Pebble Project EIS
Consolidated Comments Table

Department/Division/Section	Document Name	Section/Fig./Table	Page #	Comment/Issue	Recommendation/Action
ADF&G/Comm. Fish/Homer	Draft EIS	General	General	From a general perspective, the DEIS does not adequately incorporate risk into the assessment of potential impacts. Both the complexity of the project, sensitivity of the habitat/connectivity of the watershed, and long operational timeline of the project should warrant more consideration of potential operational issues, spills, accidents, etc. that may occur over the life span of the project.	Reevaluate how risk is handled and incorporated into the DEIS. If no revisions are made, then provide an explanation about why the risk of spills, accidents, operational issues, etc. was not incorporated.
ADF&G/Comm. Fish/Homer	Chapter 1: Purpose and Need	1.2	1-1	Description of timeframe needed for mine closure and monitoring activities should be estimated/proposed. Saying "many years" is not the appropriate level of detail.	Change description of post-closure timeline from "many years" to specific amount of time required by laws and regulations.
ADF&G/Comm. Fish/Homer	Chapter 2: Alternatives	2.1.2	2-2	States: "Appendix B details each step of the alternatives development process for the Pebble Project EIS." Appendix B was not provided with the draft EIS for agency review.	Provide Appendix B and allow sufficient time for review by Cooperating Agencies.
ADF&G/Comm. Fish/Homer	Chapter 2: Alternatives	2.2.2.1	2-7 Fig. 2-5	The Mining Methods and Phasing section describes the mine site and references Figure 2-5 to illustrate details of the the open pit design. Figure 2-5 was not provided for this review.	Provide Figures 2-5 (and all other missing figures) and allow sufficient time for review by Cooperating Agencies.
ADF&G/Comm. Fish/Homer	Chapter 2: Alternatives	2.2.2	2-7	The Closure/Post-Closure Phase Water Management Plan includes a defined timeline for each phase [e.g., Year 20 until bulk TSF consolidation is complete (approx. Year 50)	Recommend the EIS/Water Management Plan explicitly state that post-closure water management must continue to fullest extent required by regulations and law.
ADF&G/Comm. Fish/Homer	Chapter 2: Alternatives	Tables 2-4, 2-6, and 2-8	2-30, 2-56, and 2-69	Tables lists water extraction site quantity estimates for various project components. However, site descriptions (e.g., site=WES-01, water body type=stream) do not allow reviewers to determine the actual source of water being used. This information is needed to evaluate if the proposed extractions may impact aquatic resources around that site and to determine if adequate baseline data have been collected in that area to make an informed determination of potential impacts.	Please provide accurate water body sources and quanitites to be used
ADF&G/Comm. Fish/Homer	Chapter 2: Alternatives	2.2.2.3	2-34	In the Lightering Locations section, the EIS proposes two locations for mooring bulk transport vessels within 12-18 miles from the port. The EIS states the alternate location between Augustine Island and the mainland would offer more protection from waves during poor weather. This may be true for easterly storms, which can be severe. However, the EIS fails to address impacts to port activities generated by the very strong westerly winds that frequently blow straight offshore from Amakdedori Beach. These are called "Kamishak Gap" winds (Fett 1993) because they funnel through the lowest lying portion of the mountains seperating the Cook Inlet and Bristol Bay basins. These gap winds hit Cook Inlet at Amakdedori Beach, right where PLP is proposing to locate their port. This issue was also pointed out in ADF&G scoping comments submitted in June 2018, but it has not been addressed in this EIS. Likewise, winter ice conditions in this area can fill the gap between Augustine Island and the mainland, but this issue is not adequately addressed in the EIS, despite it being included in ADF&G's scoping comments.	The EIS should consider the vulnerability of the port and lightering operations due to "Kamishak Gap" winds blowing offshore at Amakdedori Beach. The EIS should also address how port/lightering operations would be impacted by fixed and drifing ice conditions in this area during winter operations.
ADF&G/Comm. Fish/Homer	Chapter 2 Alternatives	2.2.2.3	2-41	In the Port Operations and Materials Transport section, it states that ore-concentrate will be loaded into bulk cargo carrier vessels offshore and that dust generation will be managed by dumping the previously lidded ore containers "as close as possible to the bottom of the hold". How will this help when the ship is nearing capacity and the dumping of concentrate occurs closer to the open hold of the receiving ship? Will operations be halted if wind conditions at lightering sites are sufficient to result in dust not being retained in the hold? ADF&G scoping comments included concerns over copper dust emmisions to the environment during loading operations. When dissolved in water, copper is highly toxic to aquatic organisms. The cummulative impact of frequent "minor" dust spills during loading operations at lightering sites should be addressed in the EIS.	As illustrated above (and initially during scoping), high winds are common to the port area and this may lead to copper dust containment issues during lightering/loading operations. The EIS needs to assess the potential impacts from copper dust entering marine waters around lightering sites over the lifetime of the project. An alternative ore concentrate loading method should also be developed and evaluated.
ADF&G/Comm. Fish/Homer	Chapter 2: Alternatives	2.2.2.3	2.41	The EIS indicates up to 27 Handysize ships would be required annually to transport concentrate, and that it would take 4-5 days to fill them while moored at lightering sites. That comes out to ~ 108-135 "loading days" required per year to keep up with ore concentrate production. The EIS should provide baseline weather data (e.g., average and max daily wind speed/direction, sea state, etc.) for the port and lightering sites so agencies can assess the feasibility of safely conducting that volume of loading operations at the proposed and alternate port sites.	Baseline weather data (e.g., average and max daily wind speed/direction, sea state, etc.) for the port and lightering sites should be reviewed along with the proposed number of "loading days" to determing the feasibility of ore loading operations at lightering sites without risking accidental spilling of ore concentrate containers and/or wind driven copper dust emmissions. Mitigation measures should include threshold wind levels above which ore transfer operations at lightering sites would be suspended.

ADF&G/Comm. Fish/Homer	Chapter 2: Alternatives	2.2.3.4	2-71	The inset image in figure 2-50 illustrates the primary and secondary lightering sites for the Diamond Point port site (alternative 2). The primary lightering site is in the mouth of Iniskin Bay, where water depths are up to 12 fa (72 ft). However, between this lightering site and similarly deep water offshore there is approximately 10 km of shallower water, including a 5 km stretch that averages closer to 6 fa (36 ft) deep at MLLW. This EIS states that "Handysize" bulk container vessels will be used to transport ore concentrate off site from the lighter locations. However, they do not specify the draft required by a fully laden vessel leaving the lightering site. That information is needed to evaluate the feasibility of safely operating vessels of this size in this area, and the probability of a major incident (e.g., vessel grounding) occuring over the life of this project. It should be noted that Table 2-18 indicates 50 foot water depth is needed to accommodate the bulk carriers. If that is the case then the EIS should decribe how PLP plans to get vessels that size in/out of the Iniskin Bay lightering site.	Provide the exact location of the access routes bulk carriers will take to get to each of the lightering stations, the depth of the water along the route (and a reasonable distance on either side to account for vessels blown off course), the bottom type along and alongside the route (e.g., hard rock, soft mud), and the tide windows that will be needed to safely transit those areas when empty and when fully laden. The EIS is incomplete without that information as it is impossible to assess how appropriate the proposed lightering sites are, nor the probability of a major incident occuring and the potential impact of such an incident.
ADF&G/Comm. Fish/Homer		2.2.2.3	2-41	"Two ice-breaking tug boats would be used to support marine facility operations." This area, due to very high tidal current flow does not typically form thick sheet ice, as may be the case in the Bering sea and Arctic ocean. Therefore, "breaking ice" with the intent of forming a navigable channel behind the tug may not work as intended. In addition, this dynamic ice flow may present scouring and impact problems for vessels transiting this area when ice floes are present and dense.	Take into account pack-ice in this unique and high current environment.
ADF&G/Comm. Fish/Homer	Chapter 2: Alternatives	2.2.3.4	2-71	Figure 2-50 illustrates the alternative port site at Diamond Point, including the shoreside facilities, which appear to be located directly over a creek and within the floodplain created during high flow events draining the basin directly above the shoreside facilities, which includes 4 fuel tanks storing up to 5 million gallons of diesel fuel. Figure 2-51 also illustrates the slope of surrounding terrain and the potential for landslides and avalanches to impact shoreside facilites at this location. However, the EIS does not adequately address the risks associated with siting the port/shoreside facilities at this location, nor does it discuss how the site will be engineered to mitigate these problems.	EIS needs to provide key engineering design details for the shoreside facilities associated with the Diamond Point port site. It should also assess the risks associated with locating these facilities over a creek and within floodplain and avalanche zones, and what mitigation measures may be needed to manage those risks.
ADF&G/Comm. Fish/Homer	Chapter 2: Alternatives	2.2.3.4	2-74	The Natural Gas pipeline alternative that comes ashore at Ursus Cove and then runs overland to Cottonwood Bay appears to require a right of way (ROW) through the Brown's Peak Creek drainage (see Fig 2-52). Brown's Peak Creek is an anadromous stream with an escapement goal for pink salmon and runs of sockeye, coho, and Chinook salmon and Dolly Varden. The draft EIS provides no engineering details on how the NG pipeline would be sited/constructed through this drainage to minimize impacts to aquatic resources in this stream.	EIS should provide key siting and engineering details re: the location and construction of the Natural Gas pipeline route from Ursus Cove to Cottonwood Creek and how it will avoid impacts to Brown's Peak Creek, an anadromous stream.
ADF&G/CF/Homer	Chapter 2: Alternatives	2.2.4.2 Table 2-10	2-85	Table 2-10 lists water extraction site quantity estimates for various project components under Alternative 3. However, site descriptions (e.g., site=WES-N05, water body type=stream) do not allow reviewers to determine the actual source of water being used. This information is needed to evaluate if the proposed extractions (500-1000 GPM, year round) may impact aquatic resources around that site and to determine if adequate baseline data have been collected in that area to make an informed determination of potential impacts.	Identify specific water sources to be used.
ADF&G/Comm. Fish/Homer	Chapter 2: Alternatives	2.2.4.5	2-92	In the Diamond Point Port section under the Concentrate Pipeline Variant of Alternative 3, it states that conveyor belts would be used to move dewatered ore concentrate from the dewatering plant to the bulk carrier barges at the dock and that "appropriate controls" will be used to address the potential for fugitive dust emmisions. Figure 2-63 shows the conveyor terminating at a "barge loader on fixed pivot" where it appears ore concentrate would be dropped into open containers on barges, creating the potential for fugitive dust emmisions.	EIS should provide more detail on how concentrate dust emmissions will be managed during bulk loading operations under this alternative.
ADF&G/Comm. Fish/Homer	Chapter 2: Alternatives	2.3	2-97	Section 2.3 discusses alternatives that were eliminated from further consideration and references Appendix B for details on all 70 proposed alternatives and the rational for their dismissal. Appendix B was not provided to agencies for review. Table 2-12 provides a list of proposed alternatives that were dismissed, but it does not include USACE rationale for dismissal of each alternative.	Provide Appendix B and allow sufficient time for review by Cooperating Agencies.
ADF&G/Comm. Fish/Homer	Chapter 2: Alternatives	2.2.2	2-3	This section summarizes the proposed action (Alternative 1) for the project and references Appendix N for detailed information on engineered facilities and operations for the project from initial construction through closure and reclamation. Appendix N was not provided to agencies for review.	Provide Appendix N and allow sufficient time for review by Cooperating Agencies.

ADF&G/Comm. Fish/Homer	Chapter 2: Alternatives	2.2.2.3	2-34	Design specifications are lacking. Though patio elevation is given in subsequent sections, a through description of dimensions of the facility in text and drawings should be included. Given the 78-year projection considering the RFFAs included in the DEIS, the exposure of the port to a tsunamis is great and the predicted ground acceleration from earthquakes is high. Therefore risks to the large capacity fuel tanks and other chemicals storage should be considered. Figure 2-28 shows a "curb" for perimeter containment and doesn't seem adequate.	EIS should provide more details, such as the containment capacity of the tank storage and the is snow removal plan. The EIS should include safety measures being considered should a maximum estimated seismic or debris avalanche generated tsunamis occur.
ADF&G/Comm. Fish/Homer	Chapter 2: Alternatives	2.2.2.3	2-34	There is no mention of the magnitude 7.1 earthquake that occurred on 1/24/2016, at 01:30AM with an epicenter in Iniskin Bay. This is within a few miles of Williamsport and approximately 30 miles north of the Amakdedori River. This could have significant implications that may need to be considered for both the Amakdedori access as well as the Williamsport access options.	Include discussion regarding the January 24, 2016 earthquake. It had a magnitude of 7.1 and was centered in the Diamond Point area. Provide explanation regarding why earthquakes of this magnitude centered near the project site and corridor will not be an issue for project infrastructure. Consider impacts to this project from earthquake activity.
ADF&G/Comm. Fish/Homer	Chapter 2: Alternatives	2.2.4	2-78	"Alternative 3-North Road Only (Alternative 3) is being considered as an alternative that addresses alternative transportation corridor and natural gas pipeline routes that were carried forward from screening, and eliminates the need for ferry transportation across Iliamna Lake." Not all benefits for Alternative 3 are stated- for example, the upgrade of an existing/utilized road that could be left in place for long term use.	The DEIS should consider the benefits (eg., upgrade existing road for long-term use) of this alternative as it further develops the Williamsport area, which has already incurred some impacts, while eliminating impacts to the undeveloped Amakdedori watershed/Kamishak Bay area.
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.1.4.2	3.1-4	Climate and Meteorology does not include a description of weather conditions at the Amakdedori Port area or in Kamishak Bay and lower Cook Inlet. The SOA provided scoping comments on weather conditions in the Amakdedori Port area and Kamishak Bay that appear to have been ignored in the DEIS. Sea ice conditions, tidal currents, and Kamishak Gap winds have been completely ignored or understated. Weather and sea conditions will not effect operations individually but in concert.	Recommend that monthly significant wave height and wind speed, and icing conditions summary be included for marine waters. Sea ice conditions should also be included for Kamishak Bay. Other known weather phenomena such as gap and drainage winds at the Amakdedori Port area and transportation corridor should be acknowledged.
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.2.2.1	3.2-6	Narrative under the NOAA section incorrectly states that the Kachemak Bay National Estuarine Research Reserve (NERR) is a state/federal partnership between NOAA and ADF&G. That was originally the case, but no longer. The State partner is now the University of Alaska (not ADF&G).	Revise paragraph for accuracy. More information can be found at http://accs.uaa.alaska.edu/kbnerr/
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.6.1.1	3.6-8	The DEIS presents data on the price of Bristol Bay sockeye compared to other fisheries. While the reasons given are mostly factual they only reflect the past and current market pressures and the trends in how the fish are processed.	Historic average prices should be be adjusted to reflect present day values.
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.2.2.3	3.2-9	Kenai Peninsula Borough (KPB) section states that the KPB regulates floodplain development near certain anadromous streams, including Amakdedori Creek, adjacent to the port site.	KPB Comprehensive Plan should be reviewed to see how the referenced regulations addressing development near anadromous streams would affect constructing large fuel storage tanks adjacent to Amakdedori Creek.
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.6.2	3.6-21 through 3.6-23	The overall tone of this section down plays the value of commercial fisheries in lower Cook Inlet	Present the data and a more objective assessment of the commercial fisheries in the area.
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.6.2	3.6-22	Description of LCI groundfish species targeted in commercial fisheries in state waters should include lingcod and non-targeted commercial harvest should include octopus. Also, the paragraph focusing on groundfish fisheries uses generic "Rockfish" as opposed to listing the various species of rockfish harvested.	Add lingcod and octopus to the list of species commercially harvested in state marine waters of Lower Cook Inlet. Also, list rockfish by species rather than lumping them under "rockfish".
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.6.2	3.6-22	There is no mention of Tanner crab, red king crab, or weathervane scallop fisheries. Though crab fisheries are currently closed due to low stock abundance (due to funding cuts, no surveys are conducted in Kamishak Bay so the population status is currently unknown) these used to be very valuable fisheries. There is a commercial weathervane scallop fishery within the pipeline corridor. Development could result is a direct loss of fishing opportunity since the dredge gear is hard on bottom. These suggestions were previously included in ADF&G's scoping comments.	Revise section to include additional fisheries and provide historical harvest levels and the potential to impact stocks that are currently closed to fishing, but could be opened in the future.
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.6	3.6-22 & 3.6-23	Two paragraphs referencing groundfish and halibut are poorly organized and include inaccuracies, such as "Limited fishing occurs near the pipeline's western terminus" (not true for halibut fishery), inaccurate summarization of management of the commercial halibut fishery, and minimizing the amount of harvest that occurs in the area of the proposed pipeline. Scoping comments provided by ADF&G previously summarized these fisheries.	Revise text to include the following information: The Pacific cod fishery is the largest commercial groundfish fishery in the Cook Inlet Area with about half of the total harvest occurring in the Cook Inlet District (waters of Cook Inlet north of a line from Cape Douglas to Point Adam). For combined federal and state waters of the Cook Inlet District over the recent 20 years, annual Pacific cod harvest has averaged ~2.7 million lb with a high of ~4.4 million lb, about 40% of which typically occurs in the federal waters between Kamishak and Kachemak Bays. The exvessel value of the fishery in the Cook Inlet District in 2017 was just under $1 million with 37 vessels harvesting Pacific cod. The federally managed commercial Pacific halibut fishery in the Cook Inlet District had an average annual harvest of ~437,000 lb of halibut over the recent 10 years, with 66% of that harvest occurring in the federal waters between Kamishak and Kachemak Bays. In 2017, 42 vessels participated in the halibut fishery. Other commercially important species harvested in the Cook Inlet District include lingcod, rockfish, sablefish, walleye pollock, spiny dogfish, and skate species.

ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.6.2	3.6-22 & 3.6-23	Commercial shellfish fisheries are completely omitted from this chapter. Extensive comments on shellfish fisheries in Cook Inlet that could be impacted by the proposed pipeline were provided in scoping comments. In particular, the weathervane scallop fishery and the scallop resource (bed) would be impacted, and there exists the potential for gear conflicts from scallop dredge interaction with the pipeline.	Revise text to include the following information: Weathervane scallops are found throughout the Kamishak Bay District and commercial harvest of this resource began in 1983. The fished component of the population is aggregated in two areas, or scallop beds, located east (North bed) and southeast (South bed) of Augustine Island in depths ranging from 30 to 90 m. Population biomass of whole scallops estimated from ADF&G dredge surveys conducted since 1996 has averaged ~5.7 million lbs. in the North bed and ~2.5 million lbs. in the South bed peaking at ~12.9 million lbs. in the North bed and ~6.8 million in the South bed. This biomass has supported a commercial fishery of up to 5 vessels harvesting ~28,000 lbs. of shucked scallop meats. Commercial harvest of Tanner crab in Kamishak Bay began in the mid-1960s but has been closed since 1991 due to low stock abundance. Harvest over this period for the Kamishak Bay and Barren Islands districts averaged ~1.6 million lb to over 4.6 million lb. Although the commercial fishery is currently closed, the noncommercial fishery was reopened to harvest in 2017 after being closed since 2012 due to low stock abundance. A commercial red king crab fishery occurred in the Kamishak Bay and Barren Islands districts from 1960 until 1984 when it was closed due to low stock abundance. Harvest over this period averaged ~2 million lb of king crab and peaked at ~5.5 million lb. The current population status of king crab in Kamishak Bay is unknown due to lack of assessment data, although it is considered a depressed stock. An active commercial razor clam fishery occurs around Polly Creek in Upper Cook Inlet, where the average annual harvest over the past 10 years was 314,000 lbs (in the shell). Other commercially important crab and shellfish species occur in Kamishak Bay including Dungeness crab, red sea cucumber, octopus, and many species of Pandalid shrimp.
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.6.2	3.6-23	Statement that "halibut fishermen…can fish anywhere in the 3A managed area" is an opinion that does not take into account travel time, weather, location of halibut resource, home port of fishermen, vessel size limiting ability to fish offshore, fuel costs being cost prohibitive to long trips for some fishermen, etc. Also, stating that "fishermen have…flexibility to avoid... pipelines and... cables" is minimizing the potential impact and gear impacts as well as making assumptions about fisheries and resources without providing facts to back up these statements.	The DEIS should refrain from irresponsible opinions implying that it doesn't matter if the resource is adversely affected in that area or if the project might displace fishermen. The document should maintain professional integrity and provide information on current fishing practices and potential impacts from the project.
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.6.3	3.6-23	No mention of recreational marine fisheries including Pacific halibut, multiple groundfish species, and Tanner crab, along with the potential for additional shellfish species if populations were to recover.	Include information on sport fisheries for halibut, groundfish, and Tanner crab, which are an important resource for the communities of Cook Inlet.
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.6.2	3.6-23	The following statement " Federal management areas are much larger than state management areas; thus, fishermen have greater flexibility to avoid fixed assets such as buried pipelines and undersea cables. For example, the statement, "halibut fishermen holding halibut quota for International Pacific Halibut Commission 3.6-23Area 3A, which includes Cook Inlet, can fish anywhere in the 3A managed area." implies that a takings is ok. Many halibut IFQ holders are small boat fishermen that salmon fish in the summer. To assume a small boat fishermen can go anywhere in 3A in the fall and winter months is not realistic. The loss of fishing opportunity is also cumulative, as this would not represent the first displacement of the fishing industry in the area.	The EIS should not determine what the value of one resource is over another. The EIS should instead state what the possible losses would be to existing activities should the development go forward. Delete quoted text and referenced map and replace with a statement that there would be a loss of fishing opportunity if these activities proceeded. Provide a surveyed map of the pipeline installation and state what if any buffer would be required for on bottom fishing gear and vessel anchoring to avoid conflict with the pipeline.
ADF&G/Comm.Fish/Homer	Chapter 3: Affected Environment	3.6.3.1	3.6-28	No mention of the Cook Inlet communities that benefit from sport fisheries, particularly as it relates to charter vessel businesses and tourism, as well as sport harvests that are important food source of Alaskan residents that put up fish for freezing and canning in these communities as well as Anchorage.	Include information on economic benefit to livelihood of residents and visitors to the Kenai Peninsula who fish in Cook Inlet.
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.12.3.3	3.12-5 through 3.12-6	Lacking data on wind speed. Lacking data on the exact location of navigational hazards between the port and lightering sites.	include information on wind speed and navigation hazards
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.13	All	The section appears to be written from the perspective of what contributed to the formation of the Pebble deposit and what contributed to the formation of other resources in the area that could be developed. There is no mention of the geology and its contribution to the fish population.	This section should be rewritten. The DEIS geology section should present the geological setting for the region, without sole focus being on the deposit. Though faults and volcanos are addressed in section 3.15 they should be acknowledged here as well.
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.15.5	3.15-12	The tsunamis inundation model cited (Crawford 1978) is out of date. The DEIS states that "Tsunami wave height predictions for 100- to 500-year return period events (combined with high tide) in lower Cook Inlet are estimated to be 12 to 23 feet above mean sea level (AMSL) in the Amakdedori area of Kamishak Bay" This same report reported similar estimates for Homer (Gage # 246) of 13.5 – 21.3 ft. New inundation maps were just completed for Homer and Seldovia and report a maximum predicted wave height of 33 – 40 ft. above MHHW for Homer (Suleimani et al 2018). Likewise, the DEIS cites recent tsunami modeling that predicts a higher elevation (28.5 ft. run-up elevation above MHW). I don't see this in the ASCE 2017 report they cite, however. Having the actual study report would be needed to confirm this estimate. Based on the updated inundation map for Homer, this estimate seems low.	The report citing the recent tsunami modeling needs to be provided. These data are not contained within the cited report.
ADF&G/Comm. Fish/Bristol Bay	Chapter 3: Affected Environment	3.24.1.1	3.24-1	First paragraph describes the Kvichak River as 50 miles long. It is 70 miles long.	Change 50 miles to 70 miles.

ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.24.1.1	3.24-13	The gas pipeline has the potential to affect more than what has been stated. The substrates are much more complex in Kamishak Bay than stated and there is no mention of the hard substrate communities. Additionally, no mention of substrate composition on the east side beaches that support clams.	Revise section to include recommended information. If baseline studies exist, include them and if not the studies should be completed prior to finalizing the DEIS.
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.24.1.1	3.24-14	There is no mention of kelp in the description of Amakdedori Port.	Describe the kelp species and extent there and the fact that this is spawning substrate for Pacific herring.
ADF&G/Comm. Fish/Bristol Bay	Chapter 3: Affected Environment	3.24.1.2	3.24-14 through 3.24-19	The Nushagak River Chinook salmon run is one of the largest Chinook salmon runs in the state.	Provide a description of the size and value of the Nushagak River Chinook salmon run.
ADF&G/Comm. Fish/Bristol Bay	Chapter 3: Affected Environment	3.24.1.2	3.24-22	The discussion on abundance of spawning sockeye in the eastern part of Iliamna lake should be expanded. Aerial surveys indicate highly variable escapements to these habitats, with aerial survey estimates ranging from tens of thousands to over 2 million spawning sockeye salmon (Morstad 2003).	Expand the discussion/context of the sockeye spawning in Iliamna Lake.
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.24.1.2	3.24-22	Section describing species found in the Cook Inlet Portion of the Natural Gas Pipeline Corridor does not include the following important forage fish: sand lance, eulachon	Add sand lance and eulachon to the list of species found Cook Inlet along the pipeline corridor.
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.24	3.24-22 & 3.24-23	Note that information included here on species occurrence for groundfish and shellfish species is actually complete and further confounds the exclusion of these species in the earlier sections mentioned.	Utilize information provided in the section to expand fishery resources information in 3.6. Ensure DEIS is consistent.
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.24.1.2	3.24-23	The information provided on fisheries in the immediate area of the Amakdedori River is incomplete. There is no reference to the Kirschner Lake sockeye remote release site, (established 1985) that is 10 miles away, or the Paint River salmon ladder that is 8 miles to the south of the proposed Amekdadori port complex. In addition, Chenik Lake is only 4 miles south of the Amakdedori site and information is limited. All of these are major salmon producers that are fished commercially in the summer. Commercial harvest also occurs in Iniskin and Iliamna Bay. Both of these bays are associated with the Diamond Point alternate site. Further to the south is the McNeil River which is in the McNeil River Wildlife sanctuary. Further south is Kamishak Bay where significant numbers of chum, coho, and pink salmon are regularly harvested by commercial permit holders. Purse seine gear is operated seasonally in the immediate area of the mouth of the Amakdedori River. Information about alternate sites should be included also (eg. Illiamna and Cottonwood bays are fished commercially for pink and chum salmon.)	Include more information on, and evaluation of potential impacts to, commercial salmon fisheries in the area of the proposed Amakdedori and Diamond Point port locations.
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.24.1.2	3.24-23	Description of hardshell clam abundance in Lower Cook Inlet should be updated. Hardshell clams are no longer "prolific" in Kachemak Bay. Likewise, Red and Golden king crab are likely no longer found in Cook Inlet.	Update this section with more accurate narrative on LCI shellfish populations.
ADF&G/Comm. Fish/Homer	Ch. 3 Affected Environment	3.24.1.2	3.24-23	Description of salmon and herring resources in Kamishak Bay marine and freshwaters should be updated. The recent 10-yr average escapement of pink salmon to Amakdedori Creek was 7.5 thousand (Hollowell et al. 2017). McNeil River and Ursus Cove should be added as major chum salmon producers. The Kamishak Bay sac roe herring fishery has been closed to commercial fishing since 2000 (Hollowell et al. 2017)	Update this section with more accurate narrative.
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.24.1.2	3.24-23	The DEIS states that the proposed port site will be near Amakdedori Creek which the DEIS identifies as having an abundant sockeye salmon population. The proposed port is actually located at the mouth of Amakdedori Creek in the historic floodplain of this river and in neighboring wetlands. Commercial fishing which normally occurs offshore of the river mouth will be impossible for the life of this project. There is no mention of Kirschner Lake which is a sockeye enhancement project that has operated since 1985 and is only 10 miles from the port. In addition, while the report mentions three chum salmon systems by name, (Big Kamishak River, Little Kamishak River, and Cottonwood Creek) there are four other chum salmon index systems in close proximity to the proposed Amakdedori Port. These are the McNeil River, Bruin River, Ursus Cove, and the Iniskin River. Note that the Iniskin River is approximately 5 miles east of the Diamond Point quarry and salmon runs to the Iniskin River (and Cottonwood Creek) could be potentially impacted if development occurs there.	The DEIS should properly state that the proposed port is at the mouth of Amakdedori Creek. Additional waterbodies mentioned above [in this comment] should be included in the description and analysis of the DEIS.
ADF&G/Comm. Fish/Bristol Bay	Chapter 3: Affected Environment	Table 3.24-6	3.24-29	Anadroumous stream crossings have an "n/a" in the feature column. This table appears to have incorrect streams or is incomplete depending on what it is intended to show. Alternative 2 text states that 23 anadromous fish streams would be crossed, but only 9 streams are listed in the table. The Iliamna River is east of Eagle Bay and is not on the road corridor for this alternative.	

ADF&G/Comm. Fish/Bristol Bay	Chapter 3: Affected Environment	3.24.2.2	3.24-30 & 3.24-31	This section is lacking descriptions of the diversity of sockeye salmon habitat in the Kvichak drainage.	Revise section: There are 22 genetically distinct populations of sockeye salmon in the Kvichak drainage that make up four sub-stocks of the greater Kvichak River stock (T. Dann, Fisheries Geneticist, ADF&G, Anchorage, personal communication).
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.24.1.2	3.24-24	In the Transportation and Natural Gas Pipeline Corridors section it describes two macroinvertebrate sampling sites, one in Y Valley Creek and another at an "unnamed creek site" and then references Figure 3.24-6, presumably so we can see the locations of those sites (especially the unnamed one since no lat/longs are provided). However, in the materials we were provided, Figure 3.24-6 depicts "Iliamna Lake Alternatives", not Cook Inlet Aquatic invertebrate sampling sites. So we have no idea where this "unnamed creek" site is and how relevant it may be towards characterizing macroinvertebrate and periphyton communities near the proposed port site at Amakdedori Creek.	Provide lat/longs for study sites and label their locations on Figure 3.24-6 or provide a new figure with that information.
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.24.1.3	3.24-26	Description of macroinvertebrates commercially harvested in Lower Cook Inlet (in the Cook Inlet Portion of the Natural Gas Pipeline Corridor section) needs to be updated. Crabs, butter and little neck clams, and shrimp are no longer commercially harvested. However, scallops are targeted in a commercial fishery in LCI but they are not included in the DEIS list.	Update this section with more accurate narrative.
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.24.1.3	3.24-26	The Amakdedori Port section simply states "Available information is included in the Cook Inlet Portion of the NG Pipeline section". However, the referenced section contains no information whatsoever on aquatic resources (marine or freshwater) in the immediate vicinity of Amakdedori Creek. Question: How can an EIS effectively review potential impacts from proposed activities when it doesn't include baseline studies focused in the immediate vicinity of a proposed major port/fuel storage facility?	include more data to establish a basline
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.24.1.3	3.24-26	Aquatic invertebrates for CI portion of gas pipeline corridor is incomplete.	Should include sessile invertebrates such as coral, sponges, sea whips, and sea pens. These are all known to be import habitat for groundfish and crab and shrimp species. All of these occur in Kamishak Bay. There are extensive sea whip and sea pens colonies in the corridor and these are known to increase survival of early settled weathervane scallops and Tanner crab. Pacific halibut and Pacific cod, two of the most important groundfish species in LCI consume a diverse diet of marine invertebrates many of which are not commercially fished. These should be included.
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	Fig. 3.24-6	3.24-27	Figure 3.24-6: Cook Inlet Aquatic Invertebrates Sampling Sites. The actual figure does not show any CI sampling sites.	Update figure and provide data sources.
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.24.1.4	3.24-28	This section on Fish Tissue Trace Element Analysis only includes samples from the mine site and none from Amakdedori Creek, the applicant's preferred location for the port site (Alternative 1). The applicant proposes to store 5 million gallons of fuel, store concentrate (potential source of dust drift), and operate equipment next to Amakdedori Creek (an anadromous stream with significant sockeye and pink salmon runs), but chose not to include it as a sample site for fish tissues. This baseline data is needed to assess potential impacts in the future.	The missing baseline data (tissue samples from resident and anadromous species in Amakdedori Creek to characterize baseline metals concentrations) should be collected to accurately establish a preproject baseline.
ADF&G/Comm. Fish/Bristol Bay	Chapter 3: Affected Environment	3.24.2.2	3.24-31	The Illiamna Lake section describes the route and references previous sections, but does not address fish resources.	Suggest adding: "This route is immediately adjacent to sockeye salmon spawning beaches on the south side of Pile Bay (Southeast Beaches and Finger Beaches) and the along the islands important to spawning sockeye salmon (Porcupine Island, Flat Island, Ross Island, Triangle Island, and Eagle Island; Morstad 2003)."
ADF&G/Comm. Fish/Bristol Bay	Chapter 3: Affected Environment	3.24.2.2	3.24-31	Access Corridor section does not sufficiently address fish resources.	Suggest adding: "Illiamna River and Chinkleyes Creek are important habitat spawning habitat for sockeye salmon. Aerial survey estimates indicate that hundreds of thousands of spawning sockeye salmon use the system in some years (Morstad 2003).
ADF&G/Comm. Fish/Bristol Bay	Chapter 3: Affected Environment	3.24.3.2	3.24-34	Very limited site visits are used to describe fish resources in these watershed groups. There are significant populations of sockeye salmon that spawn in these watersheds.	Include adequate fish surveys in these drainages and expand on the description of fish resources.
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.24.3.3	3.24-35	The Infauna section references Figure 3.24-6 to identify intertidal sites sampled between 2004-08. However that figure depicts Iliamna Lake alternatives and has no details on intertidal sampling sites or habitats.	Create a new figure that provides the intended information on sampling sites and habitats. Note that this same figure has been incorrectly referenced multiple times to illustrate various Cook Inlet coastal sampling sites (e.g., marcroinvertebrate/periphyton, epibiota, and infauna).
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	Fig. 3.26-6	Figure provided separately and reference in the text doesn't match up	It is unclear if this vegetation map is complete, as there are a lot of "other" segments in the map.	Define "other" and clarify what the vegetation map is showing. Also, another Figure 3.26-6 (pie graph) is included in the DEIS creating confusion.
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.26-6	3.26-9	There is no vegetation mapping on this figure. See previous comment.	Update figure and provide data sources.
ADF&G/Comm. Fish/Homer	Chapter 3: Affected Environment	3.9	All	Although Cook Inlet communities of Ninilchik and Seldovia are referenced, the native villages of Nanwalek and Port Graham and their residents' use of subsistence resources is omitted.	Include specific information on use of subsistence resources by Cook Inlet communities, and include sections by community, particularly for Nanwalek and Port Graham (similar to information provided for Bristol Bay native communities).

ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	All	All	There are some rather sweeping statements made about how the different parts of the project would not affect the different land uses.	There are many activities and types of infrastructure associated with each part of the proposed project. The statements should be parsed out and made more specific to support claims of "would not affect". Quantifying the acreage that would shift from one use to another would be informative.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.1.1	4.1-1	The magnitude, duration, geographic extent and potential for impacts are minimized throughout Chapter 4. As stated above, it is concerning that the DEIS does not include risk assessments with likelihoods and probabilities for normal activities and for accidents. As defined in this section, the "intensity of the impact" can only be estimated if the likelihood and probability of a normal activity or a failure is evaluated. Likewise, the duration of the impact can only be estimated under the same criteria. The same goes for the geographic extent. Iliamna Lake is the largest sockeye salmon rearing lake in the world and just down stream from the mine site. The potential impacts evaluated throughout Chapter 4 are mostly compartmentalized. Individual effects on surface water or groundwater contamination can cascade in the event of infrastructure failures (mining and processing facilities, drainage management structures, storage and disposal facilities, and other operational infrastructure). The consequences can increase the geographic extent of the event (e.g. surface water contamination in Iliamna Lake). Indeed, in section 4.1.1, "Potential" is defined as "How LIKELY the impact is to occur". This can only be evaluated in a risk assessment framework where the likelihood and probabilities can be estimated.	Risk needs to be included in all Chapter 4 sections. This whole chapter is written as if over the 78 year life span of the project, everything will go as planned and there will be NO accidents or failures.
ADF&G/CF/Homer	Ch. 4	4.1.2	4.1-2	The operations phase is confounded by the 78-year buildout identified in the RFFAs.	Reconcile the time periods.
ADF&G/Comm. Fish/Homer	Ch. 4	4.1.3	4.1-2	The RFFAs are understated. One week before Pebble's announcement of its new mine plans, the CEO of Pebble's parent company, Ron Thiessen, gave a presentation to investors where he outlined plans for a much larger mine than the one currently proposed by Pebble . http://www.denvergoldforum.org/dgf17/company-webcast/NDM:CN/ Overall, Thiessen talked about expanding the currently planned mine pit by building the pit out to the east and north to mine up to 10 billion tons of material as well as developing potentially up to 12 additional mines within Pebble's 417 square mile mine claim block. He also acknowledges that the highest grade ore they have found in exploration drill holes is located to the east of and adjacent to the current plans and that these resources are not included in the 10 billion tons and that he sees this project as "multi-generational." The 78-year buildout is considered an RFFA in the DEIS. This, however is for a 6.5 B tons. In Ron Thiessens words, Pebble is planning for a 10 B ton mine.	Expand the narrow definition of RFFAs. At the least, RFFAs should include mining claims held by and stated by Northern Dynasty as part of the overall strategy for development.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.1.3.2	4.1-7	In Table 4.1-1 the Big Chunk North project is deemed "reasonably foreseeable" for further exploration, but NOT for development within the 78-year time span USACE is considering for the Pebble Project. I don't know how they can draw that conclusion. NDM acquired these claims in 2014, EPA's 2014 Watershed Assessment considered this project under their cumulative effects analysis, and USACE's own note in Table 4.1.6 acknowledges that if future exploration by NDM (who owns the Big Chunk North claims) is completed and indicate viability then that project could be facilitated by access to the Pebble project's transportation infrastructure.	Recommend check with USACE to make sure they are correclty assessing Big Chunk North
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.1.3.2	4.1-7-8	In Table 4.1.1 the Fog Lake project is deemed "reasonably foreseeable" for further exploration, but NOT for development within the 78-year time span USACE is considering for the Pebble Project. EPA's 2014 Watershed Assessment considered this project under their cumulative effects analysis, and USACE's own note in Table 4.1.6 acknowledges that if future exploration by the claim holder is completed and indicates viability then that project could be facilitated by access to the Pebble project's transportation infrastructure if an arrangement is reached with PLP.	Recommend check with USACE to make sure they are correctly assessing Fog Lake
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.1.3.2	4.1-8	In Table 4.1-1 the Groundhog Project is deemed "reasonably foreseeable" for further exploration, but NOT for development within the 78-year time span USACE is considering for the Pebble Project. It is unclear what this assessment is based on. This claim is just 6km from the Pebble Project area and ADNR issued the claim holder an exploratory permit in 2017. EPA's 2014 Watershed Assessment considered this project under their cumulative effects analysis. Given it's close proximity to the Pebble mine, it is not unreasonable to anticipate this mine will be developed once resource delineation has been completed and the claim holder works out an agreement with PLP to access their transportation infrastructure.	Recommend check with USACE to make sure they are correctly assessing Groundhog

ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.2.2.2	4.2-2	The Mine Site section states that "The habitat resources of the North and South Fork Koktuli stream corridors that traverse this unit are managed for protection" The mine site is within units R06-23 and R06-24 of the Bristol Bay Area Plan. This statement refers to unit R06-24 but is incomplete in it's interpretation.	The full definition of the defined "Management Intent" for unit R06-23 as defined in the BBAP (2013) is: "The habitat resources of the two stream corridors that traverse this unit (R06-24) are to be protected. (See management intent for R06-24.)" And is defined for unit R06-24 as: "Mineral development within R06-24 should be performed in such a manner as to ensure that impacts to the anadromous and high value resident fish streams are avoided or reduced to levels deemed appropriate in the state/federal permitting processes related to mineral deposit development. Specifically, such development is to ensure the protection of the streams affected by MCO 393 and their associated riverine habitats, which includes the area within 100' of OHW. Mineral entry and location within the two streams is not allowed pursuant to MCO 393." This needs to be in the DEIS along with a map of the DNR Region/units overlaid on the mine site and all related infrastructure.
ADF&G/CF/Homer	Chapter 4: Environmental Consequences	4.2.2.2	4.2-2	The above statement in the Mine Site section of the EIS goes on to say that ".....in addition, the area is managed for moose wintering habitat. Active management for fish and wildlife protection would be modified as necessary in the immediate area as a result of the project. There would not be a conflict with management plans but may require permit conditions to accommodate additional plan direction related to fish and wildlife management".	Active management and Affected area need to be defined/described better.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.2.3.3	4.2-6	There is currently no active resource extraction at Diamond Point.	Correct said statement.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6	4.6-1	List of management areas incomplete - at least it references only salmon area, and if using letter designations document should also include the names of the management areas, specifically Bristol Bay Area (Area T) and COOK INLET AREA, which is not specifically discussed except to list Area H.	Instead of "Commercial Salmon Fishery Area", reference the Bristol Bay Area and associated salmon fisheries, the Cook Inlet Area and associated salmon, groundfish, and shellfish fisheries (Pacific halibut is not managed as a groundfish under state regulations), federal Central Gulf of Alaska Regulatory Area (CGOA; Area 630) and associated Pacific cod fisheries, and the International Pacific Halibut Commission 3-A Reglatory Area and associated commercial and charter Pacific halibut fisheries.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6	4.6-1	The list of management areas that comprise the study area is incomplete.	For those managed by ADF&G, it should include; Commercial shellfish Area H (Southern District and Kamishak Bay District) and the commercial groundfish Cook Inlet Management Area (Cook Inlet District). The reporting areas for IPHC area 3A should be included as well as area 630 for the NMFS.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6	4.6-1	There are many more potential impacts then the 4 in the list.	Change "Long-term" to "short or long-term". Short-term losses could occur with catastrophic events such as dam failures. Other short-term (and long-term) losses could occur though the release of contaminates. Cook Inlet salmon fisheries were closed in 1989 due to the Exxon Valdez Oil Spill, though the spill did not affect some of the salmon streams the returning adults swam though contaminated waters. Should consider the potential loss of a unique lifestyle as a commercial salmon fisherman. Along with a potential reduction in recreational fishing effect, there could be a potential reduction in revenue to businesses and of loss of business that rely on that: lodge owners, flight operators, guides, outfitters, etc. The potential loss of fishing opportunity due to infrastructure installations or the privatization (temporary or permanent) of properties (see additions below).
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6	4.6-1	Making the statement that Bristol Bay salmon is a "price-taker" is formal fallacy. This statement has nothing to do with the actual dollars that could be lost to fishermen; comparison to the Copper River fishery seems included specifically to attempt to diminish the value of the existing fishery.	This line of reasoning is not relevant or valid and should be removed.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6	4.6-1	There is no discussion of potential impacts to Cook Inlet groundfish, shellfish, or Pacific halibut fisheries in the bulleted list and does not include specific mention of Cook Inlet salmon fisheries.	Include the Cook Inlet fisheries mentioned in the column to the left and potential impacts - "Long-term changes in groundfish, shellfish, and Pacific halibut marine populations that reduce the number of animals available for harvest by commercial permit holders and thus reduce"... (list same as that provided for salmon). Include same populations in bullet number two (reduction of consumer purchase due to perceived loss...)
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6	4.6-1	Description of ADF&G Commercial fishery boundaries within the study area reference salmon (Area T and H) and SF SWHS areas S, T, N, and P, but there is no reference to the applicable Commercial Groundfish Fishery Area (H for Cook Inlet)	Add reference to Commercial Groundfish Fishery Area H (Cook Inlet) to this section.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6	4.6-1	Similar to above issue, the "Commercial Fisheries" discussion on this page fails to include Cook Inlet groundfish, shellfish, Pacific halibut, and salmon fisheries.	Include Cook Inlet groundfish, shellfish, Pacific halibut, and salmon fisheries in this discussion of potential effects on these sectors of commercial fisheries.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6	4.6-2	Similar to above issue, the "Recreational Fisheries" discussion on this page fails to include Cook Inlet groundfish, shellfish, Pacific halibut, and salmon sport fisheries.	Include Cook Inlet groundfish, shellfish, Pacific halibut, and salmon sport fisheries in this discussion of potential effects on these recreational fisheries by both private anglers and charter vessels (economy affected).

ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6.1.1	4.6-2	Only Bristol Bay salmon fishery is mentioned under Commercial Fishing section and associated subheadings here - same issue as previous that there is no mention of Cook Inlet groundfish, shellfish, Pacific halibut, and salmon fisheries. No mention of commercial fish buyers/processors in Homer and Kenai, where majority of fish harvested in Cook Inlet is delivered.	Include Cook Inlet groundfish, shellfish, Pacific halibut, and salmon fisheries, and associated infrastructure and economy where appropriate, in all discussions of commercial fisheries as affected by the proposed project.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6	4.6-2	Recreational Fisheries impacts are incomplete.	The second bullet should read "if the project reduces fish populations or the quality of opportunities".
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6.1.1	4.6-2-3	Under the Commercial Fishing section, only the Bristol Bay salmon fishery is discussed as being potentially impacted by the project. No mention is made of salmon/groundfish/shellfish commercial fisheries in Cook Inlet, where major project components (port and NG pipeline) occur and which therefore may potentially be impacted.	Include potentially impacted commercial and sport fisheries in Cook Inlet in this section and subsequent related sections (e.g., permit holders and crew, processors, Recreation and Tourism based Fishing, etc.), which also only discuss impacts to Bristol Bay.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6.1.2	4.6-3	No mention of recreational fishing in Cook Inlet marine waters.	Include Cook Inlet marine sport fisheries in discussion.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6.2.1	4.6-3	There is no mention of Amakdedori commercial landings (sockeye, coho, pink and chum). These numbers are substantial and significant to Alaskan commercial fishermen.	Include number of salmon harvested from Amakdedori and Chenik Subdistrict (249-55): year sockeye coho pink chum 1985 46,833 1986 387,997 210 757 1987 380,990 102 533 1,739 1988 749,825 73 1,303 7,426 1989 154,015 4 54 8 1990 283,988 34 639 1,649 1991 248,244 6 1,768 501 1992 55,296 62 220 1993 106,611 4 110 68 2004 127,921 2005 183,964 2006 38,809 3,216 21 2007 593,172 19 1,633 6 2008 750,037 46 65 2009 289,079 1,571 2010 24,626 2011 294,307 648 2012 258,465 2013 157,625 314 1,673 2014 25,453 50 2016 32,060 34 217 2017 386,932 189 7 2018 110,643 69 184
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6.2.1	4.6-3	Document refers to Optimal Escapement Goals (OEGs). ADF&G may restrict or liberalize run is projected to exceed or not meet the escapement goal whether it is an OEG, Sustainable Escapement Goal (SEG), Biological Escapement Goal (BEG), or inriver goal. OEGs are not typically based on carrying capacity.	Update to reflect all types of escapement goals.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6.2.1	4.6-3 & 4.6.4	The Board of Fish (BOF) may adjust an OEG. The last sentence regarding OEG adjustment is not how ADF&G develops and modifies SEGs, BEGs and, inriver goals.	Clarify that BOF sets and modifies OEGs. Modify paragraph to include how BOF and ADF&G develop escapment goals. A meauseable reduction in productivy could result in lower goals and reduced oppportunity for subsistence, sport and commerical users.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6.2.1	4.6-3 through 4.6-5	States that Amakdedori port site would not be located near substantial commercial fishery resources and makes assertion that increased vessel traffic should not affect fishing effort. This conclusion should be explained and supported. It seems that increased vessel traffic could directly affect fishing activity in the area, especially if large vessels are moving through the area to and from the proposed port site in the transportation corridor. Cook Inlet commercial shellfish (scallop and razor clam) and Pacific halibut fisheries are omitted from this discussion, and need to be included in the paragraph discussing interactions with the natural gas pipeline. The pipeline is slated to be located directly through one of two scallop beds in Kamishak Bay, therefore an impact to the resource would be expected as well as potential conflict with commercial scallop fishery vessels and dredge gear employed, which could come in contact with pipeline and cause damage. Statement that commercial fishermen may need to adjust gear placement assumes "they would have flexibility to do so" - how is this concluded? Similarly, concluding that there would be no impact to permit holder revenues and associated metrics seems opinion based and inaccurate - if fishery resources declined, it would be expected that revenues would also decrease. Also, Processing Sector and Fishery Fiscal Contributions under Alternative 1 again does not include Cook Inlet fisheries.	Include Cook Inlet commercial groundfish, halibut, and shellfish fisheries in discussion, particularly the potential scallop fishery interactions as described. Groundfish and Pacific halibut longline gear could also interact with the pipeline and this gear type can be quite long and cover a lot of ground, therefore interaction is very possible. Opinions without fact should be omitted from this document - it appears that research into these potential interactions and impacts has not been completed and broad assumptions are being made that seem to dismiss the importance of these fishery resources to fishermen in this area.

