

Summary of Responses to Comments on the Proposed Plan

The remedial investigation for the Ketchikan Pulp Company (KPC) site was carried out under a joint administrative order on consent between KPC, the U.S. Environmental Protection Agency (EPA), and the Alaska Department of Environmental Conservation (ADEC). In addition, there has been ongoing input from the public and from other government agencies responsible for protection of public health and the environment. The EPA and ADEC remedial project managers worked cooperatively with KPC to develop a technically sound, protective, and appropriate Proposed Plan for site remediation.

A total of 33 comments were provided during the 60-day comment period on the Proposed Plan. Comments were received from the Department of the Interior, the Agency for Toxic Substances and Disease Registry (ATSDR), the Tongass Conservation Society, and four individuals. Each comment was evaluated by the remedial project managers. The comments and their associated responses are described below and summarized in Table 1. Many of the comments on the Proposed Plan are addressed in the draft institutional control plan (Exponent 1999), which sets out monitoring and site control methods and responsibilities and will be available for public comment.

Several general comments discussed the adequacy of the Proposed Plan, as summarized in Table 1. The remaining comments can be grouped into the following categories:

- Offsite characterization and risks associated with water cisterns
- Landfill status
- Characterization of the near-shore fill subarea
- Institutional controls
- Arsenic management.

Offsite Characterization and Risks Associated with Water Cisterns

There were a number of comments regarding risks associated with offsite residential water cisterns. Commenters raised concerns that there were no means to identify which cisterns were to be cleaned, all tanks were not individually tested during cleanout, and risk estimates were not presented for the consumption of water and sediments. The approach to characterization of exposure and risks related to aerial deposition of flyash onto offsite residential soils and to cisterns was described in the work plan (PTI 1997) and the remedial investigation (Exponent 1998). This approach was agreed upon with EPA, ADEC, and KPC after consideration of comments from the public and from other regulatory agencies, including ATSDR. The rationale for this approach is briefly summarized here.

As a first step, aerial deposition modeling was used to delineate a maximum deposition area for the former power boilers. The modeling results served as a guide for offsite soil sampling. During the remedial investigation, 21 soil samples were evaluated within aerial deposition areas. Results of the air modeling and soil sample analyses were considered in identifying the area where cisterns were cleaned. This area encompassed most of the residences and businesses between the mill and Refuge Cove and within Refuge Cove. In its *Petitioned Health Consultation* (ATSDR 1998), ATSDR evaluated potential risks associated with chemicals, including dioxins and furans, detected in water and sediment samples from four cisterns within the aerial deposition zone. ATSDR concluded that no adverse health effects were expected to result from exposure to chemicals in water or sediments from these cisterns. However, because the cisterns collect pollutants from various sources not necessarily related to the KPC site (i.e., air pollutants, dust, dirt, animal droppings, leaves, paint, and roofing materials), the agency did recommend that the cisterns be cleaned and noted that the four cisterns might not be representative of other cisterns, or of past conditions.

KPC cleaned cisterns within the maximum deposition area and in areas beyond where there was no apparent deposition to soils (i.e., up to and including most of Refuge Cove). The risk assessment is based on current and future conditions. Because the cisterns have been cleaned, no current or future exposure will occur. Thus, the cistern data and the associated exposure pathways were not included in the risk assessment. Moreover, ATSDR's evaluation of water and sediments from cisterns near the maximum deposition zone did not identify unacceptable risks. This ATSDR finding suggests that risks associated with cisterns in areas more remote than those cleaned by KPC (i.e., further from the maximum deposition zone) would be well within acceptable levels.

Landfill Status

Comments were received regarding the adequacy of the landfill closure and on past and current transport and fate issues at the landfill. Commenters suggested that the landfill design was not adequate, the landfill contained wastes in excess of ATSDR guidelines, more specific monitoring requirements were needed, and monitoring should continue for more than the 30-year time frame identified in the permit. In addition, concerns were expressed regarding exposure to contaminants within the landfill and in downgradient areas that may have been affected by past releases from the landfill (i.e., drainages on Dawson Point and beaches on "Dawson Cove" and Refuge Cove). These comments are briefly addressed here and discussed in greater detail in the draft institutional control plan (Exponent 1999), which specifies future monitoring and controls for the landfill.

The landfill was constructed and closed in keeping with the ADEC guidelines and following public input. The construction methods are consistent with the level of contamination present. Specifically, the maximum concentration of dioxins and furans (the primary contaminant in the waste within the landfill) of 5.5 parts per billion (ppb) is well below the upper-end concentration (20 ppb) that EPA has identified as a cleanup level for nonresidential sites (U.S. EPA 1998). The draft institutional control plan identifies monitoring requirements for leachate and land-use restrictions to protect human

health and the environment in the future. While the 30-year time-frame is protective, given the level of contaminants, and is consistent with requirements at other sites, ADEC and EPA have authority to require further operation and maintenance beyond 30 years, if needed.

Through some sort of invasive activity, it would be theoretically possible for a site visitor to contact contaminants in the landfill, direct exposure to contaminants is prevented by the cap and by ongoing land-use restrictions preserving the cap. In the absence of these restrictions, concentrations of dioxins and furans in the landfill are lower than cleanup levels set for nonresidential sites and thus, exposures would be limited. In addition, concentrations of dioxins and furans detected in sediments in the drainages around the landfill are similar to typical background levels. No chemicals of concern were found in sediment samples from the beach area of "Dawson Cove," which was identified as the most likely area for recreational use. Areas upgradient between "Dawson Cove" and the landfill would have less frequent visits. Several of the streambeds were sampled and did not have concentrations above the established screening levels. Any contamination present would be at concentrations lower than the maximum concentration of dioxins and furans in the landfilled flyash of 5.5 ppb and thus would also be well below the upper end of the EPA guideline of 20 ppb for nonresidential soils.

