

**Response to Public Comments  
on the Environmental Assessment  
for the New Source NPDES Forest Oil Redoubt Shoal Unit  
Production Oil and Gas Development Project  
NPDES Permit No. AK0053309**

**INTRODUCTION**

The final Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) were published for public review in January 2002. The comment period initially ended on February 26, 2002 but was extended to March 6, 2002. On March 6, 2002, EPA received a joint comment letter from the Cook Inlet Keeper (CIK) and Alaska Community Action on Toxics (ACAT). Responses to these comments are presented below. The CIK/ACAT comment numbers, as listed below, are based on the electronic version of the comments received by EPA.

In January 2000, EPA distributed a scoping notice packet to all known interested parties; this scoping notice solicited input regarding any issues or concerns the public may have with regard to the project. Issues and concerns raised by interested parties in the responses to the scoping notice, including those of the Cook Inlet Keeper, were requested for the purpose of focusing the analysis in the EA on the primary issues of importance to the public. In some cases, comments on the EA (below) identify additional public concerns that were not brought up during the scoping phase of the project. Comments not originally provided to EPA at the time of scoping have been addressed herein (below) to the extent possible. None of the comments raised to date would alter EPA's Finding of No Significant Impact (FONSI). The EA was prepared using the best information available at the time it was written.

Issue	CIK/ACAT Comment Number	EPA Assigned Comment Number	Comment	Response
General Comments	e	8	The EA purports to address the potential environmental consequences associated with the development of the Redoubt Shoals Unit, while conceding that EPA hasn't independently validated all of the data. The EA should clarify what EPA or its contractor have done to scrutinize the statements and reports of the applicant and the contractors who will benefit from this proposed project.	EPA's area of authority and jurisdiction on the proposed Forest Oil project lies with the protection of water quality through issuance or denial of the NPDES permit. EPA and its contractor independently evaluated all data pertaining to water quality. In addition, independent investigation and analysis was conducted of marine biological resources and impacts on threatened and endangered species as well as air quality data and emissions estimates. For other environmental issue areas, EPA's contractor conducted a thorough review of the applicant's information, requested clarification, and requested additional data, as appropriate. Other sources as (identified in Section 9.0 of the EA), including documents prepared by other state and federal agencies, were consulted as appropriate to facilitate an independent assessment of potential environmental impacts of the proposed project and alternatives.
	f, j, z	9	Throughout the EA, EPA describes environmental impacts that will be "moderate" or "potentially significant", especially in connection with an oil spill. The existence of moderate to major impacts, even though only potential, by definition precludes a finding of no significant impact (FONSI).	Environmental impacts associated with a major oil spill are considered a "worst case" scenario and have been presented in the EA to comply with EPA's requirement to disclose all potential environmental effects. While the potential for a major oil spill cannot be eliminated, the proposed project minimizes the offshore pipeline length and employs a variety of mitigation measures as described in Section 4 of the EA. Therefore, given the low probability of a major spill and with proper mitigation as specified in the NPDES permit and under the permit authority of other federal and/or state agencies, potential adverse impacts are not predicted to be significant. In addition, project documents were reviewed by the National Marine Fisheries Service (NMFS), the U.S. Fish and Wildlife Service (USFWS), and the Alaska Department of Fish and Game (ADFG); comments provided by these agencies were incorporated and the agencies concurred with the EPA's finding of no significant impact and EPA's assessment of impacts to resources under the agencies' area of jurisdiction.

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	m	15	The EA does not evaluate pipelines connecting the Kustatan Production Facility to existing infrastructure at West Forelands #1, West McArthur River Unit, and Trading Bay Production Facility. These pipelines are in integral part of the Redoubt Shoals project; excluding these pipelines therefore constitutes illegal segmentation.	Access roads between the Kustatan Production Facility and the Trading Bay Production Facility already exist and were previously permitted. Pipelines will be placed in the existing 7.8-mile pipeline corridor from the Kustatan Production Facility to the West McArthur River Unit Facility, and on to the Trading Bay Production Facility. Construction of these pipelines had been previously authorized under the U.S. Army Corps of Engineers Nationwide Permit #12. Because these access roads/pipelines have previously undergone environmental review, they have not been included in the environmental analysis performed for the currently proposed project. EPA does not believe that this constitutes improper segmentation.
	t	22	The EA analysis of environmental impacts associated with accidents is flawed. It considers only new facilities and pipelines and fails to include existing pipelines and facilities that will also be used to transport Redoubt Shoals oil. Specifically, this analysis fails to address the pipeline that will carry the oil from Trading Bay to the Drift River terminal, and the tankers that will transport the oil from the Drift River terminal across Cook Inlet to the refinery in Nikiski.	Environmental impacts associated with existing pipelines and facilities are addressed in the EA as part of the assessment of cumulative impacts. The contribution of the proposed project to environmental impacts resulting from transportation of oil and gas in Cook Inlet is considered minor. Flow within the pipelines to the Drift River terminal will be within capacity and consistent with historic levels. Similarly, the number of tankers necessary to transport Redoubt Shoal oil to Nikiski will be well within historic levels.
	s	21	The EA is flawed because it does not address the closure phase of the project. The project should not be reviewed and approved until a closure plan is submitted. How the platform will be moved, what will be done with the production piping and facilities, and how the area will be restored and cleaned-up should be considered.	Facility closure, including removal of the Osprey Platform, abandonment of pipelines, and closure/reclamation of the Kustatan Production Facility will require appropriate approvals from the Alaska Oil and Gas Conservation Commission (AOGCC), Alaska Department of Natural Resources (ADNR), and the Minerals Management Service (MMS). In addition, ADNR requires a \$500,000 statewide bond to cover activities at a drill site. EPA does not believe it is reasonable at this time to evaluate environmental impacts from closure of this facility 20 to 30 years in the future.

