone of the Airport study which strongly opposed dredging and filling on nearby Sturgeon Bank. I believe this discrepancy reveals a lack of credibility in one of the two reports.

Thank you for providing me the opportunity to comment on this report.

Yours truly,

B. A. Pendergast

B. A. Pendergast
Habitat Protection Biologist
(Wildlife)

BAP:ae

cc. G. A. West
F. C. Boyd
E. Taylor



YOUR FILE
OUR FILE 0667

January 13, 1978

RECEIVED

JAN 18 1978

EAP PACIFIC

Fisheries and Environment Canada
Environmental Assessment Panel
1870 - 1050 West Pender Street
Vancouver, B. C.
V6E 3S7

Attention: Mr. John Heritz Panel Secretary

Dear Sir:

Re: Roberts Bank Port Expansion

As our regional office has commented in some detail on the Hinton report, the following remarks are a supplement to the regional comments rather than a comprehensive critique.

Some of the logic in assessing the environmental value of the Roberts Bank Port site is inconsistent and tends to de-emphasize the value of the area. Much emphasis is placed on the importance of the Eel grass beds between the two causeways. While these areas are important, the report implies that the Eel grass community are the only areas of ecological significance between the causeways. If this logic were applied to the whole Fraser estuary, it could be concluded that only Boundary Bay is really critical habitat since it contains most of the Eel grass beds in the area.

As a result of this stress on Eel grass the suggestion for culverting the port causeway is dismissed as it would cause increased turbidity thus reducing light penetration to the Eel grass. This ignores the positive aspects of increasing freshwater flow between the causeways, such as increased fertility and the possibility of transforming the area from salt marsh to estuarine marsh, the latter being generally considered more productive.

Comparison of sites did not adequately assess the value of developing certain combinations of ports. For example, Roberts Bank might be developed only as a coal port and other sites such as Britannia Beach which have little biological value but are too small for large scale

The values shown in Table 8 - "Relative Intrinsic Value of Components" is by admission in the text of the report, "a highly subjective judgement." Therefore, the values given in the table are suspect and they are based on the opinions of one group of individuals. It may be that a different group would derive an entirely different set of values. The writers of the report acknowledge that this could be the case and suggest that reviewers of the report apply their own subjective judgement to the analysis of alternative sites. This is all well and good. However, the report still reaches the conclusion that "Southern coal is best shipped from Roberts Bank, with an alternate in Vancouver Harbour experiencing moderate cost and environmental disadvantages." It is this conclusion which we feel is questionable based on the subjective nature of the methodology used to compare the sites.

3) There are a few errors of a minor nature in Appendix B of the report which describes The Existing Biological Environment.

(i) Page B128, 1st paragraph, 2nd sentence reads: "Russel and Paish (1968) indicate that brant frequently feed and nest in the intercauseway area." We are assuming the "nest" should have read "rest" since brant do not nest in this area.

(ii) Page B138, 1st paragraph, 2nd sentence: The reference to the habitat requirements of nutria is somewhat misleading since the reference is that they can be found in the Lower Mainland when in fact none have been sighted or trapped in this area for approximately the last 15 years. More importantly, however, the report states that "nutria are not as heavily dependent on the river for habitat or food." This is not the case and in fact their normal habitat is along stream and river banks.

(iii) Page B87, 2nd paragraph: The sea run or anadromous race of coastal cutthroat trout is rapidly becoming an important sport fish with a growing number of anglers pursuing them in coastal estuaries and bays as well as the lower reaches of many of our Lower Mainland rivers and streams.

The statement: "It (cutthroat trout) is not as highly regarded among anglers as steelhead.", should be qualified to some extent since anglers in certain areas may have a higher regard for cutthroat and others may regard them highly at certain times of the year or because they provide variety in an angler's experience.

(iv) Page B88, 1st paragraph, 2nd sentence: Steelhead trout spawn in the mainstem of many of our coastal rivers and streams and not "in small tributaries of rivers, and inlet or outlet streams of lakes.", as stated in the report.

Finally, we have some questions and general comments regarding parts of the reports.

(i) Will there be any long term effect on the substrate as a result of deposition of coal dust?

(ii) On what basis was the elevation of the dyke around the development selected so that 5% of the annual high tides would overtop it along the alignment perpendicular to the causeway?

(iii) Use of aircraft in the area should be restricted during October and November as well as from mid-February to mid-April.

(iv) What will be the effect of narrowing the area or "channel" between the two causeways?

Thank you for supplying us with the complete environmental impact statement and affording us the opportunity to comment on it.

Sincerely yours,


G. A. West
REGIONAL DIRECTOR

BC:jk

cc. - J.H.C. Walker
- F. C. Boyd
- E. Taylor
- R. Martel



To: Mr. J. Sector
Head, Environmental Services Section
Environmental & Engineering Services

Date: January 31, 1978

Subject: Report on the Environmental Impact
Assessment of Roberts Bank Port
Expansion by Beak-Hinton

Further to our telephone discussion of January 30,
I attach for your information and use in the EARP
discussions the following:

- (1) A memo I wrote to Peter Kittredge of our staff
setting out the questions I thought should be asked
about the report.
- (2) Peter Kittredge's draft notes based on a quick one
to two day review of the report.

Peter and I have not had an opportunity to sit
down and discuss his findings and prepare a formal response.
Therefore, I would ask you to use his comments only as
background to the position you put forth on behalf of the
province.

In general our comments fall into three specific
areas of concern:

(1) Terms of Reference

Why was the terms of reference of the study expanded
to look at the questions of alternative sites and timing of
Port expansions on the Pacific coast without requesting the
consultants to do a proper cost-benefit analysis? Should not
the report have stuck to the detailing of environmental
impacts for the site(s) for alternative engineering configurations
for the site(s)?

The report should have dealt with identifying
impacts, mitigation alternatives, the costs of mitigation, and
the opportunity cost of the environmental impacts. This
information could then have been fed into a proper cost
benefit study at the appropriate time when a developer actually
proposed to build a new coal terminal or another port.

(2) Demand and Supply Estimates

If we accept that the report was to look at the
questions of timing and alternative sites, then the report is
deficient in several respects:

(a) Demand forecasts -

In general all bulk commodity export forecasts appear to be optimistic. This is especially true for metallurgical coal exports. Recent projections for 1985 suggest 19 million tonnes of metallurgical exports from Western Canada by 1985. Of this total, some 17 million tonnes are expected to move through Southern British Columbia ports and 2 million through Northern British Columbia ports by 1985.

The Beak-Hinton report used the old Coal Task Force estimates of 27 million tons by 1985, with 23 million tons through southern ports and 4.5 million tons through northern ports. These forecasts are substantially in excess of current metallurgical coal export forecasts for 1985.

There is, however, some possible offset of the decline in metallurgical coal forecast with the increased interest in Western Canadian thermal coal exports. We are currently forecasting about 3 - 4 million tonnes of thermal coal exports by 1985 from Western Canada, with 2 million from south east British Columbia, 1 - 2 million tonnes from north west and central Alberta, and 0 - 1 million tonnes from Vancouver Island.

Even with thermal coal exports (and assuming all these will be shipped through southern British Columbia ports) we can only forecast a maximum of about 20 - 21 million tonnes of coal exports through southern British Columbia ports by 1985.

(b) Supply of Ports and Policy on Development

(i) Existing Capacity

We question the analysis of existing port capacities. Our information suggests a 10 million tonnes throughput capacity at Roberts Bank, 5.5 million tonnes capacity at Neptune and 1.5 million tonnes at Pacific Coast Bulk Terminals for a total throughput capacity of about 17 million tonnes.

(ii) Marginal Capacity Expansions

We question the absence of a discussion of marginal increases in existing capacity for small additional capital costs plus some operating inefficiencies. Again, our information suggests that Roberts Bank could be expanded to handle 12 million tonnes and Neptune could be expanded to handle 7 million tonnes.

(iii) New Capacity -

Roberts Bank Phase II is suggested for 1980. From 2(a) and 2 (b) (i) and (ii) we would conclude

that no capacity is required for 1980 and existing and marginal expansion capacity may be sufficient to 1985. If our assessment of capacity is overestimated then a new terminal in southern British Columbia may be needed earlier than 1985, say by 1983.

- (iv) No statements of capital costs for Roberts Bank Phase II are given. Furthermore, no statements about the methods of developing, financing, leasing, or pricing of the port are discussed. This is a serious omission as the price of port capacity will certainly affect the demand for that capacity.

(3) Methodology

We simply question the applicability and acceptability of the methodology used to determine timing and alternative site ranking.

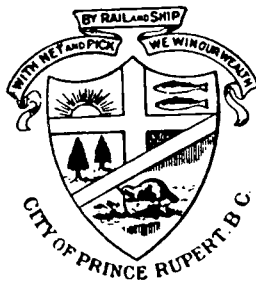
In summary then we question the terms of reference, the methodology used to analyze ports alternatives and timing, and the demand and supply estimates. We would suggest you raise the points at the EARP meetings.

Could you please contact us in the near future so that we can discuss with you what further work on this issue we can contribute to? Please note, however, that I will be away on my holidays from February 2 to 17. Peter Kittredge or Lorne Sivertson will be available to interact on this issue in my absence.



