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Order of Appearances

Northern Gateway Panel 1

Marine, Environmental & Socio-Economic Assessment

Mr. John Carruthers	Ms. Andrea Ahrens	Mr. David Fissel
Mr. Jeffrey Green	Mr. David Hannay	Mr. John Thompson
Dr. Tom Watson	Mr. Paul Anderson	Mr. Peter Reid
Mr. Malcolm Stephenson		

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Examination by Ms. Joy Thorkelson for United Fishermen & Allied Workers' Union (continued) 15857

Ms. Thorkelson put up Figure 21-1, DFO Fisheries Management Areas 5 and 6 and Subareas, from [Exhibit B3-34](#). Dr. Watson identified the seine fishery, which surrounds Gil Island and includes southern Gribbell Island, an area which Ms. Thorkelson called “the outside areas of Area 6.” 15857

Tanker traffic & Escort tugs

She asked about tankers – their route, length, frequency and tug accompaniment. Mr. Green said, that VLCCs are a maximum of 344 metres, Suezmax are an average 274 m and Aframax average 221 m. There will be 440 oil tanker transits per year, 220 inbound, 220 outbound. Approximately half will use the northern route. Two tugs – one tethered, one in escort - will accompany laden vessels, both condensate and oil, and one tug will accompany empty tankers. 15875

Mr. Green said that the escort tugs will be purpose-built, there will be four or five of them, and “there is nothing equivalent on the Coast right now.” Tugs may move faster than tankers, up to 15 knots. One tug will escort unladen oil tankers to the terminal; two tugs will escort the laden tankers on the return trip.

Transit times are approximately 12 hours, a bit shorter on the southern approach. Transit time in the outside areas of Area 6 may be two to three hours. Mr. Carruthers said that there is no prohibited zone around a transiting tanker, there are no safety clearings specified. The Shipping and Navigation panel will be able to provide more specific information about tugs. 15913

Salmon landings in Area 6

Ms. Thorkelson turned to Figure 3-7, Commercial Salmon Landings in FMA 6 by Species, 2000 to 2008, from [Exhibit B9-40](#). The graph shows that pink salmon are by far the largest catch in most years, with chum a distant second. Chinook, coho and sockeye barely appear on the chart. Figure 3-6 shows that gillnet is the leading gear type in Area 6, with approx. 1050 boats equipped, about 450 boats are rigged for seine fishing, and perhaps 60 for trolling. Dr. Watson explained that most of the boats are not assigned to a specific subarea in Area 6, because they fall under the “three party rule” which protects the identity of fishers where three or fewer are in a specific area. Ms. Thorkelson said that

approx. 400,000 chum were caught in Area 6 in 2003, and pinks were around 4.4 million fish. 15941

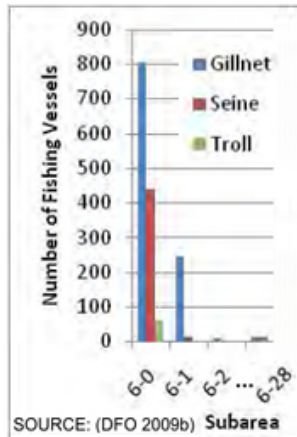


Figure 3-6 Number of Commercial Salmon Fishing Vessels in FMA 6 by Gear Type and Subarea, 2000 to 2008

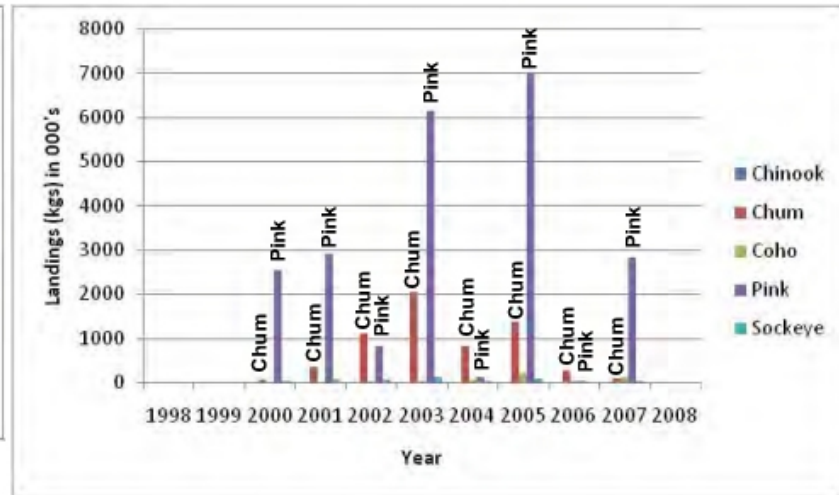


Figure 3-7 Commercial Salmon Landings in FMA 6 by Species, 2000 to 2008

Discussion continued about fishing in Area 6, exploring discrepancies in different reports, the variations in catch from year to year, and average weight of fish caught. 15970