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	d, 1	7	There is no discussion of the implications of drilling one well vs. ten wells. The EA fails to properly analyze the fact that no fewer than 16 wells will be drilled over the life of the project. The EA fails to compare the 16 wells that will be drilled at Redoubt Shoals with the number of existing wells associated with existing platforms, and fails to ascribe environmental consequences to drilling practices and frequencies. Drilling will also increase air emissions for power generation and will increase the risk of spills from treatment and reinjection activities.	The EA has assumed that approximately 16 wells would be drilled during the construction phase (see EA page 2-5). The risk of spills was determined on the basis of industry statistics in relation to the quantity of oil produced (e.g., spills per billion barrels of oil produced) and is not related to the number of wells that will be drilled. Power for the platform will be electric, as described further in the response to Comment # 2 (CIK/ACAT comment b) below, therefore the specific number of wells drilled will not affect total air emissions from the platform. Spills from reinjection activities could occur, however environmental impacts from a spill of produced water or drilling muds/cuttings would be much lower than for an oil spill. No treatment activities will be conducted on the Osprey Platform.
Description of Project Alternatives	b	1	The EA fails to adequately provide an up-to-date description of proposed activities, including detailed schematics, process flow diagrams and other necessary information to understand the environmental consequences posed by the proposed project. The EA is unclear whether bluff augering or trenching will be used for pipeline placement.	Process flow schematics of the Osprey Platform and Kustatan Facility production operations have been revised and are provided as Attachments A and B to this Response to Comments. At the time the EA was prepared, the applicant proposed trenching as the preferred alternative. Therefore, EPA evaluated the applicant's preferred option of trenching. As defined on page 2-7 of the EA, the proposed project assumes that the nearshore pipeline will be placed by trenching and cutting through the intertidal/shallow subtidal area and through the bluff. Potential environmental impacts have been described for this option. Bluff augering may be determined to be technically feasible; if this option is implemented, environmental impacts would be lower than those described for the proposed project, particularly for nearshore sediments, water quality, and benthic marine organisms.
	b	2	The applicant may power the platform without on-platform power generation, but there is no specific discussion how such energy will be produced or from where it will come.	Energy will be supplied via electrical cables from the Kustatan Production Facility. Electrification of the platform will be completed within 120 days of the beginning of production operations.

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	b	3	The EA claims the applicant will not store drilling muds or cuttings on the platform, but there are no design plans or discussions on where or how such materials will be stored, handled, or prevented from spilling prior to reinjection.	Drilling and reinjection is a continuous operation, and will not require storage of drilling effluents on the platform.
	b	4	The EA lacks virtually any discussion about what specific modifications will be made to the exploratory platform to ready it for production.	The exploratory platform will be readied for production by the installation of underwater pipelines and utility lines. Figure 2-3 of the EA indicated that a two-phase separator, wet oil surge vessel, and glycol dehydrator would be installed on the platform; however, as shown in the revised process flow schematic for the Osprey Platform (Attachment A), these operations will now be performed at the Kustatan Production Facility rather than on the platform. In addition, the platform will be electrified within 120 days of the beginning of production operations.
	c, h	5	The EA fails to adequately provide information on the ability of the platform to withstand environmental and other conditions. To fully understand the environmental impacts and threats posed by this project, additional information is necessary on: the effect of wind speeds greater than 80 mph; the platform's ability to withstand the force of strong currents and rips; the effects of storm waves and pan ice on the platform; the effect of low temperatures (including effects on air quality equipment); ice impacts; effects of heavy ash after a volcanic eruption on air quality equipment; and the platform's ability to withstand a collision with a tanker, tug, helicopter or other vessel.	EPA believes that the EA has adequately assessed the ability of the platform "to withstand environmental and other conditions." It is not the purpose or intent of an EA to evaluate all possible situations and conditions, irrespective of their probability of occurrence. For example, the platform was designed to withstand a 100-year wind recurrence (i.e., 80 mph). While winds greater than 80 mph could potentially occur, they are considered unlikely and therefore impacts are not predicted to be significant. The platform is designed to meet all regulatory requirements and has been designed by an experienced and reputable company, consistent with standard practices and API recommendations. In addition, the Osprey Platform was awarded the "Honor Award" for engineering excellence by the American Council of Engineering Companies.

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	o	17	The Alternatives Analysis is inadequate because it fails to include the alternative of using directional drilling from onshore.	Directional drilling from onshore was not considered a reasonable or viable alternative because the high costs associated with this option would make the Redoubt Unit uneconomic, and certain design aspects of directional drilling were considered technically infeasible. A typical well from the Osprey Platform is 14,000 feet to 20,000 feet deep, and is drilled at a total cost of \$8 million to \$11 million. Wells drilled from the West Forelands Peninsula (the nearest onshore location from which Redoubt Unit wells could be drilled) would be 24,000 feet to 32,000 feet deep, and would cost \$25 to \$35 million apiece (Forest Oil 2002). This assumes that successful drilling and completion is technically feasible; in addition, producing oil from wells would be problematic and expensive. The wellbore angles would be 60 to 70 degrees from vertical, precluding the use of electric line or wireline to convey tools with any reliability. Thus, directional drilling was not considered a reasonable and practicable alternative to carry forward in the analysis.
	ii	46	The Underwater Pipelines and Utilities section of the EA says an 8-inch pipe will carry 25,000 gallons of produced water and 6,000 gallons of water to the Kustatan facility from the platform, yet estimates a maximum of 25,000 gpd of produced and freshwater back to the platform. These figures are incomplete and do not describe in sufficient detail operations at the facilities, and conflicts with a statement made in EA 2.2.3.3.	Please note that the EA refers to barrels per day of water, rather than gallons. The EA should have indicated that an estimated 25,000 barrels per day of oil and water will be transported from the platform to the Kustatan Production Facility, and 25,000 barrels of water (including produced water and freshwater) will be piped back to the platform for injection. The revised process flow schematics (Attachments A and B) reflect this.
Likelihood of Spills	c	6	The EA fails to analyze the possibility of leaks or spills from the reinjection of drilling muds and cuttings.	The potential for leaks and spills during reinjection of drilling muds and cuttings is considered to be small, and environmental impacts associated with such a leak would be minor in comparison to an oil spill. There is no storage of muds or cuttings on the platform, and all operations are conducted within secondary containment.