Wally Malkinson
Policy Planning Division.

cc: A. L. Peel
L. Sivertson
P. Kittredge



PHONE 627-1781
TELEX 047-89184

CITY HALL
PRINCE RUPERT, B.C.
V8J 1L7

CITY OF PRINCE RUPERT

January 18, 1978

Environment Assessment Panel,
Roberts Bank Outerport Expansion,
Room 1870 - 1050 West Pender Street,
VANCOUVER, B.C.
V6E 3S7

RECEIVED

JAN 20 1978

EAP PACIFIC

Attention: Mr. J.F. Herity

Dear Sir:

Re: Environmental Impact Assessment- Roberts Bank
Port Expansion Proposal

The City of Prince Rupert intends to present a submission to public hearings during phase two of the Environmental Assessment Panel's review of the Port of Vancouver's proposed expansion of Roberts Bank.

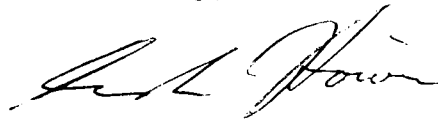
A cursory review of the "Beak Hinton Report" has revealed the following broad areas of deficiency:

1. The capacity of rail access to the Port of Vancouver: particularly through the Fraser Canyon.
2. Analysis of possible areas of coal production and the coal's ability to move over rail to a mid-British Columbia port on Ridley Island.
3. Analysis of imminent shift of sulphur production to Central and Northern sectors of Alberta as McMurray Tar Sand operations come in production.
4. The growing interest throughout the grain trade in the need for expanded grain handling facilities at the Port of Prince Rupert.

5. The strategic and logistic need for an alternate west coast port to speed and ensure delivery of Canadian products to export markets.
6. The possibility of expanding present Vancouver terminals to handle the minimal increase anticipated in the Southern production of coal.

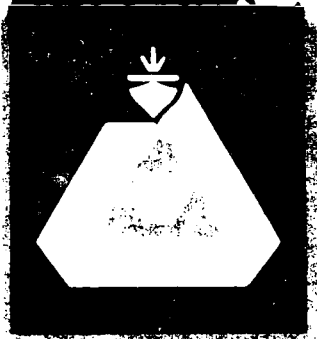
Our initial review of the Beak Hinton Report fails to convince us of the need for expansion of Roberts Bank in either the short or medium term. We are now preparing a detailed analysis of the "Beak Hinton Report" for presentation to your panel's phase two review.

Yours truly,

A handwritten signature in dark ink, appearing to read "Gordon Howie", written in a cursive style.

Gordon Howie,
Administrative Assistant

GH/sr



The Corporation of Delta

January 16, 1973

RECEIVED

JAN 24 1978

EAP PACIFIC

Environmental Assessment Panel
(Roberts Bank Port Expansion)
Room 1870
1050 West Fender Street
Vancouver, B. C.
V6E 3F7

ATTENTION: MR. J. F. HERITY, PANEL SECRETARY

Dear Sir:

Re: Environmental Impact Assessment of Roberts Bank Port
Expansion.

The Council of the Corporation of Delta thanks you for the opportunity to provide their comments with respect to the Environment Impact Assessment of the proposed Roberts Bank Expansion. We have had our staff review the reports as submitted, and offer the following comments for your consideration:

1. Environmental Impact Projection.

a) Physical Environment - It is our opinion that additional study is required with respect to the potential air pollution problems which may be related to this expansion. Residents of our community have, from time to time, experienced dust problems believed to be as a result of blowing coal dust from both the stock pile and from the coal trains to and from the port. The G.V.R.D. have had sample stations out to measure the amount of dust from this area, however we do not feel that the results of these tests are conclusive. We are also concerned of a potential noise problem from the area. Due consideration must be given to this concern during the planning stages.



January 16, 1978

Environmental Assessment Panel
Vancouver, B. C.

Page 2

b) Biological Environment - There have, from time to time, been conflicting reports with respect to the effects that the existing port has on the fish and crab community in the area. We do not find fault with the work undertaken and reported in this study, nor the conclusions drawn as a result thereof. However, we do trust that the Fisheries and Environment Canada will very carefully examine this area to be certain that all concerns with respect to the fishing and crab industry are considered and accounted for.

c) Socioeconomic Environment - The report indicates that considerable interviews and studies have been carried out both in the local community and in the coal producing areas. The summary, however, does not detail any specific recommendations in this regard. We would recommend that further attention be given to the socioeconomic effects on the Delta community.

2. Planning Impact.

There has, in our opinion, been insufficient investigation into the effects that such an expansion at Roberts Bank would have on the Delta community. We believe that it is necessary to establish an overall Twenty Year Plan incorporating all possible Port and/or Industrial requirements within the area. This plan would be not only a time frame, but would also determine the type and location of Industrial development and their interaction and relationship to surrounding uses. The impact that such a development would have on the Delta community must be very carefully considered. Particular emphasis is also required on the effects to the farm community. This community is already badly fragmented and disrupted by utility rights of way, streets, highways, railroad, etc. Any extension to these types of facilities to permit the development of the industrial area or expansion of the port must receive proper consideration.



January 16, 1978

Environmental Assessment Panel
Vancouver, B. C.

Page 3

3. Engineering Considerations.

The report only superficially addresses itself to the additional requirements with respect to the Municipal and Provincial highway network system and to possible expansion of the railway system. It would appear mandatory that highway overpasses be provided at all intersecting streets with the railway, as a result of the additional rail traffic anticipated. Expansion of the railway marshalling yards, as suggested, would extend back into the farm community. The effects of such expansion again has not been adequately considered. The report superficially touches on the soil and geologic conditions in the area. The statement is made that the underlying soils consist of about 100 meters of sand and silt sediments overlying interglacial deposits down to bedrock presumed to be about 300 meters down. There does not appear to have been any soils investigation carried out to determine the true depths of these deposits, the actual location of the underlying bedrock, or its inclination. The report goes on to give a rather "Textbook" analysis of the sheer strength of the soils expected to be found in the area. There has been no discussion with respect to the fact that this area is in an earthquake zone and what effect liquefaction might have to the stability of any further stockpiles. A far more extensive investigation of the present geology and soil conditions in the area is required to answer these concerns.

In keeping with the open letter circulated to individuals and organizations having an interest in the proposal to expand the port facilities at Roberts Bank, these are our main concerns at this point in time. As the various studies are expanded we would hope to be given the opportunity to have additional input and to be consulted with on matters directly affecting the Municipality of Delta and its residents.

We thank you for this opportunity to provide input into this topic.

Yours truly,

Tom Goode
Mayor

TG/gap

JAN 19 1978

EAP PACIFIC



OFFICE OF THE MAYOR

DISTRICT OF KITIMAT

13 January 1978

Environmental Assessment Panel,
Roberts Bank Port Expansion,
Room 1870,
1050 West Pender Street,
Vancouver, B.C.
V6E 3S7

Dear Sirs:

We have reviewed the Environmental Impact Assessment of Roberts Bank Port Expansion with particular emphasis on the comparison between the possible sites for bulk handling facilities. As a summary of this study will most probably be widely distributed, we are concerned that Kitimat appears to have been shown as a less than optimal location for a bulk port based on ranking of the possible sites. As these results are contrary to other comparative studies on potential sites for bulk handling ports (e.g.: U.S. Federal Energy Administration Report on Marine Terminals of the West Coast) we question the results presented in the Roberts Bank study.

As examples of the errors and misinformation presented, we would like to point out the following:

Environmental

It is beyond us how, despite indicating in page 49 of volume 2, that "by comparison with the Prince Rupert area, environmental values in the Kitimat area are quite low . . .", in page 63, Table 7, Kitimat is given a higher negative score than two of the Prince Rupert sites for aquatic ecology. Further, the description of the different sites does not confirm this analysis.

Engineering

It is surprising that despite the negative aspects of Ridley Island for ship access as described in page D-119, and compared to the description of Kitimat's ship access in page D-124, Ridley Island still receives a higher rating than Kitimat for that aspect. Similar issues can be raised for some of the other ratings. The qualifying paragraph on page D-139 does not negate the issue that these ratings are also subjective generalizations, and as such should be treated very cautiously. In view of this it is inappropriate to take these results and generate the figures in volume 2 (figures 23, 24 and 25).

.... 2

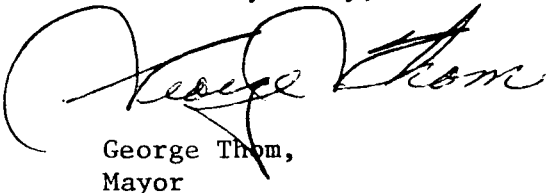
In the first instance, there is a distortion in the figures because of the scales utilized which gives the engineering score significant visual importance over the environmental score. In this day and age of environmental conscienceness this is totally unrealistic. Secondly, despite there not being a readily apparent association or relationship between the two scores, and despite the admission of this in page 68, it is dishonest to represent the information in such a manner that some relationship is implied. Furthermore, as absolute values were utilized rather than relative values, which would be more appropriate, when using subjective methods, the information becomes more misleading still.

We have raised only three issues from the Report's comparison of sites. These were presented only as examples and the District is prepared to systematically review all of the other points in private or in public as convenient to the Panel.

In summary, it is the District's position that the method of comparison of sites was grossly overextended to the point that it is a dishonest reflection of reality.

Admittedly, Kitimat does not have at its disposal sufficient information (from this report or others) to do an independent evaluation on Roberts Bank and the other ports, nor does the District of Kitimat presume to do the Panel's job. The Panel may well find that Roberts Bank is the "best" site for the purposes considered, namely a bulk port. We do, however, take issue with a report, which, through misinformation and errors, tends to cast a shadow on Kitimat's present port and its potential for the future as a port.

Yours very truly,

A handwritten signature in dark ink, appearing to read "George Thom". The signature is fluid and cursive, with a large loop at the beginning and a long, sweeping tail that extends to the right. It is positioned above the printed name and title.