More on expected impacts to fisheries in Areas 5 and 6

Noting values indicated on page 84, 13.2.7, of [Exhibit B3-15](#), Ms. Thorkelson asked how a meaningful mean could be captured from the catch data. She asked about the use of 20% as a significant departure from the mean to calculate significant effects, given that previous years have seen returns in one year of 14 million kilograms and in the next of only 9000 kg. Dr. Watson spoke about the difficulty of calculating a mean difference and explained that other indicators are used to reflect strength of runs, such as DFO quotas. Ms. Thorkelson noted that quotas are only pre-season catch estimates. Discussion continued and Ms. Thorkelson continued to seek an understanding of the significance of 20 percent as a representative of departure from the mean. 16037

Noting the importance of fisheries to some peoples' livelihoods, Ms. Thorkelson asked about the calculations of harvest rate, noting the use of the 20 percent significant reduction for effects thresholds. Discussion continued, with Mr. Green pointing out that the 20% figure is used for effects assessment only. He stated that NGP's intention is to use an adaptive management approach, sending feedback to the Fishing Liaison Committee (FLC), which would work to mitigate and minimize conflict. 16067

Discussion continued around NGP's expectation that its traffic increases in Areas 5 and 6 will result in minimal impacts only, to commercial fisheries. Mr. Carruthers pointed out that "accommodation on all sides", through the FLC, is required to reach successful conclusions. 16092

Discussion moved to the reasonableness of a 20 percent impact to fisheries, with Ms. Thorkelson asking if the panel members thought 20 percent cuts to their incomes would be insignificant. Mr. Green explained that NGP expects impacts to fisheries to be less than 20 percent, noting that the proposed vessels will not be owned by NGP, but by many other companies. Discussion continued. 16097

Impacts to geoduck, sea urchin and sea cucumber fisheries

Turning to [Exhibit D203-4-10](#), page 4, a map of the Fishing Management Areas for geoduck fisheries, Ms. Thorkelson noted that the areas are slightly different from the salmon fishery management areas and asked the witnesses to describe the value of and methods used in the geoduck fishery. Dr. Watson provided details of the use of divers harvesting the geoducks while tethered to boats. 16117

Ms. Thorkelson asked if tanker waves would interfere with the geoduck fishery noting potential safety concerns for divers. The witnesses indicated that wake from vessels would be minimal. Ms. Thorkelson explained that dive fishermen currently have problems with wave action in the area and asked how increased traffic wouldn't worsen the problem. Mr. Fissel indicated that the current traffic doesn't have the speed restraints that NGP is proposing for its vessels. Discussion continued around the speed differences for NGP tankers as opposed to current speed restrictions in the area. 16147

Discussion ensued around potential impacts to the red sea urchin fishery, which is also a dive fishery. Dr. Watson explained that the fishery is associated with higher current areas, as is the sea cucumber fishery. Discussion continued with regards to expected vessel traffic that will potentially interfere with diving fisheries. Mr. Green explained his expectation that the tankers will travel further from shore than the fisheries divers, and that the tankers will travel at slow speeds, resulting in reduced wake and interference with divers. 16184

The scope of the proposed Fisheries Liaison Committee

Ms. Thorkelson asked if it were true that most of NGP's mitigation efforts for tankers, other than reduced travelling speeds, are to be referred to the FLC. Mr. Anderson answered, "there are a number of mitigations that have been identified", pointing to the TERMPOL process as well as the use of escort and tethered tugs. 16246-16248

Adding to [Exhibit B15](#), pages 88-89, Mr. Carruthers confirmed that NGP envisions the FLC to include representatives from the commercial, recreational, and First Nations fisheries as well as government agencies, NGP, and potentially the Chamber of Shipping. Discussion continued around the topics to be discussed by the Committee as well as the decision making process. Mr. Carruthers indicated that he sees the FLC as "a collaborative effort so that you would... better understand the situation, talk about potential mitigation, and reach a joint solution." 16249-16266

Discussion turned to how NGP proposes to use *adaptive management*. Ms. Thorkelson expressed concern that such a management style could mean lenient measures are used until concerns are expressed. Mr. Carruthers spoke about "education, information, and dialogue". Mr. Anderson spoke about the importance of balance, in having tankers

travelling not too quickly, and not too slowly. Discussion on potential impacts continued. 16274-16298

Ms. Thorkelson spoke about her experience of sitting on many advisory committees and “providing advice that mostly isn’t listened to.” She expressed concerns that the FLC would ultimately only accommodate tanker traffic in fishing areas and asked what topics the Committee would address other than traffic mitigation measures, noting that the entire topic of fishery compensation was referred to the present witness panel. 16303-16307

Mr. Anderson called up [Exhibit B47-10](#) Adobe 24, which he said outlines the FLC’s mandate, management and charter. He explained that the Committee was modeled after “a number of existing in-place committees or associations”, which NGP sees as successful and able to reduce conflict. 16308-16310