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	t	23	The analysis of the impact of oil spills on marine resources and water quality fails to consider the potential for spills from the Kustatan Production Facility.	Oil spills from the Osprey Platform, Kustatan Production Facility, and onshore and offshore pipelines have been addressed in the EA. Specifically, spills from the Kustatan Production Facility are discussed in Section 4.6.3 (Freshwater Resources), Section 4.9.3.1 (Vegetation and Wetlands), Section 4.9.3.2 (Birds), and Section 4.9.3.3 (Terrestrial Mammals). Federal and state resource agencies (USFWS, NMFS, and ADFG) have reviewed the project documents and have concurred with EPA's finding of no significant environmental impact.
	x	33	The EA considered only onshore crude oil transmission pipelines and not onshore gathering lines in assessing the likelihood of an onshore oil spill. Onshore gathering lines in Cook Inlet have had numerous releases, including lines operated by Forest Oil associated with the West McArthur River Unit. Moreover, as Kustatan Production Facility pipelines likely will be classified as rural gathering lines, these lines also will have virtually no federal and state oversight.	EPA acknowledges the data provided by the reviewer. The evaluation presented in the EA was performed using the best available information at the time the document was written. EPA has indicated that there is a potential for oil or produced water spills from the Kustatan Production Facility, and has described the potential environmental impacts. The additional information provided would not affect the conclusions of the EA.
	x	34	The EA should have addressed Cook Inlet's underwater pipeline releases since 1993, including the relatively recent deactivation of the Dillon platform pipeline due to underwater pipeline failure.	A project scoping notice was sent to interested parties in January 2000; the EA addressed issues and concerns that were raised at that time. No data to support the comment was provided by the reviewer. Therefore, EPA is unable to evaluate this comment further. The evaluation in the EA was performed using the best available information at the time the document was written.
	t	24	The EA fails to discuss the quality and sulfur content of the Redoubt Shoal crude, and how it compares with that from other parts of Cook Inlet that use the same pipelines. This could be significant because sulfur content has an impact on pipeline integrity (and therefore spill potential) and on downstream air quality.	A project scoping notice was sent to interested parties in January 2000; the EA addressed issues and concerns that were raised at that time. The reviewer has not provided sufficient data to support the comment. Therefore, EPA is unable to evaluate this comment further. We are not aware of data that relates pipeline failure rates to sulfur content of the crude oil.

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Geology and Soils	q	19	The EA mentions that upper Cook Inlet is prone to deposits of shallow, high pressure natural gas. Yet, the environmental impacts analysis provides only minimal discussion of the likelihood of any one of these events occurring, what industry response will be or how the occurrence of such an event could affect the likely environmental impact of the project.	Table 4-2 of the EA presents the predicted number of spills greater than 1,000 barrels from the Osprey Platform (which includes well blowouts and diesel tank ruptures). Assuming a total production of 50 million barrels, no spills greater than 1,000 barrels are predicted to occur at the Osprey Platform. This conclusion is based on MMS statistics for Outer Continental Shelf (OCS) producing areas from 1964 to 1992 which indicate approximately 0.60 platform spills (greater than 1,000 barrels) per billion barrels of oil produced; this translates to a probability of occurrence of 0.03 spills at the Osprey Platform. The environmental impacts of a large oil spill are evaluated in detail in the EA.
	p	18	The EA fails to provide even rudimentary seismic data which is readily available for the area (i.e., frequency and magnitude of quakes). The EA does not discuss safety procedures in the event of a major earthquake, or what air, land, or water impacts may ensue from such events.	There are no known active faults located at any of the onshore or offshore facilities or pipelines. The project incorporates American Petroleum Institute (API) Zone 4 (highest earthquake hazard) earthquake loadings. As discussed above, it is not the purpose or intent of an EA to evaluate all possible situations and conditions. EPA evaluated a reasonable range of alternatives and environmental impact scenarios. Safety procedures are discussed in detail in the facility's Oil Discharge Prevention and Contingency Plan (C-Plan), which is reviewed and approved by ADEC.
	kk	48	The EA impacts discussion on gravel resources includes no analysis supporting the intended gravel volume to be used, does not show where these resources are located, does not discuss implications for wetlands, hydrology or cultural resources, yet concludes impacts will be minor.	Section 2.2.5.4 of the EA indicates that up to 36,000 cubic yards of gravel will be required to construct the access road/construction pad. This gravel has already been extracted; it was purchased from a private individual and extracted from private property. This activity was authorized under Corps of Engineers Nationwide Permit #12.