Characterization of the Near-shore Fill Subarea

Comments regarding the near-shore fill subarea suggested that it was incompletely characterized with regard to transport of polychlorinated biphenyls (PCBs) to Ward Cove and that more discussion was needed regarding how any excavated soils would be handled. The near-shore fill subarea sampling was determined during the remedial investigation with input from the public. Sampling results were considered conservatively in a model to evaluate the potential for migration to Ward Cove. Specifically, the model assumed that the entire volume of soil in the near-shore fill subarea is a source of PCBs to Ward Cove. Instead, PCBs are more likely to be present

in limited areas, perhaps associated with paint chips. As outlined in the draft institutional control plan, any excavation in the near-shore fill subarea would require further characterization and appropriate evaluation and management.

Institutional Controls

Several commenters addressed long-term monitoring and control of the site. Comments included a request that site management require reevaluation following new information on any of the toxicity or exposure assumptions used in evaluating site risks, questions about how soils and debris would be managed during demolition, and questions about future responsibility for the site. EPA and ADEC will have ongoing oversight on any site issues regarding toxic substances, and the future owner will be responsible for following applicable environmental regulations. EPA and ADEC regulations and guidelines will continue to be updated as new information becomes available on toxicity or exposure to chemicals at the site. The draft institutional control plan outlines the responsibilities for future management of the site and sets out steps to be followed should any contamination be identified during excavation or demolition.

Arsenic Management

Concerns were raised regarding the potential adverse effects of arsenic in runoff from the site on Ward Cove organisms. Arsenic unrelated to site activities was identified in native rock. Use of crushed rock that is relatively high in arsenic was identified as one of the sources for observed arsenic concentrations in onsite and offsite soils. While arsenic from onsite and offsite soils could reach Ward Cove, arsenic was not identified as a contaminant of concern in Ward Cove following sampling of sediments in the cove.

References

ATSDR. 1998. Petitioned health consultation, Ketchikan Pulp Company. Ketchikan, Ketchikan Gateway County, Alaska. CERCLIS No. AKD009252230. August 19, 1998. U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry, Division of Health Assessment and Consultation, Atlanta, GA.

Exponent. 1998. Remedial investigation, Ketchikan Pulp Company site. Submitted to U.S. Environmental Protection Agency, Region 10, Anchorage, AK, and Alaska Department of Environmental Conservation, Anchorage, AK. Prepared for Ketchikan Pulp Company, Ketchikan, AK. Exponent, Bellevue, WA.

Exponent. 1999. Draft institutional control plan for the Ketchikan Pulp Company site. Prepared for Ketchikan Pulp Company, Ketchikan, AK. Exponent, Bellevue, WA.

PTI. 1997. Work plan for the remedial investigation and feasibility study, Ketchikan Pulp Company site. Submitted to U.S. Environmental Protection Agency, Region 10, Anchorage, AK, and Alaska Department of Environmental Conservation, Anchorage, AK. Prepared for Ketchikan Pulp Company, Ketchikan, AK. PTI Environmental Services, Bellevue, WA.

U.S. EPA. 1998. Approach for addressing dioxin in soil at CERCLA and RCRA sites. OSWER Directive 9200.4-26. April 13, 1998. U.S. Environmental Protection Agency.

Table 1. Comments on proposed plan for KPC Uplands Operable Unit

Commenter	Comment Number	General/ Specific	Type	Comment Summary	Response
Dick Coose	DC-1		General	Concerned Alaskans for Resources and Environment thanks ADEC and EPA for responsible proposed plan.	Comment noted.
George Winter	GW-11	General	General	Characterization inadequate, health study needed, institutional controls needed.	Characterization followed plan developed with extensive input. ATSDR declined health study based on limited exposure. Onsite institutional controls identified to restrict residential use.
Karen Larson	KL-1	General	Overall	Plan is adequate to mitigate exposure to contamination, provided that institutional controls are initiated and remain in place and that the arsenic management plan continues to be followed.	Comment noted
Aaron McDonald	AM-1	General	Overall	ADEC/EPA must stay involved in process in order to confirm KPC's efforts protect public. Concern over migration to cove, effect of mill on cove, and dioxins.	ADEC and EPA will continue to be involved.
TCS	TCS-1a	Specific	Water Cistern	Tanks beyond cleanout area may also carry unacceptable risk.	Cleanout area was supported by both modeling and soil sampling and extended to include most residences in Refuge Cove. Concentrations beyond Refuge Cove would not have been higher than those in Refuge Cove. EPA and ATSDR indicated that no health effects were expected from exposure to water or sediments from cisterns.
TCS	TCS-1b	Specific	Water Cistern	No rationale for boundary of tank cleanup.	Rationale for boundary of tank cleanup was identified during the remedial investigation and was supported by additional soil sampling data collected as requested by commenters.
TCS	TCS-1c	Specific	Water Cistern	Water tanks should have been tested at cleanout.	Stored sediments were tested for proper disposal after all tanks had been properly cleaned. There was no need for individual tank testing.
TCS	TCS-1d	Specific	Water Cistern	Water tanks not cleaned may be subject to resuspension of high PCDD/F levels in sediments.	ATSDR evaluated this pathway and indicated that no adverse health effects were expected.