Citing several examples of previous questions that had been referred to the FLC panel, such as compensation issues, Ms. Thorkelson asked how broad the Committee would go. Mr. Anderson indicated that the FLC would “provide a mechanism” to address routine effects of NGP’s operations to fisheries. Mr. Carruthers stated that discussion of compensation of spills would be addressed during the Emergency Preparedness and Response Panel. 16312-16326

Discussion continued and Mr. Green spoke about the FLC having a “neutral chairperson” that all members will decide on, stating, “it’s not an industry-driven committee; it’s a member-driven committee that elects the chairperson that will drive the activities of the committee”. He also spoke about the commitment to develop the FLC six months prior to construction of the terminal and to “collect two years of data pre-operations.” 16327-16338

Discussion continued on how the FLC will address compensation to the commercial fishery, inland impacts, shore workers and ancillary industries. Ms. Thorkelson asked about NGP’s intention to model the FLC after One Ocean. Mr. Carruthers confirmed that the organization is a corporation funded by the Canadian Association of Petroleum Producers. 16340

Discussion continued around how the FLC would differ from One Ocean and who would decide on the allocation of FLC’s funds. Mr. Carruthers indicated that NGP would fund the initial administration costs of the Committee, “and then depending on what aspects would come out, we’d have to talk about how it could get funded.” 16355-16364

Noting the 2.8 million dollar budget for the Prince William Sound Regional Citizens’ Advisory Council, Ms. Thorkelson asked if NGP was proposing to provide the Regional Advisory Committee with a similar budget. Mr. Carruthers answered that such an amount would not be provided, but that initial costs would be covered. 16366

Examination by Mr. Benjamin Ralston for Heiltsuk Tribal Council 16410

More on the funding of the FLC

Mr. Ralston asked what Mr. Carruthers meant by *administration costs*, in his previous answers regarding the FLC. Mr. Carruthers indicated that NGP would cover the set up of the chairperson, committee and meetings, as well as the development of the mandate, protocols, purpose, structure and operations. He estimated that costs for the Committee would be approximately \$200,000 annually. Discussion continued around NGP's actual budgeting commitment for the FLC with Mr. Carruthers indicating that further details would be determined once approval of the project takes place. 16421

Mr. Ralston asked how the public knows that NGP will follow through with its commitments to establish the FLC and Mr. Carruthers answered that he expected that the JRP would approve the project subject to certain conditions, including the FLC. He continued to answer Mr. Ralston's questions about why budgeting commitments haven't already been made. 16439

NGP's view of Aboriginal FSC fishing rights & cultural importance of fishing

Summarizing NGP's evidence of potential damages, disruption and economic losses to fisheries and fishing gear in [Exhibit B38-2](#), Adobe 190, Mr. Ralston asked if such impacts included Aboriginal FSC (food, social & ceremonial) fishing activities. The witnesses confirmed that such fisheries were included in the assessments and that NGP is aware of the importance of fishing to First Nations people. 16449

Mr. Ralston asked what NGP understands "food, social, and ceremonial fishing to mean", noting various references to the subjects in NGP's evidence. In particular, he inquired what source NGP relied upon to define terms such as *FSC fishing*. Mr. Anderson confirmed that NGP used the DFO's definitions and data on the subject. 16458

Mr. Ralston asked if NGP had sought information on First Nations' understandings of their Aboriginal fishing rights. Mr. Anderson spoke about using traditional land use studies to gather information for the environmental assessments. He pointed out that such information provided NGP with an understanding of "how these areas are used by the communities that use them... [and] importance of these areas to these communities." 16486-16488

Discussion continued. Mr. Ralston asked if NGP recognizes that food, social and ceremonial fishing "forms an essential part of the cultures of coastal First Nations. Mr. Anderson confirmed that it did, and Mr. Ralston asked for agreement that disruption to fisheries causes more than just an economic impact to First Nations, but a cultural impact as well. Mr. Anderson again spoke about meeting the CEAA requirements. 16495

Mr. Ralston again asked whether NGP agreed there could be cultural impacts from the tanker traffic. Mr. Anderson responded, "Defining culture is a very difficult thing to do... we looked at determining if there was the potential for an alteration, or a change in the resources that our project may effect and then extended that potential impact to a potential use of those resources and we found that there would be no significant adverse effects of the project on those resources or on the use of those resources." 16500-16502

Mr. Ralston asked if the witness disagreed that “the presence of tankers in waters being fished for Food Social and Ceremonial (FSC) may have an impact on the cultural ceremonial nature of this activity.” Mr. Anderson answered that he didn’t believe NGP should comment on the perceptions of Aboriginal communities, noting that one of the purposes of the traditional knowledge studies and consultation program is to gather such information. 16503-16512

Mr. Ralston asked if loss or damage to fishing gear occurred as a result of the project, would NGP dispute that cultural impacts could result. Mr. Anderson answered that he could only comment on how compensation to fishing gear would be managed, but not to cultural losses. 16513

Mr. Ralston asked about NGP’s plan to defer compensation for impacts and process related costs to fishing gear, to the FLC to determine. Mr. Anderson confirmed that the FLC is believed to have the expertise to provide guidance on how to compensate for such losses. 16515

