Cascadia Wildlands Project

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Joint Pipeline Office
ATTN: Becky Lewis
Department of Environmental Conservation
411 West 4th Avenue
Anchorage, AK 99501

RE: ADEC Contingency Plan Number 015-CP-4131

Also VIA EMAIL TO blewis@jpo.doi.gov

Please consider the following comments, hereby submitted on behalf of Cascadia Wildlands Project, and myself as an individual, regarding the application for renewal of the Trans-Alaska Pipeline (TAPS) Oil Spill Prevention and Contingency Plan (ADEC C-Plan #015-CP-4131, hereafter "C-plan.")

Cascadia is a 501(c)(3) public interest nonprofit corporation dedicated to defending the lands, waters and wildlife of our home Cascadia bioregion—which are the watersheds of the Pacific temperate rainforests. Cascadia members and staff, including myself, use and enjoy the pipeline corridor and downstream areas for many uses, including commercial, subsistence, fishing, hunting, gathering, recreation, education, research, and spiritual endeavors. As a downriver subsistence user (there is a load in our smoker as I write this) I will personally have to eat the poisons of a TAPS spill into the Copper River Watershed. This town here depends on the river, and especially the salmon. There is no replacement.

As citizens and residents we have the right to expect our government to fairly represent our interests, and to obey the law.

Our primary interest here is conserving clean water, healthy wildlife, abundant fish populations, and the

opportunity to pursue a way of life found in Alaska that has gone missing in so much of the civilized world. We value the wild lands and wild critters partly for our own livelihood, but mostly for their own sake and for future generations.

After a careful review, we've found the overwhelming evidence shows the proposed C-Plan grossly inadequate. The pipeline is a grave and gathering danger, in particular to the Copper River Delta. Public comment, a City Council resolution[1], and the September 2 demonstration of over 100 vessels of the Copper River fleet[2] testifies to well-justified concern. The recent shut-downs, spills and revelations about inadequate maintenance are a wake-up call. Considering the obscene profits being earned on Alaska's oil, Alyeska owners are not even making their best effort.

Please take as strong action on behalf of the public interest to remedy this situation.

NOTE: Comments on individual sections of the plan have been identified where appropriate, but comments are intended to apply to the proposed C-Plan as a whole. Requested remedies are identified by shaded boxes.

I. INFORMATION/ PROCESS

A. WITHELD INFORMATION

A large amount of information is kept secret from the public review copies, making thorough review impossible. While censoring certain security-sensitive information may be warranted, it is not clear the costs to public freedom, the environment, and Democracy have been considered.

Censored is critical environmental information that poses no discernable security threat, including:

- Table 3.2 Tank and Containment Locations
- §3.1.8 Spill Control and Prevention
- §3.1.9 Corrosion Monitoring and Deformation Program
- §3.1.10 Leak Detection
- §3.1.11 Emergency Response Organization
- §3.1.12 Type and Amount of Oil, including MSDS sheets
- The SPCC Plan

[1] See *Cordova Times* September 21, 2006 (Attached)
[2] See *Cordova Times* September 14, 2006 (Attached)

Also, public access is severely restricted to critical supporting documents, such as the DNV Fate & Transport Study, along with its supporting data.

Without any other explanation for this censorship, the C-Plan cites AS 40.25.120(a)(10).[3]

While there is perhaps merit to censoring security sensitive information, such as law enforcement radio codes, this must be done according to some rational procedure that fairly balances the harm done to the public interest.

It is not reasonably apparent why information is being withheld. The weight of evidence and logic shows release of information to better serve public safety.

For example, how could corrosion monitoring information be expected to "endanger the life or physical safety of an individual or…present a real and substantial risk to the public health and welfare?" The far greater dangers to safety are complacence and inadequate diligence caused by shielding the program from public and stakeholder scrutiny.

Much of the censored information is available elsewhere[4], so the only effect of keeping information out of public review copies is not to keep information from highly motivated terrorists or criminals, but rather the average, interested public.

The burden is on the government to justify withholding public information. Public access to information is fundamental to our system of law. Government secrets are the antithesis of democracy.

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[3] The statute reads, in full, "records or information pertaining to a plan, program, or procedures for establishing, maintaining, or restoring security in the state, or to a detailed description or evaluation of systems, facilities, or infrastructure in the state, but only to the extent that the production of the records or information

> **(A)** could reasonably be expected to interfere with the implementation or enforcement of the security plan, program, or procedures;
>
> **(B)** would disclose confidential guidelines for investigations or enforcement and the disclosure could reasonably be expected to risk circumvention of the law; or
>
> **(C)** could reasonably be expected to endanger the life or physical safety of an individual or to present a real and substantial risk to the public health and welfare

[4] The DNV Study, for example, was released to me by JPO per a FOIA request.

B. C-Plan was not made reasonably available to the public.

Despite clear authority to do so, the ADEC and Alyeska have refused to make free copies of the C-Plan available to the requesting public.[5] Without a copy of the plan, it is unreasonable to review and comment on the C-Plan.

The two options available, a copy in the library or $500,[6] are not reasonable. It would be impossible to fully or meaningfully review the C-plan at public libraries, given limited hours, other users, length and complexity of the document, and other obligations (e.g. office hours). A fee of over $500 is exceptionally burdensome. This fee isn't justified by actual duplication expenses. An electronic copy could be provided via the internet for free, or for less than $1 by CD. Even Kinkos could have it done at $0.08 cents a page in an hour.

These exceptional hurdles clearly have a chilling effect on public knowledge and involvement. Equivalent federal information is routinely provided for free, and generally posted on the internet. I have requested and received copies of many other state public review documents, including C-plans, without charge.[7] Others are provided with copies that serve no purpose but to collect dust.

C. Public input was not pursued

The "public" process for this C-plan is not that.

Barrier after barrier is put up to effective, informed, and meaningful involvement. For whatever reason, constitutional, legislative and regulatory mandates for public notice and involvement are not being met. The Alaska public has no reasonable opportunity even to discover what

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[5] See my May 24, 2006 request to ADEC, and the written response June 1, 2006. These letters were the culmination of several telephone conversations, in which I was attempting unsuccessfully to locate a copy of the C-Plan. The conclusion of the story is that I was loaned a copy by a Tribal government, which was appropriately given a copy by Alyeska. They were under no obligation to do this, and ultimately this is not a workable remedy.

[6] In a phone conversation in June, 2006, Becky Lewis, ADEC indicated to me that a public records request would be $0.25 per page, and that the C-plan was at least 2,000 pages long. Lewis also indicated that requestors might also be billed for department labor time in excess of five hours for the copies.

[7] Specifically, the C-plans for the Rutter & Wilbanks well near Glennallen, and ASRC's Nearshore Stratigraphic Test Well in the Eastern Beaufort Sea.

we are commenting on, let alone any reason to suspect that comments would be actually considered.

There are no public hearings scheduled, or response to requests for them.

Those seeking information are greeted with suspicion of being terrorists, rather than as owners of the land and sufferers from potential ill-effects of a deficient C-Plan.

The C-Plan itself is obviously incomprehensible to the lay person. There is no reasonable disclosure of information or opportunity for comment to the average Alaskan citizen.

This concern is nothing new. In 1999 Ahtna commented in frustration on use of “boilerplate” rather than real analysis. They wrote:

> This is not just a plan to get the agency’s approval. Our way of life is at stake here.[8]

Please provide copies of the C-Plan at no charge to members of the interested public who request them, and post the C-Plan on the internet. This is standard procedure for equivalent documents, would meaningfully inform the public and save costs.

Please release the C-Plan for public comment in its entirety.

D. C-Plan improperly relies on self-reporting, and unsupported statements

The C-Plan renewal application requires we take Alyeska at their word to an unsettling and entirely unwarranted degree. Spill incidents and volumes, on which the entire C-Plan risk analysis, deployment strategies, and protection of sensitive areas depend, are notoriously under-reported. The public, even agencies, have no opportunity to verify critical information.

The DNV Study, as explained more below, hinges on oil company assessments of costs and benefits. It does not require a finding of bad faith to know the bottom line for Alyeska is different from the bottom line for the state or

[8] Ahtna Inc. to ADEC, June 22, 1998 Comments on the Draft TAPS oil discharge prevention and contingency plan.

its residents. Alyeska finds it cost-effective to litigate spills after the fact.[9] Alaska residents do not.

Even while preventing the public from doing so, ADEC has not itself verified critical information presented by Alyeska in the C-plan, and especially the DNV Study. The much-anticipated trajectory models that were run for the pipeline, for example, are “in a computer in Texas.” ADEC has not asked even to review this information.[10]

Even more striking, on being presented with the Hisey memo's warning that APSC is out of compliance with the existing C-Plan, ADEC has failed to investigate or take action.[11] The oil companies are not accountable. The state seems complacent.

The information in the C-plan isn’t even the best they have. It’s as though a master draftsman were drawing with crayons. While spending hundreds of millions on highly sophisticated 4-D seismic, the same companies can only come up with a one-dimensional fate & transport study? We strongly dispute these priorities.

Please do not approve the C-Plan until all information in it has been verified as reflecting the best available information.

II. C-PLAN FAILS TO DEMONSTRATE PROTECTION OF ENVIRONMENTALLY SENSITIVE AREAS[12]

A. Protection of sensitive areas is a pillar of the state's spill prevention and response strategy.

You have broad authority to require protective measures under the Right-of-Way Lease and state law. With regard for C-Plans, AS 46.04.030(e) says the Department,

> "may attach reasonable terms and conditions to its approval or modification of a contingency plan… to protect environmentally sensitive areas…"

Regulations further implement the requirement. Per 18 AAC 75.425(e)(3)(J), a C-plan must include,

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[9] *See* Ott 2005; Mark Curriden, March 14, 1999, “Exxon finds slow pace of Valdez case profitable: Company says fairness, not money, is the issue” *The Dallas Morning News*

[10] Rebecca Lewis, ADEC, personal communication 6/29/2006

[11] Hisey 2005. (Attached)

[12] “Environmentally Sensitive Areas and Areas of Public Concern,” as described in 18 AAC 75 (*see esp.* §425(e)(3)(J)) and AS 46.04.030(e), hereafter referred to in these comments as “sensitive areas.”

> “identification of environmentally sensitive areas and areas of public concern that may suffer an impact from a spill of the applicable response planning standard volume; if identification of those areas and site-specific strategies for protection of those areas are in an applicable subarea contingency plan, the plan holder may incorporate that information by reference; whether prepared separately or incorporated by reference, the identification of and planned protection measures for those areas must be based on mapped predictions of discharge movement, spreading, and probable points of contact, based on expected local, seasonal, meteorologic, and oceanographic or topo-graphic conditions; and, for each probable point of contact, must include a description of each environmentally sensitive area and each area of public concern, including
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> (i) the effect of seasonal conditions on the sensitivity of each area;
>
> (ii) a discussion of the toxicity effects and persistence of the discharge, based on type of product; and
>
> (iii) an identification of which areas will be given priority attention if a discharge occurs;

18 AAC 75.425(e)(1)(F)(v) requires the C-plan include,

> "… a description of site-specific strategies for the protection of environmentally sensitive areas and areas of public concern identified under (3)(J) of this subsection, including, for a land-based facility or railroad, protection of groundwater and public water supplies."

Under 18 AAC 75.455(d), this requirement is an approval criteria,

> "Response Strategies…must demonstrate that…**(4)** sufficient oil discharge response equipment, personnel, and other resources are maintained and available for the specific purpose of preventing discharged oil from entering an environmentally sensitive area or an area of public concern that would likely be impacted if a discharge occurs, and that this equipment and personnel will be deployed and maintained on a time schedule that will protect those areas before oil reaches them according to the predicted oil trajectories for an oil discharge of the volumes established under 18 AAC 75.430- 18AAC 75.442; areas identified in the plan must include areas added by the Department as a condition of approval.

B. C-Plan doesn’t demonstrate protection of sensitive areas.

There is no systematic method in the C-Plan to identify or protect sensitive areas or priority environmental areas. The C-Plan has no focused discussion of how this mandate is, or isn’t, fulfilled. Relevant issues are scattered throughout the document.

The closest thing to a systematic consideration or definition is the statement:

> "information used to develop the list of priority environmental areas in this plan comes from the Alaska Unified Plan…"[13]

There are many problems with this approach. First, priority environmental areas are not the same as sensitive areas. Second, it is unknown how much of the information was taken from the Unified Plan, or *how* it was used. The Copper River Delta is in the Unified Plan but not the C-Plan.

Whatever the method being used to identify and protect sensitive areas, it apparently does not involve public comment.[14] Many past comments[15], and our RFAI on this review, go unanswered and unaddressed. Many sensitive areas that are at risk are not even mentioned in the C-Plan. We have listed a number of specific sensitive areas below, and there are surely others that could be revealed by public hearings.

§1.6.4 Methods to Exclude Spill from Sensitive Areas

The C-Plan tiers to the Environmental Atlas (EA-119), which it says identifies "important land, water, and biological resources" along TAPS.[16] There are several flaws in tiering to the Atlas in this way.

- The relationship between the Atlas and C-Plan is a catch-22. The C-Plan says the Atlas identifies sensitive areas[17], where the Atlas says it uses information from the C-Plan.[18]
- It is not geographically inclusive of important downstream sensitive sites. The maps focus only on the immediate vicinity of the ROW.
- It did not follow the procedures of 18 AAC 75, and was not intended for this use.
- It follows a different system of area identification than required by state law. The Atlas shows “special areas,” “fish” “wildlife,” “recreation,” “scenic resources,” “subsistence resources,” “vegetation study sites,” “cultural areas,” and “High Consequence Areas.” These do not translate in terms of state law. For example, ecological “USAs” [unusually sensitive areas] were determined by looking at habitats of

[13] C-Plan Vol.1 @ p. 1-84
[14] Raising especial questions as to how “areas of public concern” are considered.
[15] see CDFU 2005 comments to ADEC, RCAC 2003 comments to ADEC (attached)
[16] C-Plan Vol.1 @ p.1-84
[17] C-Plan Vol.1 @ p.1-84
[18] EA-119 @ p.iv, *Purpose and Organization* section.

threatened and endangered species of plants and animals."[19] USAs, however, are not inclusive of all sensitive areas as defined in 18 AAC 75. Another example: the Atlas does not display the HCAs (High Consequence Areas) as defined by the U.S. Government, even though these would clearly qualify as sensitive areas under 18 AAC 75.425(e)(3)(J).

- It was not a public review document. It is critical that ADEC determine environmentally sensitive areas, and in particular *areas of public concern*, based in part on public and agency input.
- It is limited in resolution and scale. It is impossible to zoom in or out, as with more sophisticated, readily available mapping technologies. As a result specific locations like fishwheel sites are overlooked.

Many important downstream areas are missing from the Environmental Atlas, as well as the C-Plan identification of priority environmental areas. Specifically:

- major fishwheel concentration for much of the summer at the Chitina airport,
- The Chitina dipnet and fishwheel concentration, from the Chitina bridge to Haley Creek, which sees something like 10,000 visitors each year.[20] This area would require unique management action, fast, to prevent unwitting dipnetters from being exposed to TAPS oil.
- Copper River Delta
- Eyak River
- Bremner Sands
- Abercrombie Rapids
- Miles Lake
- Native Village of Eyak fishwheel sites
- Million-Dollar Bridge
- ADF&G sonar

§1.6.9.3 Procedures to Exclude Oil from Sensitive Areas

[19] Alyeska 2002 @ p.v
[20] Chitina Dipnet Association
http://www.chitnadipnetters.com/frontpage.htm

This section doesn't match its heading. It does not describe where sensitive areas are or how oil would be excluded from them. Available evidence shows Alyeska's response would sacrifice many sensitive areas.

The C-plan says, "Volume 3 describes mapped projections of discharge movement and probable points of contact."[21] This is simply not true. There is no indication mapping was "based on expected local, seasonal, meteorologic, and oceanographic or topo-graphic conditions."[22] Nothing in the public record shows where oil would go down the Copper River, for example. Neither does the C-Plan adequately identify areas per 18 AAC 75.425(e)(3)(J), to determine which of the sensitive areas would be impacted. Please also see our comments on Volume 3, and on Fate and Transport, below.

As for procedures and equipment, those described in the C-plan are plainly insufficient to exclude oil from sensitive areas.[23] In fact the C-plan sometimes takes the opposite approach, using sensitive areas, such as Wild Copper River King Salmon spawning grounds, as "containment."

§1.6.9.4 Procedures to Prevent Impacts to Wildlife indicates,

> "Following a spill, the Wildlife Unit Leader and the Surveillance Supervisors will determine areas that may become contaminated with oil and take prompt actions to minimize contact between animals and oil."[24]

Following a spill is much too late to start forecasting areas that may be impacted. A C-plan cannot possibly demonstrate protection of sensitive areas when it hasn't even identified probable points of impact yet.

The C-plan doesn't adequately protect wildlife from spills. I can just see the Wildlife Team from Berkeley chasing spawned out King salmon around the Gulkana River in waders. The image does not bode well for the salmon or the Californians.

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[21] C-Plan, vol.1 @ p.1-100
[22] 18 AAC 75.425(e)(3)(J)
[23] Thus violating 46.04.030(e), 18 AAC 75.425(e)(3)(J), 18 AAC 75.425(e)(1)(F)(v), 18 AAC 75.455(d)(4) ("must demonstrate…sufficient oil discharge response equipment, personnel, and other resources…for the specific purpose of preventing oil from entering an environmentally sensitive area or an area of public concern…and that this equipment and personnel will be deployed and maintained on a time schedule that will protect those areas before oil reaches them…")
[24] C-Plan, Vol.1 @ 1-101

Wildlife protection is a prime opportunity for community-based response.

§3.10 merely points to Volume 3.

Volume 3 plainly fails to meet legal requirements, including of 18 AAC 75.425(e)(3)(J) and 18 AAC 75.455(d)(4) (More on Vol.3 below). Specific failures include:

- Does not list Environmentally Sensitive Areas or Areas of Public Concern. "Priority Environmental Areas," are distinct, and a step down from broader environmentally sensitive areas, and areas of public concern.
- It is not based on mapped predictions of probable points of impact.[25]
- Areas are not defined or described. For example, "Gulkana R (fish, waterfowl)" is the entirety of the C-Plan description. Does this mean just the distance between the cut-banks, or encompass wetlands and floodplains, and pathways of feeding predators like bald eagles? How much of the river up and down stream is a probable point of impact from an RPS spill? Another example, "Copper R (fish, waterfowl)" also leaves more questions than it answers.
- I don't see a word anywhere about "Areas of Public Concern."[26]
- There is no "discussion of the toxicity effects and persistence…"[27] for each area.
- Areas are much too broadly defined (e.g. "Copper R.") to provide meaningful information about specific priorities, such as burial sites, private inholdings, subsistence fishing areas, spawning grounds, etc.