Table 1. (cont.)

Commenter	Comment Number	General/ Specific	Type	Comment Summary	Response
TCS	TCS-1e	Specific	Water Cistern	Composite sample of sediments from tanks was high suggesting other higher concentrations and direct consumption in drinking water.	Tank bottom sediments are not consumed in drinking water, and the limited contact with sediments during cistern cleanouts would not be expected to result in adverse effects. ATSDR did evaluate this issue and indicated that no adverse effects would be expected.
TCS	TCS-1f	Specific		KPC was responsible for release of contaminants to air; EPA and ADEC have responsibility for protection of air quality.	Releases to air have ended, and the investigation evaluated and addressed effects on soil from air.
TCS	TCS-1g	Specific	Water Cistern	No discussion of most direct exposure pathway—human consumption of cistern water contaminated by KPC emissions.	Cisterns within area of highest exposure potential were cleaned out, thus eliminating the pathway. Even these cisterns were not identified as having unacceptable risks. Areas further from the site would have lower risks.
TCS	TCS-1g1	Specific	Water Cistern	Comment notes p. 6-15 of the remedial investigation report and indicates that since not all tanks were cleaned risk assessment should be conducted on sediments in remaining tanks.	Investigation evaluated extent of aerial deposition using both air modeling and soil sampling. These findings were used to identify areas for cistern cleanup. ATSDR evaluated sediments and water in cisterns within cleanup area and found no unacceptable risks. Risks in more remote locations would be lower.
TCS	TCS-1g2	Specific	Water Cistern	Comment notes p. 6-45 of the remedial investigation report and states that not cleaning all tanks may result in noncancer hazards, which were not evaluated and cannot be properly evaluated due to lack of EPA guidelines.	See response to Comment TCS-1g1 and note that noncancer effects of PCDD/F were evaluated in the uncertainty assessment using ATSDR guidelines and this evaluation did not identify any new areas of concern.
TCS	TCS-2a	Specific	Landfill	Landfill is unlined, which is contrary to ADEC guidelines.	Retrofitting the landfill with a bottom liner is not required by regulations or needed to protect human health and the environment. During closure of landfill cells, several measures were implemented (installation of cover geomembranes and a leachate collection system) that will minimize the potential transport of contaminants from the landfill. Surface water drainages where groundwater discharges will continue to be monitored during post-closure to assure contaminant levels stay within acceptable risk levels.

Table 1. (cont.)

Commenter	Comment Number	General/ Specific	Type	Comment Summary	Response
TCS	TCS-2b	Specific	Landfill	Landfill flyash cell contains PCDD/F concentrations in excess of ATSDR guidelines.	The ATSDR guideline of 1,000 ng/kg noted applies to residential soil where potential for exposure exists in contrast with the capped landfill where there is little or no exposure potential.
TCS	TCS-2c	Specific	Landfill	Comment notes RI/FS Decision 3 and states that landfill risks (i.e., breach/failure of cap, seepage, and losses from leachate system) should be evaluated.	Landfill engineering was agreed to after public input. Exposure pathways to be evaluated were identified in the RI/FS work plan following public input.
TCS	TCS-2d	Specific	Landfill	Landfill risk assessment should include pathways in addition to recreational visitor unless this is the only specific use. Areas above "Dawson Cove" should be included in institutional controls.	The risk assessment did not identify any risks at "Dawson Cove" and thus no use restriction is needed there. Institutional controls for landfill will prevent exposure by preventing any breach of the cap.
TCS	TCS-2e	Specific	Landfill	Comment notes p. 6-7 of the remedial investigation report and states that areas above "Dawson Cove" should be evaluated due to past releases to these streams.	"Dawson Cove" was identified as the most likely area for human contact with CoPCs. Any exposure upstream would be less frequent. Several of the streambeds were sampled and did not have concentrations of chemicals above RBCs. Any contamination present would be at concentrations lower than the maximum concentration of PCDD/F concentrations in ESP flyash of 5,500 ng/kg and thus would also be well below the upper end of the EPA guideline of 20,000 ng/kg for nonresidential use.
TCS	TCS-2f	Specific	Landfill	Institutional controls should be placed on areas downstream of landfill and upstream of "Dawson Cove."	See response to Comment TCS-2e.
TCS	TCS-2g	Specific	Landfill	Institutional controls need to be evaluated together with proposed plan.	Draft institutional controls are in development and will be available for public review.
TCS	TCS-2h	Specific	Landfill	Institutional controls should include groundwater monitoring and a specific post-closure plan.	Post-closure monitoring of the landfill will be conducted in accordance with the conditions in the solid waste permit and the Comprehensive Landfill Monitoring Plan (KPC 1999). Groundwater discharges to small surface drainages which are monitored and are within acceptable risk levels. ADEC has granted a temporary waiver of groundwater monitoring requirements and is considering a long-term waiver because of the associated very low risks.

Table 1. (cont.)