Mr. Ralston asked if NGP is committed to covering the costs of loss of fishing opportunity. Mr. Carruthers stated that the FLC would seek to avoid or minimize such losses, but that NGP was not committing to covering such costs. 16524

Mr. Anderson answered that NGP was not committing to compensating for cultural impacts of disrupted fishing activities, stating, “we do not see that with the implementation of the mitigation measures that we’re proposing, that we’ll see any impacts.” 16527-16528

Mr. Anderson asked, “on what basis does Northern Gateway see the potential impacts as being so minimal and Mr. Anderson pointed to NGP’s environmental assessment. Discussion continued on how NGP concluded that its project would not result in impacts to Aboriginal fisheries or cultural impacts. 16529

Accommodating Aboriginal fishers in the marine area

Discussion turned to how responsibility for impacts to Aboriginal fisheries would be allocated between NGP and vessel owners. Mr. Anderson indicated that NGP would provide compensation to fishers and would subsequently seek compensation from a ship owner when required. He answered that no amount had yet been set aside or budgeted for such compensation. 16542

Discussion turned to protocols for conflicts between smaller vessels and tankers in the marine area. Mr. Green spoke about laws of the sea typically giving right of way to larger vessels and that small vessels would be able to avoid large tankers through automatic identification systems. Mr. Carruthers spoke about the need for proper communication so that rerouting and accommodation could be discussed. 16551

Mr. Ralston continued to seek an understanding of whether NGP would commit its vessels to respect priority for FCS fishing. Mr. Carruthers again spoke about the commitment to collaborate through the FLC to find joint solutions. Mr. Green added that

sea laws do not give priority to FSC fishers, only to priority in the allocation of harvests. 16565

Discussion turned to how the FLC's determinations would be implemented by NGP. Mr. Carruthers indicated that he saw the Committee as a place for parties to develop solutions amongst themselves, answering that NGP would be a part of the committee, so will have agreed to its resolutions and recommendations. Discussion continued, with Mr. Carruthers answering that no party would have veto power and that dispute resolution could be brought to the committee if necessary. 16570

Mr. Ralston argued that NGP would have ultimate veto power if it is deciding whether or not to implement the recommendations of the FLC and Mr. Carruthers continued with comments about consensus-based decisions. Discussion continued. 16582

Traffic interference with cultural vessels

Mr. Ralston asked about NGP's awareness of vessel traffic in the marine project area that may interfere with tankers, such as vessels operating for cultural purposes. Mr. Carruthers answered that NGP is aware of reports of canoe journeys, though wasn't aware of how many canoes travelled for such practices. Mr. Anderson answered that NGP has not conducted research on the canoe journeys. 16591

Mr. Ralston asked for agreement that canoe journeys could potentially conflict with the project's tanker traffic. Mr. Anderson answered that NGP believes such conflict could be avoided. Mr. Ralston asked if conflict with tanker traffic could have a cultural impact on such activities and Mr. Anderson stated that no such conflicts exist with current tanker traffic. 16610

Mr. Ralston asked if NGP would commit to not running tankers during canoe journey periods and Mr. Anderson again spoke about the commitment to working towards joint solutions. Similar discussion ensued. 16614

More on the FLC

Discussion turned to the costs of participation in the FLC, with Mr. Carruthers stating that it wouldn't cover such costs, but that it would want to ensure that costs wouldn't prevent participation from groups. Discussion continued on determination for First Nation participation in the FLC. 16638

Mr. Ralston asked whether NGP would commit to funding AIS technology for fishing boats and Mr. Carruthers again stated that the commitment is to create a forum to discuss such issues. 16652

Discussion again turned to coordinating First Nations fishers and tanker traffic through the FLC and how First Nations would be able to participate in the Committee without funding. 16662

Mr. Carruthers confirmed that ship owners are not expected to participate in the FLC. He answered that the Canadian Association of Petroleum Producers could be involved in the

Committee, explaining that they could be relevant stakeholders in the issues to be discussed. Mr. Ralston continued with questions about the importance of having ship owners present on the Committee and Mr. Carruthers indicated that NGP would represent the marine aspects of the project, while the Chamber of Shipping may also be present. 16686

Discussion continued. Mr. Carruthers answered that no alternatives have been planned in the event that the FLC is not successful, because NGP expects it to be successful. 16699

First Nations obligation to steward the land and the PNCIMA process

Mr. Ralston asked questions about NGP's awareness of the ongoing marine planning process for coastal First Nations within PNCIMA. Mr. Carruthers was asked to confirm earlier comments that he understands coastal First Nations' feelings of obligation to ensure stewardship of their traditional territories. Mr. Anderson answered that NGP is generally aware of such efforts through such forums as the PNCIMA. 16709

Mr. Anderson answered that NGP is aware that its project area overlaps with the Central Coast First Nations' territory as well as the PNCIMA planning area, pointing to [Exhibit D85-3-15](#), Adobe 4, which delineates boundaries within the relevant territories. He confirmed that NGP understands that the Central Coast First Nations have opposed oil and condensate shipping through their territories. 16729