[25] In the event there are such maps, the public would need reasonable opportunity to review and comment on them.
[26] 18 AAC 75.425(e)(3)(J) It is worth noting the qualified "and" distinguishes between these areas, and areas that might be just environmentally sensitive.
[27] 18 AAC 75.425(e)(3)(J)(ii)

C. Specific, Missing Sensitive Areas

1. Copper River Delta

(a) Copper River Delta is an environmentally sensitive area worthy of special protection

At 700,000 acres, the Copper River Delta is the largest intact wetland on our continent. The intersection of influences from the upper Copper, open Pacific and Prince William Sound forms an incredibly rich ecological community.[28]

> "Because of its unique combination of physical and biological attributes, the Prince William Sound/ Copper River Delta ecosystem is globally significant to the conservation of biodiversity…By any measure, the unusually rich diversity and abundance of wildlife in a spectacular natural setting set this special wild place apart as a great natural wonder."[29]

The Copper River Delta is recognized by the UN as a World Heritage Site, by the Federal Government as one of two areas in the National Forest System governed primarily for fish & wildlife habitat,[30] and by the state of Alaska as the Copper River Delta Critical Habitat Area.[31] Residents value the Delta highly for subsistence, recreation, cultural, spiritual and economic reasons.[32]

At the base of the delta ecosystem is a rich benthic invertebrate community of clams, amphipods, polychaete worms and chironomid lavae, which is drawn by the nutrients in river and marine sediment.[33] The *Macoma* clams in particular are an ecological keystone species. They are the primary food source for 4-6 million migrating shorebirds

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[28] There are many sources of information regarding the values of the Copper River Delta. Cascadia's interests are perhaps best represented by Ott, Riki 1998, Alaska's Copper River Delta University of Washington Press. 160 pp.

[29] Cline 2005: p.7

[30] ANILCA 501(b): "the conservation of fish and wildlife and their habitat shall be the primary purpose for the management of Copper/ Rude River addition and the Copper River-Bering River portion of the existing Chugach National Forest."

[31] AS 16.20.600

[32] *See* Ott 1998.

[33] Powers S.P., M.A. Bishop, J.H. Grabowski, C.H. Peterson 2002. "Intertidal Benthid resources of the Copper River Delta, Alaska, USA." *Journal of SEA Research*. (27):13-23; S.P. Powers, M.A. Bishop, and E. Clesceri "Characterization Of Energy And Potential Contaminant Pathways In Subarctic Estuarine Habitats: Ecology Of Tidal Flat Communities Of The Copper River Delta, Alaska." Final Report to PWSRCAC.

including 70-90% of the world population of dunlins, and most of North America's western sandpipers.[34]

> "Every May, 4-6 million western sandpipers and Pacific dunlins use the Copper River Delta as a migration stopover (Bishop et al. 2000). Least sandpipers (*Calidris minutilla*), pectoral sandpipers (*C. melanotos*), lesser yellowlegs (*Tringa flavipes*), short and long-billed dowitchers (*L. scolopaceus*), marbled godwits, red knots, black-bellied plovers (*Pluvialis squatarola),* Pacific (*P. fulva*) and American golden plovers, and many other species also use this area during migration. These birds use the mudflats as critical feeding areas to replenish their fat reserves during their long migrations to breeding grounds."[35]

In all, 36 species of birds stop over each spring, giving rise to the popular annual *Copper River Delta Shorebird Festival*.

The Delta supports over 700 nesting pairs of trumpeter swans, one of the world's largest populations. It also hosts nearly all of the world's dusky Canada geese, which nest in the wetlands and waterways.[36] Both are Forest Service Region 10 "Sensitive" species, and have been recognized by the Pacific Flyway Council, Audubon and others as populations of special concern.

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[34] Bishop, M.A., Meyers, P.M., McNelly, P.F., 2000. “A method to estimate migrant shorebird numbers on the Copper River Delta, Alaska.” *Journal of Field Ornithology*. (71):627–637.
[35] USFS 2005. East Copper River Delta Landscape Assessment. Cordova Ranger District. Chugach National Forest. @ p. 52
[36] from USFS 2005

Table 2.6 - List of bird species occurring on the Copper River Delta considered to have special conservation concerns by either the USFWS, USFS, ADF&G, or the National Audubon Society.

Common name	Scientific Name	Comments
Alder flycatcher	*Empidonax alnorum*	Common Breeder
American golden plover	*Pluvialis dominica*	Common Migrant seen on mudflats and upland wetland areas
Bar-tailed godwit	*Limosa lapponica*	Casual Migrant
Black oystercatcher	*Haematopus bachmani*	Common Breeder, Winters near Montague and Green Islands
Black turnstone	*Arenaria melanocephala*	abundant in PWS near rocky areas rare on Copper River Delta, migrant
Brant	*Branta bernicla*	Common Spring Migrant mainly on the barrier islands
Bristle-thighed curlew	*Numenius tahitiensis*	Casual Migrant
Canada goose	*Branta canadensis*	Common Breeder and Migrant Dusky
Chestnut-backed chickadee	*Parus rufescens*	common all year
Common loon	*Gavia immer*	Migrant, & common local Breeder mainly on large upland lakes with fish
Dunlin	*Calidris alpina*	Abundant Migrant, most of world's population stops during spring migration
Golden-crowned sparrow	*Zonotrichia atricapilla*	abundant breeder and migrant, rare winter resident
Gray-cheeked thrush	*Catharus minimus*	Rare Breeder east of the Copper River
Hudsonian godwit	*Limosa haemastica*	Uncommon Migrant
Kittlitz' murrelet	*Brachyramphus brevirostris*	Breeder, Common PWS near glacial moraines Rare on Copper River Delta
Marbled godwit	*Limosa fedoa*	Common Migrant seen on mudflats and upland wetland areas
Marbled murrelet	*Brachyramphus marmoratus*	Breeder, winters, Common, Feeds in the nearshore and offshore regions, nests in Old Growth
Northern goshawk	*Accipiter gentilis*	Common Breeder and Winter Resident
Northern shrike	*Lanius excubitor*	uncommon in all seasons, may breed on the delta
Northwestern crow	*Corvus caurinus*	Breeder, abundant along coast in all seasons, decreases dramatically inland
Olive-sided flycatcher	*Contopus cooperi*	Rare migrant, May breed on Copper River Delta and other areas around PWS
Osprey	*Pandion haliaetus*	Spring Migrant, Report of Breeding pair near Copper River
Pacific golden plover	*Pluvialis fulva*	Common Migrant seen on mudflats and upland wetland areas
Peregrine falcon	*Falco peregrinus*	Rare Migrant & Breeder, Cliff Nester, Reports of Nests Near Katalla, Hook Point, Boswell Bay, Possibly Flag Point
Red knot	*Calidris canutus*	Rare Migrant
Ruddy turnstone	*Arenaria interpres*	Abundant migrant in PWS near rocky areas rare on Copper River Delta
Rufous hummingbird	*Selasphorus rufus*	Common Breeder & migrant
Rusty blackbird	*Euphagus carolinus*	Rare winter resident. May breed inland.
Sanderling	*Calidrus alba*	Common Migrant, Rare Winter
Short-billed dowitcher	*Limnodromus griseus*	Seen on mudflats during migration, breeds in wetlands
Spectacled eider	*Somateria fischeri*	Rare winter Migrant
Steller's eider	*Polysticta stelleri*	Rare Migrant
Surfbird	*Aphriza virgata*	Seen mainly in PWS, Possible breeder
Townsend's warbler	*Dendroica townsendi*	Common, Breeds in Spruce Forests. Often seen and heard along SaddleBag Trail and Crater Lake Trail
Trumpeter swan	*Cygnus buccinator*	Common Breeder, Winter Resident--remains on open water during mild winters
Varied Thrush	*Ixoreus naevius*	abundant migrate and breeder, rare in winter
Western sandpiper	*Calidris mauri*	Abundant Migrant, up to 80% of World's Population stops during Spring Migration
Whimbrel	*Numenius phaeopus*	Common Migrant
Yellow-billed loon	*Gavia adamsii*	Winter Resident on Salt Water

At least 88 species of birds have been observed on the Delta, and 219 have been documented in the area.[37]

[37] USFS 2005.

The Delta also supports a sizeable population of large mammals.[38] Sea lions[39] feed alongside wolves. *Homo sapiens* prey on moose. Black and brown bear coexist.

The Delta is a critical salmon area.[40] This is the physical location of the Copper River commercial fishery. Also, about 20% of the silvers in the entire copper River Watershed spawn and rear on the Delta. The concentration of fish, as well as birds, game, berries and clams make the Delta an important subsistence use area.

The Delta also has incredible cultural significance to Eyak, Chugach, Ahtna and Tlingit indigenous peoples.

Comments in the project record further indicate that the Delta is an area of special public concern.

2. TAPS threatens Copper River Delta

(a) spill would make it down stream

A spill from the TAPS into the Copper River Watershed, could quickly migrate downstream, almost inevitably reaching the Delta. This opinion is a consensus that is supported by the overwhelming and clear weight of evidence.

> PWSRCAC strongly believes that a response to an oil spill into the Klutina River from the pipeline will have little to no success in protecting the Copper River and the Copper River Delta and Flats, and therefore prevention is the key to avoiding a devastating oil spill.[41]

CDFU also has written ADEC about the threat downriver.

> Spilled oil at river crossings will quickly be transported downriver. Alyeska does not have the capacity to contain or divert these types of spills. Alyeska does not have sufficient equipment or trained responders to diver, contain and clean up this type of spill.[42]

The best available fate and transport modeling information certainly indicates oil in moving bodies of water tends to migrate downstream. The scenarios in the C-Plan demonstrate contamination from an oil spill would migrate downriver. There is nowhere else for it to go.

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[38] Cline 2005; USFS 2005; USFS 2002 *Final Environmental Impact Statement: Chugach National Forest Land Management Plan Revision*. R10-MB-480d.

[39] Many of which are of the Western Gulf of Alaska stock, which are protected by, among other things, the Endangered Species Act.

[40] Cline 2005; USFS 2005.

[41] J.S. Devens, September 28, 2005 letter to Jerry Brossia, JPO.

[42] CDFU 2005. p.3

Especially sobering is the CRWP GIS analysis showing transport of an August TAPS spill to the Copper River Delta within 36 hours.

(b) Delta is uniquely vulnerable to impact of a spill. Effects would be global and catastrophic.

The Copper River Delta is uniquely vulnerable to a spill.

Another spill would have cumulative impacts to critters and residents who are already battered by the Exxon *Valdez*.[43] For example, many of the fishermen whose herring fishery has been erased, also fish flats. The Copper was mercifully spared oiling from EVOS, so the loss of the Copper fishery as well would be a severe double blow to these fishermen.

Pathways of spilled oil to resources on the delta could be by direct oiling or through the food chain. Of particular interest is potential contamination of the bivalve *Macoma balthica*. The Oil Spill Response Institute has joined in research of this often overlooked species, in part to determine potential oil contamination pathways. According to one study:

> *"M. balthica* is sensitive to the presence of oil (Shaw et al., 1976, 1986), and is particularly susceptible to bioaccumulation of petroleum hydrocarbons (Broman and Ganning, 1986; Mageau et al., 1987). A major oil spill originating from either the Trans Alaska pipeline or from the Gulf of Alaska shipping lanes could result in significant oiling of the Copper River Delta's mudflats. The acute, chronic and indirect effects of oiling on *Macoma* could impact the food web of the delta, which could expand to larger geographic areas because of the importance of the delta to migratory species. For Pacific Flyway shorebirds, the Copper River Delta and the adjoining Bering River Delta together comprise one of the few sizeable coastal wetlands available as a stopover between the Fraser River Delta (southern British Columbia) and their western Alaskan breeding grounds (Senner et al., 1989). Shorebirds are directly vulnerable to oil both through oiling of feathers and the transfer of hydrocarbons through the food chain (see Martin, 1994, for a review). Oiled plumage can cause direct mortality or impaired physiological condition of adults through loss of insulation and subsequent hypothermia (Hartung, 1967; Vermeer and Vermeer, 1975) and altered foraging and preening behaviour (Burger, 1997). Shorebirds also can ingest oil by preening or by consuming contaminated foods. Bivalves such as *M. balthica* are a staple for many shorebirds, including the Western Sandpipers and Dunlin, the most numerous shorebirds stopping over on the Copper River Delta. Ingestion of oil even at sublethal doses can lead to altered

[43] *see* for example Ott 2005, Peterson et al. 2003, and http://www.evostc.state.ak.us for a more complete discussion of impacts of the EVOS.

> endocrine function (Holmes et al., 1978). Thus, the loss or degradation of key staging areas such as the Copper River Delta through development or catastrophic events such as oil spills could severely affect reproductive success and survival of shorebirds unable to shift to alternative feeding areas (Myers, 1983; Senner and Howe, 1984).[44]

The State of Alaska, in its factsheet on *Macoma* clams, says:

> "This species will bioaccumulate various toxins and heavy metals released from industrial waste and is especially sensitive to contamination by oil (Shaw et al. 1977, Stekoll et al. 1980, Powers et al. 2002)."[45]

A spill to the Delta could have dire impacts to migratory birds that cascade globally. According to a 2001 *Los Angeles Times* article:

> "If this area was oiled, it could take out the entire Pacific Coast flyway, literally," said Riki Ott, a marine biologist at Cordova and an opponent of oil drilling in the region. "We get 90% of the birds here. This is one of the two most important wetlands in the world, because it's strategically located: They simply can't miss it."[46]

Further complicating matters, ecosystem recovery would be uniquely slow.

> " Whereas benthic communities and their predators at more temperate latitudes may show rapid (1 yr) recovery from large-scale disturbances (e.g. Powers et al., in review), the effect of similar disturbances at more northern latitudes may require substantially longer recovery times because of the slow growth rates and longevity of the dominant taxa of the system."[47]

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[44] Powers, S.P., M.A. bishop, J.H. Grabowski, C.H. Peterson. 2002. "Intertidal Benthic resources of the Copper River Delta, Alaska, USA." *Journal of SEA Research*. (27) @ p.21 Internal citations are: Shaw, D.G., Paul, A.J., Cheek, L.M., Feder, H.M., 1976. "Macoma balthica: an indicator of oil pollution." *Mar. Pollut. Bull.* 7, 29 – 31; Shaw, D.G., Hogan, T.E., McIntosh, D.J., 1986. "Hydrocarbons in the bivalve mollusks of Port Valdez, Alaska: consequences of five years' permitted discharge." *Est. Coast. Shelf Sci.* (23):863 – 872; Broman, D., Ganning, B., 1986. "Uptake and release of petroleum hydrocarbons by two brackish water bivalves, Mytilus edulis (L.) and Macoma balthica (L.)." *Ophelia* 25, 49 – 57; Mageau, C., Engelhardt, F.R., Gilfillan, E.S., Boehm, P.D., 1987. "Effects of short-term exposure to dispersed oil in arctic invertebrates." *Arctic* 40, 162 – 171; Stekoll, M. S., L. E. Clement, and D. G. Shaw. 1980. "Sublethal effects of chronic oil exposure on the intertidal clam *Macoma balthica*." *Marine Biology* 57: 51-60.

[45] Jansen, A. and T.A. Gotthardt, Alaska Natural Heritage Program, University of Alaska Anchorage *Baltic Macoma*. Online at http://aknhp.uaa.alaska.edu/zoology/species_ADFG/status_reports/ADFG_PDFs/Invertebrates/Marine_Clam_ADFG_final.pdf

[46] Murphy, Kim. "In Alaska, the Hunt for Oil, Gas Only Begins at Wildlife Refuge" *Los Angeles Times* February 6, 2001.

[47] Powers et. al. 2002 @ p.21

Research is ongoing, but continues to indicate the importance of *M. balthica*, and special significance of persistent effects of oiling

> "The strong reliance of these intertidal food webs on benthic as opposed to free-floating primary producers suggests the sensitivity of these waters to oil spill effects that can have long residence."[48]

See also Section III below, regarding new information regarding long-term toxicity of oil.

Shorebirds are not the only potential victims. Significantly, salmon heading both directions would be vulnerable.[49] River otters, sea otters, harbor seals, sea lions and other critters could be oiled. Oiling of swimming critters, and critters which are prey, potentially would also alter spill trajectories by carrying contamination some distance upstream, cross-stream, or on-land. Predators and scavengers especially would be vulnerable to oil impacts through the food chain.

There is intrinsic value in the delta as wild land. It contains all the values of the world's great Wildernesses. As the Wilderness Act, ANILCA and indeed much of the body of conservation work at the Federal level over the past century indicates, we are not alone is seeing intrinsic worth in wild, untrammeled places.

(c) C-Plan does not protect the Copper River Delta from an oil spill.

A spill responder relying on this C-Plan would be unaware that the Copper River Delta even existed, let alone be informed of its unique ecological, cultural, spiritual and economic values and its sensitivity to oil spills—and oil spill responders. Much less would a responder be given the tools needed to prevent oil from reaching the Delta. For the many reasons given in these comments, response under the proposed C-Plan would be inadequate to exclude oil from sensitive areas, or protect public interests in them.

The Copper River Delta is not listed as one of the sensitive areas in Vol. 3. It is not mentioned in the Environmental Atlas. It is not depicted on any maps in the C-Plan. Shorebirds aren't mentioned or considered. The

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[48] Bishop, M.A., S.P. Powers, & E. Clesceri. 2006 "Pathways In Subarctic Estuarine Habitats: Ecology Of Tidal Flat Communities Of The Copper River Delta, Alaska." Final report to the PWSRCAC.

[49] Oil and salmon don't mix. *See* Sec.III below about toxicity of oil to salmon at parts per billion.

world of C-plan planning stops just downriver of the pipeline.

Strong comments on past Contingency plans have indicated concerns of downstream stakeholders. For example, CDFU, representing the Copper River gillnet fleet, wrote:

> We are gravely concerned with the current adequacy of spill response plans and the capacity of the owners of the Trans-Alaska Pipeline System to prevent or respond to even small oil spills, let alone catastrophic failures of the pipeline system.[50]

Total lack of consideration or protection of the Copper River Delta is "an unconscionable error and omission."[51] The error grows as evidence continues to pile up warning of the danger.

As a COA of previous C-Plans, Alyeska commissioned the DNV Fate & Transport Study, which was completed for Region 5 in 2005. I critique that study in more detail below. As part of that study, several fate & transport models were created that could perhaps be used to predict downriver reach of oil. Maps showing areas impacted by spilled oil are included in the back of the DNV study (Appendix VII) by way of example, but these do not give a clue whether they depict oil fate after ten minutes or ten hours. It is impossible to determine whether or not those models show oil from a TAPS spill reaching the Copper River Delta, or not. We strongly suspect that APSC *knows* oil could extend downriver, and has in its possession appropriate models that show that oil would get downriver. For some reason, Alyeska isn’t volunteering and JPO refuses to ask. Please do.

In any event, we've been unable to determine to what extent downriver transport is acknowledged or disputed by Alyeska or JPO information, or what other contingencies there may or may not be for a spill extending downriver.

The only thing that *is* clear is that the C-plan does not even recognize the existence of the Copper River Delta, much less give it the protection it deserves.