George Thom,
Mayor

ROBERTS BANK PORT EXPANSION

A SUBMISSION TO THE ENVIRONMENTAL ASSESSMENT PANEL, ENVIRONMENT CANADA, FROM THE CORPORATION OF THE DISTRICT OF SURREY

INTRODUCTION

The development of a major bulk loading facility at Roberts Bank has significant implications for the Provincial economy. The Municipality of Surrey welcomes the economic benefits which will accrue to British Columbia, as a whole should the development go ahead, but feels that the direct costs of this undertaking and the associated costs of its 'spill over' effects should be paid by those parties directly benefitting.

The majority of the impacts of the bulk loading facility will, of course, be borne by the Municipality of Delta nevertheless there will be some impacts on Surrey particularly along the rail corridor. We are concerned, therefore, to ensure that the costs of overcoming or ameliorating these impacts do not fall upon the taxpayers of Surrey, but rather are shared by the whole Provincial community.

It is, therefore, in a spirit of general support for this proposal, subject to satisfactory arrangements on the impact costs, that the Municipality makes this submission to the Environmental Assessment Panel. The submission deals first with a general reaction to the consultants' work before dealing more specifically with some of the impacts on Surrey.

GENERAL COMMENTS

The Beak Hinton Report has been successful in meeting the terms of reference established, however, the social aspects of the development do not appear to have been given the consideration that is necessary. A major flaw in the consultants' terms of reference is the omission of any requirement to study the land use implications of the development of a major port facility at Roberts Bank. These would include the pressure for development of the back up lands in Delta (previously proposed for industry) and the requirements for marshalling yards etc. needed to support such a port. The scale and location of the marshalling yards is of concern to Surrey since it is conceivable that they could be located in this Municipality. We would have found it more helpful to know what is to be proposed in terms of rail facilities and where in order to weigh the implications of such a proposal with the other impacts.

Specific Impacts on Surrey

The potential impacts for Surrey relate to the transportation of the material through Surrey and the land use implications of the development of this transportation system. There are three main points related to the transportation of the material to the port which are dealt with in the consultant's report:

- (1) Grading crossings - The consultant recommended that these be provided as required by traffic volumes and train frequencies. The consultant noted that currently there are approximately 900 trains per year and that by 1995 it is estimated there would be approximately 2,600 trains per year. The only rail crossing at which grade separation will be necessary is at 152nd Street and Council is on record as opposing any expansion of rail service unless a proper grade separated crossing is provided at 152nd Street, funded entirely by the Province or its agencies.

- (2) Noise buffers - The consultant recognized the problem of noise impacts on adjoining residential areas and recommended that the Municipality and the railway share the cost of a noise berm to reduce these impacts, but only in areas in which citizens have requested some action. We find this recommendation totally unacceptable since the need for noise berms will only arise because of increased railway operations, it is only reasonable, therefore, to expect the railway to pay all of the costs of noise berms. Furthermore, to suggest as the consultants do that such berms only be installed where residents complain indicates that there would be a certain level of public inconvenience and disruption necessary before any action was taken. Surely the environmental impact procedure is designed to identify problems and take positive corrective action before a problem is allowed to exist.

We urge, therefore, that if the volume of rail traffic is to build up to the level predicted then the precise noise impacts on adjoining development be identified and the necessary corrective measures be implemented at the time of commencement of operation of the port.

- (3) Coal dust control - The consultant suggested that there could be some improvements in techniques of controlling coal dust, but felt that this was primarily a problem of peoples' perception rather than an actual problem. This is somewhat debatable, however, we would urge implementation of their recommendation that dust inhibiting techniques be used on the trains destined for the terminals - this we take to mean covered railcars.



Greater Vancouver Regional District

2294 WEST TENTH AVENUE VANCOUVER, BRITISH COLUMBIA V6K 2H9 TELEPHONE 731-1155

RECEIVED

JAN 16 1978

EAP PACIFIC

43-32 P

Please refer to our file number:

January 13, 1978

Mr. J.F. Herity,
Panel Secretary,
Fisheries and Environment Canada,
#1870,
1050 West Pender Street,
Vancouver, B.C. V6E 3S7.

Dear Sir:

Re: Roberts Bank - Expanded Port Facilities

By open letter of November 18th, you have advised us that a federal environmental assessment panel has been established to review all environmental aspects of the subject proposal and is seeking the assistance of interested organizations in its review. You further ask that interested parties identify what they consider to be information deficiencies in the environmental impact study and to indicate briefly what they consider to be the main environmental issues.

My interest in this matter is that under the Provincial Pollution Control Act, this Regional District is responsible for the control of air emissions within the boundaries of the District. For the purposes of carrying out the intent of the Act for this function, I have been appointed as Director of Air Pollution Control and therefore am responsible for the administration of the Act for air pollution control in the Regional District. It is within this context that I make the following remarks.

First, reference is made to page 13 of Volume 1, "Air Quality", in which it is stated the suspended particulates as measured at the ferry terminal are within the most stringent federal and provincial standards. This is misleading. As part of the provincial objectives for ambient air, the limit for coal and coke in suspended particulate matter - annual geometric mean - and measured as micrograms per cubic metre, is

5 for level A
15 for level B
20 for level C

Mr. J.F. Herity,
Fisheries and Environment Canada,
Vancouver.

January 13, 1978

Recent measurements of the coal content in the annual geometric means quoted on page 13 of Volume 1 show an average level of 55% when the wind is from the bulk loading operations. Therefore, although the level A criterion for total suspended particulates is being met, the ambient levels for coal which are part of the suspended particulate objectives exceed the most stringent provincial objectives.

Second, reference is made to page 15 of Volume 1, in which conclusion 8 states that suspended particulate levels at the ferry terminal are projected to be within the most stringent federal and provincial air quality criteria. From the information given on page 13 that there would be an increase of 9.6 ug/m^3 in particulate matter at the ferry terminal, with covered sulphur and potash storage, one must conclude that most of the increase can be attributed to coal handling and therefore the incremental increase, alone, would exceed the 5 ug/m^3 level A criteria.

In conclusion, although the current and proposed levels of total suspended particulates satisfy level A objectives, there are positive indications from the information in Volume 1 that the coal content of the particulate matter does not meet and will not meet the most stringent provincial air quality criteria as stated on page 15 of Volume 1. It is apparent, therefore, that there is valid reason for expecting a continuing incidence of complaints and that the number of complaints will increase when the expanded facility is in operation.

If we can be of further assistance in this matter please call us.

Yours truly,



F.R. Bunnell, P.Eng.,
Director,
Air Pollution Control

FRB:af



Greater Vancouver Regional District

2294 WEST TENTH AVENUE VANCOUVER, BRITISH COLUMBIA V6K 2H9 TELEPHONE 731-1155

Please refer to our file number: 6110

January 18th, 1978

Mr. J.F. Herity
Panel Secretary
Environmental Canada
Federal Environmental Assessment
Review Office
1870-1050 Pender Street
Vancouver, B.C. V6E 3S7

RECEIVED
JAN 18 1978
EAP PACIFIC

Dear Mr. Herity:

Roberts Bank Port Expansion

A Submission to the Environmental Assessment Panel
From the Greater Vancouver Regional District Planning Department

This is the response to the open letter of November 18th, 1977 by the Federal Environmental Assessment Panel. The attached material is directed towards the first phase of the review process, an identification of any deficiencies or data gaps in the environmental impact statement prepared by Beak Hinton Consultants.

This response is based on an independent review of the Beak Hinton reports prepared for the GVRD Planning Department by Robin Gregory, Consultant. The information requested is based on gaps and deficiencies in the terms of reference and the environmental impact statement as perceived by that reviewer. The submissions preceeding each set of information requests do not represent the views or opinions of the GVRD Board or its Planning Committee but it is held that informational gaps should be answered in order for a formal position to be formulated for the GVRD Board.

We appreciate the opportunity to participate in this and all subsequent phases of the review process.

Respectfully submitted

G. F. Farry
Director of Planning

GFF/PP/md

Encls:

from GVRD

QUESTION #1

A. BULK COMMODITY PROJECTIONS AND SOUTHERN PORT EXPORT CAPACITIES

IT IS SUBMITTED THAT the existing and potential capacities of bulk export terminals in the Lower Mainland are not sufficiently described.

INFORMATION REQUIRED

- (a) Explain the derivation of the capabilities of the existing bulk terminals in the Lower Mainland.
- (b) Provide details on the constraints to the current and potential capacities of these existing terminal facilities and sites.
- (c) Explain why further increases of capacities cannot be made to existing facilities and sites. (e.g. no potential increase in coal export capability at Pacific Coast Terminals).
- (d) Explain the derivation of the suggested increase in coal export capacity at Roberts Bank (8.0 to 11.0 million tonnes/year) and the feasibility of an increase above that level given the considerations listed on p. D-76, Vol. 6.

QUESTION #2

A. BULK COMMODITY PROJECTIONS AND SOUTHERN PORT EXPORT CAPACITIES

IT IS SUBMITTED THAT the percentage annual increase in demand for coking coal (primarily to Japan) is highly speculative at this point, and that even the lowest projection for coal exports may exceed a realistic rate of growth.

INFORMATION REQUIRED

- (a) Confirm that a rate of 3.0% annual increase in demand for coking coal (used as the low projection in Vol. 6, p. D-29) is still a realistic minimum; and that the 1976 estimate of the Coal Task Force (used as the high projection) is still a realistic upper limit.
- (b) Provide information on the short run competitive position of B.C. coal producers for Japanese markets given the relatively high production and transport costs of B.C. coal (compared to Australian and Chinese competition).
- (c) Explain why the high projection for coal exports (Figure D5; p. 30, Vol. 6) was not redrawn to reflect the over-optimism of the Coal Task Force's projections (see Vol. 6, p. D-27..."the Coal Task Force's projections appear somewhat high for the early years.")