ADF&G/Comm. Fish/Bristol Bay	Chapter 4: Environmental Consequences	4.6.2.1	4.6-4	"This section relies on Section 4.24, Fish Values, which estimates that Alternative 1 would not reduce returning adult salmon to the Kvichak and Nushagak river systems as a result of project operations." However, Section 4.24 describes loss of anadromous habitat; potential for direct mortality from construction work at stream crossings; reduced production of spawning habitat from increased sedimentation; and increased metal concentrations due to fugitive dust deposition. While these impacts may seem small, they lead us to conclude that the project could potentially result in reduced returns of adult salmon to the Kvichak and Nushagak River systems.	Reconcile discrepancy or provide supporting information for the conclusion reached for Alternative 1 (i.e., would not reduce returning adult salmon to the Kvichak and Nushagak river systems).
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6.2.1	4.6-4 & 4.6-5	The statement "This section relies on Section 4.24, Fish Values, which estimates that Alternative 1 would not reduce returning adult salmon to the Kvichak and Nushagak river systems as a result of project operations." ignores any potential for accidents. The same applies for cascading impacts that would be felt in the Fish Processing Sector and Fishery Fiscal Contributions.	As stated before: the DEIS does not include risk assessments with probabilities for accidents. It instead assumes that everything will go as planned during all phases of the project over decades and hundreds of years. It is imperative that the DEIS contain likelihoods throughout the document. There are a multitude of points along the way from the pit to the transfer of material to ships where potential accidents can occur both large and small. These can in turn have both large or small potential impacts on the commercial and recreational fisheries. They should be addressed in the DEIS.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6.2.1	4.6-5	The comparison with the Kennecott Copper Mine is questionable, as it was a much different type of mine than the proposed Pebble mine. For example, it was an underground mine as opposed to an open pit, the Kennecott mine produced ~ 1 million tons of waste rock where as the Pebble mine at the 78+ year stage would produce > 15 billion tons.	The DEIS should look for more similar projects for comparison purposes and if none exist clearly state the limitations of the comparison.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6.2.1	4.6-5	Amakdedori Port is located where Pacific herring fisheries occur.	This fishery is currently closed due to low stock abundance but will open again once commercial thresholds are attained. The likelihood this will occur is great given the proposed longevity of the project.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6.2.1	4.6-5	There is no mention of commercial Tanner crab or weathervane scallop fisheries. The scallop fishery would be directly impacted since the pipeline would traverse directly through one of two scallop beds in Kamishak Bay. This fishery drags 1000+ lb steel dredges that could severely damage or rupture the gas pipeline or could result in the loss of gear. The scallops beds in this area are relatively small, so the potential loss of opportunity could be significant. There will potentially be some level of direct mortality to weathervane scallops, Tanner crab, and other commercial and non-commercial fauna from the burial of the gas pipeline. As stated in comments for section 3.6.2, the DEIS implies that a takings is ok when saying the fisherman can just move to avoided the gas pipeline. Though Tanner crab fisheries are currently closed due to low stock abundance, the likelihood this will reopen is great given the proposed longevity of the project.	Address commercial shellfish and groundfish fisheries along the gas pipeline corridor. This should include quantifying the potential loss of resources to direct impacts of pipeline installation and the loss of fishing opportunity due to necessary avoidance of the pipeline.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6.2.2	4.6-5	As with the commercial fishing section above, the DEIS implies that a "takings" is ok with regard to recreational fishing opportunities. The authors suggest that fishermen and businesses just move to another location. Further the "takings" is very likely going to be greater than implied, as fishermen looking for a wilderness experience are not going to want to fish near an industrial site.	This analysis should include survey data from fishermen, lodges, and outfitters, to obtain a realistic estimate of the river miles of alternative fishing areas and what percentage the loss of river miles makes up of the total. Additionally, competition is high in this recreational fishery and potentially reduced opportunity will increase that competition. This should be addressed.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6.2.1	4.6-5	In the 2nd paragraph on this page, it states that the Amakdedori port site would not be located near substantial commercial fishery resources and would therefore not affect fishing effort. This statement ignores the reasonable possibility that the Kamishak sac roe herring fishery, while currently closed due to low abundance, will reopen once the population recovers and thresholds in the management plan are reached. Effort and harvest during that fishery historically occured in southern Kamishak Bay from the Douglas Reef complex north to Bruin Bay, including the proposed Amakdedori port site. Purse seine gear interacts with the bottom in waters shallower than ~95' and may create a conflict with the NG pipeline and with port activities.	Recommend that this EIS consider potential impacts to the Kamishak Bay sac roe herring fishery. Since the marine habitat in this area is currently pristine, it is reasonable to assume that the Kamishak herring stock will recover to levels allowing a commercial fishery within USACE's 78-year time span of consideration for the Pebble project. This comment/action also applies to Table 4.6.1 where it references effects to commercial fisheries for the Amakdedori port site alternative.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6.2.1	4.6-5 & 4.6-6	Statements in this section regarding sport fishing is concerning because it seems to acknowledge potential impacts and displacement of users, although with little concern. Similar to other sections, Cook Inlet Area fisheries are not addressed - the Amakdedori port site is located near recreational Pacific halibut fisheries, particularly utilized by charter vessels, salmon resources, as well as razor clam beaches on the west side of Cook Inlet so the statement that "there would be no direct or indirect impacts expected" is untrue.	Address potential impacts to Cook Inlet sport fisheries as noted in column to the left under Alternative 1.
ADF&G/Comm. Fish/Homer	Ch. 4	4.6.3 & 4.6.4	4.6-7	Alternatives 2 and 3 and summary table (Table 4.6-1) do not reflect needed comments made above. Nor do they address risk, likelihood, and probabilities of impacts from accidents	Alternatives 2 and 3 and the summary table need to be updated with regard to comments above.

ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6.3.1	4.6-7	This statement is inaccurate: "The Diamond Point port site is not located near substantial commercial fishery resources. " Additionally, there is no mention of Amakdedori harvests (see comment below). At right are the annual pink and chum harvest numbers from 1986-2017. These numbers are substantial and significant to Alaskan commercial fishermen.	Include numbers of chum and pink salmon commercially harvested from Illiamna and Iniskin Bays by year. year chum pink 1986 8,830 159 1987 9,695 246 1988 39,240 1,335 1991 1,031 1992 208 8 2002 17,036 146 2003 29,679 2004 161,887 6,446 2005 74,109 4,733 2006 36,174 13,055 2008 7,341 125 2009 1,540 2010 17,919 2011 285 2017 4,034 9,582
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6.3.1	4.6-7	It is presumptive to state there will be no effects on health or value of BB salmon fishery - need information to back up this conclusion. Again, Cook Inlet fisheries are omitted. Similar comments for Diamond Point Port as Amakdedori Port site - there are potential impacts with commercial fisheries - those impacts are not detailed in the DEIS.	Include data to substantiate claim that there would be no measurable effect from Alternative 2. From previous recommendations listed here, there are similar concerns as with the Amakdedori port site - the Diamond Point site would have similar effects with vessel traffic and the pipeline route could still impact fisheries, although direct impact on scallop beds would likely be reduced with further north route (might be able to avoid northern scallop bed).
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6.4.1	4.6-7 & 4.6-8	Same comment as above. Also, under 4.6.4 intro, again states the transportation corridor would not be expected to affect long-term fish populations - need data to understand how this is concluded.	Include data to substantiate claim that there would be no measurable effect from Alternative 3. See above comments for Diamond Point Port site.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6.5	4.6-8	Broad statement on alternatives not expected to result in a long-term change - seems unlikely there would be no impact.	DEIS needs to provide data to back up these claims - there are a lot of potential environmental impacts from the project and many are detailed here and in other staff's comments - DEIS is ignoring the likelihood of incidents that could include (but not limited to) fuel spills, vessel accidents, pipeline damage, or containment breach in addition to interactions stated in previous comments here.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6.4.1	4.6-8	The Commercial Fishing section here states that "The Diamond Point port site is not located hear substantial commercial fishery resources". That is not accurate. Cottonwood creek is adjacent to Diamond Point and it is a significant producer of chum salmon (Esc Goal is 5,200-12,200). While harvest of this stock does not occur every year, it is significant in some years (e.g., over 160,000 chum salmon were harvested from this subdistrict in 2004; see Hammarstrom and Ford 2008, Appendix A22). Also, when the Kamishak sac roe herring fishery was active, harvests did occur in this area and may again when the stock recovers and the fishery reopens.	Include assessment of impacts to the sac roe herring fishery and the purse seine fishery targeting chum salmon returning to Cottonwood Creek. The location of the Diamond Point quarry was a concern for area fisherman at the time it was permitted because seiners targetting Cottonwood chums fish Diamond Point at certain stages of the tide. Operation of a major port at this location would at least disrupt if not preclude seining activity in this general area, and especially at Diamond Point. This comment/action also applies to Table 4.6.1 where it references effects to commercial fisheries for the Diamond Point port site alternatives.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6.5	4.6-8 Table 4.6-1	Table 4.6.1 includes references to impacts to commercial fisheries that could be associated with varoius project components. The Pipeline route section of the table suggests there will be no conflicts with commercial fisheries, regardless of the route selected, because the salmon fishery occurs in the top 30 feet of the water column. That may be true for drift gillnet gear in UCI, but not seine gear in LCI, which can contact the bottom in depths <95'. It also states that on-bottom groundfish fisheries (e.g., longline, pot, scallop dredge) can avoid conflicts by not setting gear near the pipeline. However, the applicant has not conducted baseline studies to characterize the shellfish/groundfish resources that are present along the proposed gasline route(s). It is therefore difficult to effectively judge the potential impact to these resources or the users who target them.	Include potential impacts to the purse seine (salmon and herring) fisheries in Lower Cook Inlet that may occur from the pipeline. Recommend applicant include baseline studies necessary to characterize shellfish/groundfish resources along the pipeline routes so agencies can effectively evaluate potential impacts to those resources or users. Specify why LCI commercial fisheries in the Amakdedori area, as well as Illiamna and Iniskin bays will not be impacted if this project is developed.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6.6	4.6-10	The first paragraph of this section references Section 4.1 and then lists Pebble South and Shotgun as two reasonably forseeable future developments during the 78-year RFFA timespan. However, Section 4.1 (Table 4.1.1) indicates that development of Pebble South is NOT considered an RFFA (only continued exploration was considered an RFFA).	Resolve the discrepancy between sections, preferably by acknowledging that Pebble South is an RFFA and then considering potential cumulative impacts from that development in this EIS (as was recommended in an earlier comment).
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6.2.2	4.6-11	Same issue as with previous comment. Again, it is suggested that fishermen and all the businesses that support them, can just move to other areas. If the Pebble development forces them to move to another area, and then the other exploration and development projects that are listed in the RFFAs do the same, the options for fishing get more and more reduced and the "takings" becomes much larger.	The reduction in fishing opportunities needs to be quantified in this section. Maps needs to be included for all potential exploration and developments identified in the RFFA. This analysis should include survey data from fishermen, lodges, and outfitters, to obtain a realistic estimate of the river miles of alternative fishing areas and what percentage the loss of river miles makes up of the total. The survey should include the proposed Pebble project area and all applicable RFFAs.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.6.6.1	4.6-11	There are no data on the number of commercial fishing related jobs. With regard to Cumulative Effects, as defined in Section 4.1.3 of this DEIS, "Proximity is based on natural geographic boundaries of potentially affected resources and the period of time that the projects impacts would persist." There appears to be no analysis in the associated mining claims that meet the "proximity" definition.	Reevalute which RFFAs meet the "proximity" definition and consider cumulative impacts.

ADF&G/Comm. Fish/Region II	Chapter 4: Environmental Consequences	4.6.6.1	4.6-11	Example of a decline in 1,000,000 fish is overly simplistic and does not address lost future returns resulting from lost production.	Update text to reflect future loss in produciton.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	Table 4.6-1	4.6-8	Table does not fully address potential impacts to commercial and recreational fisheries from the port site and pipeline route.	Similar comments as previously mentioned to address potential impacts from these two aspects of the project, particularly the scallop resource for the pipeline route in alternative 1 and the fact that the row is combined is not differentiating this effect. Groundfish fishermen needing to adjust their gear and having flexibility again minimizes impact. All Cook Inlet shellfish fisheries are again omitted - in addition to scallops, should include razor clam fishery, and impact to recovery of Tanner crab resource as potential impacts. Discussion in text should be consistent throughout document in regards to potential impacts. It is a broad statement to say "Cook Inlet and Anchor River fishing opportunities should be unaffected" under Alternative 3 Pipeline Route for recreational fisheries. Need data to substantiate claims.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.15		In various locations throughout this Geohazards chapter, it refers the reader to the "Spill Risk" section, which is sometimes referenced as being Section 4.21 and sometimes Section 4.27. Section 4.21 is a 2-page "Food and Fiber" section with no mention of spill risk and Section 4.27 was not provided for agencies to review. Access to this section is needed to review how the DEIS assesses the risk of spills associated with various project components and proposed mitgation measures.	Provide Section 4.27 and allow sufficent time for Cooperating Agencies to review.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.15.2.3	4.15-10 & 4.15-11	Given the uncertainty in the predicted run-up elevation estimate of 34.8 MHW (see comment for section 3.) it is difficult to conclude if the 28 ft. MHW design height of the terminal patio is adequate. Even if the run up elevation estimate were accurate, it would still be ~ 7 ft. above the terminal patio. Given the amount of infrastructure, volume of fuel storage, size of concentrate storage, etc. the proposed port facility should have an additional safety factor built into the design to accommodate for tsunami events. The selection of 100 - 500 vs 2,500 time horizons is arbitrary.	Designing for maximum inundation elevations should be done and include additional elevation as a safety factor given the level of risk.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.15.2.3 (with references to section 3.15.5)	4.15-10 & 4.15-11	In the Tsunami section, it discusses the runup elevations that would be expected under various size earthquake events and indicates that the elevation of shore facilities associated with the port (including diesel storage tanks) would be sufficient (28' above mean sea level [amsl]) to withstand a medium-large earthquakes (~15-23' amsl) but not a very large earthquake (35' amsl). The potential for damage to infrastructure (including fuel tanks) stemming from tsunami events greater than 28' amsl is acknowledged, but the risk is rated very low over the life of this project (which they did not specify as 20 or 78 years) and Section 4.27 (the Spill Risk section) was not available for review. Also, in Section 3.15.5 (Tsunamis, Seiches, and Coastal Hazards) of the previous chapter, it indicated that the 1883 eruption of Augustine Volcano produced a wave that affected areas up to 55' above high tide. Given that the port pad will be only 28' amsl, a similar event would very likely destroy the fuel tanks at the port, releasing up to 5 million gallons of fuel into the environment.	Provide Section 4.27 and allow sufficent time for Cooperating Agencies to review. Also, recommend design change to increase the elevation of the port pad to 55' above high tide so there's a better chance of the fuel tanks withstanding a tsunami wave generated by a major landslide on Augustine volcano.
ADF&G/Comm. Fish/Homer	Chapter 4	4.15.2.3	4.15-11	Augustine volcano is said the be the most historically active volcano in the Cook Inlet region (Miller et al 1998) and it's estimated that as many as 12-14 debris avalanches have reached the sea in the last 2000 years (Waythomas et al 2006). Known flow paths of historical debris avalanches extend in all directions around Augustine volcano including toward Amakdedori Port and the 2 proposed lightering locations (Waitt et al 1996). One of the avalanches that occurred 300 – 500 year ago on the western side, generated a wave with maximum amplitude of up to 49.2 ft. that struck the mainland shore. This same wave generated a secondary wave with maximum amplitude of 62 ft. This happens to be at proposed lightering location 1. The DEIS dismisses these risks as unlikely to occur in the project's life given that the estimated historical occurrence has been every 150 to 200 years on average.	Given the 78-year projection (RFFAs) , a thorough analysis should be undertaken of this assessment due to the amount of infrastructure, volume of fuel storage, size of concentrate storage, etc. the proposed port facility. Amakdedori Port should be engineered to an elevation above the historical estimates of maximum wave heights from debris avalanches at Augustine volcano and include an additional elevation safety factor given the level of risk. Specifics on how lightering and cargo ship operations would be engineered to withstand these effects should be included.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.16.2.1	4.16-1	Water management plan…based on historic temperature and precipitation data. Climate changes, specifically significantly warmer winters resulting in precipitation no longer being stored as ice and snow at historic levels. How will this impact mine operation and safeguards?	Address climate change in water management plan.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.24	4.24-1	List of potential impacts is incomplete.	Additional impacts such as changes to estuarine and marine water quality such as turbidity, dissolved oxygen, metal, hydrocarbon, or other chemical contaminants, potential spills. The 6th bullet should include lakes and other fish bearing water bodies, not just streams (instream water quality).

ADF&G/Comm. Fish/Bristol Bay	Chapter 4: Environmental Consequences	4.24.2.1	4.24-2	"In the context of the entire Bristol Bay drainage, with its 9,816 miles of currently documented anadromous waters, the loss of Tributary 1.19 represents a 0.002 percent reduction in miles of anadromous stream habitat, or a 0.03 percent decrease in accessible drainage area." Not all anadromous habitat is equal. Some anadromous waters are designated so because they are used for migration, however they may have limited or poor spawning habitat. Other anadromous waters are designated so because they are spawning habitat; spawning habitat is often limiting in Bristol Bay. To say a loss of x miles of spawning habitat represents x percent loss of anadromous habitat is misleading.	Provide context for the statements about percentage reduction in anadromous fish habitat, preferably by identifying specific percentages for spawning and noting that spawning habitat is often the limiting factor in Bristol Bay.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.24.2.1	4.24-3	Road/Pipeline does not include impact to scallop bed caused from crossing directly through it. Impacts from building Amakdedori port is incomplete. In Ch 5 that there will be lightering in lieu of dredging a deep water channel. To say that "There would be a permanent, direct loss of benthic habitat beneath the pipeline footprint on the bottom of Cook Inlet." and then state "Habitat alteration would be limited over time, and would not have quantifiable effects to populations of fish and shellfish." seems to understatement what may be a significant impact to the scallop bed.	Address potential impact to scallop bed by loss of habitat. Also include additional impacts on survival and recruitment of shellfish from building Amakdedori port.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.24.2.1	4.24-3	The habitat loss section pertaining to the Natural Gas pipeline states that: "Habitat alteration would be limited over time, and would not have quantifiable effects to populations of fish or shellfish." There is no baseline data for the Natural Gas pipeline route so it is unclear what data or analysis supports this conclusion.	Baseline studies to characterize habitats and marine fauna along the proposed or alternate Natural Gas pipeline corridors should be completed and provided for review before conclusions about potential impacts can be made.
ADF&G/Comm. Fish/Bristol Bay	Chapter 4: Environmental Consequences	4.24.2.2	4.24-4	"Sockeye salmon are known to use shoreline habitat for spawning, and therefore could be potentially affected; however, documented spawning areas are more than 0.5 mile from the ferry terminals and primary entry points of the pipeline into the lake (EPA 2014)."	The mouth of Upper Talarik Creek is less than a mile from the North Ferry Terminal. Adult sockeye salmon likely use the shoreline near the ferry terminal for staging before entering streams nearby. Ferry operations could potentially delay fish migration into spawning streams. This should be described in the DEIS.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.24.2.2	4.24-3-6	The sections pertaining to the gas pipeline across Cook Inlet (and Iliamna Lake) do not consider the potential gas leaks that could occur over the life of this project and how they will displace, injure, or kill fish. The EIS should provide an ecotoxilogical assessment of the impact gas leaks may have on various life stages of freshwater (Iliamna Lake) and marine (Cook Inlet) organisms commonly found along the pipeline corridor.	additional baseline environmental studies associated with the gas pipeline portion of this project should be conducted or included.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.24.2.2	4.24-6	There may be direct and indirect mortality to razor clams, weathervane scallops or other marine life during gas pipeline installation in Cook Inlet due to burial and displacement.	Baseline studies to characterize habitats and marine fauna along the proposed or alternate Natural Gas pipeline corridors should be completed and provided for review before conclusions about potential impacts can be made.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.24.2.2	4.24-6	Amakdedori Port sub-section, should include text about the potential for injury and mortality to shellfish, in addition to fish species, from construction (direct and indirect impacts); similar to comment above, natural gas pipeline discussion should include potential mortality and injury to scallops and other shellfish, which could impact the resource, particularly with presence of equipment required for ditching and to place the pipeline which will increase the overall footprint of the impact and associated water quality issues. Scallop beds are in a finite area in Kamishak Bay and are not widespread and do not adapt and move to different areas, therefore, the impact could be significant and long-lasting, resulting in a direct decrease in the commercial fishery resource.	Revise section to more accurated present potential impacts.
ADF&G/Comm. Fish/Bristol Bay	Chapter 4: Environmental Consequences	Table 4.24-4	4.24-9	Table does not include units for available habitat and some species are missing.	Include units in table. Expand to include all fish species in the mine site area.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.24.2.4	4.24-13	Statement that Amakdedori port would impact 14 acres of benthic habitat but "there would be no anicipated impacts to the overall benthic productiviy in Cook Inlet" is not acknowledging potential impacts to localized scallop beds and crab populations.	Account for potential impacts to benthic productivity in relation to shellfish populations, specifically scallop, Tanner crab, and Dungeness crab in Kamishak Bay.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.24.2.5	4.24-15	For Amakdedori port, turbidity could also affect shellfish.	Include effects on shellfish from turbidity during construction of Amakdedori port - see comments above.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.24.2.6	4.24-16	To state that there are no anticipated impacts to fish migration from the port is presumptuous, since the physical barriers from the dock as well as increased sound from equipment and vessel traffic associated with the port could affect fish migration due to disruption and displacement; there could also be water quality effects. The port jetty will extend some distance feet offshore with no breach at it's connection to the coast to facilitate ease of movement by organisms traveling along the shore. Also, assumptions that, while the pipeline has the potential to hinder migrations of crab, the impacts are expected to be minimal, is presumptuous.	Address potential impacts to fish migration from construction of Amakdedori port. Assess fish and shellfish migration corridors as part of the DEIS. If USACE goes with alternative 1 port design (solid jetty), recommend that the project consider adding a raised piling section.

ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.24.2.8	4.24-18	EFH section is not complete.	Provide a complete EFH section to Cooperating Agencies for review prior to finalizing DEIS.
ADF&G/Comm. Fish/Bristol Bay	Chapter 4: Environmental Consequences	4.24.2.8	4.24-18	"Potential impacts associated with the ferry terminal location on Illiamna Lake would be similar to those described under Alternative 1." This statement is a leap since resources at this site are not fully described or are unknown (no project surveys in this area).	There are several productive sockeye salmon spawning streams in this area and adult sockeye salmon are frequently observed staging in the near shore areas of this portion of the lake. Site specific studies should be conducted for this area so the extent of resources and potential impacts can be described.
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.24.3.3	4.24-19	For Diamond Point Port impacts from Alternative 2, specific organisms impacted is not detailed.	For Diamond Point Port impacts from Alternative 2, provide specific information on marine invertebrates impacted (e.g. shellfish - crab).
ADF&G/Comm. Fish/Homer	Chapter 4: Environmental Consequences	4.24.6	4.24-25	Page 4.6-8 of Chapter 4.6 lists Pebble South as a RFFA for development. Here is says it's only an RFFA for continued exploration.	Reconcile the discrepency between sections, preferably by acknowledging that Pebble South is a RFFA for development during the 78-year RFFA timespan of the EIS.
ADF&G/Comm. Fish/Homer	Chapter 5: Mitigation	Table 5.3	5-16	Table 5-3 lists "Mitigation and Monitoring Measures Assessed as Likely to be Implemented". There are only 4 items on this list and some are exceedingly simplistic and required by existing laws (e.g., treat bilge water before discharge) for a project of this scope and scale. Given all of the wetlands that will potentially be impacted by construction of this project and the likely loss of aquatic habitat (including water quality) and subsequent potential decline in productive capacity (e.g., for fisheries), the list of mitigation and monitoring measures should be much more comprehensive. For instance, there is no mention of the timeline that water quality monitoring and management will be required during post-closure and what mitigation actions may be necessary if containment of mine waste is not 100% successful in perpetuity following mine closure.	Recommend USACE and PLP further develop the monitoring and mitigation measures needed to minimize and compensate for impacts from each component of this development (e.g., mine, transportation corridor, port, gas pipeline corridor). Recommend that USACE and PLP pay particular attention to monitoring and mitigation measures addressing mine waste containment that will be needed indefinitely following mine closure.
ADF&G/Comm. Fish/Homer	Chapter 6: Consultation and Coordination	6.1.2	6-1	Draft EFH Assessment is not complete. Additionally, the list of species regulated under FMP that could be potentially impacted is not complete - only includes salmon, no groundfish or shellfish species.	Provide a complete EFH section to Cooperating Agencies for review prior to finalizing DEIS. Include groundfish and shellfish species under GOA FMP when complete EFH Assessment (salmon is only FMP species listed in DEIS). There is an FMP for weathervane scallops; and also an FMP for groundfish species that includes Pacific cod, sablefish, walleye pollock, rockfish (3 assemblages - demersal shelf, pelagic shelf, and slope), flatfish (5 groups: arrowtooth flounder, flathead sole, rex sole, deep water complex, and shallow water complex), and Pacific halibut; all of these species occur in Cook Inlet marine waters. EFH is defined as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" and EFH for groundfish species is determined to be the general distribution of a species described by life stage.
ADF&G/Comm. Fish/Homer	Chapter 6: Consultation and Coordination	6.1.2	6-2	The list of species regulated under an FMP is inadequate.	Include other species under FMPs that could potentially be impacted occur within the pipeline corridor. Species know to occur in the area from ADF&G surveys include: Species specific FMP species include; Weathervane scallops, Pacific cod, Walleye Pollock, rex sole, arrowtooth flounder, flathead sole, octopus, and northern rock sole. Species within FMP complexes include; Shallow-water flatfish (yellowfin sole, starry flounder, butter sole, English sole, Alaska plaice, and sand sole), Skates (big skate, longnose skate, Bering skate, Aleutian skate, and Alaska skate), Sharks (spiny dogfish), Scuplins (many species documented in ADF&G surveys), demersal shelf rockfish (yelloweye rockfish, quillback rockfish, copper rockfish). There are others as well.
ADF&G/Comm. Fish/Homer	Chapter 6: Consultation and Coordination	6.3	6-3	"The complete scoping effort for the Pebble EIS is described in Apendix A". "A summary of issues received during scoping is provided in Appendix A". Appendix A was not provided to us for this review.	Provide Appendix for Cooperating Agencies to review.
ADF&G/Comm. Fish/Homer	Chapter 6: Consultation and Coordination	6.4	6-3	Under Ongoing Coordination Efforts it states: "Consultation with USFWS and NMFS will continue for ESA and EFH assessments. However, on pages 6-1 and 6-2, it states that informal consultation with these agencies for ESA and EFH has not been initiated.	Resolve the discrepancy. If a consultation has not yet been initiated, that should be stated on pages 6-1 and 6-2 instead of saying the consultation will continue (eg., something can not be continued if it hasn't yet started).
ADF&G/Comm. Fish/Homer	Appendix M: Mitigation Screening	General	Multiple including 5-17	The DEIS references Appendix M for details on mitigation measures that were proposed during the NEPA process. Appendix M is also said to contain PLP's Compensatory Mitigation Plan (CMP). However, Appendix M was provided very late for this review and was incomplete. Appendix M did not contain any component of the CMP.	Provide a completed version of Appendix M, including the CMP, and allow Cooperating Agencies sufficient time to review.