Commenter	Comment Number	General/ Specific	Type	Comment Summary	Response
TCS	TCS-2i	Specific	Landfill	Post-closure plan should include monitoring of subsurface water near landfill including Refuge Cove wells.	Transport of contaminants from the landfill was evaluated during the remedial investigation and did not indicate a need to sample wells in Refuge Cove.
TCS	TCS-2j	Specific	Landfill	Post-closure plan should have a lifetime that exceeds the lifetime of the landfill; 30 years isn't long enough for post closure plan.	The institutional control plan requires deed restrictions to limit land use so that the cap will be protected. While 30 years is a standard regulatory time frame for post-closure care and is represented in the solid waste permit and in EPA guidance (U.S. EPA 1998, 1993), EPA and ADEC have authority to require further operation and maintenance beyond 30 years, if needed.
TCS	TCS-2k	Specific	Landfill	Landfill not secure enough for long-term containment or containment in catastrophic earthquake. Plans in event of failure needed.	Appropriate construction methods have been used. Although it is possible that the landfill could be disturbed during a catastrophic event, extensive contingency planning is not needed because the landfill wastes are not in excess of levels that can be left in place at industrial sites (see response to Comment TCS-2e). If the landfill is affected during a catastrophic event, ADEC will require appropriate repair of the landfill.
TCS	TCS-3a	Specific	Near-shore Fill Subarea	Near-shore fill insufficiently characterized to evaluate migration of PCBs to Ward Cove. Additional sampling requested.	Sampling was agreed to in the remedial investigation. Institutional controls will be developed to prevent contact with soils. Modeling was conservative in that the entire near-shore fill subarea was considered to be a source of PCBs. In reality, soils (probably paint chips) that have elevated PCBs were found in a small area within the near-shore fill subarea.
TCS	TCS-3b	Specific	Near-shore Fill Subarea	Adequacy of PCB sampling.	PCB sampling areas were identified through evaluation of past use of PCB-containing materials as described in the remedial investigation report.
TCS	TCS-3c	Specific	Near-shore Fill Subarea	Table 3 incorrectly identifies paint shop PCB concentrations as 10 ppm (mg/kg).	Table 3 shows cleanup objectives, not past concentrations.
TCS	TCS-3d	Specific	Near-shore Fill Subarea	Comment notes p. 15 of proposed plan and states that the plan needs to be more specific regarding how excavated soils will be managed.	Details will be added in the institutional control plan. Because regulations may change in the future, flexibility is needed.

Table 1. (cont.)

Commenter	Comment Number	General/ Specific	Type	Comment Summary	Response
TCS	TCS-4	Specific	Institutional Controls	Comment notes p. 15 of proposed plan and states that the plan needs to be more specific on post-demolition sampling	Details will be added in the institutional control plan. Because regulations may change in the future, flexibility is needed.
TCS	TCS-5a	Specific	Institutional Controls	Plan should contain triggers for action based on new information regarding toxicology, fate and transport, land use, landfill issues.	ADEC and EPA guidelines will be used for triggers. These RBCs would be updated by the agencies if new information is available.
TCS	TCS-5b	Specific	Institutional Controls	Who is responsible for site during and after the 30-year time period?	The owner and the regulatory agencies will have responsibility.
Pamela Bergmann	PB-1	Specific	Arsenic Management	Potential effect of arsenic in runoff on aquatic organisms is not well characterized.	Arsenic in native rock is unrelated to site activities. Arsenic was not identified as a contaminant of concern in either the human health or ecological evaluations in the sediment investigation.

- Note:**
- ADEC - Alaska Department of Environmental Conservation
 - ATSDR - Agency for Toxic Substances and Disease Registry
 - CoPC - chemical of potential concern
 - EPA - U.S. Environmental Protection Agency
 - ESP - electrostatic precipitator
 - KPC - Ketchikan Pulp Company
 - PCB - polychlorinated biphenyl
 - PCDD/F - polychlorinated dibenzo-*p*-dioxin and polychlorinated dibenzofuran
 - RBC - risk-based concentration
 - RI/FS - remedial investigation and feasibility study
 - TCS - Tongass Conservation Society



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DATE: *7/22*

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Siroky, Mary

From: Dick Coose [care@ktn.net]
Sent: Thursday, July 15, 1999 4:52 PM
To: Mary Siroky
Subject: KPC Uplands Proposed Plan

Mary,
I want to thank ADEC and EPA for their work on the Ketchikan Pulp Company site, with KPC, and with the community. The evaluations and plans for the site by ADEC and EPA have been timely, professional, use good science, and use common sense. The Proposed Uplands Plan will benefit the KPC site, adjacent neighbors, and the community. The KPC project is one that has helped build trust between the local government, citizens, and your agencies. We need more like it. Thanks again.

Dick Coose
Executive Director
Concern Alaskans for Resources and Environment
PO Box 9266
Ketchikan, Alaska 99901

lets add this last one to the list then
email the list to me

July 20, 1999

EPA

in response to Upland's Clean Up KPC/LP pulp mill

EPA isn't listening! It's not being accountable. At least not to fulfill it's obligations to the Ketchikan Community as a whole. The agreement between the State of Alaska, EPA, KPC and Louisiana Pacific has meant not co-operation in the clean up but complicity. EPA and ATS's public relations, public meetings have ben focused mainly on reassuring the community that there's nothing to worry about -- that the clean up is proceeding in a good way. In reality the super dite designation was avoided and there's been no clean up! Some toxics have been moved from other parts of the clean up site to the landfill and other off site areas. There's no insititutional controls over these dump areas and adjoining regions. At this time there's only minimal monitoring of the landfill expected and most directions/indications of leakage will not be detected. But we know the landfill is unlined and on fractured rock half surrounded by water. The contaminated materials were not treated before being placed in these dump areas (e.g. Ketchikan Land Fill) There's no accurate accounting of where they've been placed or how they may have been mixed. There is indication that the landfill itself is improperly constructed -- and what's been done about the previous illegally constructed land fill? Demolition has ocured both before the demolished materials were tested and after the clean up of the area they were in was "completed" -- there is no adequate accounting of these materials. ETC ETC ETC