A. BULK COMMODITY PROJECTIONS AND SOUTHERN PORT EXPORT CAPACITIES

IT IS SUBMITTED THAT the total export coal production capacity of Southeastern B.C. and Alberta will not exceed the potential capacity of existing terminals by the mid-1980's.

INFORMATION REQUIRED

- (a) Provide details on the potential metallurgical coal availability from Alberta which would be exported through southern B.C. ports.
- (b) Explain discrepancies between Table D6, Vol. 6, p. D-24 and the information provided in Vol. 5, pp. 105-112 regarding the annual production capabilities of future B.C. coal mine developments.
- (c) Provide detailed annual production schedules for each mine which might export coal through southern B.C. ports between 1978 and 1990.
- (d) Detail the relationship between the high demand projection for coking coal exports and the projected supply of coking coal from B.C. and Alberta.

QUESTION #4

A. BULK COMMODITY PROJECTIONS AND SOUTHERN PORT EXPORT CAPACITIES

IT IS SUBMITTED THAT the consultants' report does not justify the use of the "high projection" of exports of coking coal through Southern British Columbia ports.

INFORMATION REQUIRED

- (a) Give quantifiable evidence to support the claim that the "coal exports will likely be well in excess of this projection (the low projection in Figure D20)" (Vol. 6, p. D-88).
- (b) Provide details to support the use of the "high projection" in Figure D20 other than the subjective statement that, "The potential for very rapid increases in coking coal exports certainly exists in the next decade, even if this rapid increase does not come as soon as the 1977-1980 period indicated by the maximum projection". (Vol. 6, p. D-88).

QUESTION #5

A. BULK COMMODITY PROJECTIONS AND SOUTHERN PORT EXPORT CAPACITIES

IT IS SUBMITTED THAT the definite need for a new coking coal terminal in the Lower Mainland by 1980 is not substantiated in the report.

INFORMATION REQUIRED

- (a) Explain why a new coking coal terminal is considered a definite requirement in the immediate future when potential capacity of existing terminals may not be reached until the mid-1990's. (Figure D20, Vol. 6, p. D-89).
- (b) Explain why a new terminal of 8 million tonnes per year capacity is considered a definite requirement by 1980 when a smaller terminal facility will accommodate the highest coal export projections at least until 1990.
- (c) Identify an alternative scenario in Figure D20 where the "potential capacity of existing terminals" is increased and/or a "medium projection" for export coal demand is utilized.
- (d) Confirm that a new coking coal terminal in the Lower Mainland is only a possible need, rather than a definite need, by 1980.

A. BULK COMMODITY PROJECTIONS AND SOUTHERN PORT EXPORT CAPACITIES

IT IS SUBMITTED THAT no cost estimates are provided which enable the reviewer to compare the marginal costs and benefits of either expanding the capacity of the existing bulk export terminals or constructing new terminal facilities.

INFORMATION REQUIRED

- (a) Provide cost estimates in 1978 dollars for increasing terminal capability at existing sites without increasing the terminal land area.
- (b) Provide cost estimates in 1978 dollars for the construction and operation of a new terminal facility at Roberts Bank for a new coal handling facility of 8 million tonnes/year.
- (c) Confirm that the costs per million tons of increased bulk terminal capability for coal favour the construction of a new facility at Roberts Bank rather than expansion of the existing facilities.

QUESTION #7

A. BULK COMMODITY PROJECTIONS AND SOUTHERN PORT EXPORT CAPACITIES

IT IS SUBMITTED THAT there is an unsubstantiated correlation between the further development of southeastern B.C. coal reserves and the need to construct a new coking coal terminal at Roberts Bank.

INFORMATION REQUIRED

- (a) Explain how the decisions to proceed with new or expanded coal developments in the East Kootenay are dependent upon the creation of a new coal export facility at Roberts Bank.
- (b) Provide substantive evidence that "a failure to expand Roberts Bank will mean that development of coal mines in the East Kootenay area of British Columbia will cease". (Vol. 2, p. 161).
- (c) Explain why an expansion of Roberts Bank is required several years in advance of new or proposed coal developments when the construction of a new coking coal terminal will take only 32 months (Vol. 6, p. D-196) and the lead time for most coal developments is 3-5 years.

QUESTION #8

A. BULK COMMODITY PROJECTIONS AND SOUTHERN PORT EXPORT CAPACITIES

IT IS SUBMITTED THAT considerable speculation surrounds the potential capacity and future export demands of grain terminals in the Lower Mainland.

INFORMATION REQUIRED

- (a) Provide a more detailed analysis of the anticipated Pacific Coast Grain Exports and establish a rational criteria to evaluate terminal requirements in the short term.
- (b) Confirm that the "potential capacity" of Lower Mainland grain terminals is fixed (as indicated in Table D20, p. D-81) and that there is a need for new grain terminal facilities by the late 1980's.
- (c) Determine that new grain terminal capacity in excess of the "potential capacity" is best suited for location at Roberts Bank.

QUESTION #9

A. BULK COMMODITY PROJECTIONS AND SOUTHERN PORT EXPORT CAPACITIES

IT IS SUBMITTED THAT no potash terminal capacity is required at Roberts Bank within the near future.

INFORMATION REQUIRED

- (a) Confirm that any additional terminal capacity for potash exports is highly speculative prior to the 1990's, and that there may be alternatives to the development of a potash handling facility at Roberts Bank to meet the highly optimistic demands to the late 1990's.

A. BULK COMMODITY PROJECTIONS AND SOUTHERN PORT EXPORT CAPACITIES

IT IS SUBMITTED THAT bulk liquid commodity projections are very weak and unquantified, and that any forecasts of terminal capacity needs for this import/export trade are questionable.

INFORMATION REQUIRED

- (a) Provide quantifiable data to support the claim that there is "need of a facility in the Lower Mainland to handle bulk liquids" (Vol. 6, p. D-59).
- (b) Confirm the claim that a Bulk Liquid Tank Farm is needed (Possible Development, Vol. 6, p. D-100) by 1980, and especially provide information that such a facility would be optimally located at Roberts Bank.

A. BULK COMMODITY PROJECTIONS AND SOUTHERN PORT EXPORT CAPACITIES

IT IS SUBMITTED THAT the consultants' report tended to overemphasize the high projections for commodity exports potentials.

INFORMATION REQUIRED

- (a) Provide an alternative terminal development scenario using the low projections for all export commodities and then define the earliest start-up dates for each type of terminal development (as a comparative scenario to Table D21, Vol. 6, p. D-100).
- (b) Provide cost estimates in 1978 dollars for the expansion of export capacities at all existing Lower Mainland terminals which export bulk commodities.
- (c) Provide cost estimates in 1978 dollars for the construction of new terminal developments in the Lower Mainland to provide the increase in nominal annual capacities for both "Definite" and "Definite and Possible" developments proposed in Table D21, Vol. 6, p. D-100.
- (d) Determine who is responsible for paying the costs of either increases to existing terminal capacities or new terminal facilities.

B. SITE SELECTION CRITERIA

IT IS SUBMITTED THAT although the methodology used to assess environmental and social impacts is not unusual, the information provided on the development of criteria is grossly insufficient.

INFORMATION REQUIRED

- (a) Provide background data and criteria by which final impact assessments were constructed.
- (b) Indicate how the above criteria were combined: provide weights used and their linkage to future regional development.
- (c) Relate changes in parameters to the three possible levels of development.

B. SITE SELECTION CRITERIA

IT IS SUBMITTED THAT no sensitivity analysis has been provided which allows the reviewer to assess the subjective judgment of the authors of the report regarding the relative intrinsic value of the environmental account components as analyzed in Table 8, Vol. II, p. 66.

BACKGROUND

A raw score of environmental and social impacts, which takes no account of the relative importance of the factors considered, is exhibited. A series of weights are then presented which reflect the relative intrinsic value of each component (p. 66, Vol. 2); multiplying the raw scores by the appropriate weights results in final environmental and social impact comparisons for each of the 3 alternative levels of development. It is stated that final rankings of alternative sites reflect the subjective judgment of the authors regarding the relative intrinsic value of each component considered; these weights are then exhibited so that "reviewers of the report may apply their own subjective judgment" but the authors themselves do not produce any comparisons.

INFORMATION REQUIRED

- (a) Provide sensitivity analysis of results of final environmental and social impact for each of the three alternative levels of development.

B. SITE SELECTION CRITERIA

IT IS SUBMITTED THAT the significant differences in the results of the environmental/social and engineering rankings shown in Table 2 emphasize the need for some form of combined evaluative procedure.

BACKGROUND

No attempt was made by the authors of the report to directly equate environmental/social and engineering scores; instead a graphical procedure (as above) was utilized to compare the two assessment criteria. The resulting Figures (23, 24 and 25, shown following p. 68, 70, and 72), in which we are told that the "optimal choices are those which approach the upper left corner," are therefore allowed to appear to say more than they actually can.

Looking at Figure 23, for example, the placement of the entries appears to favour Roberts Bank, with Ridley Island a potential second choice. However, only 3 of the 9 sites examined actually ranks lower than Roberts Bank on the environmental/social scale. On the basis of the information presented, therefore, there exists no rigorous basis on which to establish trade-offs: we are unable to defend as "optimal" any site selection which does not place first on both scales. We are instead left with casual, non-supportable statements.

INFORMATION REQUIRED

- (a) Develop criteria which can be used to equate environmental/social and engineering scores directly.