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[50] RJ Kopchak & James Mykland, Chairs, Cordova District Fishermen United. September 14, 2005 comment letter to Becky Lewis, ADEC. @ p.1
[51] CDFU 2005. p.3

2. Copper River Salmon

(a). Copper River Salmon are an environmentally sensitive receptor that requires special protection

The commercial Copper River Salmon fishery is a passage of spring and a big damn deal.[52] Every spring and summer about 1.5 million Sockeye and 50,000 King salmon are caught commercially by about 500 independent fishermen, then processed and sold either via direct marketing or one of five major canneries.[53] The Copper River supports substantial subsistence and personal use fisheries, which are of immense significance to residents.[54] According to information previously submitted to the department and incorporated by reference here, all told, Copper River Salmon are a $50 million annual industry just within our region.[55]

Copper River salmon have broken exciting new ground in value-adding salmon. Copper River salmon catch high prices because of their reputation as fresh, high quality, and healthy.[56] Pristine waters and sustainability figure prominently in the marketing messages.[57]

(b) Spill threatens Copper River Salmon fishery

A spill, particularly one reaching the Delta and Flats, could forever ruin the Wild Copper River Salmon fishery.[58]

I hereby adopt in full the excellent comments of CDFU submitted on the Region 5 review. They wrote, in part:

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[52] Philips, March 2003 "Running wild: why Copper River salmon is worth $20 a pound, and why it may disappear forever" *Sunset*. (Attached). Taken from website 10/22/2006

[53] ADF&G 2005 Harvest Summary (attached. Online at http://www.cf.adfg.state.ak.us/region2/finfish/salmon/pws/pwspos05.pdf; Metzger, Scott April 16, 2003. Following the Commercial Harvest of Copper River Salmon. Report prepared for the Eyak Preservation Council. (Attached)

[54] ADF&G 2006, online at http://www.sf.adfg.state.ak.us/region3/areas/ucus/chitina/chitinaHarvest.cfm; ADF&G 2006(b), online at http://www.sf.adfg.state.ak.us/region3/areas/ucus/chitina/chitinaHistory.cfm; Chou, June 5, 2002. "Eyak woman rediscovers her heritage smoking Copper River kings." *Seattle Post-Intelligencer*. (Attached)

[55] CDFU 2005. p.3

[56] Chou, May 17, 2006. "Copper Salmon Fetching a Gold Price." *Seattle P-I*. (Attached) taken from website 10/22/200;

[57] Metzger 2003. *see* www.crsalmon.org

[58] *see* CDFU 2005

> Spilled oil into wetlands, water, streams and lakes will collect where drainages and streams enter meandering wetlands, or wash against gravel bars, where spawning and rearing occur. These fragile environments "downstream" will be at significant risk to short and long term oil impacts. The entire river system is exposed, but the greatest threats appear to be in the Upper Gulkana and Little Tonsina river areas, and at the major river crossings, especially the Klutina River crossing.[59]

Oil spills are very bad for salmon. According to studies done on Pink Salmon in the wake of the Exxon *Valdez*,

> Eggs incubating in the oiled gravel showed a higher rate of mortality; increased deformities, including extra fins, delayed growth, and irregular metabolism; less effective feeding; increased predation; and a lower percentage of returning adults. A 40% reduction in survival to adult stage was measured at certain levels of exposure in waters around Prince William Sound.[60]

Oil contamination in the parts per billion range negatively impact salmon populations.[61]

Even worse than the physical damage, perhaps, would be the destruction of the brand and marketing image, carefully constructed over years, of Wild Copper River Salmon as clean, healthful food. As Cordova District Fishermen United, representing most of the fleet, has repeatedly commented, even the *perception* of contamination would be enough to very seriously affect value.

The human, psychological impact would be devastating to the 500+ fishing families who have built their livelihoods the old fashioned way.

(c) The C-Plan fails to protect Copper River Salmon

While "salmon" are mentioned in Vol. 3, the C-Plan does not adequately appreciate the value of Wild Copper River Salmon in terms of the threats to habitat, marketing, or subsistence.

The *perception* of contamination would do immense damage to commercial fishermen.[62] Even “successful” responses in terms

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[59] ibid.
[60] S. Rice 2002. NOAA. “*Exxon Valdez*: Long Term Effects from Residual Oil. *EPA Oil Spill Program Update*, May 2002. Vol.4 No.5. p.3
[61] *See* Section III. Also *See also* Ott 2005 *Sound Truth and Corporate Myths* Dragonfly Sisters Press, Cordova AK; Peterson, CH., S.D. Rice, J.W. Short, D. Esler, J.L. Bodkin, B.E. Ballachey, and D.B. Irons. 2003. December 19. "Long-Term Ecosystem Response to the Exxon Valdez Oil Spill." *Science*. Vol. 302. pp.2082-2086;
[62] CDFU 2005 comments

of the RPS would, in some cases, spell catastrophe for us downstream.

Subsistence, personal use and sport use locations along these rivers is not mapped in the C-Plan or the Environmental Atlas.

Scenarios

The scenarios in the C-Plan clearly illustrate lack of protection of Copper River Salmon. For example, the Gulkana River bullethole scenario (#12) would oil fifty miles of the best King Salmon spawning habitat, in August, with no special measures to deal with salmon. The actual result would be near-total destruction of the commercial Wild Copper River King Salmon fishery.

Similarly, the Moose Creek oil spill scenario shows a spill potentially escaping under the ice and downstream, with no plan for downstream tracking, capture or cleanup.

Scenario 11, the Milepost 676 spill, depicts a slow response in which extensive salmon habitat would be a sacrifice zone. The Protection of Environmentally Sensitive Areas Section is blank, (Vol.2 p.11-9) despite the fact the Copper River being so close downstream. The assumption apparently is that the oil will all be easily captured and cleaned up before it get into the watershed. The imperfections of past spill response indicates that assumption is unwarranted.[63]

D. REMEDY

Protection of sensitive areas and areas of public concern from the TAPS requires a layered, redundant response. It also requires participation of the *only* groups of people who knows anything about conditions there—residents, subsistence users and commercial fishermen.

- **Identify Sensitive Areas** Please require a listing of environmentally sensitive areas, and areas of public concern, that are at risk from pipeline spills. Stakeholder involvement is critical.
- **Community-based response teams**, perhaps as a branch of the SERVS Fishing Vessel program, would be the best way to protect priority environmental and public interest places during a spill. It would be better to take advantage of the local knowledge that is already there.

[63] Pockets of residual oil left after the EVOS are one example.

These teams could combine with necessary **equipment upgrades, and pre-staging of response equipment.**

- **Citizen Oversight Council**, as described in more detail below, is integral to an effective strategy. Please include this requirement as a COA to the C-Plan.
- **Adequate tracking, and Fate & Transfer studies** Please attach a COA requiring a Fate & Transport study. Stakeholder involvement is critical.
- **GRS-level response planning.** I hereby adopt the excellent comments of PWSRCAC to ADEC on this topic, which were submitted to you in 2003. In particular we support the goal of 20 locations per region, per year until done.

III. C-PLAN FAILS TO ADEQUATELY CONSIDER TOXICITY OF OIL

Since the Exxon *Valdez* Oil Spill, a host of public trust studies have come back giving us a new understanding of the toxicity of petroleum and other chemicals. Some have likened this to a "paradigm shift" in understanding of the interaction of oil spills, responders, and the ecosystem.

> "The new understanding holds that: (1) oil has short-term and long-term toxic effects to fish and wildlife; (2) subsurface buried oil *is not* environmentally benign; and (3) oil is both persistent and bioavailable. Oil was found to be harmful to fish and wildlife at 1,000 times lower levels than those thought to be "safe" for wildlife under the old paradigm."[64]

The story of emergence of the new oil toxicity paradigm and the story of lingering harm from low level PAH exposure to a variety of birds, fish, and mammals is told in the nonfiction heavily referenced book, Sound Truth and Corporate Myth$: The Legacy of the Exxon Valdez Oil Spill by Dr. Riki Ott. This book is attached and hereby adopted in full as part of the comments for the record.[65]

Federal and state action has already occurred based on the new understanding that oil causes long-term harm. For

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[64] Ott 2005 Sound Truth & Corporate Myths, p.395; Peterson, CH., S.D. Rice, J.W. Short, D. Esler, J.L. Bodkin, B.E. Ballachey, and D.B. Irons. 2003. December 19. "Long-Term Ecosystem Response to the Exxon Valdez Oil Spill." *Science*. Vol. 302. pp.2082-2086; Ballachey and Bodkin 2003, "*Exxon Valdez* Oil Spill Restoration Project Final Report: Lingering Oil: Bioavailability and Effects of Prey and Predator" Restoration Project 030585 Part II Final Report (Attached) Carls et al. 2003

[65] If you need more copies, please ask.

example, on August 31, 2006, the United States and State of Alaska demanded that Exxon Mobil pay an additional $92 million to mitigate and restore unanticipated long-term injury from Exxon's 1989 spill.

The C-Plan, Alyeska and owner companies continue to operate under the old paradigm. As a result, the C-Plan fails to achieve legal standards. The new toxicity information has direct regulatory relevance to this C-Plan in several ways.

First, it has major implications for protection of sensitive areas.[66] Smaller amounts of oil will have more impact, for longer, than is being assumed. For example, even small pockets of residual oil left along the Gulkana River under Scenario 12 would be more toxic to salmon, for longer, than is assumed.[67] Leaving oil in place as planned would fail to adequately protect downstream sensitive areas.

Also, this throws the cost-benefit analyses, including that in the DNV study, into doubt because they will have tended to underestimate the benefit of preventing a spill. Relatively smaller prevention actions will have relatively more effect than was supposed.

The C-Plan is relying on old science.

The C-Plan relies throughout on science and assumptions of the old paradigm. For example, the C-Plan cites Kinney et al., *Kinetics of Dissipation and Biodegradation of Crude Oil in Alaska's Cook Inlet;* Smith and Macintyre, *Initial Aging of Fuel Oil Films of Sea Water,* 1971.[68] The basic assumption is that all the harmful compounds will evaporate quickly, leaving only harmless asphalt. This is precisely the myth de-bunked by the EVOS science.[69]

The C-Plan relies on studies from the 1970s that measured only acute toxicity, and only that caused by the water soluble fraction of spilled oil. We know now that the truth is different.

Volume 1 **§1.3.3.1 Crude Oil Characteristics** says,

> "The light end components (aromatics/ PAHs) are easily volatilized (evaporated) from the spilled crude and will

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[66] 46.04.030(e), 18 AAC 75.425(e)(3)(J), 18 AAC 75.425(e)(1)(F)(v), 18 AAC 75.455(d).
[67] Regarding toxicity to salmon, see especially Ott 2005, Peterson et al. 2003, Carls, Heinz & Rice 2003,
[68] C-Plan, Vol.1 @ p.1-83
[69] Ott 2005; Peterson et. al. 2003.

> generally dissipate in temperatures above 30˚F within 24 to 48 hours, reducing airborne concentrations below harmful levels for personnel exposure and flammability.”[70]

The C-Plan says typical fresh crude is composed of 90 percent aliphatics. However, Alaska North Slope ANS crude is 50 percent aliphatics, 8 percent monoaromatics, napthalenes, and 2 percent PAHs, according to chemists at the NOAA Auke Bay Lab. Only monoaromatics and naphalenes are considered "light ends" not PAHs. Evaporation of light ends is a function of temperature and slick thickness, among other things. For example, in the case of the Exxon Valdez, the light ends were persisted throughout the summer, in part because the oil was buried largely unweathered on beaches. The assumption that harmful light ends will volatilize within 24 to 48 hours is not valid.[71]

Vest monitoring tests and other measurements of air quality should be required and continue as long as the response effort.

§1.6.3.2 Weather and Degradation says,

> “It has been estimated that all components with a boiling point of less than 540˚ are gone in a few days...Left behind are the heavy components of crude oil, which tend to be the least biodegradable and form the most stable water/oil emulsions.”[72]

The new oil toxicity paradigm, which emerged in the aftermath of the Exxon Valdez oil spill, found that PAHs are persistent and toxic.[73] In fact, in 1999 the USEPA listed 22 PAHs in crude oil on its list of Persistent, Bioaccumulative, Toxic Pollutants.[74] The PBT Pollutant list contains a short list of some of the most hazardous chemicals known to humans, including now 22 PAHs in crude oil. PAHs are indeed "left behind" when the light ends disperse. However, PAHs are persistent, bioavailable, and toxic.

1.6.9.1 Wildlife

This paragraph under Waterfowl is only part of the story. It refers to the old 1970s oil toxicity paradigm that held that oil toxicity to wildlife with fur and feathers was largely due hypothermia from direct oiling. The new 1990s oil toxicity paradigm holds that, in addition to the immediate *acute* threats from oil coating and hypothermia,

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[70] C-Plan, Vol.1 §1.3.3.1 @ p.1-37
[71] Ott, personal communication, October 18, 2006.
[72] C-Plan, Vol.1 @ p.1-76
[73] Ott 2005
[74] www.epa.gov/tri/guide_docs/2001/pacs2001.pdf

there is an additional *chronic* threat from low level PAH exposure.

Further, the paragraph under "Fish" understates risk. PAHs were found to be toxic to pink salmon eggs at 1 to 20 parts per billion PAHs and toxic to Pacific herring at 400 parts per trillion PAHs. Therefore, risk from oil (PAHs) to overwintering sensitive life stages including eggs and fry is huge in the event of a spill during this time. To simply state the obvious, that "care must be exercised to minimize disturbance..." is insufficient. The public needs more information to assess whether the proposed "care" is sufficient to protect the resources.

§1.6.9.2 Effects and Persistence of Discharge in Environmentally Sensitive Areas.

The C-Plan says, “Some higher molecular weight four and five-ring PAH could contribute to long-term effects in sediment dwelling organisms. However, their concentrations in crude oil are usually quite low.”[75] The next paragraph goes on to explain impacts of various fractions of crude in terms of their “*acute* toxicity”[76] alone.

We now know, of course, that chronic sublethal doses and toxicity are harmful to salmon and other wildlife. The studies done by public trust scientists have indicated that oil is much more poisonous than we thought. According to the study by Auke Bay Lab scientists, and published in the journal *Science* (Attached):

> The ecosystem response to the 1989 spill of oil from the Exxon Valdez into Prince William Sound, Alaska, shows that current practices for assessing ecological risks of oil in the oceans and, by extension, other toxic sources should be changed. Previously, it was assumed that impacts to populations derive almost exclusively from acute mortality. However, in the Alaskan coastal ecosystem, unexpected persistence of toxic subsurface oil and chronic exposures, even at sublethal levels, have continued to affect wildlife. Delayed population reductions and cascades of indirect effects postponed recovery. Development of ecosystem-based toxicology is required to understand and ultimately predict chronic, delayed, and indirect long-term risks and impacts.[77]

The lessons learned have such important, far-reaching implications that some have likened it to a paradigm shift. According to Ott (2005):

> "…[O]il causes delayed and indirect effects by unraveling bits of the complex tapestry of life that we simply call "ecosystems." …

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[75] C-Plan, Vol.1 @ p.1-100
[76] ibid @ p.1-100
[77] Petersen et. al. 2003 @ p.2082

> "The new paradigm shatters several tenets of the old paradigm. The new understanding holds that: (1) oil has short-term and long-term toxic effects to fish and wildlife; (2) subsurface buried oil *is not* environmentally benign; and (3) oil is both persistent and bioavailable. Oil was found to be harmful to fish and wildlife at 1,000 times lower levels than those thought to be "safe" for wildlife under the old paradigm. Further, extraordinarily low levels of oil— PAHs in the low parts per billion range— cause persistent and measurable population-level harm to sea life. On the basis of these scientific advancements, environmental policies are grossly under-protective of aquatic life."[78]

This entire section is outdated as it relies solely on the 1970s oil toxicity paradigm.[79] It does not incorporate the new oil toxicity understanding into the discussion on effects and persistence. The new understanding makes it very clear that oil is toxic, persistent, and bioavailable at very low levels of PAHs. The new understanding, therefore, significantly increases the risk side of the risk-benefit equation. This risk MUST be addressed––but it is not acknowledged or addressed in this document. From a public and environmental perspective, this is unacceptable.

Three- to five-ring PAHs are now known to contribute to chronic problems including reduced fitness in individuals within a population to the point of population level impacts. Measurements taken from sediment burden are misleading. Even a tiny amount of PAHs in aqueous solution can cause chronic problems for wildlife. For example, the level of chronic harm documented to cause population level impacts is **1 to 20 parts per billion** PAHs. PAHs are soluble in lipids and transfer rapidly from water into biological fatty tissue. These low levels were documented in both field and lab tests.

The old style 96-hour bioassays and the amphipod sediment bioassays were not designed to test chronic toxicity. Rather, these tests were designed to test acute exposure from the water soluble fraction. Reliance on literature results from this method of assessing toxicity understates risk.

Petroleum hydrocarbons in the particulate form; i.e., PAHs, are persistent, bioavailable, and toxic.

The biological health risk from PAHs must be acknowledged, assessed, and mitigated.

[78] Ott 2005 @ p.395
[79] Ott, personal communication, October 18, 2006.

VOLUME 1:

RPS Calculations are wrong

There are at least six key considerations to determining RPS volume: 1) segment size, 2) hydraulic characteristics, 3) pipeline capacity, 4) flow rate, 5) spill detection time, 6) time to shut down pipe.[80] The C-Plan has problems with at least the first, and the last three.

No Description of Segments

With regard to the first two considerations, the C-Plan doesn't describe how RPS volumes are calculated. Why doesn't the RPS Section discuss how RPS volumes are determined for the stretches of pipeline between pump stations?

Flow Rate

Anticipated flow rates are withheld from the public review copy, Without this information we are unable to determine what assumptions it makes regarding throughput, or whether the RPS is accurate.[81]

It seems safe speculation that flow rates will continue to diminish as North Slope fields play out. The recent situation of a series of incidents, including the Prudhoe Bay shutdown, mechanical problems at satellite fields, and extreme weather, has resulted in slack-line conditions.

The TAPS has a lower-limit to flow rate, below which operations do not function smoothly.[82] The C-Plan has no

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[80] AS 46.04.030(k)(2) For pipeline, RPS means "shall plan to be able to contain or control, and clean up **realistic maximum oil discharge** within 72 hours." Regulations give the specific formula at **18 AAC 75.436(b):** "The response planning standard volume for a crude oil pipeline facility is the amount of oil which equals the length of the pipeline between pumping or receiving stations or valves (Lpl), minus the hydraulic characteristics of the pipeline due to terrain profile (Hpl), times the capacity of the pipeline in barrels per lineal measure (Cpl), plus the flow rate of the pipeline in barrels per time period (FRpl), multiplied by the estimated time to detect a spill event (TDpl), plus the time to shut down the pipeline pump or system (TSDpl). Written as a formula, the response planning standard is (Lpl - Hpl) * Cpl + FRpl * (TDpl + TSDpl)." That this all is done correctly is an approval criteria, per 18 AAC 75.455(b).

[81] 18 AAC 75.436(b) describes the role of throughput in the RPS calculation.

[82] Slack flow conditions have caused vibrations at Atigun, Isabel and Thompson Pass. This situation was reported to Congess in a September 22 letter by Alyeska whistleblower Glen Plumlee. *See* Mauer. October 10,

discussion of this threshold. Please request additional information and analysis of this issue, as slack line conditions raise novel technical issues with direct bearing on spill response (e.g. spill detection).

Leak Detection time

The C-plan fails to consider the RPS given potential long-term failures to detect a spill. RPS considerations seem to assume instantaneous detection, whereas the 2001 Capstone Risk Analysis estimated time to detect a 30-gallon-per-hour spill from an underground segment at as much as 3 months. Shortcomings in leak detection mean that more of the spills will escape downstream, and to sensitive areas, than is assumed.

Pipe Shutdown

The entire RPS calculation depends on perfect isolation of pipeline segments by RGVs, CKVs, and other valves in the event of a spill. This underlies the calculation of the pipeline segment size, hydraulic characteristics, and time to shut down in the event of a spill under 18 AAC 75.436(b). As discussed more below, some of those valves are leaky, a factor which is not considered in the RPS calculation.

COMMENTS ON §1: Response Action Plan

Proposed Response Strategies are inadequate. The C-Plan does not indicate ability to respond to even the under-estimated RPS spills.