One major weakness of the "clean up" is that the upland's area was never given a clear definition -- that is, how far the airborne toxics would travel and produce a significant health or envirometal hazard. There simply was not enough testing done, inparticular for the dioxin family and arsenic, to support or refute the air distribution model used. All parties admit that this model was not designed for this purpose yet continues to be utilized to describe expected contamination. Much would be leared if a health survey was conducted to see how people who worked at the pulp mill and lived nearby have fared -- but it hasn't been done. Instead of investigating the extent of contamination, regardless of the source, discovering its parameters & boundries, more time has been spend on indicating there's other sources of doixins and arsenic -- clearing LP/KPC of reponsibility. What we need to know is how extensive the contamination is -- that's the health and enviromental problem -- who/what's responsible comes later!

Insitutional controls! More samples to define contaminated region! Health survey! More active participation and independent direction given by EPA with less complicity!

Sincerely,


 George Winter

PO Box 6842

Ketchikan, AK 99901

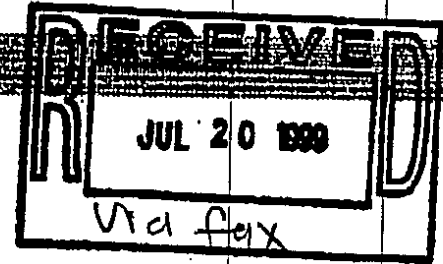
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P01



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To: Mary Siroky Fax: 465-5362

From: Tongass Conservation Society Date: 7/19/99

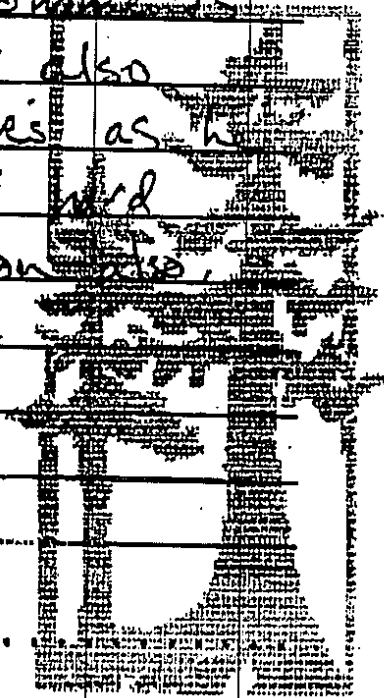
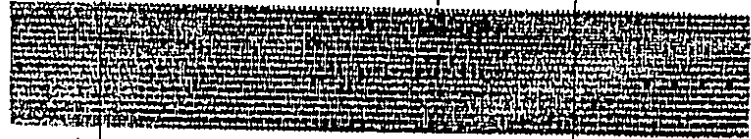
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Re: Uplands Proposed Plan

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Notes: Mary, Here are our comments
to the proposed Plan. I also
am faxing George Winter's as he
has no fax. I will send hard
copy of each along to you also.
Regards, Eric

ps. please forgive typos



From :

P02

To: Marcia Combes, Dianne Soderlund, EPA; Ron Klein, Mary Siroky, ADEC.
From: Eric Hummel, Tongass Conservation Society
re: Proposed Plan Comments

July 19, 1999

Dear Marcia and Ron,

Enclosed are our comments on the Proposed Plan of Ketchikan Pulp Company's uplands remediation project. These comments are submitted on behalf of the Tongass Conservation Society and its membership.

1. Water cisterns:

We believe there is insufficient sampling of water cisterns to justify limiting the cleanout by KPC to Refuge Cove.

The evaluation of risk from watertanks is not complete.

- a) Merely cleaning out selected tanks will not assure all future residents of the area that their tank is free of contaminated sediment. Tanks were selected based on an arbitrary assumption that by the time smoke from the stacks reached the boundary of the cleanout zone contaminant load had dropped to such a level that there would be no risk to residents drinking water supplies. How was this determined? We see no rationale for this apparently tacit assumption.
- b) No evaluation has been done which shows any rationale for setting boundaries of the area to be included for cleanup of tanks. Sampling of watertanks is the only means by which the extent of the "aerial deposition area" can be determined. The air modeling exercise was so crude as to be useless in helping to guide such a decision. Results were completely uncalibrated and no meaningful risk calculation is possible. EPA and ADEC seem to be agreeing that the risk to residents just outside the cleanout area from ingesting water tank sediment is negligible. We request that this conclusion be formally quantified.
- c) We requested that watertanks be sampled as a part of the cleanout. This should have been required as part of QA/QC and health and safety protocols.
- d) Water tanks that have not been cleaned out may have very high PCDD/F levels as illustrated by the ESI cistern sediments sample RW32 (515ppt). RW32 was taken at a location where the model predicted relatively low deposition. Other samples could be higher. This sediment can be resuspended when the tank is refilled and ingested by the residents. This represents a considerable health hazard.
- e) The composite sample of sludge from the bottom of the 23 tanks that were cleaned out show very high levels of dioxins. Since this was a composite sample and represents an average of concentrations it is quite possible that individual concentrations were much higher in certain tanks. With a TEQ of

From :

P03

more than 500ppt, this sample raises the possibility of some sites with Dioxin at greater than 1000ppt. It is important to remember that there is no question of whether or not there is a pathway. We are talking about domestic drinking water here!!!!