Discussion continued on the First Nations marine planning process with respect to marine-based sustainable economic development. Mr. Ralston sought an understanding of the extent to which NGP understands the Coastal First Nations' marine use planning process. 16740

Mr. Anderson indicated that NPG had a limited understanding of the process and that it expects its project not to affect the process because its activities "are consistent with what's going on today and are, in many ways, providing additional mitigation that does not exist today." 16774

Examination by Ms. Carrie Humchitt for Heiltsuk Tribal Council 16786

NGP's commitments with regards to First Nations and the FLC

Mr. Carruthers confirmed for Ms. Humchitt that NGP had received feedback from the Gitxaala and Haisla Nations about the FLC. She indicated that she has no record of the Heiltsuk being contacted in regards to the Committee and Mr. Carruthers answered that an information request was put out in regards to the communication on the matter. 16788

Ms. Humchitt asked if the UBCIC, AFN, BCAFN or First Nations Fisheries Council had been contacted in regards to the FLC and Mr. Carruthers deferred the question to the Public Consultation and Aboriginal Consultation Panel. 16791

Mr. Carruthers confirmed that NGP would be open to considering alternative proposals to the FLC. Pointing to the east coast experience, Ms. Humchitt asked if NGP would commit to employing coastal First Nations people as fisheries observers and fisheries

liaison officers as part of the FLC process. Mr. Carruthers confirmed an interest in doing so, stating that the value and benefits of doing so would have to be established. 16795

Noting reference to working with DFO to reduce impacts of the project, Ms. Humchitt asked if recent funding cuts to the Department pose any impacts to this work, in NGP's view. Mr. Anderson answered that DFO has been able to perform such items so far, and that the question could be put to the Department. 16805

Discussion continued around NGP's willingness to work with affected First Nations around cultural and socioeconomic impacts of the project. Ms. Humchitt asked how NGP would seek to meaningfully employ First Nations as stated in the company's advertisements. Mr. Carruthers pointed the question to a subsequent witness panel. 16810

First Nations consultation and traditional land use studies

Noting the importance of meeting early in the process as discussed in the east coast experience, Ms. Humchitt asked when NGP was planning to meet with fishers. Mr. Carruthers again spoke about the intention to meet following a decision by the JRP. He spoke about previous consultation work and traditional land use studies. Discussion continued on the noted lack of traditional use studies and harvesting surveys. 16818

Ms. Humchitt asked if NGP had read Heiltsuk's traditional land use study and Mr. Anderson answered that he didn't think the document had been released to the company but that it would be very interested in reviewing the information. 16825

Ms. Humchitt asked if NGP was aware that some hereditary chiefs have title to certain marine resources and lands, inquiring how the company would propose to consult with them on the matter. Mr. Carruthers referred the question to a subsequent panel. Ms. Humchitt asked if NGP was aware that cultural impacts on some nations will be different for others. Mr. Anderson answered that the company understands "every First Nations community is different and has its own specific character and traits." 16833

Noting that the Bella Bella Fish plant has only been operating for a year, Ms. Humchitt asked how NGP would address the project's socioeconomic impacts on the plant. Mr. Anderson answered that no significant effects on marine fisheries or services provided from the fishery is expected. 16837

Ms. Humchitt highlighted testimony from the Bella Bella hearings indicating that not being able to conduct traditional harvests of animals would "kill the culture of the Heiltsuk", and could not be financially compensated. Ms. Humchitt asked about NGP's view of such impacts and how it would propose to deal with an impact that couldn't be solved using money. Mr. Anderson answered, "we do not expect any effects to their culture related to the routine activities of our operations." Discussion on the matter continued. 16843-16855

More on NGP's work to reduce impacts

Noting DFO cuts have resulted in a cut to the Heiltsuk Nation herring fishery survey, Ms. Humchitt asked if NGP foresaw such cuts to impact its ability to work with First Nations

tanker-related matters. Mr. Anderson answered that NGP doesn't see its tankers affecting the area any differently than the 22,000 existing tankers transiting the area each year. He noted that data gaps had been identified during the environmental assessment, but that addressing them is not contingent upon DFO participation. 16857

Ms. Humchitt noted that NGP has stated that they will go beyond requirements in terms of mitigating impacts, and that such impacts could be reduced if other operators did the same. She asked if NGP had reached out to other operators on the subject. Mr. Anderson explained that some discussion had taken place with other ship operators and the Chamber of Shipping. He stated that "a global outreach on behalf of the project" hadn't taken place, but that the process is public and that others can see the proposal. 16861

Mr. Carruthers answered that NGP would be interested in working with other users to reduce cumulative impacts through the FLC, noting that he expects the Province of BC will also be addressing the issue. 16864