B. SITE SELECTION CRITERIA

IT IS SUBMITTED THAT there is no evidence for the statement that:

"The net biological costs (of Roberts Bank port expansion) seems very low for the size of the development and the local aesthetic cost is less than the social and economic costs which would be felt in the coal producing areas if expansion did not proceed."
(p. 163, Vol. 2)

INFORMATION REQUIRED

- (a) Provide the basis on which the reported trade-offs were established.

B. SITE SELECTION CRITERIA

IT IS SUBMITTED THAT the criteria utilized by Beak Hinton present a strong bias in favour of engineering criteria to the detriment of environmental/social criteria.

BACKGROUND

This engineering bias appears in statements such as "Alternative sites for southern B.C. coal are not nearly as desirable as Roberts Bank from all viewpoints" (p. 151, Vol. 2, emphasis added), which as seen in Table 2 is simply untrue. Not only are the engineering scales valued more highly, thus lending a presumption of greater worth, but the scale utilized in the construction of the graph shown tends to emphasize the engineering scores.

INFORMATION REQUIRED

- (a) Using Figure 1 below, which exhibits identical information to Figure 23 of Beak Hinton but uses a different scale, justify the choice of Roberts Bank over Ridley Island, Brittania, Squamish, and Kitimat from an environmental/social criterion.

B. SITE SELECTION CRITERIA

IT IS SUBMITTED THAT the statement made (p. 68, Vol. 2) that:

"The northern sites can serve only northern B.C. and
northern Alberta economically"

has not been proved.

INFORMATION REQUIRED

- (a) Divide proposed sites into categories on an economic basis, not a cartographic basis, and on that basis, provide additional information that it is uneconomic to support southern B.C. coal through northern ports.

B. SITE SELECTION CRITERIA

IT IS SUBMITTED THAT there exists no *a-priori* argument favouring any particular level of consolidation of services at a single site.

BACKGROUND

"The argument advanced by Beak Hinton, that 'The most favorable site should be one which has a reasonably moderate impact in its initial stages and stays moderate thru full speculative development' is again one which sounds entirely plausible but may well prove to place the cart before the horse. To consolidate all development in one central location has a ring of efficiency to it but may well prove to be a costly solution." (Vol. 2, p. 73).

INFORMATION REQUIRED

- (a) Demonstrate that sufficient economies of scale exist to in fact warrant consolidation of services.

C. ENVIRONMENTAL CONSIDERATIONS

IT IS SUBMITTED THAT the field sampling undertaken for this study is limited in time and scope so that the results are questionable, and further that the report bases a great deal of its assessments upon available literature.

INFORMATION REQUIRED

- (a) Provide the precise ecological inter-relationship between the eelgrass beds in Tsawwassen Bay and the juvenile salmon and crab populations, particularly in the context of the specific local marsh ecosystem.
- (b) Detail the extent to which the study team interrogated individuals who live and work in the area throughout the year who could assist in ascertaining the extent to which the problems are actually problems of perception, as stated in the report.

C. ENVIRONMENTAL CONSIDERATIONS

IT IS SUBMITTED THAT insufficient information is presented in support of the claim that "For economic reasons, it is more advantageous to develop all 4 sites simultaneously" (p. 152, Vol. 2)

INFORMATION REQUIRED

- (a) Detail the economic benefits associated with the simultaneous development of all four proposed terminal locations.
- (b) Confirm that Terminal 1 remains the preferred choice should only one additional terminal be constructed.
- (c) Provide staged design plans in which the least environmentally sensitive areas (Terminals 2 or 3) would be developed first and the most sensitive locations (Terminals 1 or 4) would receive maximum protection.

C. ENVIRONMENTAL CONSIDERATIONS

IT IS SUBMITTED THAT southern Roberts Bank is the only area of the Fraser River estuary which supports extensive underwater meadows of eelgrass (*Zostera marina*). The beds are singled out for their important linkages with pelagic fish, crabs, and the entire estuarine plant and animal communities.

INFORMATION REQUIRED

- (a) Provide the experimental evidence to support the claim that a "reduction in the eelgrass would be expected to cause a proportional reduction in the herring population". (Vol. 2, p. 83).
- (b) Provide the experimental evidence to support the claim that "the biological production of those portions of the chinook salmon and coho salmon stocks residing in the intercauseway area is directly dependent upon the production of juvenile herring". (Vol. 4, p. 105).
- (c) Provide the dollar value of the anticipated loss in fish numbers in terms of both recreational and commercial fisheries.

C. ENVIRONMENTAL CONSIDERATIONS

IT IS SUBMITTED THAT the estimated net loss of 4% of the Roberts Bank eelgrass beds (6% gross loss with 2% possible recolonization) is not sufficiently documented given the special characteristics of substrate, depth, currents, and light penetration which is required to support the present eelgrass community.

INFORMATION REQUIRED

- (a) Provide the experimental or literature evidence to support the assumption that 1/3 of the loss can be regained through proven recolonization techniques.
- (b) Provide the timetable, cost-estimates and man-years required for eelgrass recolonization.
- (c) Provide the contingency plan for preventing the further erosion of the eelgrass beds by the present facility.

C. ENVIRONMENTAL CONSIDERATIONS

IT IS SUBMITTED THAT insufficient information is presented to assess the impact of intensive dredging on aquatic populations.

INFORMATION REQUIRED

- (a) Provide information on the recovery rate of the aquatic ecosystem following a period of intensive dredging.
- (b) Provide additional information on both the short and long term impact of dredge and fill operations on the aquatic habitat.
- (c) Provide more explicit information on the anticipated volumes and duration of suspension of dredged materials.

C. ENVIRONMENTAL CONSIDERATIONS

IT IS SUBMITTED THAT the dredge spoil impacts associated with the proposed construction of new terminal facilities at Roberts Bank are not adequately described in terms of potential environmental consequences.

INFORMATION REQUIRED

- (a) Provide the precise projected sediment loss for a total fill of $14 \times 10^6 \text{ m}^3$.
- (b) Provide precise information on the assimilative capacity of the environment to sustain the immediate impact of the suspended material, specifically on:
 - (i) the eelgrass communities
 - (ii) the benthic biota
 - (iii) herring
 - (iv) juvenile salmonids
- (c) Provide the projected timetable for dredging in terms of quantity of dredges and time period required to complete the dredging.

C. ENVIRONMENTAL CONSIDERATIONS

IT IS SUBMITTED THAT insufficient information has been provided concerning problems of coal dust air and water pollution.

INFORMATION REQUIRED

- (a) Provide additional information on temporary (maximum) levels of coal dust pollution in local areas, in particular following times of unusual weather conditions.
- (b) Confirm that alternative port storage arrangements (such as covering all commodities, including coal) are not preferred.
- (c) Detail the cost of requiring that all coal rail cars (both existing and planned) be covered.
- (d) Evaluate the effect of coal dust pollution on the rate and extent of decreases in the quantity and quality of the local crab catch.
- (e) Evaluate individual complaints from local residents regarding coal dust pollution of both aquatic and terrestrial communities.
- (f) Establish the relative contributions to current airborne particulate concentrations of the Roberts Bank port development and the Tsawwassen ferry terminal.

C. ENVIRONMENTAL CONSIDERATIONS

IT IS SUBMITTED THAT potential effects on local bird populations have not been adequately investigated.

INFORMATION REQUIRED

- (a) Detail the extent of the impacts of construction and operation at RB on local bird habitat, including the Reifel Bird Sanctuary.
- (b) Provide detailed information on the species and estimated numbers of birds using affected lands and waters.
- (c) Confirm that increases in ship traffic and resulting increases in both routine emissions and the possibility of collision or grounding, are not expected to significantly affect local bird populations.

C. ENVIRONMENTAL CONSIDERATIONS

IT IS SUBMITTED THAT impacts associated with the maximum proposed expansion at Roberts Bank and the resulting increase in ship traffic are not adequately described in the report.

INFORMATION REQUIRED

- (a) Provide collision probability data, on the basis of world shipping figures, and the frequency probability of accidents which might be expected to occur given the expected six fold increase in ship traffic.
- (b) Provide evidence to support the claim that the possibility of collision and/or grounding would remain "quite remote" (Vol. 2, p. 154).
- (c) Outline the possible effects the increased ship traffic will have on commercial shipping, commercial fishing and recreational boating in the Strait of Georgia.

C. ENVIRONMENTAL CONSIDERATIONS

IT IS SUBMITTED THAT the proposed environmental emergency contingency plan (Vol. 1, p. 16) dealing with accidents involving contaminants is not detailed enough in the report.

INFORMATION REQUIRED

- (a) Assess the present status of such a contingency plan and its probability of being implemented prior to full operation of the expanded port facility.
- (b) Provide the projected organizational structure of such a plan, including jurisdictional network.
- (c) Provide the cost estimate of producing and maintaining an effective environmental emergency contingency plan.

C. ENVIRONMENTAL CONSIDERATIONS

IT IS SUBMITTED THAT there is an insufficient amount of detail to evaluate the proposed measures designed to deal with bulk liquid leaks and spills associated with ship-loading procedures.

INFORMATION REQUIRED

- (a) Provide the design guidelines for the proposed surface-to-bottom enclosure, including costs and proven effectiveness.
- (b) Outline what will be done with the large volume of enclosed water surrounding a chemical ship if it proves to be contaminated.
- (c) Provide a list of chemicals which might be handled at Roberts Bank, and a list of chemicals which would be considered too hazardous to be handled at such a facility.
- (d) Provide guidelines and cost estimates for establishing and maintaining an effective environmental monitoring program to control the latent environmental hazards of "normal" loading operations.