- f) Air contaminants discharged by KPC over its period of operation are KPC's responsibility. The public resource of clean air is supposed to be protected by ADEC and EPA. These agencies have a public trust obligation to protect the resource of clean air and the health of humans that rely on it. This case represents a substantial abrogation of that responsibility.
- g) We believe there has been a major failure of this project to evaluate the most direct exposure pathway - human consumption of cistern water contaminated by KPC emissions.

RI p 6-15 6.2.2.1 Decision 4 says, "this pathway has been addressed because KPC cleaned out most of the cisterns in late 1995/early 1996 and most of the remaining cisterns in 1998. Therefore, this pathway is not quantitatively evaluated in the risk assessment." KPC argues that the pathway has been closed by cleaning out some of the tanks. This is only true for the tanks that KPC did cleanout. KPC has failed to establish that the pathway is closed for tanks near Refuge Cove that were not cleaned out. The only way to do that is to show that smoke and flyash from KPC was not present beyond Refuge Cove. There is no proof of that and there is considerable proof to the contrary including pictures, personal observations and complaints to ADEC from residents in the Sunset Drive area and further along North Tongass highway. This pathway is not closed. Since there is no guarantee that watertanks with contamination will actually be cleaned out, the risk assessment for residential exposure should include watertank sediments.

RI 6-45 6.2.4.2 Unless all watertanks are cleaned out or tested this scenario needs to include water and sediment ingestion. The fact that hazard indices are below 1 indicates only that the noncancer effects of dioxin and watertank exposure are not assessed. Non-cancer effects of Dioxins do exist. EPA has failed to provide the necessary guidelines for evaluating it.

2. Landfill

- 2a Landfill remains unlined. This is contrary to ADEC guidelines for industrial landfills.
- 2b We note here that the landfill contains a large cell of flyash. Testing of this flyash showed PCDD/F TEC's in excess of 11,000ng/kg. We note that in section 6.2.5.3 p 6-39 of the RI/FS, ATSDR considers that "at TECs greater than 1,000 ng/kg, potential public health actions are considered."
- 2c The RI/FS did not characterize the potential risks from the KPC landfill. The assumption was that the landfill cover would adequately contain the hazardous contents. PP

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assumes continuity of containment. Nowhere in the RIFS process have the risks of breach, cap failure or any form of non-catastrophic breach been addressed. There has been no evaluation of seepage or contamination in the soils or groundwater immediately below the landfill. The leachate collection system relies on porous dikes which are not sealed to the bedrock and under which groundwater can flow. This constitutes a pathway which has not been evaluated.

2d We repeat our comment to the RIFS Decision 3: "We do not agree that the only area likely to present the potential for exposure are within the intertidal zone at "Dawson Cove". Children who visit the site could be exposed to sediments in the bottom of the various streams and to contaminated soils from the numerous releases that have occurred over the years and will continue to occur for the next 1000 years or so. The only receptor considered is the recreational visitor or trespasser. The risk assessment should include workers or future residential sites unless all development of the site is prohibited in perpetuity by a legally binding and enforceable restriction on the title of the property designed to prevent any exposure besides "recreational visitor". The lands surrounding the landfill have been the subject of numerous spills, leakages, overflows and other unevaluated releases of toxic material. These areas should also be covered under such a restriction.

2e RIFS p6-7 6.1.3.3 The statement "Areas considered likely to present the potential for exposure for human visitors are within the intertidal zone at "Dawson Cove", along with test results is used to conclude that "no CoPC's were identified and this pathway is not quantitatively evaluated in the risk assessment." Numerous reports from the public and workers have identified other areas which showed signs of contamination from the landfill runoff before closure. As we stated in our comments to the RIFS Workplan,

"We consider the sampling proposed in the vicinity of the KPC landfill to be totally inadequate. There has been a repeated problem with overflows of the leachate collection system. This system which is supposed to prevent contamination of water and sediments outside the boundaries of the landfill has totally failed on numerous occasions. Water in at least one stream has shown contamination with Dioxin. Sampling should be designed to determine sediment contamination in the various streambeds leading from the landfill and in areas where the leachate is reported to have "daylighted" (see ADEC files). All present data indicates that the dioxin levels in the landfill flyash merit careful consideration of pathways for human exposure. We suggest evaluation of sediments in the streambeds at SWL6A, SWL6B, SWL4, SWL11, SWL10 and a point between SWL4 and the leachate lagoon. In addition any areas in which leachate has escaped from the leachate collection system should be evaluated."

2f These requests fell on deaf ears and the only sampling done near the land fill was on the intertidal zone (WWAD-C1,2,3). The risk assessment assumes that this is the only place where people are likely to contact soils contaminated from the landfill. If this RIFS is not going to be a sham then the other areas (such as the remaining

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beach fringe and down gradient property not evaluated) should be placed off limits to all human exposure both by physical barriers and by permanent restrictions on human 'visitors'. We urge institutional controls that require no residential, commercial or industrial development on these lands. This is the only way to ensure the assumptions of the risk assessment are indeed valid.

2g Institutional controls need to be on the open for discussion as we consider the Proposed Plan (PP). The institutional controls will be the cost borne by Ketchikan (in tax base and development potential) for the assumptions in the risk assessment. If those assumptions are reasonable then there should be no problem in formalizing them into deed restrictions. If KPC is unwilling to incorporate them in deed restrictions then they are not realistic assumptions and EPA/ADEC should require KPC to do a risk assessment based on exposure assumptions that they are willing to legally record.