Ms. Humchitt noted that NGP had offered funding towards traditional land use surveys and harvesting surveys. She asked if it was aware that some Nations may not accept the funds because they would consider doing so as agreement with the project, or prejudicial to their rights and title. Mr. Anderson answered that NGP had stated that funding was not contingent upon acceptance of the project. Discussion on the funding continued. 16866

More on potential impacts to First Nations fisheries

Ms. Humchitt asked if NGP had considered creating a tanker monitoring system and employing members of each coastal First Nations for the program. Mr. Green spoke about the advantages of the AIS systems that all large vessels have in Canadian waters. He pointed out that NPG had proposed to increase radar stations, which will help people independently view location of tankers. Mr. Carruthers answered that the subject could be further discussed through the FLC. 16872

Ms. Humchitt turned the discussion to the Gladstone case by Maria Morellato of the coastal First Nations. The witnesses discussed their knowledge of the case and its implications for the Heiltsuk people. They indicated that they were not aware of the Gladstone Reconciliation Program. Discussion continued. 16886

Discussion continued on NGP's commitments to compensate for impacts to First Nations fisheries and access to traditional foods. Ms. Humchitt asked about NGP's awareness of Heiltsuk's commercial communal fisheries and Dr. Watson described his knowledge. Discussion turned to potential mitigation measures or compensation for impacts to such fisheries. 16897

Mr. Anderson explained that NGP's fish habitat compensation programs are being developed with the DFO. He stated that fish hatcheries are low on the hierarchy of preferences for compensation with the Department, stating, "it would only be if we were very pressed for finding other alternatives for enhancement would we go that route." 16914-16916

Potential employment opportunities for First Nations

Discussion turned to the high rate of unemployment in coastal First Nations and the potential impacts of tanker traffic on fishing. Mr. Anderson spoke about NGP's proposal to create up to 20 full time emergency responder positions. Discussion continued on potential employment opportunities for First Nations such as with the marine environmental effects monitoring program, the Environmental Sensitivity Atlas and the whale-spawning vessel. 16918

Discussion again turned to how NGP would mitigate economic losses from tanker traffic, this time around aquaculture projects, with Mr. Anderson again stating that NGP does not foresee potential for such impacts as a result of routine operations. Mr. Green commented that many of the previously discussed employment programs are also intended to be confirmations of success of mitigation measures. 16932

Examination by Ms. Rebecca Brown for the Joint Review Panel 16948

NGP's proposed marine mammal density and distribution surveys

Ms. Brown called up [Exhibit B165-3](#), page 12 which includes "Description of Commitment" around timelines for marine mammal density and distribution surveys. She compared this to Mr. Green's statements at paragraph 9149 in [Volume 112](#). Mr. Green confirmed NGP's commitment to conduct the surveys 3 years prior to construction, and for 3 years following. 16952

Noting the large range given by NGP in expected density surveys for the CCAA, Ms. Brown asked for clarity on the actual number that would be conducted. Ms. Ahrens explained that the document was meant to provide a framework only. She continued to explain the various factors that would determine how and how many surveys would be conducted. 16963

Ms. Ahrens then explained the differences between the surveys around the marine terminal and those in the CCAA. See transcript for details. 16970

Referring to [Exhibit A59-1](#), Ms. Brown highlighted the JRP's request to NGP for further information on potential effects on marine mammals, as well as known effectiveness of its proposed mitigation measures. She noted NGP's response which included a literature summary in [Exhibit B47-16](#), and further comments in [Exhibit B47-10](#), page 51. She continued with further examples of NGP's documents and witnesses' comments at length. Please see transcript for detail. 16977

Ms. Brown then asked, "considering this information that I've noted, including that there will be additional vessel transits, the length of the project, and the fact of seasonal natural variability in the density and distribution of marine mammals...why [is NGP] only going to conduct marine mammal density and distribution surveys for three years post construction?" She also asked if NGP was confident in its ability to determine effectiveness of its mitigation measures and potential effects on marine mammals with statistical significance in the proposed timeframe. 16986-16987

Ms. Ahrens spoke about the importance of not singling out any of the particular programs or research programs “because the primary goal... is to make it an ongoing iterative process and to integrate adaptive management practices into it.” She also talked about the purpose of the surveys, and provided reasons for the difficulty of determining effectiveness in a statistically significant manner, an example being that many mammal strikes by vessels currently go unreported. 16988-16994

Ms. Ahrens explained that given the difficulty of distinguishing finite trends, “the only thing you can really do is to try and propose mitigations that reduce those effects.” She talked about additional programs proposed to supplement the density surveys, such as acoustic monitoring. 16995-16998

Mr. Anderson added comments about NGP’s commitment to fund a Marine Research Chair in an effort to fill data gaps and shape the monitoring program within the area. He answered that the details of NGP’s timeline for funding the chair had not yet been confirmed. 16999

NGP’s assessment of vessel noise

Ms. Brown noted that NGP’s vessel noise models are found in [Exhibit B83-25](#). She asked if the purpose of such modeling was only to determine potential effects or indicators, or whether the modeling was also meant to for management and mitigation of potential noise impacts. 17005