C. ENVIRONMENTAL CONSIDERATIONS

IT IS SUBMITTED THAT the impact of a causeway widening which would be necessary for a greatly expanded port facility at Westshore Terminals is not adequately addressed in the report.

INFORMATION REQUIRED

- (a) Identify at what stage of the port expansion a widening of the causeway will be required.
- (b) Provide the full range of environmental impacts which might occur with the widening of the causeway.
- (c) Provide the cost estimate in 1978 dollars of widening the causeway.

C. ENVIRONMENTAL CONSIDERATIONS

IT IS SUBMITTED THAT the supply and distribution of water services at the expanded Roberts Bank port facilities has not been adequately investigated.

INFORMATION REQUIRED

- (a) Determine whether existing facilities would be sufficient to supply the needs of an expanded RB port facility.
- (b) Investigate the effect of an increased demand for water at RB on other regional developments which face potential supply restrictions.
- (c) Provide information regarding the sharing of water distribution costs between Terminal owners and the relevant municipalities.
- (d) Discuss the anticipated water supply arrangements in the event of subsequent industrial expansion on the causeway or on BCHB holdings.

C. ENVIRONMENTAL CONSIDERATIONS

IT IS SUBMITTED THAT the impact of planned increases in rail traffic has not been adequately investigated.

INFORMATION REQUIRED

- (a) Determine the costs and extent of any additional infrastructure required to service increased volumes of rail traffic.
- (b) Establish explicit criteria under which the decision to construct noise buffering berms will be made.
- (c) Estimate the degree to which existing levels of noise and air pollution from trains will increase should port expansion proceed.
- (d) Investigate the environmental impacts created by a required widening or increased amount of rail trackage to the facility.

C. ENVIRONMENTAL CONSIDERATIONS

IT IS SUBMITTED THAT the impact of port expansion on aesthetic and cultural values has not been adequately assessed.

INFORMATION REQUIRED

- (a) Determine costs and benefits associated with the enhancement of recreational opportunities along the causeway.
- (b) Establish the social and economic costs to the Tsawwassen Indian Band of both present and potential port development.
- (c) Discuss the range of available mitigation procedures designed to minimize potential negative aesthetic and cultural impacts of port expansion within adjacent communities.
- (d) Determine the form and extent of compensation that will be made to affected residents in the case of unavoidable adverse impacts.

C. ENVIRONMENTAL CONSIDERATIONS

IT IS SUBMITTED THAT insufficient information was provided with regard to potential industrial development adjacent to the port.

INFORMATION REQUIRED

- (a) Provide detailed impacts of any proposed or potential development related to the Roberts Bank terminal requiring encroachment on the "back-up lands".
- (b) Confirm that the proposed expansion to the terminal facilities at Roberts Bank should not encourage any industrial development adjacent to the port (Vol. 2, p. 37).

C. ENVIRONMENTAL CONSIDERATIONS

IT IS SUBMITTED THAT the feasibility and impacts of proposed trestle as depicted in the master design of the proposed expansion (drawing D59) are not detailed anywhere in the text.

INFORMATION REQUIRED

- (a) Provide detailed plans and costs for such a trestle.
- (b) Describe the anticipated environmental impacts the westward expansion of such a trestle would impose.

C. ENVIRONMENTAL CONSIDERATIONS

IT IS SUBMITTED THAT the evidence is not clear to support the consultants claim that the net result of the proposed expansion of the present westshore terminal would have no major adverse environmental impact on Roberts Bank.

INFORMATION REQUIRED

- (a) Provide the additive expected environmental impact this project would have on the estuary in light of other projects being simultaneously carried out on the Fraser estuary. Specifically we request information on the effects this project imposes on the environment by the Fraser River training project, the possible airport expansion, and the several marina proposals designated for this area.

C. ENVIRONMENTAL CONSIDERATIONS

IT IS SUBMITTED THAT there is some questionable wind data presented in the consultants' report. It is stated that prevailing winds in winter are from the east and average slightly more than 5 m/s (18 km/hr.) (Vol. 2, p. 78). It is also stated that during the summer winds are from the west at 4 m/s (14.4 km/hr.) However, Vol. 6, p. D-51 states that frequency of easterly winds is over 41% with almost 48% of the winds over 25 mph coming from the East or Southeast, compared to the westerly component amounting to 25% of the winds and 32% of the winds over 25 mph. Other sources show that the average wind speeds for the area are 11 knots for summer, and 13 knots for winter with most extreme winds blowing most frequently from the E-S-E quadrant. (Source: Department of Environment, Atmospheric Environmental Service).

INFORMATION REQUIRED

- (a) Provide an accurate analysis of the wind direction, frequency and intensity in the vicinity of the proposed terminal facility.
- (b) Provide an analysis of the total particulates expected to arise from winds from all directions (not just from N.W. as in Vol. 2, pp. 142-145).
- (c) Provide an outline of mitigation procedures for minimizing the loss of coal dust by strong winds from all directions.

REGIONAL DISTRICT OF KITIMAT-STIKINE

9 - 4644 LAZELLE AVENUE • PHONE 635-7251 • TERRACE, B.C. V8G 1S6

RECEIVED

January 17, 1978

Chairman
Environmental Assessment Panel
Robert's Bank Outerport Expansion
Room 1870
1050 West Pender Street
Vancouver, B.C.
V6E 3S7

Dear Sir:

Please be advised that this Regional District takes exception to assessments made of the Port of Kitimat in the Robert's Bank Environmental Assessment reports.

Although we realize there are some limitations to a bulk port development at Kitimat, it is felt that the report is written in such a way as to imply there are limitations to all port development projects there. We see the Regional role for the Kitimat port as an importer of freight and an exporter of concentrate and refined minerals, forest products, and manufactured goods. These commodities may not require significant redevelopment of existing transportation systems. Substantial amounts of land exist for the economic development of port facilities, back-up industrial land, and major industrial plant sites. Existing infrastructure offered by the interconnected communities of Kitimat and Terrace are the most developed in northwest B.C. We feel that assumptions reached in the reports rely heavily on overly subjective weighting procedures designed to enhance Port Roberts as a bulk port site. (ie design of graphs on pages 8-10 vol 1 fig. 5-7 and weighting given certain elements on page D-140 vol6 table D23.)

We also note that the Port of Stewart was entirely ignored in the Beak-Hinton reports. This oversight is unfortunate, especially considering Stewart's location adjacent to extensive copper and asbestos deposits, and status as Canada's most northerly ice free west coast port.

REGIONAL DISTRICT OF KITIMAT-STIKINE

Chairman
Environmental Assessment Panel
Page 2
January 17, 1978

We would also like to take this opportunity to support the use of the Prince Rupert area as a location for major bulk port development. Direct uncrowded rail access, proximity to coal deposits, new port facilities and shorter distance to markets in the orient are all points the Beak-Hinton report failed to emphasize.

The development potentials of northern ports in both Prince Rupert and Kitimat are options that we feel could be given more favourable consideration in the assessment process.

Yours truly,



J. Banyay
Chairman

JB:dls

cc: Iona Campagnolo, MP for Skeena
Cyril Shelford, MLA

B.C. Harbours Board, Chairman
1400-1177 W. Hastings
Vancouver, B.C.
V6E 2K5

National Harbours Board
Ottawa, Ontario

CABLE ADDRESS *Greentide*

RECEIVED

JAN 25 1978

CAP PACIFIC

TELEPHONE 683-9311

TELEX 04-53401

TWX 610-922-5028

Greer Shipping Ltd.

LINER and TRAMP AGENTS

FILE

*1619 Marine Building
Vancouver, B.C.
V6C 2H8*

Environment Canada.
Federal Environmental
Assessment Review Office
1870 - 1050 West Pender Street,
Vancouver, B.C.
V6E 3S7

January 25th, 1978

Dear Sirs:

We are writing on behalf of Greer Shipping regarding Beak Hintons' Environmental Impact Assessment of Roberts Bank Port Expansion and your letter of January 9th, 1978.

We were involved in consultations between the original engineering contractors and Kaiser Resources Ltd concerning ship handling at the berth as NYK Line were proposing to put 125,000 tonners on the run on charter to Mitsubishi Shosen Kaisha.

Since we commenced operating at Roberts Bank we have experienced considerably increased expenses for these vessels as compared to the original forecasts developed from the information given to us during the design process and we believe these difficulties were due to inadequate tidal and current studies and meteorological data.

For instance, it was indicated that vessels could dock and undock at any state of the tide, whereas we found docking was confined to High and Low Water Slack due to the strength of the current across the entrance. In addition the wind factor was much greater than expected - in the case of our second vessel calling at Roberts Bank M/S Chikugo Maru, the tension winches were unable to hold the vessel alongside for loading.

cont

D. SUBMISSIONS FROM COMPANIES

We recommend that evidence be sought from operators of the present vessels using Roberts Bank and their Marine Departments. Useful input could also be obtained from BC Pilotage Authority and Seaspan International Ltd. regarding handling of vessels at the proposed extension.

We feel further expensive environmental studies should be delayed pending approval of the design from a practical basis.

Yours very truly,
GREER SHIPPING LTD.
As Agents

A handwritten signature in cursive script, appearing to read "Neil Gow".

Capt. N. Gow
Director

NG/dwc

ICL

43.0-32 P
ICL ENGINEERING LIMITED

1011 RIVER DRIVE, RICHMOND, B.C.
278-9721 V6X 1Z2

DESIGN & MANUFACTURE
REINFORCED PLASTIC PRODUCTS
SPECIALIZING IN FILAMENT WOUND PIPE, VESSELS

January 6th, 1978

RECEIVED

JAN - 9 1978

EAP PACIFIC

Environmental Assessment Panel,
1050 West Pender Street, No. 1870,
Vancouver, B.C.
V6E 3S7

Attention: Mr. J. F. Herity, Panel Secretary.