Under Alaska law, the holder of a C-Plan is required to

> "maintain, or have available under contract … sufficient oil discharge containment, storage, transfer, and cleanup equipment, personnel, and resources"[83]… "to contain or control, and clean up realistic maximum oil discharge within 72 hours."[84]

ADEC regulations require a plan holder to demonstrate that it has "ready access to enough equipment to meet the applicable response planning standard[] ... using

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2006. "Alaska Oil Line Rattle Raise Fears." *Anchorage Daily News*. Online at http://www.adn.com/money/story/8288793p-8185315c.html ; *See also* Bradner, October 15, 2006. "Alyeska officials downplay pipeline vibrations caused by low flows." *Alaska Journal of Commerce.* Online at http://www.alaskajournal.com/stories/101506/hom_20061015006.shtml

[83] AS 46.04.030(k)

[84] §§(k)(2)

mechanical methods of oil control, containment, and cleanup."[85]

> **18 AAC 75.436(a)** For a crude oil pipeline facility, the plan holder shall maintain or have available under contract within the plan holder's region of operation or another approved location, sufficient oil discharge containment, storage, transfer, and cleanup equipment, personnel, and other resources to
>
> (1) contain or control and clean up within 72 hours that portion of the response planning standard volume that enters open water; and,
>
> (2) contain or control within 72 hours, and clean up within the shortest possible time consistent with minimizing damage to the environment, that portion of the response planning standard volume that enters a receiving environment other than open water."

§1.1 Emergency Action Checklist

Vol. 1 §1.1.2 Pipeline Reconnaissance

We are concerned that there could be long lag times between initiation of leaks, leak detection, and detection of actual locations of leaks. The two recent spills on the North Slope took unknown days or weeks to be detected.[86]

As you point out in the RFAI, the TAPS leak detection systems lack precision. Potential leak detection segments are as large as from PS11 to Valdez, for example.

"Time to detect a spill event,"[87] is not accurate determination of the "realistic maximum discharge"[88] in this specific circumstance. At the time a leak alarm sounded, Alyeska will only know that, for example, there is a spill somewhere between Delta and Valdez. It will be an additional long time before the leak is precisely located. The C-plan method of visual observation obviously doesn't work for underground portions of pipeline. There is no method for tracking non-floating oil. A slow underground and/or underwater leak, for example at the Klutina crossing, could continue undetected indefinitely.

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[85] 18 AAC 75.445(g)(1) (emphasis added).
[86] ADEC SPAR August 14, 2006 "Flow Station 2 Transit Oil Line Release Final Situation Report." Final Situation Report GC-2 Oil Transit Line Release Site Report #22. Both are publicly available online at http://www.dec.state.ak.us/spar/
[87] 18 AAC 75.436(b)
[88] AS 46.04.030(k)(2)

§1.2 Reporting and Notification

This section does not adequately describe a stakeholder notification process. We are especially concerned that subsistence, commercial, personal use and sport fishermen, as well as backcountry recreationists, will not be effectively notified of spills. As indicated in Section II of these comments, above, this has bearing on protection of sensitive areas.[89]

§1.3 Safety

Given past experience on the EVOS, we are concerned for worker health and safety on a large-scale spill response.

§1.3.2 Safety Officer

We request the department require a full time safety officer. This is a matter of priority. Worker safety is too important to be relegated to part-time.

Table 1.7 Allowable Concentrations for Entry into Potentially Hazardous Work Areas.

This information should be cross-applied with response scenarios. Safety and response plans conflict. “Offensive” spill response may not be possible near a spill due to safety concerns. Recall the extended turmoil in response to the bullet-hole spill, when the extreme explosion hazard was first overlooked, and then prevented work crews getting close enough to do repairs.[90]

Given the extensive, unaddressed health problems among cleanup workers in the Exxon *Valdez*, we are concerned that the oil companies will again find it cheaper to sacrifice workers health and safety, then unleash an army of lawyers to fight off claims for compensation.[91]

Please assure the public the C-Plan is based on the best available science. Please ensure that necessary spill response can be reliably done in a safe manner.

Volume 1 §1.3.3 Hydrocarbon Vapor Testing

The C-Plan says response activities can proceed without respiratory protection if the atmosphere is found to be

[89] 46.04.030(e), 18 AAC 75.425(e)(3)(J) , 18 AAC 75.425(e)(1)(F)(v), 18 AAC 75.455(d)
[90] Alyeska 2002 *TAPS Bullethole Joint After-Action Report*
[91] *See* Ott 2005

less than 100 ppm THC and less than 0.5 ppm Benzene.[92] New science, and lessons of the EVOS experience, indicates these levels are too low.

First, these are based on OSHA standards which assume an 8 hour day, 40-hour work week. Thus, by design, the OSHA safety standards do not adequately protect worker safety in emergency response.[93]

Also, new science is showing that Napthalene is more dangerous than we knew. The NIEHS National Toxicology Report, which reports on 2 years of testing, reports "clear evidence" of carcinogenicity, mostly in the neroblastomas of the nasal cavity on both males and females.[94] Based on this information, Napthalene is a suspiciously dangerous substance and more stringent protective measures would be justified.[95]

Therefore, more stringent requirements ought to be applied. For Benzene, we recommend adopting the more stringent NIOSH level of 0.1 ppm Benzene for respiratory protection, instead of half of the OSHA level of 1.0 ppm. For THC, we recommend a standard that accounts for toxicity and health risk of Napthalene.[96]

§1.4 Communications

It is ironic that the section about communication contains none of it.

This entire section is withheld at the direction of ADEC without explanation other than reference to AS 40.25.120(a)(10). So, it is impossible to comment on communications issues that may or may not exist.

The censorship of this section is a major loss in terms of environmental protection, and protection of the public interest. Communications issues are a major limiting factor in spill response. In Prince William Sound communications

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[92] C-Plan, Vol.1 §1.3.3 @ p. 1-35– 1-36
[93] Ott, personal communication, October 18, 2006.
[94] National Toxicology Program. December 2000. NTP Technical Report On The Toxicology And Carcinogenesis Studies Of Naphthalene (CAS NO. 91-20-3) IN F344/N RATS (INHALATION STUDIES) NTP TR 500 NIH Publication No. 01-4434 U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES Public Health Service National Institutes of Health. Available online at http://ntp.niehs.nih.gov/ntp/htdocs/LT_rpts/tr500.pdf
[95] Ott, personal communication, October 18, 2006.
[96] ie. 100X lower than the lowest levels that cause harm.

has been a major problem area that has been repeatedly identified in spill drills as an area that needs improvement.[97] Any problems with communications during a spill response would impede compliance with the RPS or protection of sensitive areas.[98]

We support training and creation of community response teams, and a citizen oversight council, as a partial solution to inevitable communication problems during spills and emergencies. These measures would certainly improve stakeholder and public communications, as they have in Cook Inlet and Prince William Sound.

§1.5 Deployment Strategies

This section is inadequate to demonstrate compliance with the RPS,[99] or protection of sensitive areas,[100] and should not be approved without substantial improvement.[101]

Transportation and Accessibility

§1.5.2.3 Water Transportation

A single sentence that Alyeska has "a fleet of workboats at locations from Pump Station 1 to Valdez" does not demonstrate adequate watercraft to deploy boom, track oil, and pursue shoreside oil, transport people and other required tasks. Given the very substantial fleet of river craft that would be necessary in a major spill response on one of our rivers, and the fact that Alyeska doesn't use many boats in the general course of running their pipeline, it is doubtful their fleet is sufficient under 18 AAC 75.445(c).

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[97] PWSRCAC 2004 *Annual Drill Monitoring Report 2004*. Online at http://www.pwsrcac.org/resources/reportsavail.html

[98] 46.04.030(e), 18 AAC 75.425(e)(3)(J), 18 AAC 75.425(e)(1)(F)(v), 18 AAC 75.455(d)

[99] AS 46.04.030, 18 AAC 75 §436(a), §445(g)(1)

[100] 46.04.030(e), 18 AAC 75.425(e)(3)(J), 18 AAC 75.425(e)(1)(F)(v), 18 AAC 75.455(d)

[101] Department approval criteria for Deployment strategies is at 18 AAC 75.445(c):

"The plan must demonstrate that the identified personnel and equipment are sufficient to meet the applicable response planning standard and can be deployed and operating within the time specified under 18 AAC 75.430 - 18 AAC 75.442. The plan must state what conditions were assumed and must take into account the realistic maximum response operating limitation and their effects on response capability and the deployment of resources. Plans using contractual resources must demonstrate that the transition and substitution of equipment and resources will occur without interruption of response or cleanup."

In the Exxon *Valdez* spill, cleanup ended up relying on the fishing, tourism and subsistence fleet of vessels. Are river users, similarly, unknowingly on unpaid standby today?

Please ensure that Alyeska has an adequate fleet of river craft to do the things they say they can. Please give special attention to downriver areas. Community-based response may be a partial solution to this problem, as with SERVS use of the fishing fleet.

§1.5.2.4 Transport During Adverse Weather Conditions

This section is inadequate.[102]

First, Alyeska does not demonstrate access to enough transportation equipment to respond to a spill in a remote, off-road location such as the Copper River. Transportation of recovered oil for disposal is a huge logistic challenge in such areas, yet the C-plan doesn't show any special mitigation measures to aid recovery from these areas even under ideal circumstances, let alone inclement weather.

The C-Plan indicates that "soft" ground could be traversed by helicopter, track vehicle, or ATV.[103] For all practical purposes helicopters will be essential, especially for heavy lift capacity, and for the extensive quicksand areas along the Copper River and Delta.

Second, the response gaps during breakup and freezeup are a very serious problem. There are extended periods where response to sensitive areas could be impossible.

As a first step, please identify the location of these gaps, and determine times when response is unavailable, as expressed as a percentage of overall operations. Then, please require Alyeska to systematically close all such response gaps.

§1.5.5 Mobilization and Response Times

It looks like equipment is being taken out of warm storage and kept in trailers instead. It is a major problem to be depending on cold engines to start during an emergency. This factor further aggravates equipment performance

[102] Violating 18 AAC 75.445(c) ("…must take into account the realistic maximum response operating limitation and their effects on response…") and 18 AAC 75.445(d)(5) ("meet the [RPS]…under environmental conditions that might reasonably be expected to occur…")
[103] C-Plan Vol.1 §1.5.2.4 @ p.1-54

problems of equipment like skimmers. I support ADEC in requiring warm storage for all necessary equipment.

Response times are clearly much too slow in the 248 segments identified in the DNV Fate & Transport Study without a primary containment site.[104]

Vol.3 § 4.3.5 Accessibility

It is unclear how this discussion relates to Vol. 1.

The C-Plan discusses road, river, ATV and remote areas access in vague terms. This section fails to demonstrate ability to respond to spills. To the contrary, it reveals that in many situations Alyeska won't be able to. Access to pools of oil alongside meandering rivers, like the Gulkana and Little Tonsina, would be nearly impossible.

At **Vol.3 §4.3.5.2 River Access** says that "burning the oil as a option to eliminate the spilled oil may prevent further damage."[105] It is totally inappropriate to plan for ignition as a method of access. Alyeska needs to plan to be able to access contained oil, and dispose of it, using mechanical means.[106] This statement is worrying because, judging from scenarios and response strategies, access to contained oil along rivers is a major unhurdled obstacle.

No Access to Remote Areas

We are very concerned about Alyeska's inability to respond in remote areas, particularly those "having no access," as described in Vol.3 § 4.3.5.4,[107] and Volume 1 §1.5.

First, it is not acceptable that there should be any spill impact areas at all with "no access." That there are such areas is clear indication of noncompliance with the RPS and protection of sensitive areas.

Second, the C-Plan strategy is unrealistic and worrisome. The C-Plan calls for road construction as a primary option. It wisely also mentions the many considerations and sensitivities of this approach. For most areas, such as the Gulkana or Copper, road construction is not workable, let alone desirable, and should not be relied on as an option. Roadless places in Alaska often are that way for a reason.

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[104] A clear violation of 18 AAC 75.445(d)(4) and (5)
[105] C-Plan vol.3 @ p.4-32
[106] 18 AAC 75.445(g)(1)
[107] C-Plan vol.3 @ pp.4-32, 4-33

Third, “burning in-situ” is listed as the first option. This is a violation of regulations requiring the C-Plan plan for mechanical response.[108] In any event this would very rarely be appropriate.

Last, the C-Plan mentions “helicopter slinging in containers.”[109] This is a much more realistic option, and one that needs to be examined in more detail. Alyeska doesn’t demonstrate adequate heavy lift helicopter capacity (or any other transportation capacity) to respond to a spill that reached remote areas.[110] The few available choppers are committed to tracking and transport during a spill, so demand on them would already be heavy. A mobilization to impromtu containment sites at remote locations is not encouraging, and certainly does not demonstrate compliance with laws requiring protection of sensitive areas,[111] or the RPS.[112]

In the immediate future, please clearly identify where the inaccessible areas are so at least they are known ahead of time. Please require that all inaccessible areas be eliminated. Please require sufficient heavy lift helicopter capacity to respond to RPS spills, and protect sensitive areas.

§1.6 RESPONSE STRATEGIES

§1.6.1 Procedures to Stop Discharge

§1.6.1.4 Pipeline Valves

The trouble with actual spill response starts with the valves. **§1.6.1.1** indicates that a pipeline shutdown would be implemented for any leak in the pipeline. That procedure depends on the extended sequence of valves working properly.

But, this system does not work as designed.

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[108] 18 AAC 75.445(g)(1)
[109] C-Plan Vol.3 @ p.4-33
[110] thus failing approval criteria at 18 AAC 75.445(d)(6)
[111] 46.04.030(e), 18 AAC 75.425(e)(3)(J), 18 AAC 75.425(e)(1)(F)(v), 18 AAC 75.455(d)
[112] AS 46.04.030(k)

> "The present OSCP plan does not provide adequate source control tactics, equipment, procedures and trained personnel to limit the volume of oil that could leak from the pipeline."[113]

According to the C-Plan, internal leakage indicates that several valves show leaky seals at RGVs 73, 31 and 95B.[114] As noted in the RFAI there are also problems at RGV 37, CKV 75, PS 10 BL1, RGV 103, CKV 84A, and PS 6 BL1.[115]

The recent experience with CKV 109, which was finally replaced in late July, 2006, something like ten years after problems were detected, is disturbing. To boost profits Alyeska has long deferred valve maintenance. The current situation is a complex of mitigations and half-measures. This many leaky valves, at such critical locations, is analogous to running the family car on bad brakes.

Leaky valves ought to be fixed or replaced, rather than managed with the proposed band-aids.

It is imperative that pump-around skids (including training) be included in the C-Plan as spill response equipment, as recommended by at least one Alyeska employee.[116] However, the C-Plan only vaguely discusses measures that might be taken at RGV 73, 31 and 95B. It does not indicate that pump-around skids or other "modified procedures" are sufficiently available on the appropriate timeline, or that responders would be trained to implement them.[117]

The C-Plan still allows for running oil backward in an attempt to reduce pressure.[118] This is dangerous to the structural integrity of the TAPS, as witnessed in 2001 when it was tried. The After-Action report:

> While making preparations to reduce the pressure of the oil at the spill site, there was pipe movement at Check Valve 50 that resulted in tripped anchors.[119]

Consultant Richard Fineberg gives more background:

> "In fact, while trying to pump oil north to reduce the pressure on the bullet hole October 5, the spill responders created and

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[113] JPO March 2005. *An Evaluation of TAPS Mainline Valve Reliability.* TAPS Assessment Report JPO NO. FBU-05-A-001 @ p.3
[114] C-Plan Vol.1 @ p.1-63,1-64
[115] B. Lewis, ADEC, to R. Shoaf, Alyeska, July 26, 2006 @ p.5
[116] JPO March 2005 @ p.3
[117] This is a violation of 18 AAC 445(d)(1) (…"stop the discharge at its source within the shortest possible time."); 18 AAC 75.055(b) (requiring operator to stop the flow of oil to the leak location within one hour of detecting a discharge.
[118] C-Plan Vol.1, @p.1-62 §1.6.1.1
[119] Alyeska et al. 2002. @ p. vi

> then failed to detect an internal pressure build-up that shoved a section of the pipeline approximately 14 inches northward and damaged support system components. The damage occurred approximately 125 miles north of the spill site, at Gobbler's Knob, a steep hill near Prospect Creek. In addition to moving the pipeline out of position, the mishap caused the collapse of at least seven sacrificial anchor support components…When it discovered the damage three months later, Alyeska said it did not know what caused the pipe movement….
>
> The TAPS C-Plan specifically warns against using the procedure that resulted in the damage to the pipe at Prospect Creek."[120]

This raises the specter of multiple malfunctions on the pipeline, and a striking unwillingness to learn lessons from past mistakes. It also demonstrates the experimental nature of many response tactics. Please don't allow this method to be used unless it is demonstrated safe and effective.

§1.6.2 Fire Hazard

After the debacle of the 2001 bullethole spill, you would expect vapor suppression and fire hazard to be problems solved. The area around a bullethole spill is highly hazardous. According to the After-Action report on the 2001 TAPS bullethole spill,

> " High-pressure spray atomizes volatile elements very quickly, potentially producing significantly higher vapor concentrations, an explosive atmosphere, and an extreme fire hazard, without large amounts of liquid oil pooled nearby. The high-pressure jet also spreads the oil over a larger area, with the wind having a greater affect on the spread of the oil aerially.[121]

However, the C-Plan does not demonstrate adequate fire hazard protection to guard worker safety, or to enable response.

For the purported "offensive" strategy to protect sensitive areas[122] to work, vapor suppression and fire teams are essential.

Please ensure adequate personnel and equipment are available, and include this in consideration of response time. Please also consider this reality in terms of its impact to an exclusively "offensive" response strategy.

[120] Fineberg 2002. The Emperor's New Hose: How big oil gets rich gambling with Alaska's environment. AFER. p.78
[121] APSC et al. 2002. @ p. v)
[122] Lewis 2005 ADEC Findings Document

§1.6.3 Real-Time Surveillance and Tracking

§1.6.3.1 Physical properties of crude oil

The C-Plan says "toxicity, fouling characteristics, and biodegradability" are determined by viscosity, pour point, density, hydrogen sulfide content, benzene and initial boiling point."[123] As explained more in Section III above, various other properties of oil are also relevant to toxicity and biodegradability. This section implies it is a complete analysis, when actually it only considers a cherry-picked few properties.

§1.6.3.2 Weathering and Degradation

As explained more above (Section III) past assumptions about weathering and toxicity of oil are known to be wrong.

§1.6.3.4 On Water Tracking and Predictions

This section is inadequate because it only deals with behavior of oil on lakes rather than rivers and streams.

Alyeska has not adequately considered the behavior of oil in rivers. The only modeling or mapping done was manipulated for regulatory purposes. Alyeska has apparently never attempted to accurately estimate the fate and behavior of their oil in our rivers.

The C-Plan, and Fate & Transport studies do not contain precise hydrology information on rivers. This information is critical:

> Measuring current speed is a key element of accurately determining what materials and deployment techniques are necessary for a particular site. Water flow rates in a river vary depending on multiple factors, such as the different points in a river, annual precipitation, and time of year. Although flow rates change, their estimation is important so that response issues such as lengthwise boom towing forces can be determined. This information is not only necessary to decide how large a boat is required to tow the boom to the desired location, but also for the purposes of tension measurements and effective anchoring to keep the boom stationary.[124]

Please require use of the best available hydrologic data.