Mr. Hannay explained the purpose of the models was firstly to understand project-specific effects of particular equipment and construction activities. He spoke about the approach of the models, namely that they focused on noise emission characteristics as well as noise receptor characteristics of killer whales and humpback whales. He continued with details of the methodology and finished by stating that the assessment looked at acute effects from individual vessel passes to inform what areas should be considered for further research on effects. See transcript for greater detail. 17008

Ms. Ahrens added further comments about the methodology and use of the models. She indicated that the findings of the analysis showed that vessel speed has the largest impact on the sound emitted in the environment, giving NGP “some reassurance that our reduced speed levels are going to help reduce the effect of these vessels.” 17016-17025

Discussion continued and the witnesses confirmed that NGP would be interested in collaborating with others in the acoustic modeling. Mr. Green pointed out that a meeting had taken place with Raincoast Foundation on the matter and that letters had been sent to the North Coast Cetacean Society. 17026

FN responses to NGP’s invitation to participate in 9 proposed programs

Pulling up [Exhibit B70-10](#), pages 5-6, Ms. Brown highlighted NGP’s inquiry to several coastal First Nations groups if they would participate in various proposed programs if the project were approved. She reviewed the questions NGP asked of the First Nations groups in its letters and the specific programs it cited. Ms. Brown noted that 5 of 6 groups

responded with varying degrees of interest in participating, given certain conditions.
17038

Ms. Brown asked how the groups' responses were included in the development of NGP's 9 proposed programs. Mr. Carruthers responded that there was "an expansive response by some of the communities", expressing the difficulty in summarizing them. He indicated that many of the questions put to NGP from the communities were consistent with the questions asked of the panels during the hearings, many being related to decision-making and funding. 17044-17050

Mr. Green added his thoughts on the comments received from First Nations in response to the proposed programs. He stated that many communities communicated a desire to be in "a position of strong direction in how those studies are implemented." He added that NGP's proposed biophysical surveys would "strongly complement" some of the First Nations' coastal management plans. Mr. Green continued to describe the ways in which he saw the company working with various communities, noting various comments from First Nations. 17052-17063

The witnesses continued to describe the various proposed programs and ways that First Nations could actively participate and receive consultation. Ms. Brown asked how NGP would proceed in the event that Aboriginal groups declined to participate in a program. Mr. Carruthers answered that in such case, NGP would work towards fulfilling the proposed programs and would make information available for others to see. 17064

Details of NGP's plans for the FLC

Calling up [NGP's response to the JRP's request for more information about the FLC](#), pages 24-29, Ms. Brown noted that NGP stated it would fund the FLC "*potentially together with other operators*". She asked if the statement was referring to other terminal operators and Mr. Carruthers answered "we were probably thinking of other operators such as the people proposing the LNG terminals." 17077-17082

Ms. Brown asked if NGP had had discussions with other operators regarding funding for the FLC. Mr. Carruthers answered that no formal discussions had taken place, and that he thought such discussions could take place once project approvals had been granted.
17083

Ms. Brown asked if NGP had had other discussions with any other parties about potential funding for the FLC budget. Mr. Carruthers answered that no "significant discussions" had yet taken place. 17087

Ms. Brown asked about NGP's statements on its plans for FLC membership, as seen on page 27, inquiring how the Committee would be able to "affectively address the diverse and potentially competing interests of the membership". Mr. Carruthers spoke about the importance of education and communication as a way to mitigate potential impacts.
17090-17094

Ms. Brown asked how NGP planned to work through disputes amongst members of the FLC, inquiring if a dispute resolution process had been included in the mandate. Mr. Carruthers spoke about the success of the Community Advisory Boards in bringing diverse interests together, which has informed the FLC's mandate. He added that the FLC would involve a more action-oriented process, which would go through a mediated process with an independent facilitator. Mr. Anderson explained NGP's intention to allow the Committee to decide on a dispute resolution process. 17096

Referring to page 26 of the exhibit, Ms. Brown asked if fishers would have to be members of the FLC to receive compensation. Mr. Carruthers spoke about the Committee needing to set up procedures for dealing with compensation claims, but that it wasn't the intention to require membership for compensation. 17105

Turning to the issue of reporting on page 29, Ms. Brown asked what type of information the FLC would report on. Mr. Carruthers again answered that the Committee itself would determine such issues. Discussion turned to the type of information that would be kept confidential. Mr. Carruthers answered that he would support filing the FLC's annual reports with the NEB, so long as it respected the wishes of the Committee itself. 17115

Bringing up NGP's reference, on page 26, to other fisheries liaison committees which NGP states it is basing the FLC on, Ms. Brown noted that the other committees do not include Aboriginal representatives. She asked what aspects of the other groups' scope, mandate, and structure would be useful for incorporation into the FLC. 17124

Mr. Carruthers answered that the FLC would look to Nova Scotia's Fishery Advisory Committee for its set of criteria for gear loss and its strong collaborative working relationship. He was asked if there are aspects of that committee that would not be effective for the FLC. Mr. Carruthers spoke about the committee's use of representatives not individuals. 17127