Dear Sirs:

Re: "Roberts Bank."

This letter is to thank you for the five volumes of the "Environmental Impact Assessment" and to identify deficiencies as requested in your letter of November 18th, 1977.

There is a major deficiency in the treatment of air quality in that the dust concentrations are considered acceptable if the "annual geometric means" are acceptable. What has been a problem and what could be a much worse problem is occasional high concentrations of pollutants for relatively short periods of time. When black clouds of dust come off the piles or the returning empty coal cars, the concentrations are probably 100 to 10,000 times greater than the "annual geometric mean" reported on page 144 of Volume 2. These high concentrations present a nuisance and a potential health hazard to people in the area. Other dusts such as sulphur and potash may be much worse than coal. A major concern of residents is that the present good air quality is maintained. The report does not provide assurance that this will be the case. Pollution detectors should be installed around pads, at the ferry slip and at several points on the mainland to give instant readings of pollution. The maximum allowable instantaneous readings should be set at stringent levels to ensure the air quality is maintained.

Note: Page 145, Volume 2 is unclear. Figures 27, 28 and 29 look like fabrications with the contours bunching up near the ferry terminal and make the report appear unobjective.

Another deficiency is the lack of a limitation of noise pollution. At the present time there is a very loud, throbbing, low frequency sound which is very unpleasant and can be heard for miles. The sound appears to be caused by insufficiently muffled train-diesels operating out of synchronism. Much of this noise originates while the trains are on the causeway either accelerating or decelerating.

The report should recommend and require that the engines be synchronized and

Environmental Assessment Panel

- 2 -

January 6th, 1978

provided with improved muffling to reduce the present irritation and help minimize future irritation.

Yours very truly,

David L. Killam,

Managing Director,

ICL ENGINEERING LIMITED

DLK:HMG

Resident address: 1043 Pacific Drive,
Delta, B.C.
V4M 2K2

JAN 16 1978

EAP PACIFIC

4300-321

**NEPTUNE BULK TERMINALS LTD.**
A DIVISION OF FEDERAL INDUSTRIES LTD.1001 Low Level Road
North Vancouver, B.C. V7L 1A7
Telephone (604) 985-7461

January 13, 1978

The Chairman
Environmental Assessment Panel
Roberts Bank Outerport Expansion
Room 1870, 1050 West Pender Street
Vancouver, B. C. V6E 3S7

Attention: Mr. J. F. Herity

Dear Sir:

Re: Environmental Impact - Assessment Roberts Bank Outerport Expansion

As requested in your letter of November 18, 1977, we write to comment on some of the information presented in the Beak Hinton Environmental Impact Assessment.

Our remarks more specifically relate to Volume 6 - Appendix D, the engineering and commodity projections as produced by Swan Wooster Engineering, and their conclusions as regards terminal requirements.

Any expansion inevitably must have some environmental consequences, and while we believe that expansion is important, we are of the opinion that timing is critical, and that no action should be precipitated too far in advance of the need for facilities. It is this question of the timing of the development that we wish to raise with the Panel in order to ensure that premature or unnecessary effect on the environment is avoided.

We wish to seriously question the conclusions reached on Page D-88

"Under the high projection, coal exports reached the current capacity of the existing terminals by 1978, and the potential capacity by 1980,"

and

"The projections in Figure D-20 demonstrate the need for new terminal capacity in the immediate future."

As the report so correctly states in Tables on Page D-77, we at Neptune have a capacity under existing conditions for 6 million tons



Neptune Terminals Ltd.

Mr. J. F. Herity

- 2 -

January 13, 1978

throughput per annum, with a potential capacity, in fact, of at least 7 million. At the time of writing this report, which has been our best throughput year in the life of our facility, 3.5 million long tons of coal were handled. All indications are for a softening trend in export requirements for the next two to three years, such that in fact the volume enjoyed last year may decrease. Given, however, the continuation of the status quo, our terminal still has unused capacity of at least 2 million tons, and at this time I can assure the Panel that this spare capacity will exist in 1980, as we have no present commitments for it by mine, and no coal mine can realistically be brought into production in less than a two year time frame.

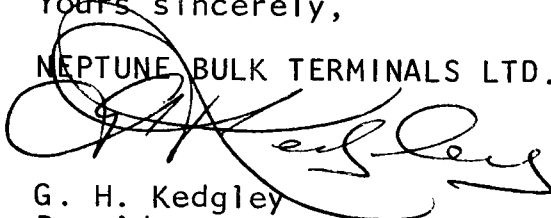
Turning to the question of bulk liquids, the statement on Page D-58 that bulk liquids are currently handled in several small installations in the Port of Vancouver and in other areas in the Lower Mainlands is questionable, in my opinion. We, as a terminal, have storage for an excess of 12,500 metric tons of liquid, and this to date has more than adequately coped with any requirements of which we are aware. Our facility still has around ten acres of unused land quite suitable for the storage and handling of liquids. We like to think that we strenuously market our facilities, and that we are aware of any pending requirements by chemical companies. I can assure the Board that we do not know of any needs unfulfilled. We would, therefore, question the conclusion reached on Page D-97, and we quote:

"It was concluded that some need for such facilities exists."

In summary, therefore, before any further consideration is given to the development of further ports, no matter how small the environmental impact of such expansions may be, care should be taken to ensure that they are really necessary.

Yours sincerely,

NEPTUNE BULK TERMINALS LTD.



G. H. Kedgley
President



TRANS MOUNTAIN PIPE LINE COMPANY LTD.

K. L. HALL
PRESIDENT

400 EAST BROADWAY · VANCOUVER, B. C. V5T 1X2
TELEPHONE 876-6711 · AREA CODE 604 · TELEX 04-54301

December 15, 1977

RECEIVED

DEC 19 1977

EAP PACIFIC

Environmental Assessment Panel
Fisheries & Environment Canada
1870 - 1050 West Pender Street
VANCOUVER, B. C.
V6E 3S7

Dear Sirs:

We have reviewed with considerable interest the Environmental Impact Assessment Report of the Roberts Bank port expansion. As you are probably aware our company operates a crude oil loading facility in the Port of Vancouver at Westridge in Burnaby. The present dock, built in 1956, is capable of handling vessels up to 65,000 d.w.t., although with present depth restrictions we limit the facility to approximately 55,000 d.w.t. vessels. During the recent OPEC embargo between November, 1973 and April, 1975 we loaded approximately 21 million barrels of crude oil on tankers destined for eastern Canada. This facility remains in readiness for potential use in any similar emergency.

Over the past several years there has been interest in the possibility of receiving crude oil from off-shore for use both in the Vancouver area and possibly central Canada. Consideration was given to the possible use of Westridge as a receiving terminal. This could be accomplished with only minor changes but would be limited to the 65,000 d.w.t. vessel size. Therefore in this consideration suggestions have been made about providing a facility at Roberts Bank to accommodate larger vessels. On three occasions recently enquiries have been received by our company from Federal Government agencies regarding the potential for crude unloading facilities at Roberts Bank. As an indication of the nature of some of these preliminary investigations I enclose extracts from a report written in 1975. At that time detailed environmental studies were conducted at only one port location and that was at Burrows Bay in Washington State. More recently detailed environmental studies were conducted at Cherry Point

near Ferndale, Washington. Our company has not been involved to date in any such detailed environmental assessment studies at Roberts Bank.

In our opinion an environmental impact assessment of Roberts Bank expansion projected 10 or 20 years into the future would be incomplete without consideration of a possible crude oil unloading facility. Canada is now a net importer of crude oil and could be importing as much as 50% of its oil engery requirements within 10 years. The manner in which this oil will be received from offshore and distributed inland is by no means resolved. Our company would be pleased to assist you in evaluating the potential impact in any way that may be useful.

Yours very truly,

A handwritten signature in dark ink, appearing to read "R. L. Hall". The signature is written in a cursive, flowing style with a long horizontal stroke at the end.

H:h
Encls.

Aug 1/75

PROPOSALS FOR REVERSING OF TRANS MOUNTAIN PIPE LINE

Trans Mountain Pipe Line Company Ltd. owns and operates a crude oil pipe line from Edmonton, Alberta to the Vancouver, B. C. and Puget Sound, U. S. areas. Present capacity of this system is 410 MBD. Details of the Company are covered in the attached General Article, dated April 15, 1975.

Recently, considerable interest has been shown in reversing the pipe line to move off-shore crude oil from the Vancouver or Puget Sound areas to Edmonton, Alberta, for further transportation via Interprovincial Pipe Line to the United States "Northern Tier Refineries", at the rate of approximately 300 MBD. This interest is brought about by the announced intention of the National Energy Board to eliminate exports of Canadian crude oil to the United States by the early 1980s.

In response to this interest, Trans Mountain has done a preliminary study of reversing its system and the results are shown below under cases 1, 2, 3 and 4. The capital costs and volume shown are approximate only, as no detailed engineering has yet been done. The assumed rate of 300 MBD is to take care of the anticipated requirements of "Northern Tier Refineries". However, substantially larger volumes could be moved by the addition of pipe line looping and additional tankage and pump stations.