Pebble Project EIS
Consolidated Comments Table

Department/Division/Section	Document Name	Section/Fig./Table	Page #	Comment/Issue	Recommendation/Action
ADF&G/Habitat/SPCS	10_10_2018 Updated Project Description	Figure 1-1	6	Map does not include the proposed pipeline on the Kenai Peninsula.	Include the proposed pipeline route on the Kenai Peninsula in the figure.
ADF&G/Habitat/SPCS	10_10_2018 Updated Project Description	Sec 3.1	51	"The pipeline will be buried in a trench adjacent to the road prism"	EIS should describe how the pipeline will be buried, particularly if blasting will be necessary as well as associated mitigation.
ADF&G/Habitat/SPCS	10_10_2018 Updated Project Description	Sec 3.1	51	"A fiber optic cable will be ploughed in, or buried in a shallow trench, adjacent to the pipeline"	EIS should indicate if the fiber optic line will be buried in the same trench as the pipeline or a separate trench. Also if it will be buried concurrently with the pipeline or if it will be plowed in at a different time.
ADF&G/Habitat/SPCS	10_10_2018 Updated Project Description	Sec 3.1	51	There is no indication in Project description on how the pipeline will cross fish streams.	EIS project description should describe how the pipeline will cross fish streams.
ADF&G/Habitat/SPCS	10_10_2018 Updated Project Description	Sec 3.1	51	The project description says that the pipeline will use HDD to enter Cook Inlet but does not indicate how it will leave Cook Inlet.	EIS project description should describe how the pipeline will leave the West Side of Cook Inlet.
ADF&G/Habitat/SPCS	10_10_2018 Updated Project Description	Sec 3.1	52	The project description says that the pipeline transitions and burial through Illiamna Lake will be similar to the Cook Inlet Crossing but only describes the transition on the east side of Cook Inlet.	EIS project description should describe how the pipeline will leave the West Side of Cook Inlet as well as specifically describe the transition and burial through Lake Illiamna.
ADF&G/Habitat/SPCS	10_10_2018 Updated Project Description	Sec 5.4.3.1	70	Environmental Construction Windows section only reference ADF&G and USFWS specific authorities.	This section should also reference the environmental authorities from the ADNR ROW lease.
ADF&G/Habitat/SPCS	10_10_2018 Updated Project Description	Table 7.1	77	"Fish collection permits for monitoring" "May be necessary for long term monitoring"	ADF&G Fish Collection Permits are now called Aquatic Resource Permits (ARP's) and will be needed anytime fish will need to be captured or transported, may be necessary for several aspects of construction and studies, not just monitoring.
ADF&G/Habitat/SPCS	10_10_2018 Updated Project Description	Table 7.1	77	Fish Habitat Permit- only indicates it is only necessary for "Water withdrawal in an anadromous fish waterbody, stream diversion, installation of culverts and bridges."	ADF&G Fish Habitat Permits will be necessary for most work in anadromous streams as well as for work in resident fish streams that might affect fish passage. Include additional activities that will require fish habitat permits such as pipeline installation across streams, dams that impact fish bearing waters, ferry docks/boat ramps on the lake, dredging, blasting, stream crossings, and fill in anadromous waters.
ADF&G/Habitat	Chapter 1 Purpose and Need	Sec 1.2	1-1	Acreage of fill is not listed.	Add acreage of fill material into Waters of the U.S.
ADF&G/Habitat	Chapter 2 Alternatives	Sec 2.2.2.1	2-4	A Mine Site Water Management Plan (WMP) is mentioned with reference to strategic water discharges to area streams. The WMP is not included with the DEIS and no details for the amounts, locations, temperatures, or timing are included in the DEIS. There is not enough information to review and determine if/to what degree aquatic habitats may be affected by water management.	Include water management details in the DEIS including, volumes, timing, temperature, and methods for water discharged to area streams so that a thorough review can be conducted and potential impacts to aquatic habitats and fish be identified.
ADF&G/Habitat	Chapter 2 Alternatives	Sec 2.2.2.1 Figure 2-5	2-10	Figure 2-5 is not included in review material.	Include Figure 2-5 in draft EIS.
ADF&G/Habitat	Chapter 2 Alternatives	Sec 2.2.2.2	2-12	The DEIS states that a total of 97 streams would be crossed by the road system. The Pebble Project 404 application submitted to USACE lists 222 streams crossed by the main road system. Additionally, field surveys by ADF&G in 2018 identified undocumented streams to be crossed by the transportation corridor.	Update the number of stream crossings on the proposed road system to accurately depict the project components and the affected environment and reconcile the discrepancies.

ADF&G/Habitat	Chapter 2 Alternatives	Sec 2.2.2.2	2-12	The DEIS states that 35 culverts designed for fish passage would be installed along the road system. The Pebble Project 404 application states that 73 fish passage culverts will be installed along the road system. Additionally, fish sampling along the south portion of the access road was just initiated in 2018 and surveys should continue in 2019.	Update the number of fish passage culverts to accurately depict the project components and the affected environment and reconcile the discrepancy. Additionally, state that the actual number of fish bearing streams to be crossed is currently unknown. An estimate could be provided with a statement about future surveys to be completed. Presently, ADF&G does not have enough information to determine how many fish passage culverts are required.
ADF&G/Habitat	Chapter 2 Alternatives	Sec 2.2.2.1 Figure 2-9	2-17	Figure 2-9 is not included in review material.	Include Figure 2-9 in draft EIS.
ADF&G/Habitat/SPCS	Chapter 2 Alternatives	Figure 2-16	2-18	There is no attached pipeline on the bridge typical.	There should be a bridge typical drawing that includes the natural gas pipeline.
ADF&G/Habitat	Chapter 2 Alternatives	Sec 2.2.2.2	2-30	The DEIS states that, 'if PAG is identified at a site,' in relation to material sites and road fill adjacent to and over streams.	In order to determine potential impacts to aquatic resources, the DEIS should detail how material sites will be tested for PAG prior to being used as fill in creeks and wetlands. Testing may take time and the details provided do not allow for an assessment of the potential impact to streams and wetlands if PAG is used as fill.
ADF&G/Habitat	Chapter 2 Alternatives	Sec 2.2.2.2	2-30	Water extraction sites are not identified in the DEIS. No screening specifications are mentioned or given for the water extractions.	The location of proposed water withdrawals should be added and is needed to assess potential impacts. Additionally, pump screening and other specifications should be stated.
ADF&G/Habitat	Chapter 2 Alternatives	Sec 2.2.2.2	2-31	Pioneer road construction details are lacking and should be provided to determine potential impacts.	Provide details on pioneer road construction, especially as it relates to stream crossings. Will fords be requested or will temporary bridges be used? Will work occur during frozen or unfrozen conditions? More details are needed.
ADF&G/Habitat/SPCS	Chapter 2 Alternatives	Sec 2.2.2.4	2-43	"The pipeline will be buried in a trench adjacent to the road prism"	EIS should describe how the pipeline will be buried, particularly if blasting will be necessary as well as associated mitigation.
ADF&G/Habitat/SPCS	Chapter 2 Alternatives	Sec 2.2.2.4	2-43	The project description says that the pipeline will use HDD to enter Cook Inlet but does not indicate how it will leave Cook Inlet.	EIS project description should describe how the pipeline will leave the West Side of Cook Inlet.
ADF&G/Habitat/SPCS	Chapter 2 Alternatives	Sec 2.2.2.4	2-44	For river crossings, the pipeline would either use HDD or be attached to the bridge structures. Does not mention open-cut for pipeline stream crossings yet Figure 2-35 references an open-cut typical.	If project intends to use open-cut to cross stream, they should indicate it in the EIS.
ADF&G/Habitat/SPCS	Chapter 2 Alternatives	Sec 2.2.2.4	2-44	There are no detailed figures on the proposed pipeline infrastructure on the Kenai Peninsula.	EIS should include a figure or figures on the proposed pipeline and associated infrastructure on the Kenai Peninsula.
ADF&G/Habitat/SPCS	Chapter 2 Alternatives	Sec 2.2.2.4	2-44	The project description says that the pipeline transitions and burial through Illiamna Lake will be similar to the Cook Inlet Crossing but only describes the transition on the east side of Cook Inlet.	EIS project description should describe how the pipeline will leave the West Side of Cook Inlet as well as specifically describe the transition and burial through Lake Illiamna.
ADF&G/Habitat/SPCS	Chapter 2 Alternatives	Sec 2.2.2.4	2-74	From Diamond Point port, the pipeline would be buried in a trench that follows the general Alternative 3 north access road alignment with minor.	Unclear what "with minor" refers to. EIS should finish the sentence.
ADF&G/Habitat/SPCS	Chapter 2 Alternatives	Sec 2.2.2.4	2-74	Section does not describe how the proposed pipeline will cross streams.	EIS should include language in this section on how the proposed pipeline will cross streams.
ADF&G/Habitat	Chapter 2 Alternatives	Sec 2.2.2.4	2-44	Not enough detail is provided for stream crossings by the natural gas pipeline and fiber optic cable to determine potential impacts. Limited information is provided for major river crossings, but not for other streams and waterbodies. Typical figures for crossings are not included.	Details on stream crossing methods and relative locations for the natural gas pipeline and fiber optic cable should be included in order to properly assess impacts to aquatic environments from streambank disturbance, erosion, temporary diversion, etc.
ADF&G/Habitat	Chapter 2 Alternatives	Sec 2.2.2.6	2-56	Water extraction sites are not identified in the DEIS. No screening specifications are mentioned or given for the water extractions.	The location of proposed water withdrawals should be added and is needed to assess potential impacts. Additionally, pump screening and other specifications should be stated.
ADF&G/Habitat	Chapter 2 Alternatives	Sec 2.2.3.1	2-57	The DEIS describes a change to the embankment construction methods for the TSF under this alternative, which increases the fill area. Why does changing the transportation route necessitate changes to the TSF embankment?	Rationale should be included for this alteration in order to properly assess trade offs and impacts from different alternatives.
ADF&G/Habitat	Chapter 2 Alternatives	Sec 2.2.3.2	2-66	Stream crossing information is not included and there is not enough information to assess potential impacts to aquatic resources from road construction and operation for this alternative.	Include road crossing information to allow for a thorough review and assessment of potential impacts to aquatic resources.
ADF&G/Habitat	Chapter 2 Alternatives	Sec 2.2.3.2	2-68	Water extraction locations are not identified and information on material sites is lacking making assessment of potential impacts to aquatic resources difficult.	Provide details on water extraction sites and material sites to allow for a thorough review and assessment of potential impacts to aquatic resources.

ADF&G/Habitat	Chapter 2 Alternatives	Sec 2.2.4.2	2-84	Not enough information provided to assess potential impacts on aquatic resources.	Include details on stream crossings, material sites, and water withdrawal locations to allow for a review and assessment of potential impacts.
ADF&G/Habitat	Chapter 3 Affected Environment	Sec 3.5.1.2	3.5-6	The sub-section, Sport Fishing, states that sport fishing is managed by the ADF&G through a permit system. This is incorrect. Sport fish guides are required to have a permit, but in general sport fishing is regulated by regulations and the board process.	Rewrite section for accuracy.
ADF&G/Habitat	Chapter 3 Affected Environment	Sec 3.5.1.2	3.5-6	The Sport Hunting and Trapping subsection states that hunting is allowed in the MRSGR. It should be noted that brown bear hunting is not allowed in order to protect McNeil River bears.	Correct the text in the DEIS to state that MRSGR is open to hunting, except it is closed to brown bear hunting in order to provide additional protections to bears using the McNeil River Sanctuary and the State of Alaska's public bear viewing program there.
ADF&G/Habitat	Chapter 3 Affected Environment	Sec 3.5.2.6	3.5-13	This section states that, "There are no visible ATV trails along the access road corridor nearing the mine site or along the access road nearing Amakdedori Port." This statement is incorrect as there are ATV trails near the mouth of and along UTC, as well as ATV trails in the immediate vicinity of the corridor south of Kokhanok.	Update/correct section to include ATV trails near the project.
ADF&G/Habitat/SPCS	Chapter 3 Affected Environment	Sec 3.5	3.5-13	Existing recreational use along the pipeline alignment in Cook Inlet and on the Kenai Peninsula consists of boating on Cook Inlet and recreational use at the state park sites on the Kenai Peninsula. Sentence implies that recreational use along the pipeline on the Cook Inlet and Kenai Peninsula are limited to boating and state park use.	EIS should include the multitude of other recreational uses around the pipeline corridor on the Kenai Peninsula such as hunting and stream fishing, clamming etc. in the vicinity of the pipeline.
ADF&G/Habitat/SPCS	Chapter 3 Affected Environment	Sec 3.5	3.5-13	Section only attempts to describe recreational use on the Kenai Peninsula and Cook Inlet with respect to the natural gas pipeline but ignores the recreational use on the west side of Cook Inlet and Illiamna Lake.	Include a description of recreational use for the rest of the natural gas pipeline including the west side of Cook Inlet.
ADF&G/Habitat/SPCS	Chapter 3 Affected Environment	Sec 3.5	3.5-14	"...though given the presence of ledges and communities around northern Iliamna Lake.."	Change "ledges" to "lodges"
ADF&G/Habitat/SPCS	Chapter 3 Affected Environment	Sec. 3.6.2	3.6-21	Section only addresses current salmon, herring and ground fisheries near the proposed pipeline but does not describe current scallop and historic crab fisheries that are temporarily closed due to low abundance.	Include current scallop and historic crab fisheries near the proposed pipeline that are temporarily closed due to low abundance.
ADF&G/Habitat	Chapter 3 Affected Environment	Sec 3.7.1	3.7-2	Data Gap Summary states that some cultural resource assessments have not yet been completed but will occur in 2019 with the information included in the Final EIS.	Suggest treating fish survey information for the road corridor in the same fashion. Additional surveys should be conducted in 2019 with the results included in the Final EIS.
ADF&G/Habitat	Chapter 3 Affected Environment	Sec 3.11 Figure 3.11-1	3.11-9	This figures shows KOP #2 (Base Camp) as located in MRSGR, but it is actually located in MRSGS.	Correct Base Camp reference as located in MRSGS.
ADF&G/Habitat	Chapter 3 Affected Environment	Sec 3.21.1.1	3.24-2	Section states that sockeye salmon run extends to the vicinity of Big Wiggly Lake.	Sockeye salmon have been documented spawning and rearing in Big Wiggly Lake. The DEIS should accurately state that the sockeye salmon spawn and rear in Big Wiggly Lake.
ADF&G/Habitat	Chapter 3 Affected Environment	Sec 3.22.5.1	3.22-7	Map of Wetlands and Waterbodies at the Mine Site is not included in DEIS review material and was therefore unavailable to review for potential impacts.	Include a map of wetlands and waterbodies in the DEIS.
ADF&G/Habitat	Chapter 3 Affected Environment	Sec 3.23.1.1	3.23-3	The text states that no peregrine falcon nests were detected during surveys, but Figure 3.23-1 shows a peregrine falcon nest close to the Iliamna Spur Road.	Correct or reconcile the discrepancy between figure and text concerning peregrine falcon nests.
ADF&G/Habitat	Chapter 3 Affected Environment	Sec 3.23.1.1	3.23-5	Second paragraph in water birds sub-section states that thousands of ducks stage around Nikabuna and Long Lakes in the fall. This contradicts what is depicted on Figure 3.23-3 which shows 25-100 birds at Long Lake and 251-500 birds near Nikabuna Lakes. Only data for 2005 is depicted in figures. Tundra swan surveys were conducted in 2006 but no results are reported. The inconsistencies, discrepancies, and possible errors make it difficult to determine what the affected environment is for water birds.	Reconcile discrepancy between text and figure for accuracy. Include 2004 and 2006 data in figures. Include tundra swan survey data from 2006 or explain why it is excluded. Make section consistent across sub-sections.

ADF&G/Habitat	Chapter 3 Affected Environment	Sec 3.23.1.1	3.23-5	Last paragraph highlights and details areas with the largest numbers of birds including Nikabuna and Long Lakes. However, Figure 3.23-3 shows the highest concentration of birds as overlapping and adjacent to a mine stockpile and the main water management pond. Stating in the text that the largest numbers of water birds are found 20 km north of the mine site while the figures show the largest fall concentration directly over mine facilities creates confusion for reviewers. The general condition of this section does not lend confidence in regard to accuracy and ability to assess the affected environment.	Reconcile discrepancies in this section so that assessment of the affected environment can be completed. Historical data would improve this section and give greater confidence for bird resources potentially affected.
ADF&G/Habitat	Chapter 3 Affected Environment	Sec 3.23.1.1	3.23-12	Caribou sub-section references Figure 3.23-5 for historical caribou trails to illustrate caribou activity as primarily west of the mine site. The referenced figure provided for DEIS review does not depict caribou trails, nor does any other figure provided.	Figures should depict information for which they are referenced in DEIS.
ADF&G/Habitat	Chapter 3 Affected Environment	Sec 3.23.1.1	3.23-16	Figure 3.23-7 is referenced in the text on p. 3.23-13 but was not provided for review.	Include referenced figures in DEIS.
ADF&G/Habitat	Chapter 3 Affected Environment	Sec 3.23.1.2	3.23-19	The Raptors sub-section states that raptor data for the transportation corridor was collected in 2004 and 2005, but also references raptor surveys in 2018. Figure 3.23-8 is referenced, but was not provided for review. This sub-section is confusing and it is unclear what data was collected and when it was collected.	Revise text to make clear what data was collected and over what years, provide the referenced figure.
ADF&G/Habitat/SPCS	Chapter 3 Affected Environment	Sec 3.23.1.2	3.23-19	Section only describes bird and wildlife species on the west side of Cook Inlet and ignores species on the east side where a compressor station as well as some natural gas pipeline will be located.	Include a description of bird and wildlife species on the east side of Cook Inlet around proposed infrastructure.
ADF&G/Habitat	Chapter 3 Affected Environment	Sec 3.23.1.2	3.23-25	Only bald eagles are discussed for the port in Raptors sub-section.	Other raptors utilize the port area and should be included for a comprehensive description of the affected environment.
ADF&G/Habitat	Chapter 3 Affected Environment	Sec 3.24.1.1	3.24-1	NFK sub-section states that 15 miles of mainstem channel are upstream of the mine site footprint. It is unclear what is meant by upstream of the mine and how the 15 miles were calculated. Mainstem habitat upstream of Tributary 1.19 appears closer to 9 miles of anadromous stream length and there are mine components upstream of this tributary (e.g., water management pond, water well field).	Define what is upstream of the mine and identify what the 15 miles refers to or how it was calculated. Where is the break point of what is considered upstream of the mine. This is referred to throughout this section and it is important to understand how it was derived. For example, 'preferred coho spawning habitat appears to be in the 10 miles of mainstem immediately downstream of the mine site.'
ADF&G/Habitat	Chapter 3 Affected Environment	Sec 3.24.1.1 Figures 3.24-2 to 3.24-4	3.24-8 to 3.24-10	These figures contain inaccurate or misleading information. Segments of stream that were never sampled are listed as "no fish present." See especially Fig. 3.24-3 (near mine site and Trib. 1.19).	Only streams with comprehensive surveys resulting in no fish observed, or where habitat is unsuitable, should be identified as "no fish present." Lakes should be included in these figures for fish distribution.
ADF&G/Habitat	Chapter 3 Affected Environment	Sec 3.24.1.1	3.24-5	This section refers to a reach of SFK as "going dry during summer," or "dry reach" and "dry channel." The way the section is written implies the reach is dry on an annual basis. Some years it contains water at the surface during all seasons and 4 years of surveys may not be representative of frequency trends.	It would be more accurate to describe this reach as intermittently going subsurface. It should also be noted that fry and eggs may still find suitable habitat beneath the gravels when the stream appears dry, unless this was researched and found not to be occurring.
ADF&G/Habitat	Chapter 3 Affected Environment	Sec 3.24.1.1	3.24-11	The Transportation Corridor sub-section contains errors or omissions and appears incomplete for review. Fish surveys along the transpiration corridor are not yet completed.	The DEIS should properly state that the number of fish streams crossed by the transportation corridor is currently unknown or data could be identified as incomplete.
ADF&G/Habitat	Chapter 3 Affected Environment	Sec 3.24.1.1 Figure 3.24-5	3.24-16	Figure 3.24-5 only depicts 2 anadromous fish streams crossed by the corridor south of Iliamna Lake. Preliminary results from sampling conducted in 2018 report at least 10 anadromous fish streams and not all of the streams have been surveyed. Three streams with documented sockeye salmon spawning in Section 11 (T 9 S/R 33 W) near Kokhanok are not depicted.	Figure should be updated to accurately depict the affected environment and streams that have not been surveyed should be identified.
ADF&G/Habitat	Chapter 3 Affected Environment	Sec 3.24.1.1 Table 3.24-12	3.24-11	The last paragraph on the page states that a total of 7 anadromous streams would be crossed by the transportation corridor. This is inaccurate and misleading to report results for something that is not yet fully investigated. There are 10 anadromous fish streams crossed by the southern portion alone and surveys are not yet completed.	Accurately report the number of anadromous fish streams affected by the project and note where surveys are incomplete.

ADF&G/Habitat	Chapter 3 Affected Environment	Sec 3.24.1.1	3.24-12	Sub-section states that 32 waterbodies will be crossed by the north access road. This contradicts information submitted to the USACE in Pebble's 404 application which lists 55 waterbodies crossed by the northern portion of the access road.	The DEIS should be updated to accurately report the number of waterbodies crossed and correct number of fish bearing streams. Preliminary data show that at least 11 fish bearing streams are crossed by the north portion of the access road and future surveys may increase this number.
ADF&G/Habitat	Chapter 3 Affected Environment	Sec 3.24.1.1	3.24-13	Sub-section states that 65 water bodies would be crossed by the south access road, of which 2 are anadromous. Preliminary results indicate that there are at least 10 anadromous fish streams crossed by the south access road. The applicant's 404 application lists 173 waterbodies crossed by the south access road.	The DEIS should be correct to accurately depict the number and type of stream crossings.
ADF&G/Habitat	Chapter 3 Affected Environment	Sec 3.24.1.2	3.24-14	Stream mileage captured or blocked by mine facilities is not listed like in SFK subsection.	Include paragraph like that in SFK sub-section that states the stream mileage captured or blocked by mine facilities for the sake of consistency and to completely depict the affected environment.
ADF&G/Habitat	Chapter 3 Affected Environment	Sec 3.24.1.2	3.24-15	Last paragraph states that other resident fish are distributed in low abundance in the lower reaches of the NFK.... This sentence is misleading and should be revised. Many of the resident fish species are found throughout the drainage, including headwaters.	Include information on headwater distribution of fish species.
ADF&G/Habitat	Chapter 3 Affected Environment	Sec 3.24.1.2 Table 3.24-5	3.24-19	Section states that stream mileage for species is given in Table 3.24-5, but the table does not contain that information.	Update table or correct reference for accuracy.
ADF&G/Habitat	Chapter 3 Affected Environment	Sec 3.24.1.2	3.24-21	The first sentence of the last paragraph says that DV, SS, and AG are the only resident fishes documented in the headwater reaches near the mine site. The next sentence states that juvenile rainbow trout were observed in the headwater reaches near the mine site.	The two sentences contradict one another and should be corrected for consistency and accuracy.
ADF&G/Habitat	Chapter 3 Affected Environment	Sec 3.24.1.2	3.24-22	The Iliamna Lake sub-section begins by stating that 11 fish species have been reported from Iliamna Lake and then lists 14 species as documented using the lake. This is another contradiction and inconsistency in this section which is difficult to review overall because of how it is written.	Include all species that have been reported in Iliamna Lake, such as pond smelt, least cisco, 3-spine stickleback, AK blackfish, round whitefish, burbot, lamprey sp..... (26 species in total by my quick research).
ADF&G/Habitat	Chapter 3 Affected Environment	Sec 3.24.1.3	3.24-25	Figure 3.24-6 is referenced for macroinvertebrate sampling sites, but the figure does not contain any depiction of such locations. Additionally, data from Y Valley Creek and an unnamed creek are referenced here but those sites are located more than 40 miles away and were sampled when the transportation corridor was proposed further north.	Sampling results should be listed from creeks along the transportation corridor or at the port to properly depict the affected environment.
ADF&G/Habitat/SPCS	Chapter 4 Environmental Consequences	Sec 4.1.3.2	4.1-4	Section lists several activities that were considered for cumulative effects analyses but does not include the proposed natural gas pipeline.	EIS should include a thorough cumulative effects analysis for the natural gas pipeline.
ADF&G/Habitat/SPCS	Chapter 4 Environmental Consequences	Sec 4.5	4.5-6	"Noise and activities during project construction and closure may also temporarily adversely affect recreation experiences for visitors to the Stariski State Recreation Site" Only describes noise impacts to users of the State Recreation Site.	EIS should describe impacts from noise and activities for the entire pipeline corridor on the Kenai Peninsula including hunting and fishing outside of the State Recreation Area.
ADF&G/Habitat/SPCS	Chapter 4 Environmental Consequences	Sec. 4.13.2.4	4.13-5	Section indicates that the pipeline will use HDD to enter Cook Inlet but does not indicate how it will leave Cook Inlet.	Section should describe in detail how the pipeline will leave the West Side of Cook Inlet.
ADF&G/Habitat/SPCS	Chapter 4 Environmental Consequences	Sec. 4.13.2.4	4.13-6	Section only indicates that the pipeline will be buried nearshore to lake Illiamna but does not indicate how. .	Section should describe in detail how the pipeline will be buried under the nearshore areas of Illiamna Lake.
ADF&G/Habitat/SPCS	Chapter 4 Environmental Consequences	Sec. 4.14.2.4	4.14-11	Chapter does not address environmental consequences of erosion and resultant stream sedimentation from trenching through thaw unstable ice-rich slopes.	Project should identify all areas of permafrost along the proposed natural gas pipeline in the EIS particularly any thaw unstable slopes that will need to be trenched. This is necessary due to likelihood of erosion and subsequent stream sedimentation once permafrost is trenched. Environmental consequences should be described, and mitigation measures should also be identified to monitor and stabilize these post-construction.