Examination by Mr. Andrew Hudson for the Joint Review Panel 17134

NGP's marine fish habitat compensation plan

Noting that NGP had committed to compensate for habitat loss related to the Kitimat terminal construction, Mr. Hudson asked who NGP had consulted in the development of its conceptual marine fish habitat compensation plan. Mr. Anderson stated that the plan needs to be refined as the project proceeds. He explained that consultation had primarily occurred with the DFO, as well as with several First Nations communities, though they were not consulted or incorporated into the plan. 17135

Mr. Hudson asked if any concerns were expressed by the DFO or First Nations communities in the meetings. Mr. Anderson answered that the DFO asked about consultation with the Haisla on the plan and that no concerns were raised by any of the First Nations communities. 17141

Mr. Hudson asked if the compensation ratios for habitat loss had been discussed with the DFO. Mr. Anderson indicated that initial conversations had occurred, but that there was still much to be worked out on the matter. See transcript for further detail. 17145

Mr. Hudson noted that the conceptual plan doesn't include options on riparian habitat. He asked if NGP was proposing to compensate for riparian losses. Mr. Anderson answered that the company isn't proposing compensation for riparian habitat, explaining that the focus will be on the CCAA. Mr. Green pointed out that riparian habitat is included in the compensation calculation. 17151

Mr. Hudson asked further details about the proposed habitat survey timelines. Mr. Anderson indicated that the intent would be to finalize the compensation plan before in-water construction of the terminal. 17158

Species at Risk

Mr. Hudson highlighted the DFO's recommendations that NGP consider endangered and species of special concern, under the *Species At Risk Act (SARA)*. He reviewed NGP's response on the matter and asked if the listing of any of the given species under *SARA* would provoke any design changes for the marine terminal. 17163

Mr. Anderson answered that the species of note, "are unlikely to occur within our project development area", indicating that surveys would be conducted to confirm that. He indicated that NGP "may also look at options that would benefit these species of concern." 17167-17171

NGP's EEMP and invasive species

Mr. Hudson noted recommendations from the DFO regarding NGP's Marine Environmental Effects Monitoring Program (EEMP) timeline. He asked if NGP had consulted the DFO on the proposed timeframe for the program. Mr. Anderson answered that conversations had taken place with the DFO and the Canadian Wildlife Service. He spoke about the rationale for the proposed timeline. 17174

Further discussion took place in regards to the marine mammal monitoring timeline. Mr. Green spoke about the need to adapt the areas of concern to data findings. He also spoke about adaptive management. 17181

Mr. Hudson asked if there was a response to DFO's recommendation to continue monitoring for the duration of the project's life. Mr. Anderson answered that the Marine Research Chair would help NGP determine what aspects may need continual monitoring, noting that monitoring may not need to take place every year. 17186

Noting NGP's statements about collaborating with key stakeholders on the development and implementation of the EEMP, Mr. Hudson asked if there were any agreements already in place. Mr. Anderson answered that many conversations had taken place on the subject, but that no agreements were yet in place. 17190

Calling up [Exhibit B45-6](#), page 13, Mr. Hudson highlighted NGP's statement about shipping as a vector for invasive species. Discussion turned to hull fouling and whether invasive species would be included in the marine EEMP, and how. 17195

Mr. Hudson asked what actions would be taken if non-native invasive species established in the marine environment of the project area. Mr. Green answered that there are "a variety of mechanisms" for invasives to get to the area, not necessarily just NGP's vessels. He indicated that the DFO would likely want the species to be removed as quickly as possible. 17217

Mr. Hudson asked about NGP's intention to track effects to eulachon as well as ensure that rockfish re-enter disturbed areas, noting the uncertainty in scientific data on the subject. Mr. Anderson answered that rockfish have a more limited range, so they will be tracked using survey transects in the area. He explained that tracking eulachon is more difficult because it uses large migratory routes, so NGP would have to work with the Haisla Nation and DFO to create a more appropriate monitoring process. 17221

Discussion continued around the proposed timeframe for tracking the rockfish and eulachon. 17227

Mr. Hudson asked what the course of action would be in the event that rockfish do not return to the area after construction. Mr. Anderson answered that there is "a very low abundance" of rockfish in the area, and that habitat compensation may have to be considered. He confirmed that the compensation plans and survey programs still have to be worked on, and that they are "very much at the conceptual phase right now." 17230

Re-examination by Mr. Bernie Roth for Northern Gateway Pipelines 17245

Turning to [Volume 112](#), paragraph 9613-9614, Mr. Roth reviewed Mr. Green's comments with respect to the use of the term "habitat destruction". He asked Mr. Green to clarify how he had understood Mr. Leadem's question on the subject. Mr. Green explained how the term related to NGP's assessment of noise affects, and provided further details of the methodology of the assessment. He noted that a "temporary alteration" of habitat was being discussed. 17245-17259