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Meteorology and Air Quality	h	11	The EA completely neglects air quality information collected on-site between October 1999 and September 2000, and instead relies on old data from a monitoring station in Beluga, a considerable distance from the proposed project.	The air dispersion modeling for emissions sources at the Kustatan Production Facility was conducted using the meteorological data that were collected at the site. In addition, these data were used for modeling all other onshore off-site emissions sources that might contribute to a significant ambient air impact. Meteorological data collected from August 1, 1993 through July 31, 1994 for the Sunfish Development Project were used to model all offshore off-site emissions sources that might contribute to a significant air impact. Sunfish data were used because offshore emission sources are modeled using the Offshore and Coastal Dispersion (OCD) model, not the Industrial Source Complex (ISC) model that was used to model the onshore sources. The meteorological data set collected at Kustatan was for use with ISC, not OCD. ADEC approved the use of the OCD meteorological data set for the offshore emission sources.
	mm	50	The criteria for air quality impacts is arbitrary and has no bearing on actual impacts to air resources in the vicinity. The EA relies on irrelevant data to conclude there are no NAAQS problems in the area.	EPA disagrees that the criteria for air quality impacts has no bearing on actual impacts to air resources in the vicinity, and that cumulative impacts have not been adequate assessed. ADEC has concurred that the proposed project will not result in significant impacts to air quality. ADEC has stated that "...operating the emissions sources within the constraints requested in the permit applications for the Kustatan Production Site and the Osprey Platform will not cause or contribute to a violation of the Alaska Ambient Air Quality Standards provided in 18 AAC 50.010, or the maximum allowable increases (increments) provided in 18 AAC 50.020" (ADEC Technical Analysis Report, 4/24/02). See also the response to the previous comment above.
	w	32	The short cumulative impacts section does not analyze the cumulative impacts to air quality of this project together with other projects in the area. In fact, the air data cited from Beluga is largely irrelevant because those data are upwind under prevailing conditions in Cook Inlet.	

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	w	29	There is no serious discussion about what the eventual emissions from the Redoubt Shoals project will actually be, nor any discussion exactly where power for the rig will come from. If generators at Kustatan will power the facility, then those detailed and specific emissions must be considered in the EA during drilling and non-drilling scenarios.	The EA is a planning/design tool to allow EPA to make a decision on issues within their jurisdiction using the best available information at the time. Updated information regarding the potential emissions from the Kustatan Production Facility and the Osprey Platform, including the specific equipment that is proposed to be used during production operations, is presented in ADEC's Technical Analysis Report for Air Quality Control Construction Permits 741CP01 and 696CP03 (dated 4/24/02). ADEC has concurred with EPA's assessment of no significant air quality impacts.
	w	30	The analysis is based on a preliminary emissions estimate because the proposed facilities are still being designed. Until the facilities are designed and a more reliable estimate of emissions can be made, the EA cannot rationally conclude that impacts will be insignificant.	
	w	31	The EA does not include any real analysis on emissions associated with emergency power sources, such as amounts of pollutants discharged or amount of time such sources will operate full time or partially. Inclusion of this and other omitted sources could put the facility over the PSD threshold and cause more impacts than are disclosed in the EA. Also, the EA fails to account for emissions from pressure relief and vent systems and flare scrubbers.	See response to Comments 30 and 31 (CIK/ACAT comment w) above.
Physical Oceanography	jj	47	The EA states that nearshore sediment disturbance from construction activities is "not known" but then concludes impacts will be minor. This conflict must be clarified.	As described in EA Section 4.2.1.1, installation of a pipe trench through the intertidal/shallow subtidal area will remove seafloor sediments at a rate of about 4.5 cubic feet per second, and increased turbidity is likely to result. Although the specific area of disturbed seafloor is not known, given the short-term nature of the activity, nearshore sediment impacts are predicted to be minor. EPA does not see a conflict.

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Marine Water Quality	y	36	The EA discussion of waste streams is inadequate. The EA fails to acknowledge that deck drainage typically contains 35 types of cleaners and solvents which include a variety of chemical components. The EA should provide more information about the efficacy of the oil-water separator, the percentage of deck drainage to be subject to treatment prior to discharge, and the amount of contaminants that will be removed by it and what contaminants will likely remain in the discharges.	While deck drainage associated with oil and gas production platforms may contain some of the chemical components listed in the review comment, most of them are not applicable to the process used by Forest Oil. Whole effluent toxicity (WET) testing will be required under the NPDES permit to evaluate the toxicity of the waste stream as a whole. If the waste stream demonstrates toxicity, then Forest Oil will be required to evaluate the source of the toxicity through additional chemical analysis. The oil-water separator used at the Osprey Platform is designed for gravity separation of free oil droplets equal to and greater than 20 microns and some solids from wastewater. It is assumed that all other non-solid constituents in the discharge will pass through the system. Forest Oil is considering all their deck drainage as potentially contaminated and has installed a six-inch berm around the outer perimeter of the platform so that all storm water is discharged through the deck drains where it will be treated with the oil-water separator.
	z	54	The EA fails to incorporate peer-reviewed science from the Exxon Valdez which shows polycyclic aromatic hydrocarbons (PAH) are more toxic to marine life than previously thought. The EA should analyze sampling sites in close proximity to discharge points. The EA makes no effort to understand the volume, characteristics, or local effects of existing and proposed discharges.	As discussed in Section 4.1.5.1 of the EA, a recent Cook Inlet Regional Citizens Advisory Council (CIRCAC) study that analyzed petroleum hydrocarbon (including PAH) concentrations in sediment, marine organisms, and the water column, concluded, based on overwhelming weight of evidence, that hydrocarbon contamination or effects related to hydrocarbon exposure are either lacking, or, if observed, occur at levels very near the detection limits. EPA does not believe that further analysis of PAH toxicity or of sampling data from sites in close proximity to drilling waste discharges is relevant to the environmental impact analysis for this project, since drilling wastes from the Osprey Platform will be reinjected rather than discharged.
	aa	37	The EA indicates that discharges will meet water quality criteria at the end-of-pipe. The NPDES permit and ADEC wastewater	The EA incorrectly stated that the discharges would meet the water quality criteria at the end-of-pipe for protection of aquatic life and that no water quality-based limits would be needed to provide