For this study, the crude oil requirements in all four cases are assumed to be as follows:

Vancouver, B. C.	150 MBD
Ferndale, Wash.	175 MBD
Anacortes, Wash.	175 MBD
Edmonton, Alta.	<u>300 MBD</u>
Making a total of:	800 MBD

Case 1

The port of entry in this case is Roberts Bank, B. C. The additions to the system required would be approximately 30 miles of 40 inch and 23 miles of 24 inch pipe plus tankage and pump stations. A dock would be constructed at Roberts Bank, capable of handling vessels up to 325,000 DWT. Capital cost of this addition would be \$100,000,000.

Case 2

The port of entry in this case is Burrows Bay, Washington. Additions to the system would be approximately 7 miles of 36 inch, 37 miles of 30 inch and 15 miles of 20 inch pipe plus tankage and pump stations. A dock would be constructed at Burrows Bay, capable of handling vessels up to 325,000 DWT. Capital cost in this case would be \$95,000,000.

Case 3.

The port of entry in this case is Port Angeles, Washington. Additions to the system would be 75 miles of 40 inch, 37 miles of 30 inch, and 15 miles of 20 inch pipe plus tankage and pump stations. A dock would be constructed at Port Angeles, capable of handling vessels up to 325,000 DWT. Capital cost would be \$175,000,000. The underwater crossing from Port Townsend to Whidbey Island is included in this figure, but this is subject to a large amount of error, as no bottom surveys have been done.

Case 4.

In this case it is assumed that the Ferndale and Anacortes requirements would be met by tanker movements over the existing refinery docks, and Vancouver and Edmonton requirements would be met by construction of a dock at Roberts Bank similar to that in Case 1. The addition to the system in this case would be 30 miles of 30 inch pipe plus tankage and pump stations. Capital cost would be \$65,000,000.

The above cases outline the various ways of moving the oil from its port of entry to its destination or to Sumas, B.C. in the case of the 300 MBD destined for Edmonton. There still remains the reversing of the existing Trans Mountain system from Sumas to Edmonton. This could be done by construction of new pump stations and relocation of some of the existing ones and would not require the addition of any new pipe to pump at rates up to 300 MBD. Capital cost of reversing this portion of the

system would be \$40 million which is additional to the capital costs outlined above in Cases 1, 2, 3 and 4.

AWS/cj .

July 30, 1975

File 3-75-8

VANCOUVER WHARVES LTD.

1995 WEST 1ST STREET
NORTH VANCOUVER, B.C.

TELEPHONE: 985-3177
CABLE ADDRESS: VANWHAR
TELEX: 04-352568

V7P 1A8

FILE REF:

January 24, 1978

Environment Assessment Panel,
Government of Canada,
1870 - 1050 West Pender Street,
Vancouver, B.C.
V6E 3S7

Attention: Mr. J.F. Herity
Panel Secretary

Dear Sirs:

Roberts Bank Port Expansion
Beak Hinton Report
October 1977

We have completed reading the above report and wish to draw to your attention some facts not mentioned, make some comments and observations, and lay before you some opinions based on our long experience in the port industry.

Several times in various volumes our capability of taking vessels of various sizes is discussed and there appears to be some confusion on draught limitations. For example, in the Main Report on Page 14 and in Volume 6, Appendix D, Page D-10, a depth of 10.8 metres or 35.424 feet is mentioned. Our depth at our bulk loading berths is 12.28 metres or 42 feet. We have berthed and loaded vessels up to 85,000 D.W.T. in size for large parcel shipments at our #4 Berth. Our depth is correctly reported on Page D-72.

We understand that Neptune can berth vessels up to 100,000 D.W.T. at its coal berth only, 65,000 D.W.T. at its potash berth and 50,000 D.W.T. at its phosphate berth. Perhaps you would care to check this with Neptune Terminals.

In the comments on bulk carriers in general it is felt that:

The diagram on Page 11, Appendix D, is inconclusive and we fail to see what contribution this makes to the study. The average size of vessel at Roberts Bank is for coal only. There are very few general purpose bulk carriers on order at present and there are indications that there may be a spate of building of smaller bulk carriers. We are not suggesting that the graphs are wrong but we are concerned that officials without experience will construe these graphs the wrong way.

On Page 16 of the main report it shows Pacific Coast Terminals as handling phosphate rock. We believe this is inaccurate.

On Page D-58, Clause D2 3.7 and D3 5.8 on Page D-97 reference is made to certain bulk liquids. Our company has made an extensive study of the bulk liquids market for deep-sea terminals for all chemical plants that may be coming on stream up to 1990 and we can assure you that there is absolutely no justification for a bulk liquid terminal at Roberts Bank until 1985 or possibly 1995 if one dock company changes its emphasis. Our market research shows many commodities not mentioned in the report and all can be accommodated at present terminals without spending considerable sums of the taxpayers money in prematurely creating a facility that can only have a very slow start. We also note a commodity listed that we are assured will not come through the Port of Vancouver.

We are also puzzled why the liquid sulphur is included in the sulphur terminal. The only aspect in common between frozen sulphur, whether rock, flaked, pelletized, or in popcorn form, with liquid sulphur is the name sulphur. All handling characteristics, transporting, storing, reclaiming, loading, accounting for etc. are totally different and you are in fact looking at an entirely distinct commodity. Liquid sulphur should be handled at a bulk liquid terminal where all the necessary facilities are usually already installed and the experience and training of the crews is tailored to meet the problems.

As the report mentions our company and its associate companies are very much involved in potash and the future of potash shipments. We have been involved in potash export since 1962 longer than any other terminal in B.C. and it is vital to our corporate well being that we understand this market. The high "speculative" graph line does not take into account certain aspects of the market environment which can be relied upon to have an increasing adverse effect on the Canadian share of the world potash market outside North America. In the first place the central and western states of the U.S. east of the Rockies have an increasing need for potash and this is an easier market for the potash industry of Saskatchewan to service in return for hard currency. Secondly, the non-oil producing countries are facing an ever increasing bill for energy whilst at the same time finding their international debt servicing load fast approaching their national G.N.P.

The increasing cost of energy will hit the coastal export of potash in a critical manner as Canada must face the 1,100 to 1,400 miles train journey to the coast before commencing to compete on the ocean journey. Nor can vessel economics in size be easily taken advantage of due to size of orders or "tenders" and discharge point peculiarities such as draught, dock facilities etc. We anticipate the delivered price of Canadian potash at many potential market points will climb faster than that of Canada's competitors and this will continue to keep the Canadian export curve flatter than we would all hope.

Since the Saskatchewan Government adopted its present policy toward the potash industry, no new plants have been built in Canada. The upper speculative graph shows an 8,000,000 ton export increase over twenty years or a new mine every thirty months exporting 1,000,000 tons of potash per annum.

We are pleased to note that the report states that access to the North Shore Terminals is not a problem as we have long maintained that the railway problems are in the interior as far as development of bulk cargoes are concerned. However, we are surprised at what appears to be a complete contradiction on Page D-130 wherein the report rates North Shore rail access as fair. Whilst we note this apparent contradiction we are surprised that tug availability for Kitson and Ridley is rated as good. We are given to understand that there are no tugs at Prince Rupert adequate to handle the large bulk carriers and that this represents an additional investment in the area.

In our research on bulk handling in the Rupert area we have long been concerned that, in the initial stages when tonnages are comparatively low, any supposed cost advantages that Ridley may have in favour of Vancouver will be absorbed by additional tug services which will have to be provided on a very uneconomical basis.

On Page D-150 there is a description of wind conditions at Roberts Bank. It would have been of interest to know how many times a vessel has been prevented berthing, how much delay time was involved in backing off, anchoring in English Bay and returning, how many tugs were involved and what was the cost in delay time to pilots, customs officials, health officials, ship agents, etc.

If we examine Scheme 2 a large empty bulk carrier attempting to berth at the 1980 coal berth would have a cruel time of it if caught in an adverse wind and might well endanger a vessel at Westshore Terminals. The same conditions would apply at the 1995 coal terminal in Scheme 5 and we strongly doubt whether ship masters or shipping companies would be very happy with Scheme 11 with vessels attempting to berth and let go with sea and wind broadside on. This would also apply to Scheme 12, 13, 14, 10, 9, 6, 5, 4, and 2 where some berths are aligned broadside to the elements. A delicate moment in berthing is when a large empty carrier is almost stopped beam on to another vessel at berth whilst approaching the adjacent berth; the combined effect of wind, sea conditions, currents and water movement caused by displacement will give pilots and masters much to think about.

We suggest that Roberts Bank needs a breakwater of substantial size to remove at least one element from the picture.

We are pleased to see the comment on Page D-86. We quote:

"A new terminal is required when demand for shipments exceeds the capacity of existing terminals. Whether or not a particular new terminal is built, and when it is built, is considerably more complicated. Depending on the nature of the sales and production of a particular commodity, new terminals may be required before the capacity of existing terminals is reached. A commodity whose production usually increases in large increments and is sold under long-term sales contracts would justify such new terminal capacity. On the other hand, a commodity with flexible production rates and sales to a spot market could utilize existing terminals to a higher level of capacity. In addition, construction of new terminals will take place only when a terminal operator can project an adequate return on his investment. To project an adequate return, the terminal operator must be able to foresee future increases in commodity throughput that will utilize a significant portion of the capacity of the new terminal."

Mr. J.F. Herity
January 24, 1978
Page 4


To the best of our knowledge this is the first time that we have seen this practical and intelligent point of view put so succinctly and clearly. We trust its importance will be absorbed by those entrusted by the community to make decisions in these matters.

We trust our comments will be of use and will throw light on some aspects of the problem from a different angle.

The report made most interesting reading, was most enjoyable and informative, and we would like to congratulate the participants on a job well done.

Yours very truly,

VANCOUVER WHARVES LTD.


R.G.H. Hutchison

RGHH:jme