2h Institutional controls should include a groundwater monitoring program and specifics of post-closure plan.

2i Post closure plan should also include monitoring of subsurface water in downgradient soils near the Dawson Pt. landfill. This should include testing and monitoring of the wells in Refuge Cove. As noted above, deed restrictions need to be included so that no-future use of landfill and no-public or private development of downgradient land is allowed.

2j Post Closure Plan should have a lifetime that exceeds the lifetime of the landfill. KPC chose to install this facility without a permit. It was improperly constructed (with no liner). It was improperly maintained (no cover until 1997). It was not "designed". And as a consequence unless it is maintained, it can be expected to fall eventually. A Post Closure Plan is needed to ensure that the maintenance is done. We are concerned that by making a post closure plan that stops in 30 years we are dooming the Ketchikan of 40 years from now to a significant health hazard. We believe that this is a violation of the public trust.

2k This is what JSI, the technical advisors to the TDG said in their evaluation of the Proposed Plan,

"From what we have read we don't think the landfill is constructed well enough to provide for secure containment of these materials for the long term. Given the mixed waste that will be disposed of in Ketchikan, it is surprising that an unlined landfill would be allowed as a remedial solution. It is questionable that an unlined landfill would be able to conform to stringent RCRA standards. Has any attempt been made to assess the possible life of the landfill and define responsibilities and procedures to take action when the landfill falls? Has any thought been given to what will happen to the landfill in the event of a catastrophic incident such as the Good Friday Earthquake of 1964? Institutional Controls will be extremely important here."

"Containment/landfill disposal decisions seldom analyze the risk of future failure, damages, and further cleanup. While some Records of Decisions (ROD) claim that

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containment/land disposal techniques are proven and reliable technologies with no implementation problems, there is evidence to the contrary. For example, the RCRA clay cap being installed at the Winthrop Landfill Superfund site in Maine failed in September 1987 before its construction was completed. With the Love Canal, New York site, EPA responded to extensive community comments against landfilling the contaminated material onsite."

"If landfilling is to be the choice technology for dealing with contaminated soil at the site, rather than a permanently effective treatment strategy, the adequacy of the landfill as a long-term solution must be carefully considered based on the adequacy of the landfill design itself. If the soils designated to go in the landfill had already been treated, are then put in the landfill, and than an impermeable cap is put on the landfill, this approach might not be such a bad idea. However, untreated mixed waste contaminated soils are intended for the landfill and, with as much precipitation as Ketchikan receives, failure of the landfill's cap could create a new source of contamination on the site. Again, institutional controls and monitoring will be extremely important here."

"The Institutional Controls should define post closure monitoring schedules and operation and maintenance schedules, as well as monitoring of discharges from the landfill into streams and Dawson Cove, or monitoring of air emissions. It must be defined as to who will review this information in the long term. Will it be ACEC, Ketchikan local government, the general public? "

3. Nearshore fill area

3a. Near-shore fill area remains insufficiently sampled to determine the degree to which PCB's are present and/or migrating to Ward Cove. The assumption that the sample NSFS-04 Represents the highest concentration is based on a leap of faith not reality or science. There is no basis for knowing whether the contaminant is present at that site because it is flowing past it from some upgradient source or is diffusing upgradient or the PCBs are welling up from some source below the sample depth or if the sample was taken from the actual source. The only way of knowing is by taking additional samples or monitoring and testing from PCBs at several locations. We do not agree that the modeling of PCB transport into Ward Cove is based on reliable information. One single sample without any verification or additional information about distribution or information on the potential source of the contamination leaves very little on which to infer the finding that transport into Ward Cove is negligible. We request that additional information be gathered before such a conclusion is drawn. For example we suggest that samples be taken nearer the Cove within the near-shore fill area. We also suggest that holes be drilled into the near-shore fill around NSFS-04 for monitoring of dissolved contaminants such as PCB.

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3b We note that the only samples tested for PCBs toward the facility are PMSA-C1,2,3,4,5. Each of these is contaminated by high levels of PCB (some samples more than 100ppm). It is quite possible that soils along the water side of the facility (in front of the no. 1 and 3 Warehouses and Pulp Prop building are contaminated or even saturated with PCBs.

3c Please note that the Proposed Plan Table 3 inaccurately shows PCBs at the paintshop at 10 ppm.

3d Page 15 of the Proposed Plan mentions that KPC will establish a procedure regarding proper characterization and management of excavated soils from the shore fill subarea, or contaminated soils underneath paved areas or structures. The plan simply states, "these soils will be properly characterized and managed". The plan needs to spell out the details of the procedure, including standards for how the soils will be characterized, how they will be managed, and who will conduct these activities.

4. Demolition

Page 15 of the Proposed Plan mentions that future demolition activities on the pulp mill site that result in the exposure of soils not evaluated in the RI will be followed by site sampling and evaluation to determine if contamination exists. The plan should provide more specifics, for example, how long will the site sampling and evaluation continue once the demolition activities are completed, and who will conduct the sampling and evaluation processes.