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			<p>applications indicate that the criteria will be modified based on allowance of a dilution ratio, or mixing zone. This would increase the water quality impacts of the project, and the analysis must take into account the elevated levels of pollutants in these discharges. The analysis should also include a review of dry weather slugs of potentially concentrated effluent which would be more toxic than diluted discharges during precipitation events.</p>	<p>protection to aquatic life (EA Section 4.5.5). This statement was based on the information provided by the applicant in their Environmental Information Document (EID) prior to EPA's development of a draft NPDES permit for the discharges from the Osprey Platform. EPA has determined that water quality-based limits are necessary for the following parameters: total residual chlorine, fecal coliform bacteria, pH, and no floating solids or visible foam. EPA is also concerned about the whole effluent toxicity from the deck drainage and has included monitoring in the NPDES permit. Since the NPDES permit contains limits and conditions that will protect Alaska's water quality and the designated uses of Cook Inlet, the conclusions of the EA have not changed.</p> <p>The water quality criteria have not been modified by the allowance of a mixing zone for whole effluent toxicity or total residual chlorine. However, acute and chronic water quality criteria can be exceeded in an ADEC authorized mixing zone as long as toxic conditions are prevented and the designated use of the water is not impaired as a result of the mixing zone. ADEC has certified under Section 401 of the Clean Water Act that the allowance of a mixing zone for these two parameters will not result in violations of the State's water quality standards.</p> <p>The only discharge that would be affected by weather conditions (i.e., storm water) is the deck drainage (discharge 002). Since this discharge is only storm water runoff, there would be no discharge during dry weather conditions. Therefore, it is not necessary for EPA to conduct an analysis of dry weather slugs.</p>
	aa	38	The EA provides no discussion on Kustatan facility domestic waste discharges.	The Kustatan Production Facility will use a septic system for disposal of domestic waste; no discharge of domestic waste is authorized under the NPDES permit.

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Freshwater Resources	ee	42	The EA provides little or no substantiation for the statement that groundwater impacts will be minor, and it must consider any domestic waste discharges from the Kustatan facility as well as projected impacts from aquifer drawdown on nearby wetlands and surface water resources.	No domestic waste discharges are authorized for the Kustatan Production Facility. Forest Oil has applied for a water use permit from ADNR for the use of groundwater during production operations. Because groundwater will be withdrawn from a depth of approximately 12,000 feet below ground surface, the water source is believed to be sufficiently deep to be hydraulically isolated from underground sources of drinking water. In addition, the groundwater at approximately 12,000 feet below ground surface may exceed 10,000 ppm total dissolved solids (TDS) and may therefore not qualify as an underground source of drinking water.
Marine Biological Resources	r, z	20	The EA barely analyzes impacts to the Redoubt Bay Critical Habitat Area and tries to minimize concerns about this area by stating that the proposed project is not within the habitat area. The proposed site for the Kustatan Facility is, however, just outside the boundary of the critical habitat area. The impacts on this protected place warrant additional analysis.	The EA has considered potential impacts on birds in the Redoubt Bay Critical Habitat Area (see Sections 4.7.1.3, 4.7.2.3, 4.7.3.3, 4.9.1.2, and 4.9.3.2). No attempt was made to minimize potential concerns. NMFS, USFWS, and ADFG have reviewed the project documents (EA and/or BA) and have concurred with the conclusion of no significant environmental impact.
	g	10	The EA fails to adequately assess and analyze thermal impacts to marine and terrestrial systems. Of particular concern are the thermal discharges to the cold marine waters of Cook Inlet, and the potential effects on mammals, fish, and other resources.	Forest Oil's NPDES permit application indicates that non-contact cooling water will be discharged at an average temperature of less than 60° F, with a maximum daily value of 70° F. Because thermal discharges from the facility are minimal and highly diluted, no significant impact on mammals, fish, and other biological resources are predicted. NMFS and USFWS have reviewed the Biological Assessment for the Osprey Platform and have concurred with EPA's conclusion.
	u	26	With over 2 billion gallons of produced water dumped into Cook Inlet from existing oil and gas facilities, how will the Osprey discharges effect (sic) water quality and marine life, especially in the winter when freshwater	The Ocean Discharge Criteria Evaluation (ODCE), Appendix F to the EA, addresses the effect of the Osprey discharges on water quality and marine life. In the ODCE, EPA concluded there would not be a significant effect on water quality and marine life.

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			inputs from the Upper Inlet minimize net water transport out of the Inlet?	
	ff	43	The EA relies on old and outdated fish data and makes unsupported presumptions about fish populations and impacts to them.	EPA disagrees that the EA relies on old and outdated fish data and makes unsupported presumptions about fish populations and impacts. The best available information was utilized in the analysis.
	cc	40	The discussion of potential impacts on Steller sea lions indicates potentially significant impacts, and is not consistent with a FONSI.	The EA states that while potential impacts on individual Steller sea lions could occur due to an oil spill associated with the proposed project, the project is not likely to adversely affect Steller sea lion populations or critical habitat (Section 4.8.3.4). NMFS has reviewed the BA for the Osprey Platform and has concurred with EPA's conclusion that the project is not likely to adversely affect Steller sea lion populations or critical habitat.
	dd	41	While the EA discusses noise airplane noise impacts on birds, it fails to adequately discuss compressor and other routine noise impacts on birds.	The compressors are electric-driven and therefore do not generate large amounts of noise. Noise impacts on birds are addressed in Sections 4.7.1.3, 4.7.2.3, 4.9.1.2, and 4.9.2 of the EA.
Threatened and Endangered Species	pp	39	Analysis of impacts of construction, normal operations, and accidents on beluga whales is inadequate, consisting only of a short discussion for each phase of the project (and with no discussion on post project impacts). Noise and underwater pressure changes from drilling and seismic activities can affect beluga whales.	Additional analysis of impact on beluga whales was presented in the Biological Assessment for the Osprey Platform (Appendix B to the EA). NMFS has reviewed the BA and has concurred with EPA's conclusion that the project is not likely to adversely affect beluga whale populations or critical habitat..
	l	14	There is little to no analysis on impacts to beluga whales and other species from noise and pressure changes associated with drilling activities.	