[123] C-Plan Vol.1 @ p.1-75

[124] Hansen, Kurt, 2002. USCG. "Oil Response in Fast Water Currents: A Field Guide" in *EPA Oil Spill Program Update.* Vol.4 No.5 May 2002. p.8

§1.6.3.6 Silty Rivers

There is no plan in place for tracking, containing or cleaning up submerged oil that is not visible and easily accessible. The Fate & Transport models, response strategies, equipment and other aspects of planning all assume that oil floats on top of water or is “contained” along riverbanks, where it will evaporate quickly and where it can be captured with boom, sorbents and skimmers. These are false assumptions.

Greatly complicating response to any spill that gets into Alaska’s silty rivers, such as the Copper, Tanana or Yukon, is the behavior of oil in combination with silt, both suspended in the water column, and along riverbanks. Oil would quickly bind with fine glacial silts, greatly complicating spill response. According to U.S. Coast Guard research and experience,

> Oil can become submerged via two pathways, as summarized in Figure 1, from the National Research Council (NRC, 1999) report on nonfloating oils. In the first pathway, an oil can be lighter than the receiving water (oil-water density ratio less than one) and initially float. However, the oil can interact with sediments and subsequently become heavier than water, either by: 1) stranding on a sedimentary shoreline, picking up sand, then being eroded from the shoreline; or 2) by mixing with sand suspended in the water column by wave action (Michel and Galt, 1995). In either case, depending on the amount of sediment mixed into the oil, the oilsediment mixture can become slightly negatively buoyant and become suspended in the water column by currents, or it can be dense enough to sink to the bottom. It is important to note that the oil itself is still buoyant and, if the oil separates from the sediment, it can refloat.[125]

The C-Plan acknowledges the issue in Volume 1, page 1-83:

> Once oil enters water, some fractions will dissolve in the water; the remainder may form oil-in-water or water-in-oil emulsions or adhere to sediment particles, making containment and cleanup actions difficult.

The C-Plan explains how studies done in the late 1990s by S.L. Ross Environmental Research showed that the rivers were loaded with silt "sufficient to remove a significant portion of the surface slick."[126] It explains how shearing action,

> ...will cause a surface slick to break up into small droplets, bind with silt particles, and be suspended in the water column. Depending on the droplet…they may collectively cause the droplet

[125] Michel, Jacqueline. June 9, 2006. Assessment and Recovery of Submerged Oil: Current State Analysis USCG Research & Development Center. (Attached) Hereby adopted in full as part of these comments.
[126] C-Plan, Vol.1 @ 1-83

> to become neuturally or negatively buoyant. The aggregate particles would travel along the course of the river. Particles remaining in suspension would be widely dispersed downstream of the release point and would not resurface. Particles having negative buoyancy would be expected to widely disperse along the river bottom and in side eddies. The small size and distribution of these particles make them ideally available for biodegradation.[127]

It is a major concern that non-floating oil could continue downstream undetected. Visual observation via helicopter, the only method called for in the C-Plan, could not detect subsurface oil in turbid waters such as the Copper.

Experience in other areas shows how non-floating oil has challenged responders.

> Spills of nonfloating oil pose special challenges during all phases of an emergency response. Nonfloating oils are difficult to track and locate; there are no proven containment methods for either oil suspended in the water column or deposited on the seafloor; underwater recovery methods are complex, expensive, and inefficient; the oil is often viscous, making it difficult to pump; and large volumes of water and/or sediment usually must be handled during recovery and disposal.[128]

A 1999 National Academy of Sciences study on the topic found:

> Most oil spill cleanup technologies, which have been developed for floating oils and the ensuing emulsions, are not very effective. For most spills, only about 10 to 15 percent of the oil is recovered, and the best recovery rates are probably about 30 percent (OTA, 1990).[129]

Submerged and riverbank oil is not contained, but mobile and toxic. For example, the *M/T Athos 1* spill in the Delaware River in 2004 resulted in mobile, submerged oil that continued downstream.

> Although the interpolations should be interpreted cautiously, spatial and temporal trends in the distribution of the mobile submerged oil indicate the downriver transport and spread into the upper bay over time.[130]

Similarly, in the *DBL-152* spill offshore Texas, responders faced mobile, subsurface oil.

> "One of the major concerns raised by the Unified Command was the risk of the oil on the bottom being mobilized by currents and transported landward, eventually stranding on the shorelines in

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[127] ibid @ 1-83
[128] Michel 2006 @ p.1
[129] NAS 1999. Spills of Nonfloating Oils: Risk and Response @ p.v The document is hereby adopted in its entirety. (Attached) Available online at http://www.nap.edu/catalog/9640.html
[130] Michel 2006 @ p.9

> Texas. The NOAA modeling team in Seattle, WA stated that the oil may move to the west but not towards shore. There were some data on the bottom current direction and speed on the shelf from a Louisiana-Texas shelf study in 1992-94. NOAA wrote a paper on the longterm trajectory of the submerged oil in which they stated that, over time, the oil would move further downcoast and offshore (NOAA, 2005)."[131]

Early reports of the major spill in Lebanon also show difficulty of cleaning spills that are submerged in layers of silt and oil.

Underwater spills have unique impacts. Among the Findings of the NAS study:

> "Finding 5. Nonfloating oils behave differently and have different environmental fates and effects than floating oils. The resources at greatest risk from spills of floating oils are those that use the water surface and the shoreline. Floating-oil spills seldom have significant impacts on water-column and benthic resources. In contrast, nonfloating-oil spills pose a substantial threat to water-column and benthic resources, particularly where significant amounts of oil have accumulated on the seafloor. Nonfloating oils tend to weather slowly and thus can affect resources for long periods of time and at great distances from the release site. However, the effects and behavior of nonfloating oil are poorly understood."[132]

The NAS study also found that contingency planning doesn't address non-floating spills.

> Finding 10. Planning for spills of nonfloating oils is inadequate at the local level.
>
> Existing area contingency plans do not include comprehensive sections on the risk of spills of nonfloating oils or how to respond to them. To date, planning has focused primarily on spills of floating oils. Inventories of equipment, lists of specialized services, assessments of the resources at risk, and protection priorities have not been developed by area committees for nonfloating oils. Nor have they identified the risks (e.g., transportation patterns, volumes, oil types), developed appropriate scenarios and response plans, or reviewed acceptable cleanup methods and end points. Existing plans have not been tested during drills or exercises to address deficiencies. …The risks of potential harm to water-column and benthic resources from nonfloating oils have not been adequately addressed in the contingency plans for individual facilities or geographic areas.[133]

These studies and experience suggest total inadequacy of planned response with regards to non-floating oil. This

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[131] ibid @ p.22
[132] NAS 1999 @ pp.4-5
[133] ibid @ pp. 6-7

major hole in current contingency planning should sound the alarm. But the C-Plan says,

> Alyeska's strategy of containing and recovering spilled oil as close to the source as possible, and pursuing spilled oil on the water surface as far downstream as possible, remains unchanged.[134]

How can this be? If the strategy is going to fail, then please change it so it would succeed. At least try additional mitigation measures. We adopt the NAS recommendations, specifically,

> Recommendation 4. Tests of area contingency plans and industry response plans for responses to spills of nonfloating oils should be required parts of training and drill programs."[135]

The pipeline is in its 29th year and it is well past time for these tests and studies to be done. There are methods of subsurface oil tracking available such as sonar and snare samplers.[136] Please require use of the best available methods. We would support, as an immediate step, pre-deploying sorbent snares at strategic downstream locations.

§1.6.4 Sensitive Areas

This section has been dealt with above, in Section II of these comments.

§1.6.5 Containment & Control Actions

Containment and Control actions are totally insuffient

A. Over 20% of the pipeline has no downstream Containment Sites

The core safety net on which the C-Plan relies is the network of containment sites. Yet there are huge holes in this net.

According to the DNV Study, there are 248 segments of pipeline on which there is no primary Containment Site.[137] Alyeska MUST address this staggering shortcoming.

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[134] C-Plan Vol.1, p.1-84
[135] NAS 1999 @ p.8
[136] Michel 2006. While no very reliable methods have been developed (due partly to lack of effort) these are certainly better than nothing.
[137] DNV Study @ Table 3-1 and 3-2. No primary containment site is defined as a segment for which either response time to a Containment Site is longer than time for a spill to reach the site, or there is no designated site. These segments were discarded from analysis under that study, which was narrowly focused only on changes related to the Strategic Reconfiguration and Region 5 C-Plan amendments. I guess the

The DNV Study conducted a review of the 1307 pipeline segments, grouping the 955 segments impacted by Strategic Reconfiguration into eight categories with regard to Containment Sites.

1. SR results in reduction in risk (4 segments)
2. oil spill restricted to land, with no change to sensitive resources impact (80)
3. **no primary CS exists along oil trajectory (primary CS defined as one for which time required to arrive and deploy is less than time of arrival of leading edge of spill.) means either there is no pre-defined CS, or 2) response time is already slower than oil, before and after SR (248)**
4. primary CS does not change and release volume does not increase. (120)
5. primary CS does not change and release volume increases (449 segments)
6. Primary CS shifted downstream (33)
7. No primary CS downstream (an spill passes the last pre-defined CS location post-SR, but there is a pre-SR pre-defined CS (4 segments)
8. Oil spill shifted from land to water (14 segments) [138]

From the available information in the C-plan many of these segments are in particularly sensitive areas. For example, many of the segments along the Gulkana River, and at major river crossings such as the Tonsina and Klutina, do not appear to have any primary Containment Site for which response could be faster than the oil.

These segments do not meet the RPS requirement,[139] or protection of environmentally sensitive areas.[140] The C-plan cannot be approved for these segments.[141]

Please require a full-scale, watershed-based, GRS-level planning effort to address this glaring shortcoming.

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logic was, if it's already broke, why bother to fix it? That raises red flags for this review, however.

[138] Table 3-2, DNV 2005b @ p.21

[139] AS 46.04.030(k), 18 AAC 75.430, 18 AAC 75.436, 18 AAC 75.445, 18 AAC 75.425.

[140] AS 46.04.030(e), 18 AAC 75.455(d), 18 AAC 75.425(e)(1)(F)(v), and 18 AAC 75.425(e)(3)(J).

[141] per AS 46.04.030(k), 18 AAC 75.455, 18 AAC 75.460.

At an absolute minimum, please require Alyeska to provide a list explaining which segments have no designated downstream Containment Sites, and which have one for which the response would be too late.

B. Lack of downstream containment sites

Oil is highly likely to migrate downstream of the major rivers and streams. That is why it is a glaring omission that contingency planning is focused *exclusively* on upriver areas.

The C-Plan does not have downstream containment sites where they intuitively should be. For example, the only Containment Sites below CS 10-16 are "sites of opportunity along river bank."[142] This area includes irreplaceable, vulnerable sensitive areas, including much of the Copper River, and the Copper River Delta. The only plan is to figure it out later, relying on the "expertise" of Alyeska personnel.

A necessary addition to Alyeska responder expertise is GRS-level pre-planning of additional downstream containment sites. Alaska's uniquely challenging conditions demand special consideration:

> In addition, spills that enter Alaska's fast-moving rivers and spread under ice during winter months present unique containment and cleanup problems.[143]
>
> The immediate response and effective containment of oil spills have proven to be difficult challenges for many oil spill response teams, most notably when dealing with spills that occur in fast water currents, or any current moving faster than one knot. Because each response is tailored to the site-specific conditions of the affected area, there are unique characteristics that must be taken into account when responding. For this reason, in order to ensure timely and effective containment, it is essential that the responding teams are knowledgeable of the conditions they will encounter at the site of a spill.[144]

These cite-specific conditions are not accounted for in the C-Plan. There are no downstream maps for any of the rivers, such as the Yukon, Tanana or Copper.[145] The C-plan pretends

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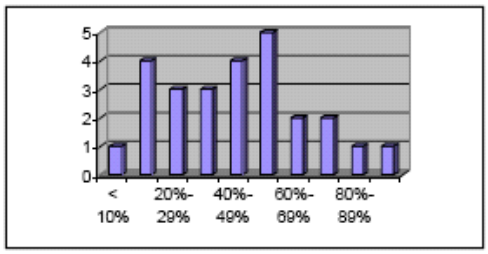
[142] Vol.3 @ p. 5-208
[143] GAO 1991: p. 52
[144] Hansen, Kurt, 2002. USCG. "Oil Response in Fast Water Currents: A Field Guide" in *EPA Oil Spill Prorgram Update.* Vol.4 No.5 May 2002. p.8
[145] This is a violation of 18 AAC 75.425(a) ("must be in a form that is usable as a working plan… Must contain enough information…to demonstrate the plan holder's ability to meet the requirements of AS 46.04.030 and 18 AAC 75-400- 18 AAC 75.495."); 18 AAC 75.425(e)(1) (Response Action Plan "must provide in sufficient detail to clearly

as though these areas don't exist. Only a very few Containment Sites have been mapped, and very few of these since the last C-Plan.

Please require consideration of downstream areas for Containment Sites.

C. Depends too much on containment sites



The C-Plan treats containment sites as 100% effective. That is an impossible scenario which has never before occurred. Empirically, oil spill response is only partially effective. Statistical analysis shows that actual recovery rates for oil spills are a long ways from the 100%.[146]

§1.6.5.2 Cleanup and Restoration

As described in more detail above, in Section III of these comments, the assumptions about toxicity of oil are skewed, and therefore the approach to restoration needs to change.

The C-Plan relies entirely too much on after-the-fact cleanup and restoration. Shoreline cleanup is very invasive and itself harmful, so should be avoided whenever possible.

§1.6.9 Wildlife Response Plan

Shorebirds are not mentioned. There needs to be a plan for protection of shorebirds, and other migratory flocks.

Harbor seals swim as far north in the Copper River as Chitina, so marine mammal response and consultation with NMFS should be a consideration.

§1.6.9.2 Effects and Persistence in Sensitive Areas

Why is this a subsection of the Wildlife Response Plan? Sensitive Areas ought to be a focus of the C-Plan, not an obscure subsection. As explained in more detail above, in Section III of these comments, we strongly dispute the assumptions explained here.

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guide responders in an emergency event, all information necessary to guide response to a discharge of any size, up to and including…" RPS volume);

[146] Chart from E. DeCola 2001 Review of Oil Spill Responses on Moderately-Sized Spills in US Waters from 1993-2000 Nuka Research. Report for PWSRCAC.

§1.6.9.3 Procedures to Exclude Oil from Sensitive Areas

Dealt with in Section II above.

§1.6.9.4 Procedures to Prevent Impacts to wildlife

Also dealt with in Section II above.

The C-Plan fails to explain how Endangered and Sensitive species will be protected from oil spills.

Wildlife protection and hazing is a logical fit for community-based response. With minimal training, and advantages of knowing the terrain and animals, and being self-sufficient, community-based wildlife response is an idea worth pursuing.

§1.6.10 Shoreline Response Plans

The C-Plan relies on river and stream shorelines to "contain" spilled oil, thus meeting the RPS within 72 hours. This is in violation of the letter and spirit of the law because oil along a riverbank is not "contained."

First, rivers and streams rise and fall, often dramatically and fast, always irregularly. This means there could be pulses of oil moving downstream as flotsam and jetsam moves around.

Second, as indicated in Section III of these comments, oil is toxic in lower quantities and for a longer time than assumed here. The planned evaluation of what levels of contamination are O.K. to leave behind, therefore, is skewed.

Third, wildlife and fish themselves could continue to transport oil in or on their bodies, or by causing disturbances (e.g. spawning salmon digging redds)

Last, many of these riverbanks, such as the spawning grounds on the Gulkana River, are themselves Sensitive Areas that oil should be excluded from.

§1.6.10.6 Breakup

We are alarmed that the C-Plan says:

> Breakup poses the greatest hazard to personnel and the worst chances for a successful cleanup. On some smaller rivers and or channels of large rivers, it might be possible to install steel nets upstream to protect personnel and equipment from debris and ice. Little can be done in the case of an oil spill directly into a major river during breakup, other than possible immediate

burning and/or cleaning up oil that might be left on the floodplain as the river subsides.[147]

This being the case, the TAPS is in clear violation of the RPS[148] and protection of sensitive areas.[149]

The pipeline should not be allowed to operate during breakup conditions.[150]

§1.7 Non-Mechanical Response Options

While sometimes the best thing that can be done after a spill, bioremediation and burning are not allowable response tactics to meet the RPS, or protect environmentally sensitive areas. Neither is burning often a solution, especially in sensitive areas such as the Copper River watershed.

COMMENTS ON PREVENTION PLAN

§2.1 PREVENTION PROGRAMS IN PLACE

§2.1.3 Medical Monitoring Programs

Please do more.

§2.1.8 CORROSION CONTROL AND LEAK DETECTION

Corrosion is an increasing problem

The current situation on the North Slope should be a wake-up call that corrosion is an increasing problem, and that oil company maintenance instincts fall short of what is necessary.[151]

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[147] C-Plan, Vol.1 @ p.1-111

[148] AS 46.04.030; 18 AAC 75 §436(a), §445(g)(1)

[149] AS 46.04.030(e), 18 AAC 75.455(d), 18 AAC 75.425(e)(1)(F)(v), and 18 AAC 75.425(e)(3)(J).

[150] AS 46.04.030(b) indicates department enforcement of response planning and performance standards. ("…may not cause or permit the operation of a pipeline…unless…the person is in compliance with the plan")

[151] *See* for example the *Anchorage Daily News* coverage, e.g. Mauer, September 8, 2006 "Congress grills BP execs," www.adn.com. A federal grand jury is currently investigating the March, 2006 spill. *See also* the congressional hearings on the topic: September 7, 2006, House Energy and Commerce Subcommittee on Oversight and Investigations (webcast and transcript online at http://energycommerce.house.gov/108/Hearings/09072006hearing2019/hearing.htm); September 12, 2006 U.S. Senate Energy and Natural Resources committee (Webcast and statements are online at http://energy.senate.gov/public/index.cfm?FuseAction=Hearings.Hearing&Hearing_ID=1585. *see especially* VanTuyn 2006 testimony, attached);

Amazingly, the DNV Risk Analysis *downgrades* the risk of corrosion. The DNV Study says, “as a result of DNV’s re-analysis and consideration of the effective use of intelligent pigging and cathodic protection by APSC, corrosion is no longer a leading factor in pipeline leaks.”[152] This analysis consists of “an intensive review of the corrosion conditions and a re-analysis of the base frequency, modifying factors and hole size distributions. Consequently, there are significant changes…,” including reducing the base frequency by 50% due to pigging and cathodic protection.[153] There are a dizzying array of model adjustments, all based on “engineering judgment,” and with the common element of decreasing risk. It looks as though engineers were tasked with reviewing the Capstone 2001 Assessment with the express purpose of not an unbiased review, but of seeking out opportunities to downplay risks and cut company costs.

18 AAC 75.080(b) requires piping be maintained in accordance with an ADEC corrosion control program. This section is a general description of the presence of a program, but without schedules and more detailed oversight, there is nothing here that shows they've complied with the regulation. Have they?

The C-Plan describes that there is a MP-166 series of Monitoring Procedures. Has anyone reviewed that procedure?