ADF&G/Habitat/SPCS	Chapter 4 Environmental Consequences	Sec. 4.14.2.5	4.14-11	Chapter does not address environmental consequences from erosion and subsequent stream sedimentation from overland flows intercepting the pipeline ditch.	Chapter should address environmental consequences of erosion from surface waters intercepting the pipeline ditch and describe how the ditch will be stabilized and monitored for erosion.
ADF&G/Habitat/SPCS	Chapter 4 Environmental Consequences	Sec 4.16.2.5	4.16-23	Section only states impacts would be similar to transportation corridor but does not describe actual impacts or consequences	Section should describe sources of erosion/scour and consequences from all aspects of pipeline installation at stream crossings including direct pipeline trenching, HDD, inadequate bank protection, ditch maintenance, blasting, erosion and channelization from surface water intercepting the pipeline ditch, etc.
ADF&G/Habitat/SPCS	Chapter 4 Environmental Consequences	Sec. 4.18.2.3	4.18-16	Section only addresses impacts on surface water from the Amakdedori Port and not the ports on Illiamna Lake.	EIS should describe impacts on surface water quality from the Illiamna Lake ports.
ADF&G/Habitat/SPCS	Chapter 4 Environmental Consequences	Sec. 4.18.2.4	4.18-18	Surface water quality at pipeline stream crossings is expected to be within water quality standards for turbidity during construction.	EIS should describe how they will maintain within water quality standards for turbidity during pipeline trenching operations through streams as well as monitoring and mitigation plans.
ADF&G/Habitat/SPCS	Chapter 4 Environmental Consequences	Sec. 4.18.2.4	4.18-18	Chapter does not address likely erosion and resultant stream sedimentation from trenching through thaw unstable ice-rich slopes.	Project should identify all areas of permafrost along the proposed natural gas pipeline in the EIS particularly any thaw unstable slopes that will need to be trenched. This is necessary due to likelihood of erosion and subsequent stream sedimentation once permafrost is trenched. Mitigation measures should also be identified to monitor and stabilize these post-construction.
ADF&G/Habitat/SPCS	Chapter 4 Environmental Consequences	Sec. 4.18.2.4	4.18-18	Chapter does not address erosion and subsequent stream sedimentation from overland flows intercepting the pipeline ditch.	Chapter should address erosion from surface waters intercepting the pipeline ditch and describe how the ditch will be stabilized and monitored for erosion.
ADF&G/Habitat/SPCS	Chapter 4 Environmental Consequences	Sec 4.18.2.4	4.18-18	"Impacts on surface water quality within the natural gas pipeline corridor would be associated with installation of the pipeline at water crossings and the use of local water sources for hydrostatic testing. Impacts at material sites and stream crossings would be the same as those described above for the transportation corridor." Section only describes two sources of impacts to surface water from the proposed pipeline.	In addition to stream crossings and hydrostatic testing, EIS should describe impacts and consequences from overland flows intercepting the pipeline ditch causing erosion, sedimentation and channelization especially on thaw unstable slopes. EIS should also describe the impacts and consequences of HDD and inadequate bank protection/restoration.
ADF&G/Habitat/SPCS	Chapter 4 Environmental Consequences	Sec. 4.18.2.4	4.18-18	Chapter does not address impacts from turbid water from within the pipeline ditch migrating to streams and streambank and streambed restoration.	Chapter should address how waters within the pipeline ditch will be handled as well as plans for streambed and streambank restoration.
ADF&G/Habitat/SPCS	Chapter 4 Environmental Consequences	Sec. 4.18.2.4	4.18-19	"Horizontal Directional Drilling (HDD) operations would be required only for the natural gas pipeline at the Kenai shore approach near Anchor Point. "	Pipeline HDD may be a requirement of Title 16 Fish Habitat Permits for high value fish lakes and streams. Chapter should describe potential impacts of HDD on areas other than just the east side of Cook Inlet. Section 4.24.2.1 indicates that HDD will be used in Illiamna Lake as well.
ADF&G/Habitat/SPCS	Chapter 4 Environmental Consequences	Sec 4.19	4.19-13	"Noise impacts associated with the mainline would occur mainly during construction. Construction-related noise sources would be generated by helicopter traffic, diesel-powered mobile equipment, pipe installation equipment, equipment operating at material sites, and blasting (in the event it would be necessary)." Statement does not include any noise associated with Horizontal Directional Drilling (HDD)	The EIS section on noise impacts from construction of a natural gas pipeline should also list noise associated with HDD.
ADF&G/Habitat/SPCS	Chapter 4 Environmental Consequences	Sec 4.23	4.23-2	Chapter does not address the unique behavioral disturbance to birds and wildlife due to the presence of remote field camps.	Chapter should address the potential effects of remote field camps on birds and wildlife. A plan addressing specifics on temporary and permanent camps should be developed and reviewed by appropriate agencies.
ADF&G/Habitat/SPCS	Chapter 4 Environmental Consequences	Sec 4.23	4.23-2 and 4.23-5	Chapter does not address the behavioral or physical disturbance to birds and wildlife associated with waste both (putrescible and non) generated during construction and operations.	Chapter should address the potential effects of improper disposal of waste on birds and wildlife. A Comprehensive Waste Management Plan should be developed and reviewed by the appropriate agencies.
ADF&G/Habitat/SPCS	Chapter 4 Environmental Consequences	Sec 4.23	4.23-2 and 4.23-5	Chapter does not address the potential behavioral or physical disturbance to birds and wildlife due to human interaction such as feeding and defense of life and property.	Chapter should address the potential effects on birds and wildlife from human wildlife interaction. A Wildlife Avoidance and Human/Interaction Plan should be developed and reviewed by appropriate agencies as well.
ADF&G/Habitat/SPCS	Chapter 4 Environmental Consequences	Sec 4.23	4.23-2 and 4.23-5	Chapter does not address the behavioral or physical disturbance to birds and wildlife associated with waste both (putrescible and non) generated during construction and operations.	Chapter should address potential impacts to wildlife from wastes generated during construction and operations

ADF&G/Habitat/SPCS	Chapter 4 Environmental Consequences	Sec 4.23.2.2	4.23-5	Chapter does not address the potential behavioral or physical disturbance to wildlife due to pipeline stringing.	Chapter should address the potential effects on wildlife movements as a result of pipeline stringing both for prolonged periods of time and length. EIS should also describe applicant's plan to minimize animal entrapment in open ditches as well as barriers to animal movement created by pipe stringing operations.
ADF&G/Habitat/SPCS	Chapter 4 Environmental Consequences	Sec 4.23.2.2	4.23-5	Chapter does not address the potential behavioral or physical disturbance to wildlife due to an exposed open trench during pipeline installation.	Chapter should address the potential effects on wildlife from the exposed open trench during pipeline installation.
ADF&G/Habitat/SPCS	Chapter 4 Environmental Consequences	Sec 4.23.2.2	4.23-6	"The Amakdedori port would also be a source of long-term disturbance due to vessel traffic, loading and unloading activities, and the presence of workers and vehicles. The disturbance zone around the port site would likely be much smaller than the area around the mine site due to a lack of explosives, smaller vehicles, and less frequent human presence. " Chapter does not list the Lake Illiamna ports as a source of long-term disturbance.	Chapter should also address the Lake Illiamna ports as a source of long-term disturbance.
ADF&G/Habitat/SPCS	Chapter 4 Environmental Consequences	Sec 4.24	4.24-1	Chapter does not list any indirect effects on fish from the proposed project.	Chapter should describe indirect effects on fish such as increased fishing pressure due to increased access.
ADF&G/Habitat/SPCS	Chapter 4 Environmental Consequences	Sec 4.24.2.1	4.24-3	Section only describes the fish habitat loss from the proposed pipeline in the waters of Cook Inlet.	Section should describe all potential sources of fish habitat loss from the installation of the pipeline including placement in Lake Illiamna as well as inadequate bank restoration/protection.
ADF&G/Habitat/SPCS	Chapter 4 Environmental Consequences	Sec 4.24.2.5	4.24-4	Section only lists two potential sources of fish displacement, injury, and mortality from the proposed pipeline-stranding from water diversions and impingement from water pumping.	This section should describe the sources of and all impacts from stream sedimentation on all life stages of fish. Sedimentation sources include trenching, improper use of BMPs, inadequate bank restoration and stabilization, channelization of backfilled trench, and HDD frac-out. Additional examples of impacts include direct mortality to eggs (both directly from trenching, blasting and piledriving as well as blocking the O2 intake from filling in interstitial spaces in stream gravel from sedimentation) and displacement and mortality of adults and juveniles from blasting, piledriving, and sedimentation.
ADF&G/Habitat	Chapter 4 Environmental Consequences	Sec 4.24.2.7	4.24-17	NFK sub-section states that a 2.8 C rise in temperature during winter months will alter incubation times of salmon eggs.	Impacts from temperature changes in the streams should be weighed against other measures and not just the ADEC guidance. A nearly 3 degree rise in winter stream temperatures will have some effect on incubating eggs even if below the ADEC threshold.
ADF&G/Habitat	Chapter 4 Environmental Consequences	Sec 4.24.2.7	4.24-17	This section states that any water chemistry impacts to fish would not be measurable, but this assumes that operations are conducted exactly as planned with no operational issues. Potential impacts due to pump breakdowns, frozen pipes, operator error, or other disruptions to the water distribution system could have impacts on fish and should be included in the assessment. In general, unplanned events should also be considered for impacts (e.g., breakdown of water management system, AMD - testing and predictions are not 100%, large rain events, road washouts, unplanned fuel releases...).	Expand the scope of potential impacts to more accurately include the range of potential operational issues that may occur over the life of the project.
ADF&G/Habitat/SPCS	Appendix E- Laws, Permits, Etc.	Table E-1	E-15	Table lists ADF&G's only role from the Anadromous Fish Act is Fish Passage permits.	Should change to ADF&G Title 16 Fish Habitat Permits
ADF&G/Habitat/SPCS	Appendix E- Laws, Permits, Etc.	Table E-1	E-15	Table lists "Fish Habitat Permits" under FWCA authority.	Should remove Fish Habitat Permits as authority under FWCA
ADF&G/Habitat/SPCS	Appendix E- Laws, Permits, Etc.	Table E-1	E-15	Table lists role of Fishway Act AS 16.05.841 only as "Fish Passage sufficiency determinations"	Should change to ADF&G Title 16 Fish Passage Permits
ADF&G/Habitat	Appendix E- Laws, Permits, Etc.	Table E-1	E-15	Activities Requiring a Special Area Permit lists the requirement for Special Area Permits in state game refuges, state recreation areas, across designated wild and scenic rivers, or through state parks. This is incorrect.	Special Area Permit requirements issued under 5 AAC 95 only pertain to activities occurring in state game refuges, state game sanctuaries, and critical habitat areas.

ADF&G/Habitat	Appendix E- Laws, Permits, Etc.	Table E-1	E-15	License, Permit, and Tag Fees; Surcharge: Miscellaneous Permits to Take Fish and Game (AS 16.05.340). This refers to hunting and fishing licenses and is not applicable to the project since they have declared that no employees will be hunting or fishing.	Remove row or reconcile discrepancy.
ADF&G/Habitat/SPCS	Appendix E- Laws, Permits, Etc.	Table E-1	E-15	Permit for Scientific, Education, Propagative, or Public Safety Purposes (5 AAC 92.033). Role is referred to as Fish collection permits for field studies which is not entirely accurate. This reference is confusing and it is unclear what is intended.	Fish collection permits for field studies are actually referred to as Aquatic Resource Permits under 5 AAC 41. Clarify intended reference or reconcile discrepancies.
ADF&G/Habitat/SPCS	Appendix K- Technical Appendices	Sec 3.14 Soils	K3.14-3	"Isolated permafrost varies from 0 to 10 percent of the landscape subsurface."	Project should identify all areas of permafrost along the proposed natural gas pipeline in the EIS particularly any thaw unstable slopes that will need to be trenched. This is necessary due to likelihood of erosion and subsequent stream sedimentation once permafrost is trenched. Mitigation measures should also be identified to monitor and stabilize these post-construction.
ADF&G/Habitat/SPCS	Appendix K- Technical Appendices	Sec 3.1 Intro Affected Enviro.	K.3.1-1	Scoping comments refer to "underwater" streams in the headwaters that are important to small fish fry and fingerlings.	Further clarification would be helpful on what is meant by underwater streams.

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ADF&G/ Sport Fish/ISF Program	Draft EIS	General	General	In general, this document is incomplete, missing sections, references etc.	Further information may be needed to assess the ability to sustain fish and wildlife production when provided with more project details, specifically regarding the transportation corridors.
ADF&G/Sport Fish	Chapter 2 Alternatives	Sec 2.2.2.4	2-43	The description of HDD is not sufficient enough to understand impacts to coastal bluff, sandy intertidal, rivers, and nearshore waters	Better describe activities.
ADF&G/Sport Fish	Chapter 3 Affected Environment	Sec 3.5.2.1	3.5-6	Sport fishing is not managed through a permit system.	Sport fishing is managed using numerous tools (effort, catch, and harvest information <Statewide Harvest Survey, logbooks>; abundance; size composition etc.) which are mentioned but there is no permit system used to manage the sport fishery.
ADF&G/Sport Fish	Chapter 3: Affected Environment	Sec 3.6.3	3.6-23 and 3.6-24	The sport fisheries at the eastern terminus of the pipeline and along the pipeline corridor in Cook Inlet salt waters are not accurately represented and there should be a complete discussion for these fisheries.	The Lower Cook Inlet Sport Fish Management Area supports roughly 10% of the total sport fishing effort in AK. Most of that effort is focused on salt water opportunities including halibut, nearshore Chinook salmon, and intertidal razor clams. All three of these fisheries may be impacted with the proposed activities. Halibut fisherman routinely anchor and fish on the bottom along the pipeline corridor.
ADF&G/Sport Fish	Chapter 3 Affected Environment	Sec 3.6.3	3.6-27	Guided angler-days for the Newhalen do not appear to be correct. The 2012-2016 average should be 288 not "fewer than 200".	Review and update the data and text for this section.
ADF&G/ Sport Fish/ISF Program	Chapter 3 Affected Environment	Fig. 3.16-4	3.16-6	Figure 3.16-4 does not show Stream Gaging Stations as cited in the text, it only depicts Meteorological Stations. Map lacks basic elements such as scale and north arrow.	Replace with correct map with standard map elements
ADF&G/ Sport Fish/ISF Program	Chapter 3 Affected Environment	Fig. 3.16-5	3.16-7	Figure 3.16-5- resolution of figure is too poor to read some labels.	Provide map with higher resolution
ADF&G/ Sport Fish/ISF Program	Chapter 3 Affected Environment	Fig. 3.16-2	3.16-8	Figure 3.16-2 does NOT "depict all gaging station locations in the three watersheds" as stated in text.	Replace with Figure 3.16-3
ADF&G/ Sport Fish/ISF Program	Chapter 3 Affected Environment	Fig. 3.16-3	3.16-8	Figure 3.16-3 lacks basic standard map information such as north arrow and scale. Very poor resolution, difficult to read labels.	Provide high resolution map with standard map elements
ADF&G/ Sport Fish/ISF Program	Chapter 3 Affected Environment	Fig. 3.16-4	3.16-9	Figure 3.16-4 is incorrectly referenced under heading North Fork Koktuli River. Figure does NOT show stream gaging stations. Map lacks basic elements such as scale and north arrow.	Replace with correct map with standard map elements
ADF&G/ Sport Fish/ISF Program	Chapter 3 Affected Environment	Fig. 3.16-3	3.16-9	Figure 3.16-3 is incorrectly referenced in last paragraph.	Reference Figure 3.16-2
ADF&G/ Sport Fish/ISF Program	Chapter 3 Affected Environment	Sec 3.16.1.1	3.16-18	Meteorological Inputs- references Knight Piesold 2018a and 2018d. These references are not included in references sections and document could not be located.	Provide required reference documentation for all Knight Piesold 2018 documents
ADF&G/ Sport Fish/ISF Program	Chapter 3 Affected Environment	Sec 3.16.1.2	3.16-19	Lack of data or surface water investigations for southern segment of mine access road from ferry terminal to Amakdedori.	Conduct detailed surface water investigations to assess impacts from this alternative
ADF&G/ Sport Fish/ISF Program	Chapter 3 Affected Environment	Sec 3.16.1.2	3.16-21	Lack of data or surface water investigations for southern segment of mine access road.	Conduct detailed surface water investigations to assess impacts for this alternative. Ideally, a minimum of 5 years of continuous flow records are desired; however, shorter periods can be agreed upon and used when field data are combined with synthetic data and mutually agreed-upon analyses.
ADF&G/ Sport Fish/ISF Program	Chapter 3 Affected Environment	Sec 3.16.1.2	3.16-22	Many surface water extraction sites along road routes are likely very small streams. But no information is provided about hydrology along south access road corridor. Hydrology data will be needed to size culverts along this corridor and assess impacts to fish habitat.	Provide information on how water extraction from small streams may impact fish habitat.
ADF&G/ Sport Fish/ISF Program	Chapter 3 Affected Environment	Sec 3.16.1.2	3.16-22	ADF&G requires sufficient seasonal instream flows be maintained in all waterbodies supporting fish and wildlife resources.	Provide information on how water extraction from small streams may impact fish habitat.
ADF&G/ Sport Fish/ISF Program	Chapter 3 Affected Environment	Sec 3.16.1.2	3.16-22	ADF&G holds Certificates for Reservations of Water on Lower Talarik Creek, Newhalen River, and Kvichak River. A Reservation of Water is on file for the Iliamna River.	Surface water extraction will not be permitted if extraction may have impacts to senior water right/water reservations
ADF&G/Sport Fish	Chapter 3 Affected Environment	Sec 3.24	3.24-13	The description of the Cook Inlet area most likely to be affected is not accurate.	Include Upper Cook Inlet for the pipeline corridor and eastern terminus
ADF&G/Sport Fish	Chapter 3 Affected Environment	Sec 3.24.1.2	3.24-14 through 3.24-19	The Nushagak River Chinook salmon run is one of the largest and most consistent Chinook salmon runs in the state and supports one of the largest sport fisheries in Southwest Alaska.	Provide some description of the size, utilization, and value of the Nushagak River Chinook salmon run.
ADF&G/Sport Fish	Chapter 3 Affected Environment	Table 3.24-5	3.24-17	Cook Inlet salt waters commercial and sport fisheries are not included in this section. There is potential for this project to affect both fisheries.	Create separate periodicity table for all salmon species and steelhead trout in Cook Inlet salt waters.
ADF&G/Sport Fish	Chapter 3 Affected Environment	Sec 3.24.1.2	3.24-20	It should be mentioned during discussion of pink salmon abundance that they are on a 2-year cycle. It is also unclear which year is being referenced when 2 years are listed as a range (i.e. "zero in 2004-2005 and 2008-2009").	Expand discussion of pink salmon life cycle and specify which year of data is being referenced.
ADF&G/Sport Fish	Chapter 4 Environmental Consequences	Sec 4.6	Table 4.6-1	Cook Inlet salt waters are not included in the table. These waters are an important migratory corridor for both smolt and returning adult salmon.	Include Cook Inlet commercial and sport fisheries.
ADF&G/ Sport Fish/ISF Program	Chapter 4 Environmental Consequences	Sec 4.16.2.1	4.16-2	Streamflow Effects- seasonality/seasonal flow distributions must be maintained. How will excess water from dewatering operations be seasonally managed? Concern regarding water releases during typical low flow periods in headwater streams.	Further explain timing/seasonality (not only net water balances) in text. Include Water Management Plan.
ADF&G/ Sport Fish/ISF Program	Chapter 4 Environmental Consequences	Sec 4.16.2.1	4.16-2	References Knight Piesold 2018a. This reference is not included in references sections and cannot locate document.	Provide required reference documentation for all Knight Piesold 2018 documents
ADF&G/ Sport Fish/ISF Program	Chapter 4 Environmental Consequences	Sec 4.16.2.1	4.16-3 & 4.16-6	Water Management- "Water not diverted before becoming contact water would be … or treated and released to environment." Management of surplus water…	Instream flow shifts and variations can affect riparian habitat. ADF&G recommends streamflow regimes similar to the magnitude and timing of the natural streamflows to maintain seasonal use of fish habitat. Provide magnitude and timing of flow augmentation anticipated from release of surplus water
ADF&G/ Sport Fish/ISF Program	Chapter 4 Environmental Consequences	Sec 4.16.2.1	4.16-15	"Flows from the fresh water diversions and reclaimed facilities are expected to vary according to natural flow patterns, which are also linked to seasonal climate variability.	Provide appropriate documentation where hydrographs which are "expected to vary according to natural flow patterns" can be reviewed
ADF&G/ Sport Fish/ISF Program	Chapter 4 Environmental Consequences	Sec 4.16.2.1	4.16-18	Bridge Crossings- "Instream channel work, including installation of bridge footings and embankments, would occur year-round during the first 2 years of construction. "	Instream work will be limited to dates specified in Fish Habitat Permits
ADF&G/ Sport Fish/ISF Program	Chapter 4 Environmental Consequences	Sec 4.16.2.1	4.16-19	"Before the extraction of water from anadromous streams along the road and pipeline corridors, sufficient streamflow would need to be demonstrated to permit summer/winter extraction."	Demonstration of sufficient streamflow/monitoring will be the onus of the applicant
ADF&G/ Sport Fish/ISF Program	Chapter 4 Environmental Consequences	Sec 4.24.2.3	4.24-7	"The magnitude and extent of impact would vary among the three principal tributaries, according to the degree of surface water and groundwater capture, the location of impacts in the basin, the proximity and size of downstream tributaries, and the magnitude of flow augmentation at the water release facilities."	Provide further analysis of these impacts, since a detailed water management plan is proposed, the information should be available to assess the estimated magnitude and extent of impacts

ADF&G/Sport Fish	Chapter 4 Environmental Consequences	Sec 4.24.2.6	4.24-16	In the Natural Gas Pipeline section there is no mention to disrupting important fish stocks such as Pacific halibut and salmon.	A thorough review of important fish stocks migration through Cook Inlet salt waters should be reviewed. The nearshore waters near the compression station location is an important staging area for Kenai Peninsula salmon stocks as they return to spawn.