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	u	25	What is the cumulative effect of drilling noise on beluga whales in Cook Inlet with the addition of the Osprey platform?	Construction noise impacts on beluga whales are discussed in Section 4.8.1 of the EA; impacts of drilling noise during normal operations are predicted to be similar to the construction impacts discussed in the EA. Because noise impacts are localized, they are not predicted to contribute to cumulative impacts on the Cook Inlet beluga whale population. NMFS reviewed the BA for this project and has concurred with EPA's conclusion that the project is not likely to adversely affect beluga whale populations or their habitat.
	BA	55	The Biological Assessment fails to adequately discuss current and projected impacts on Beluga whale habitat and behavior.	EPA disagrees with the review comment. Current and projected impacts on beluga whales are discussed in Section 5.3.3 of the BA. NMFS has reviewed the BA and has concurred with EPA's conclusion that the project is not likely to adversely affect beluga whales and critical habitat.
Terrestrial Biological Resources	hh	45	The EA fails to adequately describe the life histories and potential disruptions to terrestrial animals from onshore operations, including noise and pipeline and road corridors. For example, there is no coordinated plan to avoid certain species of birds or animals during critical life cycle stages, such as mating or nesting.	The EA describes potential noise impacts to terrestrial animals in Sections 4.9.1.3 and 4.9.2. In addition, a mitigation measure was specified in Section 4.9.6 to avoid clearing and other noise-producing construction activities during periods when major concentrations of nesting birds may be in the area. The Final Consistency Determination prepared by the Alaska Division of Governmental Coordination (dated 5/1/02), includes the following stipulations: (a) Forest Oil should prepare and implement a bear/human interaction plan to minimize conflicts between bears and humans; (b) aircraft flying over the primary waterfowl and shorebird habitat within the Redoubt Bay Critical Habitat Area and the Trading Bay State Game Refuge should maintain a minimum altitude of 1,500 feet above ground level or a horizontal distance of one mile; and (c) previously unreported active or inactive bald eagle nest sites should be reported to the USFWS. USFWS and ADFG have reviewed the EA and/or BA and have concurred with EPA's finding of no significant project impact on terrestrial biota.

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	n	16	The project description in the EA does not describe the relationship of the 10-acre facility site to wetlands. The history of the wetlands survey indicates that the Kustatan site as originally planned would have impacted wetlands; it is unclear whether the location was adjusted to avoid the wetland area. The EA contains no wetland restoration or mitigation plan to understand how wetlands will be restored from the described impacts.	The Kustatan Production Facility location was adjusted to avoid the wetland area identified in early project documents. The relationship between the facility site and wetlands is shown in Figure 3-4 of the EA. Forest Oil has received verification from the U.S. Army Corps of Engineers that construction of the access road and pipeline from the bluff at West Foreland to the Trading Bay Production Facility and the pipeline from the Osprey Platform to the bluff at West Foreland was authorized under Nationwide Permit #12, Utility Line Activities (letter dated 9/12/01). A wetland restoration or mitigation plan is not required because no potentially significant impacts to wetlands have been identified.
Cultural and Historical Resources	gg	44	The EA fails to adequately assess and analyze impacts to Native cultural and historical resources, and must do so to comply with state and federal law, especially along the pipelines and road corridors.	An extensive evaluation of impacts to Native cultural and historical resources has been conducted, as described in Section 4.16 of the EA. A programmatic agreement between EPA, Forest Oil Corporation, and the Alaska State Historic Preservation Officer was prepared and is provided as Appendix E to the EA.
Cumulative Impacts	u	27	The cumulative impacts analysis is inadequate; it does not attempt to analyze or convey direct, indirect, cumulative or reasonably foreseeable impacts from all activities. What are the combined effects of activities likely to flow from proposed state and federal leasing? What tracts are currently leased and may be developed in the short and medium term? What effects will the Cosmopolitan Project, the Kachemak Kenai gas pipeline, and expanded drilling in Anchor Point and Ninilchik have in combination with the proposed project on Cook Inlet air, water, human and biological resources?	The cumulative impacts analysis should evaluate environmental impacts due to reasonably foreseeable actions; proposed leasing activities do not constitute “reasonably foreseeable” oil and gas production activities that should be evaluated. Tracts that are currently leased and “may be developed” also do not result in reasonably foreseeable environmental impacts. The cumulative impacts section was prepared using the best available information at the time it was written. The projects mentioned in the comment would not impact the conclusions of the EA.