Another concern are persistent whistleblower complaints about Corrosion control. For example, Chuck Hamel recently wrote, "workers have warned of BP's cost cutting mismanaged Corrosion Inspection & Control (CIC) Division operations for years."[154]

Leak Detection

The C-plan does not illustrate that leak detection measures will be adequate during slack flow conditions, such as exist currently with half of Prudhoe Bay shut down. It is a fact that reduced throughput 1) decreases the ability of

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September 13, 2006, House Transportation and Infrastructure committee (*see especially* Epstein 9/13/2006 testimony, attached); and October 13, 2006, Alaska’s Congressional delegation Listening Session in Anchorage. Hearing transcripts are incorporated here by reference, and are available at www.gpoaccess.gov/chearings/index.html

[152] DNV May 6, 2005 Screening Risk Assessment Report for APSC. Report no. 70004921-0007 rev 1 @ p.53

[153] DNV 2005a @ p.16

[154] Hamel, April 13, 2006. letter to Stephen L. Johnson, Administrator, EPA.

the system to detect a leak, and 2) increases the threshold for sensitivity of leak detection under Alaska regulations.[155]

BPH	GPM	Above ground detection time (hrs)	below ground det. time (hrs)	basis
0.7	0.5	168 (1 week)	2160 (3 mos)	pipeline surveillance
4	3	168	720 (1 month)	"
21	15	168	240	"
43	30	72	72	"
71	50	40	40	"
100	70	20	20	TVB
143	100	4	4	"
286	200	0.5	0.5	"
400	280	0.2	0.2	"
714	500	0.15	0.15	"

(Capstone 2001 Table 6-1 Leak Detection Times, sited in DNV 2005 @ p.37. Times for 100 bph and larger based on APSC internal memo, 1997. (p.36))

§2.3 POTENTIAL DISCHARGE ANALYSIS

FATE & TRANSPORT INFORMATION IS INADEQUATE

A central problem of the C-Plan is inadequate and inaccurate prediction and tracking of spilled oil fate and transport. Numerous failures result in inability to meet the RPS,[156] protect sensitive areas,[157] or meet the BAT review.[158]

The state's legal requirements to track potential and actual oil spills are not very strict, and so it is surprising that the applicant chooses not to comply with them.

First, oil fate and transport tracking is necessary to determine the RPS volume that would reach open water under AS 46.04.030(k). It's impossible to contain, control or clean up without knowing where oil is going.

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[155] 18 AAC 75.055(a)
[156] AS 46.04.030(K), 18 AAC 75.430, 18 AAC 75.436, 18 AAC 75.445, 18 AAC 75.425.
[157] AS 46.04.030(e), 18 AAC 75.455(d), 18 AAC 75.425(e)(1)(F)(V), AND 18 AAC 75.425(e)(3)(J).
[158] AS 46.04.030(e); 18 AAC 75 *esp §*425(e)(4)

Second, it is necessary to ensure the protection of environmentally sensitive areas, under AS 46.04.030(e) and 18 AAC 75.425(e)(3)(J).

Further, 18 AAC 75.425(e)(2)(C) requires "…an analysis of potential oil discharges, including size frequency, cause, duration, and location, and a description of actions taken to prevent a potential discharge…"

Additionally, in this circumstance, the DNV Fate & Transport Study was required as a COA in the 2003 C-Plan approval, by both ADEC and BLM.

The C-Plan fails to meet these requirements.

THE DNV STUDY IS INADEQUATE[159]

The C-Plan indicates the DNV Study is the best and newest available discharge tracking and prediction modeling.

A. The DNV Study fails to meet basic scientific standards.

The DNV Study fails to meet basic scientific criteria.

It was not peer reviewed, or subjected to critique or criticism beyond internal Quality Control. Government monitors haven't documented any rigorous review. Compared with analogous studies, such as under NEPA or the ESA, the study and review don't constitute the hard look.

After the PWS Risk Assessment was done, the National Research Council did a rigorous scientific peer review of that report and its methods. That Risk Analysis and review is an informative benchmark. The NRC found:

> …the PWS Study does not meet the NRC peer review standards of clarity and support for conclusions. The most significant weaknesses of the report are: (1) it has no overarching risk assessment framework to ensure the consistency and logic of the analyses; (2) it lacks a clear description of how the models were implemented, how the probabilities were calculated, and how the results were reached; (3) because of proprietary commitments, NRC reviewers could not examine the processes or much of the data on which the results were based; (4) the treatment of human and

[159] Please incorporate by reference the two DNV Studies. Screening Risk Assessment: report for APSC. Rpt # 70004921-0007 rev 1, May 6 2005 by Bjorn Nilberg, senior specialist, DNV Houston TX (The "Risk Analysis"; And Alyeska SR C-Plan Update Compliance Support Project Report: report for APSC Report # 70004921-0008 rev 1 May 10 2005 by Scott Rangdall, S. Norman, Stephen Shaw. Issued May 10, 2005 (The "DNV Fate & Transport Study.")

> organizational errors is inadequate; and (5) it gives the false impressions that conclusions were both precise and logical.[160]

The DNV Study has these same shortcomings.

1. Logic and evidence of the Analysis is flawed

Figures and estimations are arbitrary, and are unchecked by scientific evidence.

One of the NRC criteria was,

> Are the conclusions and recommendations adequately supported by evidence, analysis and argument? Because the committee was unable to review the data (the evidence) or determine weaknesses in data collection (e.g., the absence of information on weather conditions and human factors), the committee concluded that this criterion was not satisfied.[161]

They would have to reach the same conclusion in this case, where data is unavailable for review.[162]

The figures throughout the study are all hypothetical, a web of hypothetical numbers almost arbitrarily assigned to yield a result that sounds about right and will get the permit issued. There is no reality-check or ground-truth.

For example, for the most part, numbers from the Capstone 2001 study were modified according to “engineering judgment.” For example, the base frequency of corrosion-caused spills, $6.0X10^{-5}$, is lifted directly from Capstone (2001), which in turn got it from Taylor (1995).

2. Closed-loop review was inadequate

The PWS Risk Assessment was orders of magnitude more useful than the DNV Study because at least it involved real stakeholders. Ironically, NRC noted that a strength of the PWS Risk Assessment was stakeholder involvement, something that is nonexistent in the DNV study.

Lack of any accountability is particularly troublesome because the models all function with a generous sprinkling of manual overrides. For example, the “override” button on the Risk Evaluation Cases screen. The report itself never indicates to what extent such manual overrides were used to yield these results.

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[160] NRC Committee on Risk Assessment and Management of Marine Systems, Marine Board 1998 Review of the Prince William Sound, Alaska, Risk Assessment Study @ p.36. (Attached).
[161] NRC 1998 @ p.41
[162] See Sec I. of these comments.

The mitigation-level analysis was all done with, at best, Alyeska personnel. Or Texas oil industry “experts.” This staff was relied on exclusively for mitigation measures, cost and value assumptions. C’mon.

3. Study fails to account for human and organizational challenges

The DNV Study doesn’t deal with human and organizational challenges at all. It looks like a theoretical exercise conducted in-house and manipulated carefully to meet regulatory purposes. This despite the perpetual reorganization of Alyeska, in particular the Strategic Reconfiguration. Management of change issues are relevant to the C-Plan and should be included for public review.

4. Study gives a false impression of precision and logic

The DNV Study portrays false scientific confidence and precision. For example, times are given to the hundredth of an hour—36 seconds—when the sweeping assumptions behind it offer nothing like that level of confidence. Another example are the mapping assumptions of varying conditions and terrain from the Arctic Ocean to the Pacific. They are bunched in rough groups of 3. Using such coarse filters, precision and accuracy are lost.

There is no discussion of confidence levels or intervals in the findings. Are they 90% confident? 95%? With repeated application of coarse filters and arbitrary groupings meaning behind numbers strays farther from reality.

Hypothetical statistics are treated as gospel in the study. This kind of unchecked confidence in their guidance isn’t sanctioned by sound scientific procedures.

> "Statistical analyses play a tenuous role in any policy arena. Certainly, statistical data alone should not be considered a basis for major oil spill response policy decisions."[163]

5. Fate & Transport Studies for northern TAPS Sections

So far, the Region 5 portion of the DNV Study is all that is done and approved. This renewal application should be contingent on approval of the entire study.

6. Mapping inadequate

Alyeska has not done a good enough job of mapping out transport of oil or sensitive receptors. This does not meet 18 AAC 75.425(e)(3)(J), 18 AAC 75.425(e)(l)(F)(iv), or Best Available Technology. The maps, a few examples of which

[163] DeCola 2001 p.4

were shown in an Appendix to the study, are low-resolution lines down rivers. Oil trajectories end for no apparent reason on the Copper River River. As indicated above the only reasonable expectation is that oil would continue downstream.

It is hard to believe these are the best maps available. DNV ran OILMAP software that gives at least a better image.[164] Please ask for the best available maps, and make them available for public, stakeholder and government review.

7. Cost-Benefit Analysis deeply flawed.

Damage of spill drastically underestimated.

Hopefully it is being communicated to you that the sensitive areas at risk of pipeline spills are valued very highly. The Copper River Delta is an irreplaceable, *priceless* resource. Entire species are at risk. The *world's* entire nesting population of dusky Canada geese lives on the Delta. Up to 90% of some shorebird populations could be oiled. The only Eyak homeland would be wounded in a way that would be very hard to take, in particular for victims of the Exxon *Valdez* oil spill.

8. The ASA Report is missing

9. Study incorrectly dismisses importance of corrosion

As discussed more above, the recent feeder line spills and Prudhoe shutdown should force re-thinking of the decision (see p. 53) to *downgrade* the importance and risk of corrosion.

It is also a glaring weakness of the Capstone study that it is based on historical data. By its nature corrosion builds up over time—the past is reliably *not* a good guide.

10. Major problems with the screening-level analysis

Holes in response should not have been eliminated from consideration for mitigation. The high number of segments in the third case is alarming! After 29 years of running the pipeline, there is no reason there should be any segments that aren't planned for.

The Two models, the Overland Flow Model, and the Water Flow Model, are both very rough. These are one-dimensional

[164] *see* DNV's own Fate & Transport Study brief, from their corporate website.(Attached)

models whereas the models they were calibrating against were much more sophisticated. (e.g. OILMAP
The Quality Control section of the study (Sec. 4.4) admits that there were missing plumes, oil flowing upstream, water, and anomalous short plume lengths. It also makes a number of qualifiers that make clear its limited scope to only meeting the regulatory burden of the Region 5 review for the Strategic Reconfiguration changes as cheaply as possible.

The water flow model uses figures published in 1933. Is this the best they can do?

There would be great benefit to a broader community-based response effort, particularly where local expertise and experience come into play. The resident subsistence user knows more about the river than the oil companies ever will.

The list of potential mitigation measures therefore is incomplete

11. Flawed Cost-benefit analysis

Hilariously, to determine the "holistic cost associated with various-sized spills," the study convenes a panel of… "APSC spill response experts and financial analysts."[165]

Their findings are shocking and not surprising:

> DNV began a study to estimate intrinsic (societal), ecological and socioeconomic value of Alaska resources. As the study progressed, it became clear that the economic cost to APSC (of even a small cleanup effort) exceeded, by several orders of magnitude, any published estimate of the value of sensitive environmental resources in Alaska. It was apparent that the most environmentally protective path was to value the benefit achieved at the difference in cost of responding to and cleaning up the spill if the measure was not implemented.[166]

Damages of a large leak to the Copper River, for example, are estimated at $2 Billion.[167] By "damages" here they do not mean the loss of a way of life, or of the poisoned people or wildlife, or even of the huge economic and personal loss of tainting the famous Wild Salmon fishery. None of those costs are considered by the assembled financial analysts. No, they mean oil company costs, including "legal fees" "business interruption," and "reputation."

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[165] DNV Fate & Transport Study @ p.32
[166] ibid @ p.32
[167] ibid @ p.33, Table 6-1

This interpretation of “holistic cost,” as equivalent to applicant’s financial self-interest is pathological.

Also, the number is not right. Please see Section II of these comments, above. The price of irreversible destruction of species and culture is beyond measure, and ought to be totally unacceptable to any compassionate citizen.

This callous dismissal of the value of our wild watersheds shows that the value-judgment, the worldview underlying the entire DNV Study, is one where the only costs that matter are costs to the oil company.

B. ADEC approval of DNV Study is in error

The ADEC approval of the DNV Study, and the C-Plan description of it, is a failure of oversight. The Decision is not warranted by what limited information was available, and doesn’t represent a hard look.

It is a shame ADEC didn't take the RCAC comment urging stakeholder involvement to heart. Ironically, NRC noted that a strength of the PWS Risk Assessment was stakeholder involvement, something that is nonexistent in the DNV study.

In response to past comments urging protection of sensitive areas, ADEC has indicated that Alyeska satisfactorily completed the study as required by COA #2 to the December 31, 2003 SR Amendment Approval.[168] In its 2005 approval to the Region 5 C-Plan amendment, ADEC found the C-Plan,

> "includes a reasonable description of the methodology, findings, and recommendations of the studies. The Department finds that the studies provide a good basis for determining whether or not environmentally sensitive areas identified in the approved TAPS CPlan (November 30, 2001) are at increased risk due to the [SR]"[169]

First, the SR alone is not the issue here. As stakeholders we care that the pipeline poses a real threat. However the threats are classified, grouped or characterized, in the end we want them all dealt with. For example, the 248 segments without *any* primary Containment Site were screened out on a technicality—because the SR wasn't the unique cause of the problem. Alyeska and ADEC have failed to carry that lesson forward. The fact that past C-Plans have been issued even while problems went outstanding is a

[168] Failure to meet that COA would be clear noncompliance, and cause to deny the renewal application.
[169] ADEC October 21, 2005 letter to APSC. Findings Document. TAPS C-Plan Amendment Region 5. @ pp. 11-12

condemnation of the past, not an excuse for future negligence.

Second, the attempt in the 2005 ADEC Findings Document at explaining the problem away by talking about an alleged "offensive"[170] approach is incomprehensible. It just makes no sense. The fact is downstream community-based response, pre-deployment of equipment and GRS planning would be well worth the expense. Also, “defensive” measures don't compete with this "offensive" approach. It is a false choice. Besides, everyone knows that defense wins championships.

Also, in response to comments, ADEC wrote that

> In addition to the pre-identified Containment Sites, the TAPS Cplan relies heavily on the training and knowledge of response and maintenance crews to rapidly identify alternate areas where control and containment tactics can be rapidly deployed in response to unanticipated discharges.[171]

This is unacceptable. With all due respect to Alyeska responders, “we’ll figure it out when we get there” is not a strategy. The training program of responders is not nearly sufficient for this strategy. This is especially puzzling coming on the heels of the Hisey memo and departure, which identified the threat of maintaining a skilled and motivated workforce.[172] After a spill is too late to try to figure the river out. This statement has the ring of the overconfident Cheechako plunging blindly into a rapid.

The ADEC response to comments also does not indicate an adequate standard of review has been applied to the study, or to the C-Plan application of it. "Reasonable descriptions" are an awfully low bar. The TAPS is too important for a book-report level Risk Analysis.

The DNV Study fails totally and ought to be rejected outright and re-done from scratch. Please find the DNV Study inadequate, and require a serious effort at Risk Analysis and a Fate & Transport Study. We request this effort be scientifically defensible, and integrate Traditional Ecological Knowledge and stakeholder input.

[170] ibid
[171] ibid @ p.13
[172] Hisey 2005 (attached)

§2.2 DISCHARGE HISTORY: DEMONSTRATED HISTORY (and present) OF NON-COMPLIANCE

Alyeska is not in compliance with the C-Plan. For example, the RCM review had over 3,800 items still on it as of September, 2004.[173] Under the heading "Compliance," Outgoing COO Dan Hisey's memo listed as risks,

- Scheduled completion of OSCP response base at PS 11 is delayed
- Minimum requirements for OSCP are not met (staff size & training)
- implementation to new amendment (OSCP) is delayed[174]

Long-time Alyeska field engineers R.D. Miller, and J.F. Globig, who departed late last year, confirmed that these and other issues identified by Hisey were noteworthy.[175] The JPO disinterest so far in pursuing these and other revelations should reach an end in this C-Plan.

> "The documentary record suggests that BP does not operate the nation's largest petroleum production complex in a safe and environmentally sound manner. All too often, BPs management culture appears to place undue emphasis on cost-cutting, while favoring rhetoric over reality. Similary problems have been documented on the TAPS, of which BP is the largest owner.[176]

Alyeska has a long history of living outside the law. It is an important difference between a history of spills and a history of negligence, carelessness, and noncompliance with regulations. At every opportunity, virtually, the oil companies resist improvements and delay fixing problems. It is profitable for them to gamble with our environment.

We believe that Alyeska, and owner companies, have displayed a very clear pattern of decision-making that consistently puts the public and environment at risk, in order to boost their own profits. Exhibit A of course is the 1989 Exxon *Valdez* oil spill, and Exxon's intransigence, bullying, and stonewalling settlement of punitive damages since that time.[177] Not least among examples of Exxon's

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[173] Brossia & Thompson, JPO, letter to D. Wright, APSC. September 8, 2004.
[174] Hisey, APSC. August 2005. "Risks Identified by Category."
[175] Fineberg May 15, 2006. "Documents Reveal Trans-Alaska Pipeline in Trouble; Monitors Punt." At www.finebergresearch.com/archives/spilling.html See also J. Carlton, *Wall Street Journal* September 17, 2005 "Alaskan pipeline Faces Safety Risk, Executive Warned.
[176] Fineberg 2006. March 15. "BP North Slope Spill Reveals A History of Substandard Environmental Performance"
[177] *See* "Sierra Club Chronicles: The Day the Water Died" (Attached DVD)

corporate bullying was in 1993 when Alyeska was busted for hiring Wackenhut thugs to spy on citizens.[178]

In the wake of the EVOS, GAO and congressional investigation indicated systemic problems. See the 1991 GAO Report: “Trans-Alaska Pipeline Regulators Have Not Ensured That Government Requirements Are Being Met"[179]

Despite some improvements in regulation, Alyeska and the oil companies declined to break the pattern.[180] In 1999 OPS inspections revealed extensive violations and assessed a civil penalty of $75,OOO.[181]

The November, 2001 bullethole spill revealed major shortcomings in prevention and response planning, to say nothing of security. Through this period, the pattern of cutting costs, at the expense of the public and environment continued.[182]

The TAPS Right-of-Way renewal public process was a sham. It culminated in a grossly inadequate FEIS, held sufficient under NEPA only through a legislative rider by Sen.

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[178] *See* Muttit & Marriott, October 2002. “*The sound of silence* BP, the Trans-Alaska Pipeline System and the *Exxon Valdez”* From Chapter 12 of Some Common Concerns. (Attached)

[179] GAO July 1991. "Trans-Alaska Pipeline: Regulators Have Not Ensured That Government Requirements Are Being Met" GAO/RCED-91-89 The report addressed as particularly inadequate regulation of corrosion prevention and detection systems, leak detection systems, and geologic hazards.

[180] Incorporated by reference here are two attached reports: Fineberg 1996 “Pipeline In Peril: A Status Report on the Trans-Alaska Pipeline.” AFER. 335pp.; and Fineberg 1997 “Pipeline in Peril: Alaska At Risk on the 20th Anniversary of the Trans-Alaska Pipeline,” AFER. 38pp.