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ADF&G/Subsistence	Chapter 3 Affected Environment	Sec 3.9.3	3.9-4	Effects are minimized.	Document states small effects on resources in the watershed as a whole; impacts would be localized to the vicinity of the project area. Adverse impacts on salmon populations would be felt by all communities in the watershed.
ADF&G/Subsistence	Chapter 3 Affected Environment	Sec 3.9.3	3.9-5	Incorrect statement that data available through the ADF&G Community Subsistence Information System are not as recent as the technical paper database.	Either give a different explanation for relying on the technical papers or delete what comes after "reviewed and incorporated into this analysis..." Data in the CSIS is the most current source of data.
ADF&G/Subsistence	Chapter 3 Affected Environment	Sec 3.9.3	3.9-7	Would be helpful to have the communities in the immediate vicinity delineated in this table	Highlight those communities, move Port Alsworth since it is not discussed with the other nearby communities.
ADF&G/Subsistence	Chapter 3 Affected Environment	Sec 3.9.3	3.9-9	More recent salmon and nonsalmon harvest data is available	Salmon harvest data for 2007-2008 (Tech Paper No 352) nonsalmon harvest data from 2013 (TP #411).
ADF&G/Subsistence	Chapter 3 Affected Environment	Sec 3.9.3	3.9-12	More recent salmon and nonsalmon harvest data is available	Salmon harvest data for 2007-2008 (Tech Paper No 352) nonsalmon harvest data from 2013 (TP #411).
ADF&G/Subsistence	Chapter 3 Affected Environment	Sec 3.9.3	3.9-15	More recent nonsalmon harvest data is available	Nonsalmon harvest data 2012-2013, ADF&G TP 411
ADF&G/Subsistence	Chapter 3 Affected Environment	Sec 3.9.3	3.9-18	More recent salmon and nonsalmon harvest data is available	Salmon harvest data for 2007-2008 (Tech Paper No 352) nonsalmon harvest data from 2013 (TP #411).
ADF&G/Subsistence	Chapter 3 Affected Environment	Sec 3.9.3	3.9-21	More recent nonsalmon harvest data is available	Nonsalmon harvest data 2012-2013, ADF&G TP 411
ADF&G/Subsistence	Chapter 3 Affected Environment	Sec 3.9.3	3.9-12	Why are only marine mammals singled out as a species group "a smaller proportion of households harvest"? Nonsalmon fish and large land mammals, migratory birds and bird eggs, as well as vegetation are all used and/or harvested by greater percentages of households.	Specify why marine mammals are singled out or include other resource categories.
ADF&G/Subsistence	Chapter 3 Affected Environment	Sec 3.9.3	3.9-15	Why are only marine mammals singled out as a species group "a smaller proportion of households harvest"? Nonsalmon fish and large land mammals, bird eggs, as well as vegetation are all used and/or harvested by greater percentages of households.	Specify why marine mammals are singled out or include other resource categories.
ADF&G/Subsistence	Chapter 3 Affected Environment	Sec 3.9.3.4	3.9-18	Why are only marine mammals singled out as a species group "a smaller proportion of households harvest"? Nonsalmon fish and large land mammals, small land mammals, as well as vegetation are all used and/or harvested by greater percentages of households.	Specify why marine mammals are singled out or include other resource categories.
ADF&G/Subsistence	Chapter 3 Affected Environment	Sec 3.9.3.5	3.9-21	Why are only marine mammals singled out as a species group "a smaller proportion of households harvest"? All other resource categories are used and/or harvested by equal or greater percentages of households.	Specify why marine mammals are singled out or include other resource categories.
ADF&G/Subsistence	Chapter 3 Affected Environment	Sec 3.9.3.5	3.9-22	Singling out two reasons that were *not* given for changes in harvest and use is of limited value. These were open-ended questions, so lots of reasons were not given, not just these two.	Provide reasons that were given or provide more context about reasons for changes in harvests and uses.
ADF&G/Subsistence	Chapter 3 Affected Environment	Sec 3.9.3.5	3.9-22	This is the only community for which reasons given, or not, for changes in households' harvests and uses was given.	Provide similar data for the other communities.
ADF&G/Subsistence	Chapter 3 Affected Environment	Sec 3.9.3.6	3.9-24	It isn't stated to what Kokhanok's economy is being compared to. Explain that is has "comparatively little industrial or tourist based economic development."	Explain what it is being compared to - other communities in the region, in the state?
ADF&G/Subsistence	Chapter 4 Environmental Consequences	Sec 4.9.2.2	4.9-4	Use area maps depict all the places that people use for harvesting wild resources in any given year, but not all areas are equally productive any given year. Although communities may have access to other areas for resource harvest outside of proposed areas with likely disrupted access, those areas may not be an equal substitute.	Include some discussion to this effect, similar to what was included in Chapter 3.
ADF&G/Subsistence	Chapter 4 Environmental Consequences	Sec 4.9.2.2	4.9-4	End of 2nd paragraph, crossing at designated points may add travel time and expense for subsistence users, not just travel time.	Add in that expense may increase with the use of designated crossing points.
ADF&G/Subsistence	Chapter 4 Environmental Consequences	Sec 4.9.2.3	4.9-7	"visit for recreational trips" could include sport hunting or fishing.	Recreation trips to nearby destinations, including for the purposes of sport hunting or fishing.
ADF&G/Subsistence	Chapter 4 Environmental Consequences	Sec 4.9.2.4	4.9-9	If there are adverse impacts on salmon runs, the communities affected would not be limited to those closest to the project's infrastructure and transportation activities. Downriver communities would be impacted by reduced salmon runs and would not just have "perceived concerns"	Change the second to last paragraph to recognize the movement of resources, such as of salmon runs, and the potential impact that could have on subsistence practices of downstream communities.
ADF&G/Subsistence	Chapter 4 Environmental Consequences	Secs 4.4.2, 4.4.3, 4.4.4	4.4-5, 4.4-6, and 4.4-9	Mapped subsistence resource harvest areas do not represent just one year of use, but areas that have been used over some period of time. Because an area has been used in one year, does not mean it's always used or vice versa. Stating that the impacts of access to subsistence harvest areas would not be high and adverse neglects the unpredictable nature of subsistence resources. If large land mammals are not present in an area that has been hunted in years past, then the availability of this alternate area does not mitigate the loss of access to the areas around the mine and transportation corridors.	Acknowledge in the assessment the variable nature of subsistence resources in terms of location and abundance and qualify the statement that impacts would not be high and adverse.
ADF&G/Subsistence	Chapter 9 References	N/A	9-43	Incorrect citation year	Wolfe et al 2005 should have a date of 2010, not 2005.

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ADF&G/Wildlife/Refuges	Draft EIS	General	General	Throughout the documents a common theme is to refer the reader to previous or other chapters or sections for information on the subject that is currently being read. For example, it is common to say Impacts or resources for one alternative are the same or similar as another alternative or site. Or to say as described in Alternative X, when discussing another alternative or variant. This is confusing and does not give the reader any good idea of the importance of resources or the impacts involved in any particular section or alternative. The affected resources and impacts for each alternative, variant and project site should explain in detail within the section that is being discussed.	Explain the affected resources and impacts for each alternative, variant and project site in detail within the section that is being discussed and avoid constantly referring to other sections for the information.
ADF&G/Wildlife/Refuges	Draft EIS	General	General	Garbage, other industrial attractants and food conditioning of bears or other wildlife caused by operations at facilities and increased access along roadways will cause conflicts and management issues. Project infrastructure, the WMP and any mitigation measures need to assess potential sources of food, garbage, or other wildlife attractants at each facility and along transportation corridors. Incorporate wildlife movement corridors, accessibility, mortality threats, and risks of food conditioning to public safety. Particularly problematic along south road corridor and Amakdedori site as brown bears using these areas utilize McNeil River State Game Sanctuary and McNeil River State Game Refuge. And food conditioning of these bears can cause substantial problems for the State and public safety.	Incorporate requested analysis and information into revised sections of EIS.
ADF&G/Wildlife/Refuges	Chapter 2 Alternatives	Sec 2	2-17 through the end of sec	Page numbering is off. Section starts with page 2-1 and goes through 2-17; then restarts at 2-1 (part way through the mine site description) and goes through 2-103.	Correct Chapter 2 page numbering.
ADF&G/Wildlife/Refuges	Chapter 2 Alternatives	Sec 2.2.2.2, 2.2.2.6, and 2.2.3.2	2-29	"NOTE TO REVIEWERS: REQUESTED AN UPDATED DATA SET FOR MATERIAL SITES FOR ALL ACTION ALTERNATIVES." The updated data is needed in order to comment on this section as well as other sections that material source locations and sizes impact. In addition to direct impacts to habitat and species these sites have noise, water quality, aesthetic, and other impacts on nearby resources.	Provide updated information, including visibility and noise impacts to KOP's
ADF&G/Wildlife/Refuges	Chapter 2 Alternatives	General	General	Vegetation mapping for each project alternative and segment needs to be completed and data presented in order to characterize the effected environment and assess impacts.	Complete vegetation mapping and habitat analysis for effected environments and impacts.
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.2.2.2	3.2-7	"The proposed natural gas pipeline and Amakdedori port would be within 2 miles of the boundary of (but would not occupy) the McNeil River State Game Refuge and Sanctuary, which is managed by the ADF&G in accordance with the McNeil River State Game Refuge and Sanctuary Management Plan (ADF&G 2008)."" The proposed port site and gas pipeline landfall are about 2 miles from the MRSG Refuge border. However, the road corridor and collocated pipeline also run adjacent to the northern edge of the MRSG Refuge border. In this area the road and pipeline are within 1 mile and skirts the Refuge boundary at less than a 1,500 feet in a number of locations and only about 250 feet at its closest point.	Accurately depict the project feature locations in relation to the McNeil River State Game Refuge and McNeil River State Game Sanctuary.
ADF&G/Wildlife/Reg IV	Chapter 3 Affected Environment	Sec 3.5	3.5-1	"Sport and trophy hunting"	Change to "sport hunting". Trophy hunting is a type of sport hunting.
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.5.1.2	3.5-4	"The boundary of the refuge portion would be within 1 mile of the transportation corridor." As noted above the proposed road corridor skirts the Refuge boundary at less than a 1,500 feet in a number of locations and only about 250 feet at its closest point.	Accurately describe and depict the project feature locations in relation to Parks and Sanctuaries. In particular the McNeil River State Game Refuge and McNeil River State Game Sanctuary.
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.5.1.2	3.5-4	"Under Alaska Statute (AS) 16.20.162, access permits are required for entry into the McNeil River State Game Sanctuary. Permits are required for bear viewing, special access to the sanctuary (e.g., for scientific, educational and media purposes), transporters, and activities in the sanctuary other than viewing bears (non-viewing permits) (ADFG 2018e)."	Revise to include underlined text: "Under Alaska Statute (AS) 16.20.162, ADF&G Sanctuary Access permits are required for entry into the McNeil River State Game Sanctuary. Access permits are required for any access to the sanctuary including bear viewing, ~~special access to the sanctuary (e.g., for s~~cientific, educational and media purposes~~)~~, transporters, and activities in the sanctuary other than viewing bears ~~(non-viewing permits)~~ (ADFG 2018e)." An ADF&G Special Area Permit may also be required for activities within the Sanctuary or Refuge, under AS 16.05.
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.5.1.2	3.5-4	Text under Kenai Area Plan misidentifies the KAP units the project occurs in. The Amakdedori Port and portions of the pipeline occurs in Unit 19 Bruin Bay Uplands, not Unit 592. Unit 592, are eelgrass tidelands from Bruin Bay northward. The discussion also mentions the project occurring in KAP Region 7, but gives no details.	Revise and correct section as noted.
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.5.1.2	3.5-4	Section on McNeil River State Game Refuge and Sanctuary needs revision and corrections. Inaccurate and incomplete information is contained in this section regarding McNeil River State Game Sanctuary (MRSGS) and Refuge (MRSGR) and references aren't provided to cross check the information. Permit requirements are listed for the MRSGS but not the MRSGR which is actually closer to the project.	SUGGESTED REWRITE: The McNeil River State Game Sanctuary (MRSGS) and Refuge (MRSGR) lay immediately south of the Amakdedori Port site and south transportation route / gas line. They extend north and east from Katmai National Park and Preserve to the shores of Kamishak Bay. The refuge portion is located north of the sanctuary. Both areas were established by the Alaska State Legislature (AS 16.20.041 and AS 16.20.162) for the permanent protection of brown bear, and other fish and wildlife populations and their habitats, for scientific, aesthetic and educational purposes. The Legislature provided additional direction for ADF&G to manage human use and activities in a way that is compatible with the primary purpose and maintains and enhances bear-viewing opportunities. The McNeil River State Game Sanctuary was created over 50 years ago in recognition of the unique and exceptional brown bear feeding congregation area and viewing opportunities at McNeil Falls. The McNeil River State Game Refuge was created adjacent to the MRSGS in the early 1990s to provide additional protection to the McNeil brown bears. The MRSGS hosts visitor facilities (i.e., campground, visitor support buildings, trails) and a world class brown bear viewing program which primarily occurs at McNeil River, Mikfik Creek, and along the coast. The MRSGR does not contain yet have any visitor facilities and is located north of the MRSGS. The MRSGR includes most of the Paint River drainage and the Chenik Creek drainage. ; most bear-viewing activities within the refuge occur near Chenik Creek. Smaller numbers of brown bear congregate at Chenik Creek within Chenik Lagoon during late June - late July depending on timing of the sockeye run there. Guided bear viewing and private visitor bear viewing occurs during the month of July. The boundary of the refuge portion would be within 1 mile of the transportation corridor and as close as several hundred feet in some locations. And it is within 2 miles of the Amakdedori port site. The MRSGS is closed to all hunting and trapping under statute, while the MRSGR is closed to brown bear hunting, but open to other hunting and trapping under Board of Game regulations. Fishing is allowed in portions of the refuge and sanctuary, consistent with current Board of Fisheries regulations. Under Alaska Statute (AS) 16.20.162, access permits are required for entry into the McNeil River State Game Sanctuary. Permits are required for bear viewing, special access to the sanctuary (e.g., for scientific
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.5.1.2	3.5-6	Sportfishing section does not include information on Kamishak River, Little Kamishak River and Strike Creek fisheries. Nor other sportfishing opportunities on the West side of Cook Inlet in the project area.	Revise and correct section to include Sportfishing opportunities on West Side Cook Inlet and Kamishak Bay.
ADF&G/Wildlife/Reg IV	Chapter 3 Affected Environment	Sec 3.5	3.5-6	"brown/grizzly bear" change to brown bear.	
ADF&G/Wildlife/Reg IV	Chapter 3 Affected Environment	Table 3.5-1	3.5-7	"brown/grizzly bear" change to brown bear.	
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.5	3.5-8	"McNeil State Game Refuge and Sanctuary was designated a wildlife sanctuary in 1967 to protect the world's largest concentration of wild brown bears. McNeil River Falls are located about a mile from the mouth of McNeil River; the falls slow the movement of salmon heading upstream to spawning grounds, causing salmon to congregate. Large numbers of brown bears can be seen at McNeil State Game Refuge and Sanctuary in early July through mid-August (ADFG 2018b)." The text in this section contains errors and does not adequately explain the import of recreational opportunities at McNeil River State Game Sanctuary or McNeil River State Game Refuge.	SUGGESTED REWRITE: "The McNeil State Game Sanctuary was created in 1967 to protect the world's largest concentration of wild brown bears. Legislation to expand the Sanctuary and create the McNeil River State Game Refuge took effect in 1993. Both were established for the permanent protection of brown bear and other fish and wildlife populations and their habitats. Brown bears congregate and can be seen at McNeil State Game Refuge and Sanctuary from early June through late-August (ADFG 2018b)."

ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.5	3.5-9	Section on Camping/Backpacking/Hiking is largely written in respect to activities occurring on the National Park Units. These activities occur throughout the area on State of Alaska general lands as well as the McNeil River State Game Refuge. The section on Other Opportunities underrepresents the skiing, snowshoeing, trekking and snowmachining that may be occurring in the region.	Revise section to more fully account for recreational opportunities in the affected environments in the area of the Amakdedori Port site, Diamond Point Port site and both Transportation routes.
ADF&G/Wildlife/Refuges	Ch. 3 Affected Environment	Sec 3.6.3	3.6-23 through 28	The EIS incorrectly estimates and reports on the sportfishing use and importance of streams on the west side of lower Cook Inlet; significantly underestimating the use and importance of sport fisheries in the project area. The SWHS data is based on user responses which may under report actual use. For instance they note the Kamishak River has only 276 average annual use days and only 1 mention in 20 years of SWHS data (Table 3.6-16); and no streams of importance in area N (Table 3.6-17). ADF&G McNeil River Sanctuary data reporting and Alaska Guide Logbook Program reporting clearly show that this system is used annually (particularly for guided fishing) and from 2006 - 2016 sport fish guides made about 111 trips (mean 93.6 MRSGS data, 128.6 SF Guide data) per year (about a 3 month season) to these Kamishak streams. Spending an average of 340 angler days (334 and 346 respectively). Angling an annual average of 4,358 fish of four species, with a harvest average of 489 fish, primarily Coho salmon. Even the EIS Appendix K3.6 notes that the Kamishak River has an average of 8 companies, 133 trips per annum, and 356 user or client days. As such Table 3.6-17 should reflect the Kamishak River, as well as, others in Area N that may have sport fishing value.	Consider all data sources and accurately report on sportfishing use and importance in all project areas.
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.6.3	3.6-26	"Angler effort is concentrated north of the project area for all the named sites, with the exception of the Kamishak River located north of Tuxedni Bay. The Kamishak River, which appears once as a named site in 20 years' worth of data, is located south of the project area near the McNeil River State Game Sanctuary and roughly 25 to 30 air miles from the potential Amakdedori port site (see Table 3.6-16)." Descriptions are incorrect and in conflict with one another. The Kamishak River is well south of Tuxedni Bay, and only 18 miles south of the Amakdedori site. Tuxedni Bay is approximately 80 miles northeast of the Amakdedori site and about 96 miles north of the Kamishak River. As noted above the SWHS does not accurately depict all sportfishing in the project area. There are significant resources in the vicinity of the Amakdedori port site that are not being identified and represented in the EIS	Correct geographical errors in descriptions and accurately report on sportfishing use and importance in all project areas.
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.11	3.11-2	"Soundscape was evaluated using a noise receptor analysis from 10 miles around the mine site infrastructure, and from 0.5 miles around the pipeline work area at Happy Valley, the transportation corridor (proposed new access roads), the north and south ferry terminals, and Amakdedori port infrastructure (See Section 3.19, Noise)." It is unclear of the distance that soundscape was evaluated around the transportation corridor and Amakdedori Port infrastructure. If 0.5 miles this is not enough. Noise from the port as well as vessels coming and going will travel farther across the water, especially under some atmospheric conditions such as warm, still days. These noises will impact users to the south and west in McNeil River State Game Refuge and McNeil River State Game Sanctuary.	Revise section to incorporate noted issues.
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Table 3.6-17	3.6-28	"Sources: Sigurdsson and Powers 2012; Sigurdsson and Powers 2013; Sigurdsson and Powers 2014; Powers and Sigurdsson, 2016." Source noted at bottom of Table not included in References Chapter 9.	Provide citation/references
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment and Chapter 4 Environmental Consequences	Sec 3.11 and 4.11	General	The southern road and pipeline corridor would be visible in the immediate foreground of the landscape along much of the northern refuge and from elevated locations within the refuge. Material sites MS-A06, MS-A07, MS-A08, are 19- 22 acres sites on southern aspects facing the McNeil River State Game Sanctuary. They are in the immediate foreground (0.5 to 3 miles) of the Refuge border and would be visible along much of the northern refuge and from many elevated locations within the refuge. Blasting would be occurring at these sites as well. And the Amakdedori Port site would be highly visible in the foreground of the landscape along much of the northeastern refuge, elevated locations within the refuge and from the Chenik Lagoon area.	Analyze and characterize visibility, noise and aesthetic issues of the material sites, southern road and pipeline corridor and Amakdedori Port site on McNeil River State Game Refuge and include in Aesthetics and Noise sections of Chap. 3 Affected Environment and Chap. 4 Environmental Consequences.
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.11.4.2	3.11-4	"As described in Section 3.5, Recreation, the McNeil State Game Refuge and Sanctuary is a premier destination for bear viewing and is home to one of the largest bear populations in Alaska. McNeil River Falls, which is located about a mile from the mouth of the McNeil River, slows the movement of salmon. Large numbers of brown bears can be seen at McNeil State Game Refuge and Sanctuary in early July through mid-August (ADF&G 2018b)." Text incorrectly characterizes resources within refuge and sanctuary and has several errors. McNeil hosts one of largest congregations of brown bear, not population. The population ranges across the Alaska Peninsula and bears using McNeil River have been noted as far away as Iliamna Lake, Hallo Bay, north of Amakdedori Creek, and west towards Kukaklek and Nonvianuk Lakes. Additionally, the statement regarding the falls slowing salmon movement is out of place. And the dates noted for brown bear viewing is wrong. Also this section (as well as others) needs to incorporate visitor use and bear viewing occurring at Chenik Lagoon within the McNeil River State Game Refuge, as that occurs in the immediate foreground of the Amakdedori Port. Revise section.	Suggested revised text. "As described in Section 3.5, Recreation, the McNeil State Game Refuge and Sanctuary is a premier destination for bear viewing and is home to one of the largest congregations of brown bears in Alaska. Large numbers of brown bears come to McNeil River to feed on sockeye, chum, and Coho salmon. Brown bears are present in the McNeil State Game Refuge and Sanctuary throughout the year, and congregate at McNeil River late May through the end of August. ADF&G operates a visitor bear viewing program at McNeil River early June through late August. Smaller numbers of brown bear congregate at Chenik Creek within Chenik Lagoon during late June - late July depending on timing of the sockeye run there. Guided bear viewing and private visitor bear viewing occurs during the month of July.'
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.11.4.2	3.11-4	TYPO: "Viewer positons take into account...."	Correct to positions.
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.11.4.2	3.11-5	"Single day adventure tours are offered from as far away as Anchorage, and as close as Dillingham." As placed within the Amakdedori Port section it is unclear that this is correct or that it presents a complete scope of the visitor use occurring in the area. Single day adventure tours, bear viewing tours etc. are offered from many communities in the project area that may be closer than Dillingham. Including: Homer, Kenai, King Salmon, Dillingham, Illiamna, ; as well as from a number of remote lodges in the project area.	
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.11.4.2	3.11-5	"...Single day tours are almost exclusively accessed via aircraft. Visitors are flown into the park over the proposed project area to access bear viewing locations along the coastline, in the estuaries and up the stream corridors and over the glaciers of Four Peaks Mountain. Multi-day commercial tours either stage outside the park on large boats in Kamishak Bay, or at lodges in the park." As written this appears to only apply to activities occurring within Katmai NP. These activities in fact occur up and down the east coast of the Alaska Peninsula on State of AK lands, as well as Katmai NP, Lake Clark NPP and private lands. There are numerous recreation, bear viewing, hunting and fishing destinations between Tuxedini Bay and Cape Douglas.	Revise text to fully depict visitor use and recreation sites in affected environment.
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.11.4.2	3.11-4	This section should include text explaining the importance and significance of the Talarik Creek, and Koktuli Rivers to sport fishers, guides, and others; similar to the detail given to the Alagnak River under the Transportation Corridor section.	Revise section to reflect importance and significance of the Talarik Creek, and Koktuli Rivers to sport fishers, guides, and others;
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.11.4.2	3.11-6	The pipeline would interface with the entire physiographic unit system tying the Cook Inlet–Susitna Lowlands to the Nushagak–Big River Hills. Unit not described with other regional landscape characterization units.	Include unit descriptions in regional landscape characterizations page 3.11-3.
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.11.4.2	3.11-5	"The Alagnak River is located about 30 miles west of the proposed mine site and 10 miles from Iliamna Lake." Statement is in error. The Alagnak River is located over 60 miles south and somewhat west of the mine site. Since this is under the Transportation Corridor section this may be a typo and Transportation Corridor needs to be substituted here. The Alagnak is much closer and more westerly to the transportation corridor.	Correct section text regarding location of Alagnak in relation to project features.

ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.11.4.2	3.11-5	This section contains no discussion of the McNeil River State Game Refuge, nor its affected resources. The transportation corridor skirts along the northern border of the McNeil River State Game Refuge and aesthetic and noise impacts from the corridor and material sites will be in the foreground from many places within the northern portion of the refuge.	Update section to include affected environment as it relates to McNeil River State Game Sanctuary and resources there.
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.11.5	3.11-6	Section does not discuss the numerous bear viewing operations along the west side of Cook Inlet.	Update text to include discussion of the numerous bear viewing operations and locations along west side Cook Inlet from Tuxedni Bay south to Cape Douglas
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.11.5	3.11-6	"Recreation Areas. Recreation extends..." Section does not discuss McNeil River State Game Sanctuary or McNeil River State Game Refuge in recreation areas.	Include McNeil River State Game Sanctuary or McNeil River State Game Refuge in discussion.
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.11.5	3.11-6	Transportation Routes.	Include a figure with existing air, land and sea transportation routes and reference here.
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.11.7	3.11-7	Text only notes receptors in vicinity of mine site. Discussion needs to include affected soundscape environment for other project components: Transportation corridor, both port sites, ferry terminals, and variants.	Include a figure with existing air, land and sea transportation routes and reference here.
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Table 3.11.1	3.11-8	Table contains KOP location for MRSG Refuge base camp. This should be McNeil River State Game Sanctuary as the base camp is located within the sanctuary. But does not include a KOP for Chenik lagoon within and MRSG Refuge. Chenik lagoon is a bear viewing / guiding area used by private citizens and a few commercial operators. Commercial filming outfits also film in this area.	Correct "refuge" to Sanctuary. Add additional KOP of Chenik lagoon to Table and assess, Amakdedori Port would be in the foreground-middle ground of Chenik lagoon (3-5 mi) Include these analysis in the textual portions of the chapter.
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.12.2	3.12-2	Improve discussion of important affected air transportation. There are a number of destinations (such as McNeil River SGS and SGR), Katmai NPP, Lake Clark NP, bear viewing sites and sportfishing / hunting destinations) and air pathways through passes throughout the project area that need to be considered in the discussion of affected air transportation environment.	Expand discussion of air transport affected resources.
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment Chapter 4 Environmental Consequences	Sec 3.19 and 4.19	General	Noise sections need to consider public uses (KOP's) at Chenik Lagoon within McNeil River SGR and vessel noise over the water of shipping traffic past both McNeil River SGR and the bear viewing camp at McNeil River SGS.	Update and revise section to consider noise impacts to McNeil River SGR and McNeil River SGS users.
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.23	General	In a number of locations there are NOTES TO REVIEWERS that specify missing data or information that will be generated.	The missing information and data is needed in order to provide comments on this section as well as other sections.
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.23 and 4.23	3.23-7 4.23-	"Therefore, while the project transportation corridor is primarily east of the main use area of the Mulchatna caribou herd, ..." "The Mulchatna caribou herd currently does not typically range in the area of the transportation and natural gas pipeline corridors. Caribou move between calving grounds (May to June), insect relief areas (June to July), and seasonal foraging areas (fall and winter months); however, none of these movements are through the transportation and natural gas pipeline corridors. Therefore, no behavioral disturbance impacts on the population (such as shifting migration routes or patterns) are expected to occur. " There is no reference to a smaller portion of caribou, likely associated with the Mulchatna herd, that is known to spend most of the year in the area south from Kokhanok in the higher country around Kukaklek and Nonvianuk Lakes east to Paint River. Not much is known about them, but they are a permanent resident of this area. These smaller localized herds that do inhabit parts of the transportation corridor and port site, such as the herd in the area south and east of Kokhanok, in the higher country around Kukaklek and Nonvianuk Lakes, and east to the coast. In 2018, ADF&G observed caribou at Chenik Lake, about 5.5 miles from the proposed port site; and historically caribou have occasionally been observed within the McNeil River State Game Sanctuary south of there.	Update and revise Chapter 3 and Chapter 4 sections to include caribou herd use along north and south road corridors. Information on these herds should be presented and habitat evaluated. Additional surveys through all seasons should be conducted and integrated into analysis.
ADF&G/Wildlife/Refuges	Ch. 3. Affected Environment	Figure 3.23.1.1	3.23-13	"Historical surveys by the ADF&G of the various GMUs around the mine site have yielded varying population estimates, but the focus of these surveys has been in areas not specifically related to the mine site. Therefore, those data are not included." "...Overall, brown bears were not common in the mine site footprint itself, but were distributed throughout the mine analysis area, primarily along streams and waterways." While historical surveys may not focus on the mine site, they do represent data that can be used to characterize the importance of the brown bear resources in the region or area and should be included. One time or one season surveys of the mine site or other project components for brown bear resources is not sufficient to correctly characterize the affected resource, nor complete accurate analysis of impacts.	Compile all existing bear population and survey data from various agencies, for all project areas. Complete additional multi-season surveys to determine use patterns at project components. This information is necessary in order to accurately characterize affected brown bear resources, determine impacts and develop avoidance, minimization and mitigation measures.
ADF&G/Wildlife/Refuges	Ch. 3. Affected Environment	Figure 3.23-7	3.23-16	Figure 3.23-7 is noted in multiple places throughout Chapters 3 & 4	Provide figures for review
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Figures 3.23-7 through 3.23-11	3.23-16 through 3.23-35	Figures 3.23-7 through 3.23-11 were not provided for review, which makes review of the textual sections these figures refer to incomplete.	Provide figures for review
ADF&G/Wildlife/Reg IV	Chapter 3 Affected Environment	Sec 3.23	3.23-17	"The ADF&G actively removes wolves in a large portion of GMU 17B/C in the range of the Mulchatna Caribou Herd, west of Iliamna Lake, which does not overlap with the mine site." This is not correct. The ADF&G is not actively "removing wolves". The IM program authorizes permitted hunters who are private pilots to take wolves by additional means within the IM area in order to increase caribou calf survival and meet Mulchatna caribou IM objectives for abundance and harvest. It is also unclear if it is the IM management area or the Mulchatna caribou herd that does not overlap with the mine site. Explain how this addition is relevant.	Either remove the language or rephrase as indicated.
ADF&G/Wildlife/Reg IV	Chapter 3 Affected Environment	Sec 3.23	3.23-18	"Population information for these species is limited, and is provided by trapper questionnaires (Parr 2018). Table 3.23-1 lists species with their relative abundance, if known, based on trapper questionnaires for GMU 17B, where the mine site facilities are located, and for GMU 9, where the transportation and natural gas pipeline corridors exist (west of Cook Inlet)(Parr 2018)." Wording is misleading suggesting data is more accurate and more specific in geographical context than it really is. Population information for furbearer and small mammal species for the project area is not available. The relative abundance information provided by the Alaska Trapper Surveys is only an index of relative abundance throughout the entire region, based on the perceptions and responses of relatively few trappers (n=8 for the data noted) for all of GMU 17 (most of Bristol Bay), not the smaller unit 17B. And is not specific to the mine site.	Project specific species abundance data and information on the effected small game and furbearer resources should be provided by the applicant; revise wording to reflect broad regional classification of information, entailing all of GMU's 17 & 9, Bristol Bay; include map of area with GMU's to show full extent of GMU's; look into additional data sources from sealing records for nearby communities of Iliamna, Igiugig, Nondalton, etc. For species that requiring sealing these might provide more specific information ion about area specific furbearer harvest.
ADF&G/DWC/Refuges	Chapter 3 Affected Environment	Sec 3.23	3.23-18	"There are additional mammal species that are not considered “furbearers,” and are known to occur in the mine analysis area. These include hoary marmot (Marmota caligata), arctic ground squirrel (Spermophilus parryii), snowshoe hare (Lepus americanus), tundra hare (Lepus othus), collared pika (Ochotona collaris), and various species of mice, lemmings, shrews, and voles. These species are generally common to abundant, depending on their population cycles."	Provide complete list of furbearers and other effected species in Table or appendices. Correct tundra hare to Alaska hare.
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.23.1.2 and 3.23.1.3	3.23-20, 3.23-23, 3.23-26	"No project-specific waterbird surveys have been conducted to date for areas south of Iliamna Lake." And at the end of the Waterbirds subsection there is a place holder note from USACE - "Note: 2018 field data for the south access road will be incorporated into the analysis of the Draft EIS." The results of the 2018 bird surveys have not been incorporated into the report.	Incorporate 2018 South Access Road and Amakdedori Port site survey data, as well as other available survey data, to fully identify affected resources and impacts and so that comments can be provided.
ADF&G/Wildlife/TED	Chapter 3 Affected Environment	Sec 3.23.1.2	3.23-23	The term "conservation species" is vague. Also common names of birds need to be capitalized.	Please replace "conservation species" with "species of greatest conservation need (SGCN) in Alaska" throughout this section, and the waterbirds section. A list of these species can be found here: https://www.adfg.alaska.gov/static/species/wildlife_action_plan/2015_alaska_wildlife_action_plan.pdf. Please also capitalize common names of birds as is customary (American Ornithological Society http://www.bioone.org/doi/full/10.1642/AUK-18-62.1)
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.23	3.23-24	EIS presents information and concludes that disturbance to brown bears from road construction and operation is probable. DFG concurs, however, the applicant needs to supply data and information on movement patterns and habitat use areas within the project area. Brown bear densities along the southern road corridor and in the vicinity of Amakdedori port are high and this species is of high value in this area. Information on movement patterns and use areas is critical to being able to avoid, minimize or mitigate impacts to brown bear and the McNeil River State Game Refuge and McNeil River State Game Sanctuary.	Provide long term data and information on brown bear movement patterns and habitat use areas in order to avoid, minimize or mitigate adverse impacts to brown bear and the McNeil River State Game Sanctuary and Refuge.

ADF&G/Wildlife/Reg IV	Chapter 3 Affected Environment	Sec 3.23	3.23-24	"Per ADF&G area management biologist Dave Crowley, for GMUs 9 and 10, there are approximately 0.19 moose per square kilometer or less for most of the Alaska Peninsula due to limited habitat (Lill 2017)."	Should be moose per square mile, not kilometer. Cited literature (Lill 2017) does not appear in References.
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.23.1.2	3.23-24	Surveys conducted in May 2018 documented a concentration of brown bear dens on both sides of the south access road and around Amakdedori port (Figure 3.23-7). Surveys documented bear dens throughout the length of the south access road, with the majority observed near Cook Inlet north of Amakdedori Creek. Additional Dens were located around the outflow to Gibraltar Lake near the south shore of Iliamna Lake. Several of the dens were close to the south access road, with the closest one around 300 feet north of the road. Additional surveys for bears around salmon streams were conducted in mid-August 2018 Bears were primarily located near the south shore of Iliamna Lake, at the east end of Gibraltar Lake, and fishing in the river flowing into Bruin Bay, with a few individuals upstream in Amakdedori Creek.	Text references studies that are not documented or cited. Provide citations and data details. the stream surveys for bears were conducted mid July, mid August and early September 2018 according to the ABR field summary report. The surveys likely significantly underestimates the number of bears using these areas. Bear use of streams is highly dependent upon species of fish, run size, fish run timing, bear gender, bear age, and access to fish. Three surveys throughout one summer are not likely to capture accurate bear and habitat use patterns. There were bears noted in Amakdedori Creek at the port site that should be noted here also. Amakdedori Creek supports chum Coho, pink and sockeye salmon. And likely has higher bear use throughout the season, than the two bears noted. This area is also likely a travel corridor for bears along the coast and heading inland
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.23.1.3	3.23-24	"Amakdedori port would be north of the McNeil River State Game Refuge and Sanctuary, which is a world-famous brown bear viewing location. During bear surveys in May 2009 for the mine site, black bears were more commonly documented east of Iliamna Lake and in some areas near the Cook Inlet. Brown bears were also common on the southern side of Iliamna Lake near Gibraltar Lake. Surveys for bears around salmon-spawning streams in summer 2018 documented a few brown bears fishing upstream in Amakdedori Creek, approximately 1 to 1.5 miles west of the port (Figure 3.23-7)." The text substantially underrepresents the brown bear resources in the area of the Amakdedori Port site and road / gas line corridor. Brown bear are very common in the area and have seasonally high concentrations at area salmon streams. Stream surveys are highly dependent upon fish run size, bear gender, bear age, and access to fish. The single survey noted in late August 2018 is not adequate to characterize bear resources in the proposed Amakdedori Port and south road / gas line corridor. The survey was not repeated regularly nor timed correctly to captured congregations on Amakdedori Creek, or other coastal streams in the area. Nor along the road / gas line corridor. Regular brown bear surveys at McNeil River, and incidental surveys at other streams in the area such as Chenik Creek and Iniskin Bay place high numbers of bears on these streams during the peak of salmon runs and lower numbers throughout the season. This very likely holds true for Amakdedori Creek as well. And as fish runs dwindle at the coast bears move inland to higher berry resources or streams at the upper reaches of Bristol Bay streams. In addition to the seasonal timing, the daily timing will make a difference to. Bears are more likely to be fishing the intertidal reaches of Amakdedori Creek adjacent the port site during low tide periods as fish move up through the shallows. And then move upstream above the tidal zone as the tide rises. Generally, stream surveys for bears are not a good way to gauge resource use unless they can be repeated regularly and over time	Collect and present data on brown bear use at Amakdedori site and along southern transportation / pipeline corridor during entirety of season at appropriate timing. This section should highlight the high densities of brown bears along the Kamishak Coast, not just bears observed in Amakdedori Creek during one survey. For example, the coast is used in general as a migration corridor, the mudflats are used for feeding, the beach is used for early season foraging, streams are used for feeding, breeding occurs in the area, etc. Figure 3.23-7 is referenced in this and other sections for brown bear den locations yet it was not provided for review.
ADF&G/Wildlife/Refuges	Ch. 3. Affected Environment - Wildlife Values	Sec 3.23.1.3	3.23-25	"The terrestrial habitat around the Amakdedori port generally lacks large waterbodies where waterbirds may breed and stage. Habitat is composed primarily of upland vegetation communities that drain east toward Cook Inlet and do not form extensive wetland areas." Statement is incorrect and misleading. In addition to large backwatered portions of Amakdedori Creek, there are over 45 small wetland pothole type waterbodies in the immediate vicinity of the Amakdedori Port site, ranging in size from .01 to ~4 acres. Typically these waterbodies would provide excellent nesting, rearing and staging habitat for a number of waterbirds and shorebirds. Additionally, there are a number of larger waterbodies to the west within 5 miles of the port site	Update characterization of Amakdedori Port site to accurately portray waterbird habitats present, and update Chapter 4 environmental consequences accordingly.
ADF&G/Wildlife/Refuges	Ch. 3. Affected Environment	Sec 3.23.1.3	3.23-26	For the subsection, Waterbirds, in 3.23.1.3 Amakdedori Port, there is a place-holder note regarding important baseline data: "Note: 2018 field data for the Amakdedori port is being synthesized and will be provided in a later EIS draft."	Incorporate 2018 South Access Road and Amakdedori Port site survey data, as well as other available survey data, to fully identify affected resources and impacts and so that comments can be provided.
ADF&G/Wildlife/TED	Chapter 3 Affected Environment	Sec 3.23.1.3	3.23-26	"Therefore, although the Amakdedori port footprint may not support large numbers of breeding waterbirds, it is flanked by two nearby IBAs, and is situated in a global IBA (Smith et al. 2017). " If no surveys have been conducted at the port itself, how is it possible to discern whether it has large numbers of breeding waterbirds or not?	Please replace this sentence with "The Amakdedori port is flanked by two nearby IBAs and is situated in a global IBA (Smith et al. 2017). Provide breeding bird data specific to the port site on the numbers of waterbirds using the area throughout the year (both winter and summer bird surveys are recommended).
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment	Sec 3.23.1.3	3.23-27	The section on "Large Mammals" for the Amakdedori Port site lacks significant explanation of the Amakdedori Port Affected Environment with respect to the brown bears utilizing McNeil River SGS and severely under represents the significance of the brown bear resources in this area and brown bear resources in the McNeil River State Game Refuge and Sanctuary. Information regarding bear numbers utilizing the area, movement patterns, and habitat use areas around the proposed port site and transportation corridor cannot be ascertained from the survey presented. Brown bear densities along the southern road corridor and in the vicinity of Amakdedori port are high and this species is of high value in this area. The applicant needs to supply baseline data and information on brown bear movement patterns and habitat use areas within the project area. Information on movement patterns and use areas is critical to being able to avoid, minimize or mitigate impacts to brown bear and the McNeil River State Game Refuge and McNeil River State Game Sanctuary is required to understand how the port infrastructure would affect the high concentration of brown bears in the area.	Provide long term data and information on brown bear movement patterns and habitat use areas in order to avoid, minimize or mitigate adverse impacts to brown bear and the McNeil River State Game Sanctuary and Refuge. Revise and expand text to fully account for affected environment in relation to the proximity of the proposed Amakdedori port to McNeil River SGR and SGS, the large number of bears in the area and the movement of these bears along the coast and their use of the MRSGS and MRSGR.
ADF&G/Wildlife/Reg IV	Chapter 3 Affected Environment	Sec 3.23	3.23-31	"The peak date of births in Iliamna Lake was based on the peak percentage of pups found in aerial surveys of the lake during May through August of 2010 to 2013 (excluding 2012), compared to those in Navak Bay."	Correction: Nanvak Bay
ADF&G/Wildlife/Reg IV	Chapter 3 Affected Environment	Sec 3.25	3.25-9	Paragraph 2- 2004-2006 satellite tagged eiders should be cited Rosenberg et al. 2016 right away instead of several sentences later.	revise citation location as appropriate
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.2.2.2	4.2-2	"Active management for fish and wildlife protection would necessarily be modified in the immediate area through the life of the mine and into post-closure as a result of the project." text is misleading, Revise text to more accurately depict that management changes and impacts would be needed as a result of project.	SUGGESTED REWRITE: "Modification of active management for fish and wildlife protection would be necessary as a result of the project, in the immediate area through the life of the mine and into post-closure."
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.2.2.2	4.2-2	Section contains no discussion of extremely close proximity of the Amakdedori Port site and Transportation corridor to McNeil River SGS or SGR with regard to management intents for the refuge and sanctuary, as well as the general DNR habitat lands the project is sited on.	Revise section to include proximity of McNeil River SGS and SGR and management intents that may be affected by proposed project components on nearby lands.
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.2.5 Table 4.2-1	4.2-7 through 4.2-9	No mention of key management issues for MRSGS and MRSGR in Chapter.	Update information in key issues summaries to include information on McNeil River SGS/ McNeil River SGR management issues as noted throughout comments.
ADF&G/DWC/Refuges	Chapter 4 Environmental Consequences	Section 4.2.6	4.2-9 and 4.2-10	Cumulative Effects section of Chapter 4, Section 2 is brief and incomplete. While the section identifies a number of reasonably-foreseeable future actions it does not present any information on the actual cumulative effects of the proposed action in relation to these RFFA's.	Revise cumulative effects sections to include analysis of cumulative nature of project impacts.
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Section 4.3.3.2	4.3-9	Document states: "Note to Reviewers: Land owners for ROW acquisition will be inserted here for the Draft EIS." Incomplete section, material required for adequate review.	provide needed text and data.
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.5.2.2 and 4.5.2.3	4.5-2 through 4.5-5	Sections on transport corridor and proposed Amakdedori port site need to be updated and more complete regarding the bear resources and public and commercial bear viewing programs within McNeil River SGR / SGS and Katmai NPP. The transport corridor and proposed Amakdedori port site components are in an area of high bear densities along the borders of McNeil River SGR / SGS and Katmai NPP. These public lands protect bear populations and habitats and have public bear viewing programs in close proximity of the project infrastructure. The Affected Environment and Environmental Consequences chapters do not even present information on a number of the bear viewing opportunities in close proximity to the project features; such as those at Chenik Lagoon within the McNeil River SGR and those at Funnel Moraine Creeks within Katmai National Preserve. Environmental consequent analysis needs to consider a number of factors including identifying important habitats, acreages and movement corridors; behavioral, mortality and public safety impacts of neutrally and negatively habituated and food conditioned bears; impacts to bears, populations, and programs within the adjacent parklands as a result of behavioral, mortality and habitat changes within the project area.	Provide long term data and information on brown bear movement patterns, important habitat use areas and movement corridors along the transportation corridors and port sites; in order to address impacts to brown bear habitats, behaviors, mortality, and bear viewing and recreation programs. Revise analysis given comments. This analysis should also consider functional loss of habitats due to behavior changes and avoidance, as well as the public safety and program quality and revenue losses within the McNeil River State Game Sanctuary and Refuge as a result of avoidance behaviors, altered behaviors and fragmentation due to infrastructure. Revise and expand text to fully account for bear and land management impacts in relation to the proposed Amakdedori port and transportation corridors proximity to McNeil River SGR/SGS and Katmai NPP, the large number of bears in the area and the movement of these bears along the coast and their use of the MRSGS and MRSGR.

	Chapter 4 Environmental Consequences	Section 4.5.2.3	4.5-5	The project may affect incidental wildlife viewing, hunting, and fishing opportunities at the port site, to the extent that they occur. Noise and activities would displace wildlife and fish from the immediate area, thus adversely affecting wildlife viewing, hunting, and fishing opportunities and experiences by reducing the likelihood of seeing wildlife or catching fish. In addition, project-related noise and activities during construction, operations, and closure at Amakdedori Port would adversely affect the recreational experiences of visitors within visual and auditory distance of the port site because of the change from a quiet, undeveloped area to a developed site with visible facilities, generators, and in-water facilities. The adverse effects would displace from this area those visitors who prefer a quiet, undisturbed recreation setting, or who participate in recreation opportunities such as wildlife viewing, hunting, and fishing, which typically require a quiet, undisturbed recreation setting. Overall, because recreational use of the Amakdedori Port site is likely low, project-related wildlife and fish displacement, noise, and activities would result in minimal displacement of wildlife viewing and fishing uses to other nearby shoreline areas." This mischaracterizes the nature of the impacts to recreation that the Amakdedori Port site. These disturbances would apply southward to Chenik Lagoon within the McNeil River SGR. In addition the Amakdedori site has been selected for various guide camp applications over the years in addition to beach combing occurring along the seven mile Amakdedori beach. These activities are all occurring at a low dispersed level as intended through the DNR land management plan. Conversion of this area to an industrial port would unavoidably change the uses and character of this area, both physically and in terms of avoidance	Both Chapters 3 & 4 need to fully identify and account for affected recreational activities at Amakdedori Creek and beach; and then provide avoidance, minimization and mitigation measures to avoid or reduce these impacts.
ADF&G/Wildlife/Refuges	Ch. 4 Environmental Consequences	Table 4.5-1	4.5-9 and 4.5-10	The Summary of Key Issues for Recreation table is incomplete with respect to potential adverse effects on Recreation at McNeil River SGS and SGR. Key Impacts need to include impacts to Recreation Experience, as well as, impacts to experience, setting and activities related to uses at Chenik Lagoon and along the northern border of the McNeil Refuge.	Gather baseline data on McNeil River SGS and SGR Recreational bear viewing and other uses along northern border and thoroughly and accurately summarize potential adverse impacts of the transportation corridor and port site in text and table 4.5-1
ADF&G/Wildlife/Refuges	Ch. 4 Environmental Consequences	Section 4.5.6	4.5-10 and 4.5-11	The Cumulative Effects section of this Draft EIS is incomplete and relies on previously collected information that does not accurately relate to the current mine/infrastructure plans.	Accurately assess and gather baseline data regarding Cumulative Effects on Recreation and wait until this is provided to review the Draft EIS.
ADF&G/Wildlife/Reg IV	Chapter 4 Environmental Consequences	Sec 4.9.2.2	4.9-4	The statement..."Once constructed, the transportation corridor roads and the natural gas pipeline corridor ROW could have a positive effect on access to subsistence resources (depending on the level of access agreed to between the State, PLP, and the Lake and Peninsula Borough [LPB]) because these cleared routes could facilitate some overland travel by ATVs and snow machines." Positive effect on access to subsistence resources cannot be supported without further detail and analysis. There is just as likely to be a net negative effect depending on how access to the road and surrounding land is managed, and management of the subsistence resources. Increased access, while opening other areas, is likely to also increase harvests by both subsistence and non-subsistence users and may have a negative effect on subsistence opportunity	Analyze and present the potential negative effects to subsistence resources of increased access, as well as benefits.
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.11	4.11-1	TYPO: "Aesthetic impacts include ~~in~~ those that could..."	Delete extra word "in"
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.11.3.2	4.11-4	"Impacts of the transportation corridor perceived from residents, recreationists, or subsistence users in the EIS analysis area would be of low to medium magnitude and localized geographic extent due to screening of the road corridor by vegetation...' This logic is used in a few places. While this may be the case below tree line, this is not the case in tundra areas above tree line, such as those along the south road corridor.	Revise analysis and text throughout alternatives to account for areas of low vegetation not screening visibility and noises.
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.11.3.2	4.11-5	"Season-specific impacts....at the ferry terminals. " First six lines of this section belong in previous sections on Alternative one. This discusses impacts associated with the Illiamna lake ferry crossing; not the summer only variant.	Revise section as noted
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.11.3.3	4.11-5	Visual impacts section and subsequent sections on soundscapes and all components do not adequately address impacts to the McNeil River State Game Refuge and bear viewing and visitor aesthetic impacts at Chenik Lagoon. The proposed Amakdedori Port would be in the immediate foreground of operations and visitation at Chenik Lagoon and needs to be addressed throughout the document.	Revise section and remainder of EIS document to accurately portray resources and impacts to Chenik Lagoon public uses within the McNeil River State Game Refuge.
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.11.3.3	4.11-5	"The port would not be visible from the mouth of McNeil River at the edge of McNeil State Game Refuge; however, vessel traffic including lightering at the southern location, would be evident and could be a dominant part of the viewers' experience." The mouth of the McNeil River is at the edge of the McNeil River State Game Sanctuary, which is south of the refuge. Additionally, as noted elsewhere, Chenik Lagoon within the McNeil River State Game Refuge is an important bear viewing and visitor use area. The proposed Amakdedori Port would be in the immediate foreground of operations and visitation at Chenik Lagoon, and needs to be addressed in this section as well as throughout the document.	Revise section as noted
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.11.3.3	4.11-5	"Visual impacts could impact viewers located in areas identified by special designations, including the McNeil River State Game Refuge..." Visual impacts would impact McNeil River State Game Refuge users.	Revise language to "would".
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.11.3.3	4.11-5	"The duration of direct impacts would be long term, as an agreement with the landowner would leave the port facilities in place for use as an industrial port."	It seems that this agreement should be contingent on the review of the project and that if the intent is to leave the port in place in perpetuity then the EIS and analysis should be updated to include that, as well as, those proposed long term activities.
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.11.3.3	4.11-5	"The anticipated noise effects within the two latter above-stated distance buffers would last as long as the port operates during concentrate loading." The anticipated noise impacts would last as long as the port operates. If noise levels during concentrate loading are significantly different from the industrial port loading that would occur after the port transfers to the landowner then those distinctions should be made	Document long term anticipated noise levels for port operations beyond life of project.
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment Chapter 4 Environmental Consequences	Sec 4.11.7	4.11-11	TYPO: "mining clams"	Change to claims
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.13.2.3 Table 4.16-5	4.13-4 and 4.16-28	Text of section and Table describe direct fill impacts of the earthen access causeway constructed in the nearshore waters of Kamishak Bay. However, they do not discuss the significant impacts this permanent solid fill modification would have to the shoreline processes along Amakdedori Beach. This solid fill causeway would be expected to interrupt longshore movement of shoreline sediments that feed Amakdedori beach, erosion and sedimentation patterns in the area, as well as the fish and wildlife habitats at Amakdedori Creek and in the shallow offshore waters of Amakdedori Beach. Depending on circulation and sediment transport mechanisms and patterns these impacts may extend southward into the McNeil River State Game Sanctuary. Data collection, analysis and documentation need to be made on these impacts along Amakdedori beach and the mouth of Amakdedori Creek.	Update and complete these sections to fully address the impacts of the solid fill causeway, sheet pile armoring, and any "...project design features and mitigation measures..." incorporated to avoid or reduce erosion and sedimentation; on longshore movement of sediments, erosion processes and coastal habitats. It also needs to consider disruptions to movement and migratory patterns of fish and wildlife the tidelands and beach area.
ADF&G/Wildlife/Refuges	Ch. 4. Environmental Consequences	Sec 4.23	4.23-1	Draft EIS refers to the development of a Wildlife Management Plan to mitigate impacts to wildlife: "Specific mitigation measures to minimize impacts are currently being developed. Impacts to wildlife species would be minimized or mitigated by development of a Wildlife Management Plan (WMP), which would detail management measures to minimize impacts to wildlife species." WMP is needed for review before the environmental consequences of the project can be fully reviewed and evaluated. While a final WMP would be contingent on completion of the EIS and final conditions on any agency permits and landowner agreements issued, the project proponent should work with agencies and interested parties to develop a draft WMP for agency review and inclusion in DEIS.	Develop Wildlife Management Plan for inclusion in Draft EIS.

ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.23	4.23-1	"Specific mitigation measures to minimize impacts are currently being developed. Impacts to wildlife species would be minimized or mitigated by development of a Wildlife Management Plan (WMP), which would detail management measures to minimize impacts to wildlife species. The WMP would describe the equipment, methodology, training, and assessment techniques that would be used to minimize the potential for wildlife interaction and minimize impacts to species from all aspects of the project." Impacts to wildlife resources cannot be simply dealt with using an as yet to be developed Wildlife Management Plan. The project proponent needs to collect species use and movement data and work with agencies to incorporate features into the project design that will avoid or minimize wildlife impacts. Specific features that may be needed are special waste management systems, wildlife underpasses or overpasses, relocating road sections or other facilities to avoid important habitats or use areas, or other changes to infrastructure. Data needs to be provided on species use and movements and important habitat areas and these data combined with project plans to develop infrastructure that avoids or reduces impacts to wildlife species. Thus far these data, analysis and infrastructure changes have not been done.	The project proponent needs to collect species use and movement data and work with agencies to incorporate features into the DEIS project design that will avoid or minimize wildlife impacts. More data is required with respect to brown bears movements up and down the coast and through the transportation corridors and the proposed port site, especially with respect to McNeil River SGR and SGS. WMP's and BMP's will mitigate for other impacts that cannot be addressed through project design.
ADF&G/DWC/TED	Chapter 4 Environmental Consequences	Sec 4.23.2.1	4.23-1-4.23-2	It is difficult for the reader to gauge the impact of vessel traffic and the level of habituation without information on current and future vessel traffic in the area.	Please provide information on the approximate number of vessels per day that use the port site at present versus how many vessels will be expected during the construction phase operation phase and post-closeout.
ADF&G/DWC/TED	Chapter 4 Environmental Consequences	Sec 4.23.2.1	4.23-2	The paragraph starting with "Some birds may habituate to noise from continuous sources.." contains no references to support statements regarding bird habituation to noise. There is abundant research on birds, noise, and habituation and it should be cited here (see above suggestions for references).	Please provide evidence for each statement pertaining to bird habituation to noise. Also, please provide information on anticipated vessel activity levels at the Diamond Point port for Alternative 2.
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.23.2.1	4.23-3	"Pipeline installation is anticipated to occur during summer months, when breeding birds are nesting. There are no nearby seabird colonies that could be disturbed (e.g., by being flushed off the nest or avoiding foraging areas) during pipeline installation." This statement is unsupported and incorrect. There are a number of seabird colonies in lower Kamishak Bay in the vicinity of the Amakdedori Port site and pipeline installation; including at Nordyke Island, Amakdedulia Islands, Amakdedulia Cove, McNeil Head and Islet, Contact Point, Chenik Head, and Kamishak Islands. In addition, to the potential disturbance at these nest colonies; adults will be feeding in offshore waters supporting nesting mates and chicks. Information on colonies and IBA's in 3.23.1.3 clearly shows that there are seabird colonies in the area and during sensitive nesting and molting life stages.	Correct section to present impacts to seabird nesting and molting.
ADF&G/Wildlife/TED	Chapter 4 Environmental Consequences	Sec 4.23.2.1	4.23-3	Paragraph 3: "Additionally, there is a high level of summer vessel traffic in Cook Inlet, and additional boats associated with pipeline installation are not anticipated to contribute in a measurable manner to avian disturbance due to increased vessel traffic." This statement is highly speculative, given that nearshore and offshore activity associated with the construction of the pipeline will be different from existing vessel patterns (mostly shipping traffic) in Cook Inlet and may increase vessel traffic to levels that will result in cumulative negative impacts to birds. Additionally, vessel traffic on the west side of Cook Inlet is much less than it is off shore of the Kenai Peninsula	Please delete this sentence and provide more quantitative information on current and anticipated numbers of vessels associated with activities (see comment above). Distinguish between differences on east side Cook Inlet where there are fewer seabird colonies and higher vessel traffic and West Cook Inlet where there are more seabird colonies and less traffic. Also, surveys during the breeding and non-breeding seasons should be conducted so that they hypothesis of no impact of vessel traffic can be tested using a BACI (before-after-control-impact) design.
ADF&G/Wildlife/TED	Chapter 4 Environmental Consequences	Sec 4.23.2.1	4.23-3	There is a large body of research on bird responses to noise that has not been referenced in this section.	Please provide more detail on known bird responses to industrial noise. Good places to start are 1) Shannon et al. 2015, Biological Reviews 91: 982-1005 and 2) a compilation of papers on noise published in Ornithological Monographs, Volume 74, 2012.
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.23.2.1	4.23-4	"Wildlife management around the pit lake will be addressed in the WMP. Note: Analysis of risk to wildlife from pit lake water is pending." Analysis of risk to wildlife from pit lake water and Wildlife Management Plan are needed in order to review and comment on this section.	Complete analysis of risk to wildlife from pit lake water and Wildlife Management Plan; revise and complete section; then submit for agency review.
ADF&G/Wildlife/Reg IV	Chapter 4 Environmental Consequences	Sec 4.23	4.23-5	Not sure if this is the best spot to mention this, but if salt will be used on the roads in winter, it could be an attractant to moose, caribou, porcupines, hares, etc. which could be problematic.	Address issue of salt use related to wildlife attractant and potential for road kills.
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.23.2.2	4.23-5	Page 4.23-19. "Wildlife would be anticipated to avoid the transportation and natural gas pipeline corridors as a result of vehicular traffic in an area that currently has no established roads ....."	This statement and conclusion would be applicable under the discussion for the south transportation corridor and pipeline ROW 4.23.2.2, Behavioral Disturbance.
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.23.2.2	4.23-5 and 4.23-10	Bear-human conflict resulting from the Amakdedori Port and Transport Corridor is a big concern especially due to the proximity of McNeil River SGR and McNeil River SGS. While the Behavioral and Bear sections generally recognize disturbance mechanisms and conclude the project will impact bears; the section does not adequately address the connection with McNeil River SGR / SGS, and Katmai NPP and the ramifications to resources in these parklands due to behavioral and other disturbances occurring within the project footprint.	Assess and include Environmental Consequences specific to the brown bears utilizing McNeil River SGR / SGS, and Katmai NPP.
ADF&G/Wildlife/Reg IV	Chapter 4 Environmental Consequences	Sec 4.23.2.2	4.23-7	"...29 years of telemetry data that were analyzed found rare instances of caribou in the area covered by the transportation and natural gas pipeline corridors. Therefore, they are not anticipated to occur in large numbers in this area of the project, and may only be encountered on rare occasions. Therefore, no behavioral disturbance impacts on the population (such as shifting migration routes or patterns) are expected to occur." ADF&G caribou survey and inventory surveys were not designed to evaluate caribou use of and movements through the proposed mine site and transportation corridors. Caribou radio collaring efforts often target the core of the herd and thus track the core of the herd.....so, the lack of telemetry locations near the mine site or in the transportation corridor may not be representative of use (or future use) at these sites. It may be more related to data collection methods than a complete lack of caribou presence as this seems to imply. Caribou use in these areas does occur and caribou habitat exists in these areas; and more extensive use by caribou may have occurred in the past or occur in the future. The conclusion that "no behavioral disturbance impacts on the population (such as shifting migration routes or patterns) are expected to occur" is unsupported. Information in the EIS and literature clearly show that disturbance will occur at the mine site, transportation corridor and other project features should caribou try to use the area.	Revise section to qualify statements as suggested in comments, include some of the discussion regarding possible movement of the herd to habitats in the mine vicinity in this section as well.
ADF&G/Wildlife/Refuges	Ch. 4 Environmental Consequences	Sec 4.23.2.2	4.23-7 through 13.	"Bear" subsections within the behavioral disturbance, injury and mortality, and habitat change sections misrepresents the habitat use of bears in the areas of the transport corridor and proposed Amakdedori port site. These project components are in an area of high bear densities along the borders of McNeil River SGR / SGS and Katmai NPP which are required to protect bear populations and habitats and have public bear viewing programs in close proximity of the project infrastructure. Brown bears in this area and using the McNeil River SGS/SGR are known to travel over 60 miles. Environmental consequent analysis needs to consider a number of factors including identifying important habitats, acreages and movement corridors; behavioral, mortality and public safety impacts of neutrally and negatively habituated and food conditioned bears; impacts to bears, populations, and programs within the adjacent parklands as a result of behavioral, mortality and habitat changes within the project area. These analysis impacts on these parklands and programs should also be considered in the Recreation sections. Focused research, pre- and post-project construction, is needed to determine brown bear use areas, movements, fidelity to MRSGS/SGR complex and mine project areas and to determine effect of project on landscape use by bears. Determine landscape use patterns and degree of relatedness among bears in area. Particularly for brown bear within and surrounding McNeil River SGS/SGR, Amakdedori beach site, Chenik Head area.	Provide long term data and information on brown bear movement patterns, important habitat use areas and movement corridors along the transportation corridors and port sites; in order to address impacts to brown bear habitats, behaviors, mortality, and bear viewing and recreation programs. Revise analysis given comments. This analysis should also consider functional loss of habitats due to behavior changes and avoidance, as well as the public safety and program quality and revenue losses within the McNeil River State Game Sanctuary and Refuge as a result of avoidance behaviors, altered behaviors and fragmention due to infrastructure. Revise and expand text to fully account for bear and land management impacts in relation to the proposed Amakdedori port and transportation corridors proximity to McNeil River SGR/SGS and Katmai NPP, the large number of bears in the area and the movement of these bears along the coast and their use of the MRSGS and MRSGR.

ADF&G/Wildlife/Reg IV	Ch. 4. Environmental Consequences	Sec 4.23	4.23-8	Information on the timing and spacing of vehicles on the road being as frequent as every 5 minutes or every 12 minutes depending on whether it was just a summer activity or year around is appropriately presented in the bear section on page 4.23-8. This is very important information and it seems this should also be noted at the beginning of this section under "Behavioral Disturbance" to give the reader a better sense of just how much traffic is going to occur and the potential impact of this activity on the other species. Having this under each species is fine too, but it should be stated right up front as well.	Consider adding language re: vehicle activity to the beginning of the section under "Behavioral Disturbance".
ADF&G/Wildlife/Reg IV	Chapter 4 Environmental Consequences	Sec 4.23	4.23-8	"...As detailed in Chapter 3.23, Wildlife Values, low numbers of wolves were incidentally detected, and no wolf dens were detected in the mine site. Wolf behavior in the transportation corridor may be affected; either by avoiding the roadways or using them for travel (especially during the winter when roads are plowed/maintained). Overall, impacts to gray wolves would be anticipated to be low, due to overall low numbers of wolves in the area and their general avoidance of humans." "Incidental" surveys for wolves (and wolf sign) is an inadequate method for evaluating wolf occurrence, density, and use of an area. Especially if these surveys were conducted when there was not adequate snow cover. Wolf dens are also often difficult or impossible to observe from aircraft, so lack of detected dens is a poor predictor of den occurrence. Further, the noted general avoidance of humans would be a "disturbance' impact in relation to mine activities and operations.	Revise section to quality statements as suggested in comments.
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.23	4.23-9	"While the WMP will outline ways to reduce the potential for wildlife mortality along the road, varying weather and seasonal conditions would likely cause periods of increased mortality for some species (such as increased moose mortality during winter months, and reduced bear mortality during hibernation)."	As noted above, project applicant and EIS should collect species use and movement data, information on travel corridors and work with agencies to incorporate features into the project design that will avoid or minimize wildlife impacts along the transportation corridor.
ADF&G/Wildlife/Refuges	Ch. 4. Environmental Consequences	Sec 4.23.2	General	Text of sections needs to be updated to describe impacts of the earthen access causeway constructed in the nearshore waters of Kamishak Bay poses significant impacts to the shoreline processes along Amakdedori Beach as well as fish and wildlife habitats at Amakdedori Creek / beach. This solid fill causeway would be expected to interrupt longshore movement of shoreline sediments that feed Amakdedori beach, erosion and sedimentation patterns in the area, as well as the fish and wildlife habitats and movements along Amakdedori Beach, the shallow waters offshore of Amakdedori Beach and at Amakdedori Creek. Depending on circulation and sediment transport mechanisms and wildlife use patterns these impacts may extend southward into the McNeil River State Game Sanctuary. Data collection, analysis and documentation need to be made on the impacts as a result of the causeway alternatives along Amakdedori beach and the mouth of Amakdedori Creek.	Update and complete these sections to fully address the impacts of the solid fill causeway, sheet pile armoring, and any "...project design features and mitigation measures..." incorporated to avoid or reduce erosion and sedimentation; on longshore movement of sediments, erosion processes and coastal habitats. It also needs to consider disruptions to movement and migratory patterns of fish and wildlife the tidelands and beach area.
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.23.2.2	4.23-10	"Bears are at risk of vehicular collisions during construction and operations; and to a lesser extent after closure, because the transportation corridor would remain open, but the traffic level would be reduced. The south mine access road would remain in place for Kokhanok residents to travel to Amakdedori port." Not enough information is provided in the DEIS to support the traffic level being reduced. Various parts of the DEIS note the road corridor and port remaining in place as an industrial port and open for access. Depending on the level of those industrial uses and access the traffic levels may less or may be greater.	Revise conclusion to accurately reflect potential for vehicular collision beyond project life.
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.23.2.2	4.23-10	"The south mine access road is located in an area with high brown bear densities and occurs between Katmai National Park and Preserve and Lake Clark National Park and Preserve. Brown bears are common in the area, especially along coastal plains in the early summer, and then along salmon-spawning streams later in the summer and fall. Thus, bears are moving around in relation to available food resources. Bears would likely cross the south mine access road as part of their regular movement patterns, and would experience increased traffic with the summer-only ferry variant.." Section needs to be revised and clarified. Unsure of area and road segments being discussed. South "mine" access road or south transportation corridor. The south transportation corridor, north transportation corridor and Amakdedori port are in an area of high brown bear densities and involve coastal plains, etc. The mine access roads however, may be in areas of lower bear numbers on the north side of Illiamna and don't fit the description. Bears along the south transportation corridor would experience increased traffic under all scenarios as there currently is little to none.	Revise section per comments.
ADF&G/Wildlife/Refuges	Ch. 4. Environmental Consequences	Sec 4.23.2.2	4.23-10	"There is a potential for bear mortality due to defense of life and property. Bears that become habituated and frequent the mine site, ferry terminal vicinity, Amakdedori port, or other project locations, may become a safety risk. Implementation of a WMP is anticipated to minimize the potential for conflict between wildlife and humans. Additionally, the project will have a no hunting policy for non-local employees." This section needs to be expanded upon and related to the numerous public bear viewing areas and potential for bears that are neutrally habituated to human presence being placed in danger at project locations; as well as; bears that are negatively habituated by the PLP project and WMP actions, or food conditioned by poor food and waste management, becoming a danger to the public at bear viewing areas.	Fully document potential behavioral, mortality and public safety impacts of project design and operations as it relates to nearby public bear viewing venues, and bear resources in neighboring parks, sanctuaries and preserves.
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.23.2.2	4.23-11	"Implementation of a WMP is anticipated to minimize the potential for conflict between wildlife and humans." The Wildlife Management Plan needs to be included, as well as, plans for other project infrastructure (such as waste management systems) in order to adequately address ADF&G concerns regarding bear-human conflicts in the area of the transportation corridor and the proposed Amakdedori port site.	This Wildlife Management Plan and other baseline data on bear habitat use areas and movement patterns is required before we can accurately assess impacts to brown bear resources, public safety and management issues at McNeil River SGR and SGS.
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.23.2.2	4.23-11	Habitat Changes, "Bear" subsection, misrepresents the habitat use of bears in the areas of the transport corridor and proposed Amakdedori port site. Reporting a net loss of vegetation or habitat acreage without taking into account the relative importance of these habitats and knowing travel corridors is insufficient.	Provide long term data and information on brown bear movement patterns, important habitat use areas and movement corridors in order to address impacts to brown bear habitats along the transportation corridors and port sites. This analysis should also consider functional loss of habitats within the McNeil River State Game Sanctuary and Refuge as a result of avoidance behaviors, altered behaviors and fragmentation due to infrastructure. Revise and expand text to fully account for habitat impacts in relation to the proximity of the proposed Amakdedori port to McNeil River SGR and SGS, the large number of bears in the area and the movement of these bears along the coast and their use of the MRSGS and MRSGR.
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.23.2.2	4.23-12	"Given the brown bear density estimate and the acreage of habitat that would be removed by the project, habitat would be lost for a few brown bears. This estimate is based entirely on direct habitat removal, and additional brown bears would likely avoid areas around the project." As noted in other sections there would be loss of habitat from behavioral changes and avoidance, in addition to the direct habitat losses. Avoidance acreages should be calculated for bears similar to caribou estimates; and figures depicting these losses provided.	Revise section to include loss of habitat from behavioral changes and avoidance, in addition to the direct habitat losses. Avoidance acreages should be calculated for bears similar to caribou estimates; and figures depicting these losses provided.
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.23.2.2	4.23-12	Impacts to gray wolves is minimized or under represented. Discussion centers on use in the mine area and does not discuss losses to wolf habitat throughout the project components. Should also include discussion of loss from avoidance and acreages.	Revise text to incorporate noted comments.
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.23.2.2	4.23-12	"Brown bears are not evenly distributed throughout the landscape and are concentrated around resources such as high quality vegetation sources (sedges, grasses, berry sources) and salmon-spawning streams."	More Accurate to say: "Brown bears are ~~not evenly~~ distributed throughout the landscape and are seasonally concentrated around resources such as high quality vegetation sources (sedges, grasses, berry sources) and salmon-spawning streams."

ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.23.2.2	General	Injury and Mortality sections within chapter need to document and evaluate the impacts to increase mortality due to increased access and harvest pressure. Sections that specifically evade this include gray wolf, bear, caribou, moose.	Revise and update sections to include discussion of increased mortality due to increased access and harvest pressure.
ADF&G/Wildlife/TED	Chapter 4 Environmental Consequences	Sec 4.23.3.1	4.23-18	"Since vessel speeds would be low in the bays, birds would likely avoid approaching vessels and the impact would be anticipated to be low." Again, this statement is speculative and overly optimistic. The impact of vessel traffic, even at low speeds, on seabirds can be substantial (Agness et al. 2008, Schwemmer et al. 2011)	Delete this sentence and cite research by Schwemmer et al (2011), Agness et al. (2008) and others on the known effects of vessel traffic on waterbirds. Here are the citations: Agness, A.M., Piaatt, J.F., Ha, J.C., and VanBlaricom, G.R. 2008. Effects of vessel activity on the near-shore ecology of Kittlitz's Murrelets in Glacier Bay, Alaska. The Auk 123: 346-353. Schwemmer, P., Mendel, B. Sonntag, N., Dierchke, V. and Garthe, S. 2011. Effects of ship traffic on seabirds in offshore waters: implications for marine conservation and spatial planning. Ecological Applications 21: 1851-1860.
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.23.3.2	4.23-19	"Impacts to terrestrial wildlife from the mine site under Action Alternative 1 would be similar and not repeated here." Error in sentence structure or typo. As this is under the section for Action Alternative 2; this may mean impacts under Alternative 2 are same as Alternative 1 at the mine site. But that is not clear from the current wordine.	Correct sentence.
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Table 4.23.1	4.23-21	Column heading "Impact Causing Project Component" makes no sense.	Rephrase column heading. "Impact from Project Component" may be appropriate.
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.23.6	4.23-23	The Cumulative Effects section is incomplete and cursory and requires additional analysis and detail regarding the cumulative effects of the other RFFA's in relation to the proposed project.	Revise and update section to completely describe the reasonably foreseeable cumulative effects.
ADF&G/Wildlife/Refuges	Ch. 4 Environmental Consequences	Sec 4.25	4.25-1	"Note: data from 2018 baseline field surveys will be included in the DEIS." Need this in order to review sections.	Provide completed section including pertinent baseline data.
ADF&G/Wildlife/Refuges	Chapter 4 Environmental Consequences	Sec 4.25	4.25-1 and 4.25-2	The document refers to mitigation measures for Threatened and Endangered Species that are under development. Prior to developing and implementing mitigation measures, the project applicant needs to provide information on avoidance and minimization actions in terms of project design by identifying infrastructure conflicts with T&E species and then modifying project design in order to avoid or minimize those impacts. This information is needed in order to adequately review environmental consequences of the proposed actions.	Provide avoidance and minimization design actions as well as mitigation measures. Then revise section on environmental consequences.
ADF&G/Wildlife/Refuges	Chapter 3 Affected Environment and Chapter 4 Environmental Consequences	General	General	"Movement and distribution of bears and other terrestrial mammals through the transportation corridor to the McNeil River State Game Refuge and Katmai National Park and Preserve may be disrupted; therefore, construction and operations activities in the south access corridor may have some adverse impacts on wildlife viewing in both of those recreation areas. See Section 4.23, Wildlife Values, for more information on impacts to bear movement and distribution." The DEIS Chapter 3 & 4 sections on Recreation mischaracterize and under evaluate the potential adverse impacts to Recreational opportunities at McNeil River SGS and SGR. Impacts to McNeil River SGS and SGR, and hunting and recreation at the Amakdedori Port site are minimized in this Recreation section. Given its proximity, infrastructure at Amakdedori beach and the southern transportation corridor have the potential for significant impacts to the "Recreation" at McNeil River SGS. The bear-viewing program at the sanctuary has relied on the predictable, consistent behavior of humans for 50 years to maintain safe viewing practices. The transportation corridor and port site would expose bears using the refuge and sanctuary to a number of anthropogenic disturbances and actions, inconsistent human behaviors, and industrial, food and waste attractants which would have an adverse and potentially dangerous impact on bear behavior ,with respect to viewing programs at McNeil River, Chenik Lagoon, and the Funnel-Moraine Creek areas. Avoidance of these impacts are critical to these bear viewing programs and public safety.	Provide complete identification of Affected Resources and complete analysis and identification of Environmental Consequences in regard to recreational bear viewing at McNeil River SGS/SGR, Katmai Preserve, and other locations along the coast of Cook Inlet / Kamishak Bay. In addition to items listed in comments, when addressing avoidance, minimization and mitigation; include project design and relocation options of infrastructure as well as the WMP. Include waste management systems, processes, industrial and personal attractants, and sources of behavioral modification from operations or WMP actions.
ADF&G/Wildlife/Refuges	Chapter 5 Mitigation and Appendix M - Mitigation Screening	General	General	The mitigation chapter seems to underestimate what would be required from a project of this magnitude and doesn't specify any compensatory mitigation. Additionally, Appendix M-Mitigation Screening was provided very late in the review process and therefore wasn't reviewed.	Further develop mitigation section and include compensatory mitigation being proposed by applicant and allow sufficient time for review.
ADF&G/Wildlife/Refuges	Appendix K	Table K3.6-1:	K3.6-3	"Sources: Sigurdsson and Powers 2012; Sigurdsson and Powers 2013; Sigurdsson and Powers 2014; Powers and Sigurdsson, 2016." Source noted at bottom of Table not included in References Chapter 9.	Provide citation/references.
ADF&G/Wildlife/Refuges	Appendix K	Section K4.11	General	While the Viewshed Analysis figures are helpful in visualizing aesthetic impact areas; the analysis needs to contain more than just figures. Summaries on the acreages of impacted areas, and textual explanation of the findings in each figure should be provided. Additionally, the southern road corridor and materials sites should be included as KOP's and included in the viewshed analysis. Rough calculations show that the road, port and material sites will all be visible in northern portions of the McNeil River State Game Refuge.	Update aesthetic and viewshed analysis to include the southern road corridor and materials sites as KOP's and included. Provide summaries on the acreages of impacted areas, and textual explanation of the findings in each figure of the analysis.