Issue	CIK/ACAT Comment Number	EPA Assigned Comment Number	Comment	Response
	v	28	The cumulative impacts analysis for geology and soils is inadequate because it fails to discuss cumulative impacts to wetlands from the roads and pipelines already built between Kustatan and existing facilities, and fails to assess possible soil failures in the event of seismic activity.	EPA believes the cumulative impacts analysis presented in the EA is adequate for the purpose of identifying potential environmental impacts from the proposed project. Cumulative impacts to wetlands, including a discussion of the existing access roads, is presented Section 4.9.5 of the EA. Cumulative impacts of the proposed project in the event of a major geologic event, such as an earthquake, are discussed in Section 4.2.5.
Mitigation Measures	j	12	There is no serious discussion in the EA about where or how SCADA, smart pigging technologies, leak detection systems, spill response or pipeline shutdown procedures will be employed.	An Oil Discharge Prevention and Contingency Plan (C-Plan) has been prepared for the proposed project, as required under 18 AAC 75. This plan has been approved by ADEC with stipulations as specified in the Final Consistency Determination. The C-Plan describes in detail where and how the mitigation measures and response procedures will be employed.
	j	13	While the EA relies substantially on the existence of available mitigation measures for a conclusion of no significant impact, EPA can impose only those mitigation measures that relate to water quality and cannot force other agencies to impose the available measures that are not related to water quality. Who will enforce the mitigation measures that EPA claims are beyond its jurisdiction?	As a result of court case law, EPA can only implement mitigation measures or conservation recommendations pertaining to water quality NPDES discharge permit conditions. The EA discloses the agency or agencies that have the authority to implement mitigation measures not within EPA's jurisdiction. EPA cannot require a particular agency to require the applicant to implement a particular mitigation measure.
	ll	49	Mitigation measures for construction in the EA are cursory and fail to properly explain how they will prevent anticipated environmental harms. As one example, "standard erosion control measures" are not defined or discussed, and the project will require a stormwater pollution prevention plan to address these issues.	Forest Oil has requested coverage under EPA's general NPDES permit for construction stormwater discharges (application dated 8/8/01). A Stormwater Pollution Prevention Plan (SWPPP) was prepared by McLane Consulting Group for the project.
	nn	51	The EA lacks any discussion on spill response issues arising from spills in broken ice conditions.	An Oil Discharge Prevention and Contingency Plan (C-Plan) has been prepared for the proposed project, as required under 18 AAC 75. This plan has been approved by ADEC with stipulations as specified in the Final Consistency Determination. The C-Plan

Issue	CIK/ACAT Comment Number	EPA Assigned Comment Number	Comment	Response
				describes in detail the spill response procedures that will be employed.
	oo	52	The mitigation measures to protect water quality are indefinite and inaccurate. Also, there is little or no secondary containment for tanks on the platforms, other than the platform floor which drains to Cook Inlet with unknown treatment efficacy.	The comment does not specify which mitigation measures are “unclear” or “inaccurate.” Therefore, EPA is unable to evaluate this comment further. Mitigation measures to protect water quality are described in more detail in EPA’s Finding of No Significant Impact (FONSI).
	pp	53	Unless construction and operation timing constraints are placed on the Redoubt Shoals project, seasonal fish, bird, and beluga whale populations may be at significant risk.	The EA lists the following mitigation measures: (a) timing of construction activities to avoid bird nesting periods, migrating waterfowl and shorebirds, and nearshore migrating fish (Section 4.7.6); (b) timing of construction activities to avoid seasonal concentrations of beluga whales (Section 4.8.6); and (c) avoid clearing and other noise-producing construction activities during periods when major concentrations of nesting birds may be in the area (Section 4.9.6). USFWS and NMFS have reviewed the Biological Assessment for the proposed project and have concurred with the conclusion of no significant impact. Also, no additional conservation measures (mitigation measures) were recommended for implementation by USFWS or NMFS.
	x	35	The listed mitigation measures for pipelines is cursory and fails to adequately explain how such measures will result in noted protections. Also, the measures fail to discuss pipeline pigging frequencies, corrosion control plans, how leak detection sensitivities will be verified and other information needed to make the mitigation measure meaningful.	An Oil Discharge Prevention and Contingency Plan (C-Plan) has been prepared for the proposed project, as required under 18 AAC 75. This plan has been approved by ADEC with stipulations as specified in the Final Consistency Determination. The C-Plan describes in detail the pipeline mitigation measures that will be employed.