[181] US DOT OPS December 31, 2003 Final Order, In the Matter of Alyeska Pipeline Service Company. CPF No. 502000-5006. This instance is an example of Alyeska seeking ways around the rules, including for corrosion prevention and detection, and security. One of the problems identified had to do with Alyeska knowingly short-changing corrosion prevention and pipeline integrity between MP 652.03 and MP 653.83. OPS wrote:

> Regardless of the cause, the pipe settled to 100% critical curvature. Between late 1991 and, early 1992, Respondent became aware that the pipeline at MLR2 bad settled. The pig runs in 1992, 1993, 1994 and 1995 confirmed that the pipeline was at 100% critical curvature. In 1993, Respondent added additional refrigeration in an attempt to address the issue. The 1995 pig run again showed 100% critical curvature. Although respondent monitored the condition, it did not take additional steps to attempt to attempt to correct the problem until it added more refrigeration in 1997. This was not correcting the curvature problem within a reasonable time.
>
> Accordingly, I find that Respondent violated § I95.401(b) by not correcting the curvature problem within a reasonable time the pipeline curvature that resulted from settlement at MLR2.

[182] *See* Fineberg, R.A. June 2002. The Emperor's New Hose, How Big Oil Gets Rich Gambling with Alaska's Environment AFER. 130pp. (Attached)

Murkowski.[183]

In 2003 BP became a felon due to dumping, and lying about it to regulators, on the North Slope. That year OPS issued violations to Alyeska of 49 C.F.R. §§195.42~a), 195.567(c), 195.575(a), 195.571, and 195.573(a) and (e), and assessed a penalty of $18,500.[184]

April 25, 2005, OPS issued an order to BP Exploration (Alaska), Inc., CPF No.5-2004-5019M.[185]

July, 2005 BP's CIC division was accused of corrupt practices by a whistle-blower.

March 2, 2006, the feeder-line spill occurred on the North Slope. About 267,000 gallons were spilled. Two items in particular are notable about this event. First, the failure was caused by corrosion. Second, the "leak detection system was not effective in recognizing and identifying the failure."[186] According to the Mayor of the North Slope Borough, "the failure here calls into question the integrity of the entire North Slope oil transport system."[187]

April 5, 2006, a senior financial analyst filed a complaint that he was asked to falsify records indicating how much the company was spending on corrosion. He refused, saying "I'm not going to be Alyeska's designated felon on this."[188]

April 6, 2006, the 6-inch R-19 Gas Line ruptured with a loud roar, surrounding the Manifold building with a

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[183] *See* BLM 2003 *TAPS ROW Renewal Final Environmental Impact Statement*, including comments and the responses; and Fineberg, “Background Report: TAPS Lease Renewal—Opportunity Lost.” (Attached) Online at http://www.finebergresearch.com/tapsenviro.html

[184] Gerard, OPS, May 19, 2005. In the Matter of Alyeska Pipeline Service Company. CPF No. 5-2003-5002. Inspections showed leaky valves on a relief tank at PS01, improper electrical wiring at Atigun Pass, lack of the proper corrosion control and cathodic protection, and bad piping at the VMT. This is another instance where APSC fought regulations and allegations, and sought delays as much as they could.

[185] Regarding bad IMP procedures for its pipeline system. This included excluding their own workers camps from its evaluation of threats to populated areas.

[186] US DOT OPS March 15, 2006. In the Matter of BP Exploration (Alaska), Inc., CPF No. 5-2006-5015H, @ p.1)

[187] E.S. Itta, Mayor, North Slope Borough, to Commissioner Fredriksson, ADEC. March 14, 2006. @ p.2.

[188] Sam Bishop, April 5, 2006 *Fairbanks Daily News Miner*. "Analyst: Alyeska falsified reports."

volatile gas cloud.[189] The incident was not revealed to the public by BP or JPO.

April 8, 2006, Alyeska lab technician T.R. Austin was sentenced for falsifying over 100 water test data samples to EPA. Alyeska did report itself and fire Austin.

August, 2006, Prudhoe Bay was shut down due to spills and corrosion, again highlighting critical failures of maintenance and leak detection.[190]

Also, September, 2006, an FBI investigation into apparent oil industry bribes to Alaska politicians resulted in raids on Alaska state legislative offices.

We believe this pattern of environmental damage and corruption are not unrelated to the current closed-loop regulatory process. Please require creation of an independent, industry-funded citizen advisory committee to oversee operation of Alaska's oil pipelines.

§2.5 LEAK DETECTION

The C-Plan explains that current leak detection system has two basic means, 1) visual observations, and 2) on-line leak detection. The on-line systems (LVB= Line Volume Balance; DA= Deviation Alarm; and TVB = Transient Volume Balance.) We are concerned that these systems are inadequate to meet regulatory requirements,[191] or to protect sensitive areas.

Leak detection system is inadequate.

Under the current leak detection system, it would take an estimated three *months* to detect a slow, underground

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[189] Hamel April 13, 2006 letter to S.L. Johnson, EPA.

[190] *see* Congressional hearings listed in above discussion of corrosion. *See also* Fineberg 9/3/2006 "Shocked." (Attached)

[191] The pipeline leak detection requirements are specified in 18 AAC 75.055(a). The requirements state that a crude oil transmission pipeline must be equipped with a pipeline leak detection system (PLDS) capable of promptly detecting a leak including:

- If technically feasible, the continuous capability to detect a daily discharge equal to not more than one percent of daily throughput;
- Flow verification through an accounting method, at least once every 24 hours; and
- For a remote pipeline not otherwise directly accessible, weekly aerial surveillance, unless precluded by safety or weather conditions.

18 AAC 75.080(b) also requires B.A.T. for the pipeline to promptly detect a leak.

leak.[192] Leak detection has weakened since then—certainly no stronger.

The LVB system is slow (between 2.5 and 24 hours) and imprecise at locating leaks.[193]

The C-Plan says the TVB system is B.A.T. for Leak Detection (C-Plan, p.4-33) The system has detection thresholds vary from 115 bph (tight-line) to 163 bph (slack-line).

The C-Plan says "there are no known alternative technologies." (4-34) That is not entirely true. They could add more LEFMs and values.

§2.1.8.3 indicates that “a certain number of false alarms” are subjected to a highly discretionary “leak validation” process. Unless additional proof of a leak is found, the TVB averages are reset. The TVB system then is only as accurate as the validation process. How accurate is that?

How common are alarms from the TVB system? This system appears to be a process of perpetual “false” alarms.

§2.7 COMPLIANCE SCHEDULE & WAIVERS

Alyeska is not in compliance with the C-Plan or regulatory requirements, as noted in Section 2.2 above.

§2.7.8 Management of Change

The management of change section of the C-Plan is clearly inadequate. It says Alyeska will “submit a management of change document to ADEC a minimum of 90 days prior to commencement of implementation...”[194] That is all.

This continual re-organization and re-writing makes the plan a moving target, and is itself a sign of system failure. Alyeska and TAPS have been in a state of perpetual re-organization since before they existed. This is a problem.

By all reports the Strategic Reconfiguration is hundreds of millions of dollars over-budget, and at least a year behind schedule.[195] This period of "extended reconfiguration" needs to be considered in terms of both increased risk of spill, and reduced capability.

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[192] Capstone 2001. Quoted in DNV 2005
[193] C-plan, Vol.1 @ p.4-34
[194] C-Plan vol.1 @ p. 2-114
[195] $434 million, September 2006 completion, reported in Nelson, January 22, 2006. *Petroleum News Alaska* "Startup set for 3rd quarter" Vol.11 No.4

COMMENTS ON SECTION 3: SUPPLEMENTAL INFORMATION

Many of these issues are dealt with elsewhere.

§3.6 RESPONSE EQUIPMENT IS INADEQUATE

Listed equipment is not sufficient to meet the RPS, or protect environmentally sensitive areas contrary to the assertion that,

> "Alyeska, through ownership or contract, has access to a wide range of oil spill response equipment needed to meet the full range of oil types, viscosity and environmental conditions expected."[196]

There is not enough warm storage equipment.

There still is only one hydraulic clamp for stopping small-hole leaks in the pipe? Wouldn't it be wise to plan on being able to deal with *at least* two holes? Especially if sabotage is considered a relatively greater risk[197], then it makes sense to tighten contingency standards of realistic maximum discharge.

Listed Equipment is not available. The C-Plan says that a "significant portion of the oil spill response equipment inventory identified in the equipment listing tables...is used on a routine basis in support of pipeline facility and right-of-way maintenance, as well as pipeline project support work," but that that's O.K. because it "remains available for oil spill mobilization and it remains in its designated response area location."[198] What "area"? How can equipment be available for response, if it's deployed for another task? If tasks are abandoned for spill response, then what equipment would cover for the task?

This situation also further increases response mobilization time, potentially by a long time.

At an absolute minimum, we request that equipment not ever be used in such a way that response times would increase. Please require response equipment be redundant so these kinds of trade-offs aren't made.

[196] C-Plan Vol.3 @ p.4-29.
[197] DNV Risk Analysis, DNV Fate & Transport Study.
[198] C-Plan @ Vol.1 p.3-85

BOOM

The boom proposed for much of the pipeline is inappropriate to faster moving rivers such as the Klutina or Copper.[199]

The plan to use boom alone doesn't take into account behavior of oil is glacial rivers. Spilled crude will bind with silt, form into goo balls and sink. That defies containment strategies that assume oil will float cooperatively on top of the water.

Spill drills also have revealed shortcomings of boom. The 2001 Lowe River spill drill revealed that "the effectiveness of containment boom deployed to deflect oil to recovery points in the exercise area was marginal,"[200] in particular in high currents. In that drill, Brown Creek, running high at 5-6 knots, tested the "extreme upper limit of boom capability," and greatly complicated boom deployment. It took over four hours for the team to deploy the first deflection boom.

Another lesson of that spill was that "initial deployment was held up for completion of site safety plan and briefing."[201] This information could have been done in advance. Previous GRS analysis, for example, would thus shave response time.

One of the main alternative tactics, building collection pits and berm in gravel bars, was also stymied in that drill due to high water. This points to the need for accurate, site-specific knowledge of hydrology.

Please put boom deployment towers and/or anchors at strategic locations, including on the Klutina, and perhaps the Copper River at Wood and Baird Canyon, million-dollar bridge.

SKIMMERS

Equipment ratings discrepancies are a problem. The C-Plan offers numbers that are manipulated to *sound* reasonable. Are they? Alyeska has adopted conservative rhetoric over rigorous scientific endeavor. If you are only planning for 20% of the rated capacity, then what is the point of the listed capacities? If the first is so drastically wrong,

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[199] USCG R&D Center 2002 *Oil Response in Fast Water Currents: A Decision Tool* (Report CG-D-03-03) and *Oil Response in Fast Currents, A Field Guide"* (Report CG-D-01-02).
[200] APSC 2001 "Lowe River Drill Exercise: June 27, 2001" @ Exercise Highlights and Challenges, p.5
[201] APSC 2001. @ "Evaluation Team #1 Summary," p.7

why would the second be correct? It is unclear what bearing on *reality* the C-Plan figures have. Has equipment been tested? For response planning, equipment needs should be based on actual recovery rates for these skimmers in other spill responses, given real operational issues.

The skimmers in the APSC inventory are a persnickety bunch. I recently was shown some varieties for the spring SERVS drill in Cordova. The models didn't actually function because the size and depth of their practice water tank was not big enough—raising the point that skimmers don't work without a deep, smooth, open pool to work in. They won't work if they are crooked, or if one of the many pins or bolts is unattached, or if one of the plastic floats is busted, let alone the gamut of mechanical issues for any gasoline engine. Wilderness is not clean. Rocks, trees, silt, bears, weather, etc. would inevitably complicate response.

Volume 3 §4.3.2 Response Equipment

In the Tactic volume (Vol.3) the C-Plan says simply, "Alyeska has purchased a number of different types and sizes of skimmers for use in recovering spilled oil."[202] Please do a more thorough review than that.

§3.9 TRAINING AND EXERCISE PROGRAMS

We hereby adopt the comments of Copper River Watershed Project regarding needed improvements in the training and exercise program. Training is insufficient in terms of both quality and quantity. I know you can do better—it is simply a matter of making it a priority.

§3.10 PROTECTION OF ENVIRONMENTALLY SENSITIVE AREAS AND AREAS OF PUBLIC CONCERN

This issue is dealt with in more detail in Section II of these comments, above.

§3.12 Bibliography

The C-Plan does not indicate that Alyeska has an ongoing (let along rigorous) research and development department. Please require use of the best available information.

[202] C-Plan vol.3 @ p. 4-30

§4(BAT) Best Available Technology

The BAT review is inadequate.

§4.2 Source Control

Shortcomings at valves give APSC a failing grade here.

> "A number of the Alyeska mainline valves are presently in an indeterminate state regarding their sealing performance. These valves are being tested."[203]

"Indeterminate" valves should be tested immediately, and assumed to be leaky in the mean time.

Testing is obviously key, but why aren't leaky valves just fixed? Jerry-rigged pump-around devices aren't the best available technology. Please stop letting Alyeska get away with this.

§4.3 TRAJECTORY ANALYSIS

The BAT for trajectory analysis is visual observation.

> "Visual observation and tracking of spilled oil on land and water has been proven effective over time and is the only methodology that provides timely and accurate results. Oil spill sensor technology has been developed and continues to be refined. The limitations of all oil spill sensors are that they can be defeated by environmental conditions..."[204]

The C-plan goes on to discuss FLIR sensors, and says, "Given the lack of opportunity to test the system on an oil spill, its actual performance is not confirmed."[205] The North Slope feeder line spill apparently provided that opportunity. Would it work on the Copper?

As noted above, tracking of nonfloating oil, as in silty rivers, is not accomplished using this technique. Neither does it work in remote areas without access.

This BAT review ignores *forecasting*. Due to the reasons given above, regarding the shortcomings of the DNV Study, the trajectory analysis cannot be considered BAT.

As indicated above, tracking devices for non-floating oil do exist and would surely be better than peering into murky water. Sorbent snares, sonar, and various screen systems are available to track spilled oil.

§4.4 WILDLIFE CAPTURE.

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[203] C-Plan, Vol.1 @ p.4-7. Table 4.2
[204] C-Plan, Vol.1 @ p.4-10
[205] C-Plan, Vol.1 @ p.4-10

A neglected issue is how to deal with oiled salmon. Obviously they won't be rehabilitated, and leaving them to spawn introduces new exposure pathways.

For information regarding wildlife, the C-plan cites state and federal agencies, personal observations, and the Environmental Atlas, saying "no alternatives or better sources of information are known."[206]

One better source of information is the traditional ecological knowledge and know-how of residents, guides, and tribes. This is another excellent example where the potential values of citizen participation are lost in closed-loop decision-making.

§4.9 MAINTENANCE PRACTICES FOR BURIED STEEL PIPING CONTAINING OIL

The discussion in the C-plan doesn't indicate much except a general primer in types of equipment, maintenance and monitoring practices. All we know about the standard all this is actually applied, is that it (allegedly) meets 49 CFR 195. There is corrosion in the MLR1 area, around PMP 647. Are adequate procedures being followed? At Prudhoe Bay they said they were and we know how that turned out.

Rather than the best, Alyeska seems to be using the cheapest, maintenance practices of buried steel piping. The C-plan says, "Alyeska evaluates the application of cathodic protection systems to determine the most cost-efficient method for providing the level of cathodic protection required."[207]

COMMENTS ON VOLUME 2: SCENARIOS

SCENARIO 11: MILEPOST 676

This scenario depicts a 1,500 bbl spill caused by a crane collapse at PMP 676, near Dry Creek just north of Glennallen. This scenario does not illustrate ability to meet the RPS, or protection of environmentally sensitive areas.

- This scenario does not illustrate source control of the spill in the shortest time possible.[208] Closure of the valves takes eight minutes before the leak is isolated by RGVs 103 and 104. That is too long.

[206] ibid @ p.4-13
[207] C-Plan, Vol.1 @ p.4-23
[208] 18 AAC 75.455(d)(1); also 18 AAC 75.425(e)(1)(F)(i); 18 AAC 75.055(b)

Further, RGV 103 shows internal leakage[209], calling into question the RPS volume[210] and ability to isolate the segment. The assumption of response tactics assumes oil is just dribbling out of the pipe. Shut-down time could be cut with installation or upgrades to RGVs and CKVs.

- As discussed more above, the scenario fails to illustrate protection of environmentally sensitive areas.[211] I'm especially concerned about the large amount of oil that would be left to slow cleanup, and the obstinate assertion that oil will not migrate downstream in the Copper River. That the sensitivity of the commercial Copper River Salmon fishery is not considered here is an excellent example of the failure explained in Section II, above. Even a drop that reached an anadramous stream in the Copper River Watershed would immediately do tens of millions of dollars of damage to the commercial fishery.
- With the spill described it seems entirely reasonable and even achievable to contain and clean up the spill before it reaches water. Please hold them accountable to this standard.
- The C-Plan indicates the leak would be stopped in an estimated 22.5 hours.[212] T+10.5 hours is too long to wait for a response team to arrive from Fairbanks.
- The scenario is over-optimistic about response time. According to APSC information, response times to Containment Sites 10-18 and 10-19 is 3.29 hours.[213] Yet the C-Plan asserts nearly instant mobilization and arrival onsite in from not less than an hour to two hours.[214] Further, spill drills have indicated it can take as much as 1.5 hours for the Glennallen Response Team to even gather at Glennallen.
- The C-Plan indicates that when Task Force 2 arrives, about two hours after the spill, "oil is no longer

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[209] JPO March, 2005. *An Evaluation of TAPS Mainline Valve Reliability.* TAPS Assessment Report JPO No. FBU-05-001.
[210] AS 46.04.030(k), 18 AAC 75.430, 18 AAC 75.436, 18 AAC 75.445, 18 AAC 75.425.
[211] AS 46.04.030(e), 18 AAC 75.455(d), 18 AAC 75.425(e)(1)(F)(V), AND 18 AAC 75.425(e)(3)(J).
[212] C-Plan Vol.2 @ p.11-11
[213] DNV 2005b Appendix III.
[214] C-Plan Vol.2 @ p.11-10, etc.

coming out of the hole under high pressure."[215] This statement is contrary to experience and logic. In 2001 the bullethole was still spewing oil a day after the pipeline had been shut-down.[216] The response in the scenario is therefore unrealistic. It also indicates a failure to take adequate precautions for workers' health, increases the potential for attempts at risky mitigation measures like pumping backward to reduce pressure.

- What is the basis for the volume?
- This scenario depicts a failure of training in that the first Alyeska responders onsite are actually instructed to retreat and wait for help to arrive. With training couldn't these crews make themselves useful? Visual tracking and reporting of oil, or hazing caribou away from the spill zone, would be useful tasks in the immediate aftermath of a spill. Certainly that would be better than nothing. All employees should have a minimum of oil spill response training, so that in the event of a spill all employees are be available to response tasks.
- Equipment is listed at Volume 1, Section 3.6. This is not specific at all.[217] What equipment would be used, and where would it come from?

SCENARIO 12: GULKANA RIVER SCENARIO

This scenario is for a 1,600 barrel (67,200 gallons) spill from a bullethole near the Gulkana River crossing, that goes undetected for 9 hours.[218]

- The scenario does not demonstrate protection of environmentally sensitive areas. Under "Environmental Considerations" in the scenario, the C-Plan points out the large recreational fishery. It is not a trivial detail that the commercial and subsistence fisheries are not included here. Subsistence fishing is the most important use. The threat to the commercial fishery

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[215] C-Plan Vol.2 @ p.11-10
[216] Alyeska 2002 *Joint After-Action Report.*
[217] C-Plan Vol.2 @ p.11-2
[218] Thank you for including an undetected spill scenario. That is a realistic, appropriate contingency to plan for. However, it is important to note that equally realistic scenarios could depict spill continuing for as long as at least a week, and up to three months in underground locations. Thus, the scenarios still fail to show compliance with the RPS.

is the largest threat. Thank you for recognizing the interests of sport fishermen.