**ATTACHMENT A**

**Process Flow Schematic – Osprey Platform Production Operations**

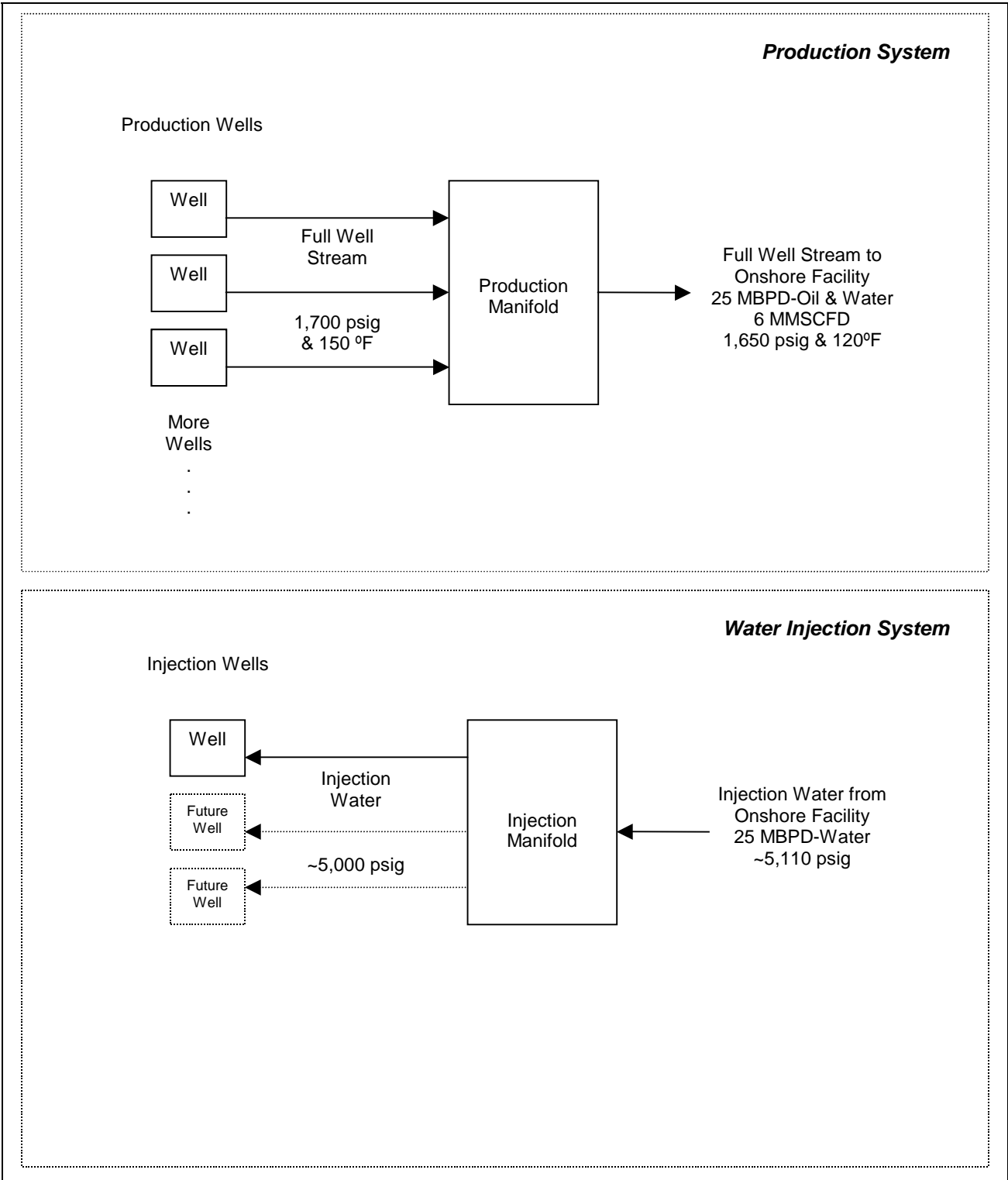
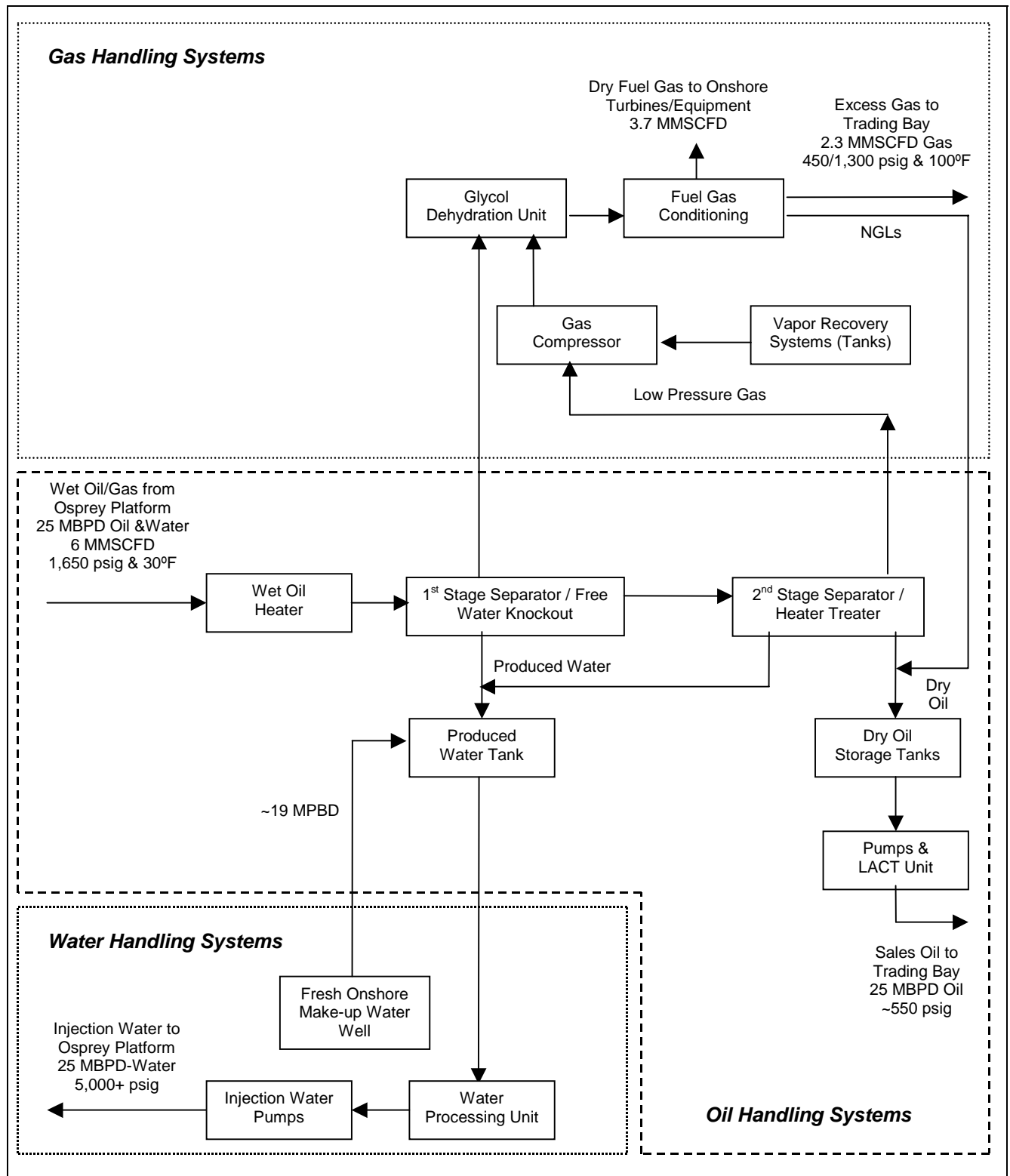


Figure 2-3. Process Flow Schematic for Osprey Platform Production Operations.

**ATTACHMENT B**

**Process Flow Schematic – Onshore Production Facility**



**Figure 2-4. Process Flow Schematic for the Onshore Production Facility.**