- Two riverboats[219] is not enough to do the job.
- Will Glennallen Response Base have personnel permanently onsite and onshift? It is crucial that at all times *someone* be in that position, not knee-deep in some maintenance project or asleep. The Scenario depicts immediate deployment,[220] which is not a reflection of reality. The C-Plan depicts Glennallen Response Base Task Forces 1 and 2 deployed and in position within three hours of notification.[221] However, Alyeska's transit time model (TTM) showed 6.03 hours to arrive onsite at CS-17.[222]
- According to the C-Plan, Task Force 3 would be deployed to CS10-16 in the 3-6 hour timeframe.[223]
- We are concerned with the long response time for source control of this spill. At the 6+hour timeline, Task Force 4 is still not even in place, while equipment and personnel (hopefully) are on their way from Fairbanks. The ETA for most of the needed equipment is T+10hr. That is way too long. Certainly, it is not "as fast as possible."[224]
- Would a dozer be useable for containment actions at the spill site before source control? The ignition danger would seem to be too extreme to run the D-6 very close.[225]
- Winds could easily greatly complicate this response, in the spill site area. Berming would be ineffective as the source of oil flow constantly changes.
- The C-Plan doesn't call for even a boat at CS10-16. How can this be?
- The **Table GULK.8**, summarizing the oil fate and estimated recovery, is flawed.
    - First, there is no apparent basis for these estimates. Alyeska has run a variety of oil spill

[219] C-Plan Vol.2 @ p.12-13
[220] C-Plan Vol.2 @ p.12-15
[221] (Vol.2, p.12-16)
[222] DNV 2005b Appendix III.
[223] C-Plan Vol.2, p.12-17 This agrees with the transit-time model, 4.06 hours.
[224] 18 AAC 75.445(d)(1)
[225] Alyeska 2003 *Bullethole Spill Joint After-action report*

fate and trajectory models, some better than others. The best available should be used here. Is it?

- Oil “trapped” along the shoreline of the river is not "contained."[226] Oil eddied and washed up on the shoreline, deadfall logs and other places (estimated at 200 bbl) would continue emulsifying, binding with silt and transporting downstream.
- Third, as explained more above, the assumed recovery rate (80% of 20% of the skimmer's nameplate rating) is overly optimistic.

- According to the C-Plan, a large amount of oil will be left pooling alongside the meandering Gulkana River, in the area between CS 10-16 and 10-17. This oil would remain on the water, and along the shore, well beyond 72 hours,[227] in plain violation of the Response Planning Standard.
- I agree with the C-Plan that the river and area wetlands are ecologically sensitive and should be left alone to the maximum extent possible. That is all the *more* reason to capture oil before it reaches land.
- The C-Plan scenario illustrates lack of protection of environmentally sensitive areas for salmon. In August, when the scenario takes place, King salmon eggs would be in the gravel, subject to exposure from oil that is sinking into the water column. Yet the C-Plan strategy is to let it sit back, then come back to mop up after it's too late. Their spill response strategy seemingly involves more attorneys than spill responders.
- The predicted recovery rate of about one gallon per second (96 bph, 5,780f gpm) is optimistic. The Pedco skimmers are not appropriate for use in tiny streams and shallow ponds of this area.
- Why is there no plan to deal with rafters and other recreationists along the river? It is good at least the recreational fishery is recognized. However, without a plan to evacuate users camped along the river, the C-Plan puts us at risk of exposure.

[226] C-Plan Vol.2, p.12-24
[227] See C-Plan Volume 2. p.12-12

SCENARIO 13: LITTLE TONSINA RIVER

This scenario is for a 29,000 bbl spill caused by a catastrophic rupture at the former PS12 into the Little Tonsina river.

- This scenario shows 1,000 bbl (42,000 gallons) "trapped" on the Little Tonsina shoreline.
- First, it is not really trapped but still mobile, toxic and bioavailable.[228] The scenario is unrealistic because it does not depict downstream reach of oil contamination.
- Second, this is a huge amount, which would represent extreme and totally unacceptable damage to the Wild Copper River Salmon fishery. The Little Tonsina itself offers Chinook and Coho spawning and rearing habitat. Downstream in August the commercial fleet would be going after Cohos, offering the potential for direct fouling of nets, or contamination of the commercial catch. The area is particularly visible. Cruise tour buses could view the oiling. The world would instantly and forever after know that Copper River Salmon were oiled.
- The C-Plan calls for identification of environmentally sensitive areas and formulation of response tactics *after* the spill, which is too late. Furthermore, it does not indicate who would do this.[229]
- As on the Gulkana, there is a huge gap between CS 11-7 and CS 11-6. There should at least be Containment Sites where the river crosses the road.
- This scenario doesn't show ability to meet the RPS if the spill were to happen a bit farther north, where lack of access would be a major problem.
- The C-Plan indicates mobilization to CS-7 and "sites of opportunity downstream,"[230] although oil is not predicted to reach that point. Why wouldn't oil reach downstream? What are "sites of opportunity?"

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[228] See Section III, above, for more on long-term toxicity and transport of oil.
[229] C-Plan Vol.2 @ p. 13-8
[230] ibid @ p.13-9

SCENARIO 14: MAXIMUM DISCHARGE

The scenario, for a 120,000 bbl sabotage spill north of Glennallen, is sobering. The scenario is based on the Jan. 19, 1991 "Technica Inc., Trans Alaska Pipeline System Risk Assessment, Final Report."

- It is a shame this scenario is place during winter. Please require a summer-time scenario that would consider the downriver transport of oil. This would be an excellent opportunity to guard against spill getting downriver.
- It is also a shame that the location of the incident is so unlikely. It is hard to imagine a saboteur choosing this location, so near to security forces (e.g. state police). It is also very convenient from a response and detection perspective.
- The C-Plan fails to describe the trajectory of the oil from this spill. Instead, it quotes sub-Section 9.2.1 of the Technica Report, saying that multiple RGV failures is not realistic anyway.[231]
- How far downstream would oil be expected to reach? The map (Vol.2: 14-5) shows the spill just across the Glenn Highway. What is the time connected with this map?
- The scenario describes oil running along the top of the ice. However, the hot oil could melt through the ice or drain in cracks and start running downriver.
- The long-term cleanup plan seems to be to figure it out as they go.[232]
- The C-Plan allows as how "discovery of the magnitude of the spill and its apparent cause result in additional emergency actions taking place."[233] The police and troopers and, presumably, Homeland Security would mobilize. The C-Plan fails to consider the impact of all this on spill response, however. For example, if a flight-ban in implemented, then the local firefighters who are supposed to arrive via. helicopter from Valdez won't get there. Alyeska ought to demonstrate that an adequate process is in place.

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[231] ibid @p. 14-4
[232] see C-Plan Vol.2: 14-4
[233] Vol.2: 14-8

- The scenario doesn't describe any realistic way of protecting the Copper River salmon from oil as the contaminated area melts at breakup.
- It is our understanding that there is some question about Alyeska's cold restart ability. The C-Plan mentions no problem, but JPO records indicate it would present unusual challenges. As the current Prudhoe shutdown shows, loss of Alaska production has major impacts to National and world energy markets.[234]

VOLUME 3: TACTICS

Volume 3 §3: Containment Actions

This section does not illustrate protection of environmentally sensitive areas,[235] or compliance with the RPS.[236] It is seemingly not enough to demonstrate effective containment.

CS 10-12 Haggard Creek

I'm concerned there are no downstream containment sites for such a vast distance here. The C-plan says there are "many areas of opportunity for water dams downstream..."[237] Where?

CS 10-16 Gulkana River

Seven miles above the confluence with the Copper River, this is a key area with regard for salmon and downstream areas. "Wildlife Sensitivities: fish stream" is totally inadequate analysis of this incredibly important and Sensitive Area. This is one of the world's last, great Wild salmon runs.

The DNV TTM model shows 4.06 hours total effective response time here. (DNV 2005b @III.1)

Downstream, this section says there are "sites of opportunity along river bank." (Vol.3 p.5-208)

This area might be an appropriate focus for community responders from Gakona.

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[234] *See, for example, Washington Post* August 11, 2006; also the congressional hearings.
[235] AS 46.04.030(E), 18 AAC 75.455(D), 18 AAC 75.425(E)(1)(F)(V), AND 18 AAC 75.425(E)(3)(J).
[236] AS 46.04.030(K), 18 AAC 75.430, 18 AAC 75.436, 18 AAC 75.445, 18 AAC 75.425.
[237] C-Plan Vol.3 @ p. 5-207

Gulkana River Contingency Area (Sacrifice Zone)

I'm very concerned about the second segment, a 50-mile unreachable sacrifice zone between sourdough and Gakona (CS 10-17 to CS 10-16). The pipeline and the river are both relatively inaccessible for this segment. Access is complicated by sensitive fish & wildlife habitat, including the most important King Salmon habitat in the Copper River Watershed, and a National Wild & Scenic River corridor.[238]

Under "Priority Environmental Areas,"[239] the C-Plan indicates: "1. Gulkana River (fish, waterfowl)"[240] While true, this is not sufficient to protect specific sensitive areas. While recognition is the necessary first step. I don't see that anything special is being done to protect this priority area.

The C-Plan indicates crews will deploy to **CS 10-16** only if oil has passed CS 10-17.[241] It seems more conservative and prudent to deploy to CS 10-16 for *any* spill entering the river upstream, if for no other reason than to ensure oil is visually tracked. What can it hurt? This task force could be equipped with boats and/or ATVs, and be able to move upriver to pre-determined containment sites.

CS 10-17 Gulkana River

There are no mapped containment sites downstream is a glaring weakness.

This site is critical with regard to salmon. All the C-plan reveals is the list of Wildlife Sensitivities "Fish, eagles, waterfowl, moose, and bears."[242] This does not demonstrate sufficient care is being taken to safeguard the *priceless* salmon spawning in the Gulkana River.

Under "Winter Response Tactics" the C-Plan suggest ice slot cutting "in specific locations."[243] What specific locations? This statement implies there are more site-specific plans—are there?

PS 11 is listed as the nearest Response Base, but that facility is closed and replaced with the Gulkana Response Base.

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[238] INS: cite for W&SR
[239] Whatever that means. This term is not defined in the C-Plan???
[240] C-Plan vol.3 @ p. 3-156
[241] ibid @ p. 3-157, Gulkana River2 Segment, Summer Containment Actions #2.
[242] ibid @ p.5-209
[243] ibid @ p.5-209

The DNV TTM Model shows 6 hours response time to this containment site.[244] That strikes me as way too slow for an operation that can afford to do better.

CS 10-18, 10-19 Dry Creek

More than three hours seems too long to respond given the location. Having committed spill responders on shift 24/7 could be done for minimal cost.[245]

These containment sites are critical to prevent a large spill in this vicinity from reaching the Copper River. As indicated in comments on Scenario 11, we are concerned with the slow initial response times, especially when combined with the long lag for pipeline repair equipment from Fairbanks.

CS 10-20 Tazlina River

How is it possible that the only Wildlife Sensitivities listed are, “bears, eagles.”

This is an incredibly high priority area for salmon. Copper River Watershed Project GIS mapping indicates that past this Containment Site oil could be on the Delta in less than two days.

Six hours is way too long to respond.[246] Oil will be well past.

DRY CREEK CONTINGENCY AREA

How far downriver in the Copper could an RPS volume spill go from here?

The Breakup strategy, of pretending it is summer, is a plan to fail. This violates legal planning and response standards.

A plan for tracking non-floating could be important here in a spill that reached the Copper River, as things would be happening fast.

Tazlina River

Why are these maps censored? This is a high priority area, not exactly a secret.

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[244] DNV Fate & Transport Study @ III.7
[245] ibid
[246] DNV Fate & Transport Study @ III.7

Klutina River Contingency Area & CS 11-2 Klutina River

Why are these maps censored?
This is maybe the #1 area of concern, because of the combination of slow leak detection (thirty gallons a minute for 3 months) and response (6.54 hours)[247]

Given the location *in* Copper Center, a community-based team could respond much faster.

Copper River

Under "Environmental Sensitivities" the C-Plan mentions "important waterfowl habitat near its mouth." (Vol.3 @ p.3-168) Does Alyeska calculate that an RPS spill here could reach the Copper River Delta?

REMEDIES

Requested remedies to problems are indicated throughout the text of these comments with shaded boxes. There are many remedies to the many problems. In the end, it doesn't matter to us *how* problems are solved, so long as they are.

Listed below is additional detail regarding the three top priority remedies.

1. CITIZEN OVERSIGHT COUNCIL

The single best way to prevent and respond to the risk of an oil spill on the TAPS is to create a citizen advisory council, using the model of PWSRCAC in OPA 90.[248]

Besides the government and industry, all the necessary parties appear willing and anxious to participate in such a venture. With the mandate and funding there is no doubt such an organization could succeed. The success of RCAC at giving PWS perhaps the best spill response system in the world is a positive model.[249]

ADEC has adequate authority to require this under Article VIII of the Alaska Constitution, and AS 46.04.030(e):

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[247] ibid @ III.7
[248] For more on that model, see www.pwsrcac.org. In further support of this concept, I also hereby adopt as part of these comments Fineberg, R.A. June 2002. The Emperor's New Hose, How Big Oil Gets Rich Gambling with Alaska's Environment AFER. 130pp.
[249] L. Robinson June 2006 Effectiveness of Citizen Involvement PWSRCAC. (Attached)

"The department may attach reasonable terms and conditions to its approval or modification of a contingency plan that the department determines are necessary to ensure that the applicant for a contingency plan has access to sufficient resources to protect environmentally sensitive areas and to contain, clean up, and mitigate potential oil discharges from the facility or vessel as provided in (k) of this section, and to ensure that the applicant complies with the contingency plan…"

ADEC HAS LEGAL AUTHORITY TO REQUIRE CITIZEN OVERSIGHT COUNCIL AS A CONDITION OF APPROVAL

In response to the numerous past urgings of stakeholders to require creation of an industry-funded but independent, citizen oversight council, ADEC has claimed a lack of authority to "require or sanction" such a body. This is wrong. AS 46.04.030(e) states that the Department

". ..may attach reasonable terms and conditions to its approval or modification of a contingency plan that the department determines are necessary to ensure that the applicant for a contingency plan has access to sufficient resources to protect environmentally sensitive areas.. . ."

Other COAs have been imposed with all the attributes of the request, without apparent legal problems. In the October 21, 2005 Amendment Findings document ADEC imposed a requirement for APSC to develop site-specific planning, in consultation with the village. The difference is only one of scale. The request for a line-wide citizen oversight council poses no unique legal issues.

2. Community-Based Response Teams

Please require creation and support of community-based response along the pipeline corridor, in particular to respond to spills into the Copper River watershed.

This is not a new idea.

"In Alaska, the 1989 *Exxon Valdez* oil spill demonstrated the efficacy of small groups of local responders collecting spilled oil. In addition to their critical knowledge about local conditions and geography, residents were highly motivated to protect “their” land and water."[250]

According to the 1990 report by the Alaska Oil Spill Commission entitled Spill: the Wreck of the Exxon Valdez:

[250] Nuka 2005 "Community Oil Spill Response Forum Final Report.” Report to PWSRCAC @ p.7

"A substantive role should be given to the affected communities in any response system ... local interests, local knowledge and experience . . . often made the community-based work force the most efficient available."

The proof of community-based response is in the results. Active teams in Cordova, the Seldovia Oil Spill Response Team, and Chenega, have been effective.

The January, 2005 Community Oil Spill Response Forum, in Anchorage, demonstrates understanding, enthusiasm, and interest by many stakeholders in expansion of community-based response projects.

We are concerned that the C-plan in fact uses downstream communities and residents as de facto spill responders already, but without acknowledgement or support. In the absense of an adequate C-Plan, a vast safety net of residents and businesses would leap to action to contain and clean a spill when it happens, and work to mitigate and restore impacts for years afterward. This is an **unpaid job, hoisted on us without consent or alternative.**

3. REQUIRE GRS-LEVEL RESPONSE PLANNING

The GRS strategy that was developed for Prince William Sound should be mirrored on the TAPS. I hereby adopt the 2003 comments to you of PWSRCAC on this topic, as well as comments being submitted separately by Copper River Watershed Project.

The DNV Study isn't what RCAC and other commenters had in mind in their 2003 comments.

The results of the study should then be used to enhance site-specific response planning downstream of the pipeline. If this study is properly conducted, we believe that it will show that oil can quickly migrate vast distances downstream of the pipeline crossings and impact environmentally sensitive areas not previously considered in the existing contingency plan.[251]

We urge ADEC to require this action be taken now. The data in Alyeska's software, developed for the DNV Fate & Transport Study, could be accessed to determine appropriate protection for downstream areas. We hereby adopt RCAC's previous comments urging creation of 20 GRS sites in each region per year, according to a transparent and inclusive stakeholder process.[252]

[251] RCAC December 5, 2003 comments to Becky Lewis, ADEC. @ pp.6-7
[252] PWSRCAC 2003 comments attached.

Thank you for thoughtfully considering these comments. Please keep me informed as this important review moves forward.

Please contact me at (907) 424-3835, or cascadia@alaska.com, or POB 853, Cordova AK 99574, if you have any questions, or if you would like to discuss any aspect of these comments.

Sincerely,

Gabriel Scott
Alaska Field Representative
Cascadia Wildlands Project

Attachments (electronic pdf copies on CD. Please ask if you desire a different format)

#1 ADF&G 2005 Harvest Summary
#2 Ballachey & Bodkin 2003 “Lingering Oil”
#3 CDFU 2005 comments to ADEC
#4 Chou 2002 “Eyak Woman Rediscovers her Heritage Smoking Copper River King Salmon”
#5 Cordova Times September 14, 2006
#6 Cordova Times September 21, 2006
#7 Epstein testimony, September 13, 2006
#8 Oil Spill Response in Fast Water
#9 DNV Fate & Transport Study brief
#10 Fineberg 1996 “Pipeline in Peril”
#11 Fineberg 1997 “Pipeline in Peril pt.2”
#12 Fineberg 2002 “The Emperors New Hose”
#13 Fineberg September 3, 2006 “Shocked”
#14 Fineberg November 2, 2005 “Documents Reveal Trans-Alaska Pipeline In Trouble; Monitors Punt”
#15 Fineberg 2004 “Economics Background Report: TAPS Lease Renewal – Opportunity Lost”
#16 Hansen 2002 “Evaluation of New Approaches to the Containment and Recovery of Oil in Fast Water”
#17 Hisey memo
#18 Metzger 2003 “Following the Copper River Salmon”
#19 Michel 2006 “Assessment And Recovery Of Submerged Oil: Current State Analysis”
#20 Muttit & Marriott 2002 “The Sound of Silence”
#21 NAS 1999 “Spills of Nonfloating Oils”
#22 Philips 2003 “Running Wild”
#23 PWSRCAC 2006 “Effectiveness of Citizen Involvement”
#24 PWSRCAC comments on TAPS C-Plan, 2003
#25 Seattle P-I, 2006 “Copper Salmon fetching a Gold Price”
#26 VanTuyn 2006 testimony
#27 Riki Ott 2005 Sound Truth and Corporate Myths: the Legacy of the Exxon Valdez Oil Spill (hard copy)
#28 “Sierra Club Chronicles: The Day the Water Died.” (DVD)