5 Institutional Controls

JSP's report on the Proposed Plan says, "The Institutional Controls should contain protocols for predemolition and predevelopment sampling procedures, and provision to notify authorities. The protocols should also contain triggers for action in the event that:

- 1. New information becomes available to lower risk thresholds.
- 2. New information becomes available on the combined effects of contaminants remaining on the KPC site or in the landfill.
- 3. Accumulation of chemicals in soils, ground and surface water, and sediments reach a level above Risk Based Concentrations (RBCs.)
- 4. Development takes place on any portion of the site or near the landfill area.
- 5. The landfill cap and leachate collection and treatment system fails.
- 6. The landfill leaches into groundwater and releases contaminants into Dawson Cove.

b It is unclear who will be responsible for the site in the long term. Will it be EPA, ADEC, or Louisiana-Pacific Corporation? What about after the 30 year time period mentioned in

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the May 1999 Draft Technical Memorandum? The responsible parties must be clarified now as the first step towards responsible management of this site in the future."

TCS is generally concerned that Institutional Controls protect the public health based on the assumptions of the risk assessment and cleanup. If the RP is unwilling to agree to restrictions on future use follow the assumptions revealed or hidden within the risk assessment then there is something wrong. We expect the Institutional Controls to restrict uses of the site that allow contact with areas that either contain contaminants or were not evaluated on the basis of the improbability of contact with humans. With changing economic and social pressures it is vital to EPA/ADEC's responsibility to the public for these assumptions to remain true.

Thank you for the opportunity to submit comments at this time. We hope they will be useful to you and that you will consider them both for their technical merits and for their perspective of concern for community and environmental health.

Respectfully yours,

Eric Hummel
Tongass Conservation Society
rtkp@ptialaska.net
(907) 225-5827

July 19, 1999

To: Mary Siroky
Alaska Department of Environmental Conservation
410 Willoughby Avenue
Juneau, Alaska 99801-1791

RE: Proposed Plan for the Ketchikan Pulp Company Uplands Unit

Thank you for the opportunity for Agency for Toxic Substances and Disease Registry (ATSDR) staff to review the proposed clean up plan for the Uplands Unit at the Ketchikan Pulp Company site. I have reviewed the proposal on behalf of ATSDR and concur with the cleanup action for contaminated soil proposed by the Alaska Department of Environmental Conservation and the U.S. Environmental Protection Agency.

This assessment of the adequacy of the clean up plan is based on currently available data, and critically depends on assurances that use of the property remain industrial or commercial. It is important that the institutional controls described in the proposal be initiated and remain in force to prevent future exposures. As iterated in the proposal, it is also important that if future activity exposes potentially contaminated soil, those soils be evaluated.

The continuation of the arsenic management plan developed for the project is an additional element of the proposal that is particularly pertinent in decreasing human health risks during future industrial or commercial use of the site.

Based on a review of the proposal and supporting documents, the elements of the plan appear to adequately mitigate exposure to contaminated soils on the site. Thank you again for the opportunity to submit comments. You can reach me at 206-553-6978 if I can answer any questions.

Sincerely,

Karen L. Larson, PhD
ATSDR, Region 10

Siroky, Mary

From: KAREN LARSON [LARSON.KAREN@epamail.epa.gov]
Sent: Monday, July 19, 1999 6:30 PM
To: msiroky@envircon.state.ak.us
Subject: Comments on KPC Uplands Proposed Plan



WordPerfect 8.0

Mary, I've attached brief comments on the KPC uplands proposed plan. Thanks, Karen Larson

ATSDR Region 10
1200 Sixth Ave, Suite 1930
Seattle, Wa 98101
208-553-8978

6526 Rodgers Pass
Ketchikan, AK 99901
May 21, 1997

Alaska Dept of Environmental Conservation
c/o Mary Siroky
410 Willoughby Ave
Juneau, AK 99801

Dear Ms Siroky:

Thank you for allowing me the opportunity to comment on the proposed plan for the KPC project.

I have lived in southeast Alaska for 21 years and Ketchikan for 5 years. Despite KPC's allegations on minimal harm in the Ward Cove area, I believe they have polluted Ward Cove for decades.

For the past 3 years I have sport fished in Ward Cove - a place where many salmon and steelhead once traversed. Now a few fish go through the cove, but the numbers are very small. Herring once spawned in Ward Cove but they have been gone for many years also. While hauling boats out in Refuge Cove I have been struck by the absence of sea life. All

of these events point to the extreme degradation of Ward Cove and the adjoining areas. All of this has occurred while ADEC has not made any attempt to have KPC obey the laws which protect water quality. Therefore, I hope ADEC will stay involved in the clean up of Ward Cove and when this process is complete, Ward Cove will not present such a danger to the community.

On page 9, the summary of site contamination mentions that KPC had collected data during routine maintenance. Since KPC polluted Ward Cove, I believe they would be reluctant to report contaminants for which they would be held accountable. Hopefully ADEC will cross check KPC's statistics.

In many KPC sites there is much arsenic, Dioxin, PAH's, PCB's and petroleum. Hopefully ADEC and EPA will work together for a clean site. There should

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be constant checks on the wood waste and ash disposal landfill. With Ketchikan's extreme rain fall, it is probable that many poisons will wash into the cove if rain fall leaches through the geomembrane cap. These pollutants are long term.

The dioxins on Slide Ridge and north of Tongass Highway are of great concern. Dioxins have proven to be carcinogenic for long periods of time and should not be underestimated.

Please treat this area with the greatest care. Ward Cove requires much time and money to repair the damage.

Thank you for your time.

Sincerely,

Aaron McDonald

United States Department of the Interior
OFFICE OF THE SECRETARY
Office of Environmental Policy & Compliance
1689 C Street, Room 119
Anchorage, AK 99501-5126

TELEFAX

TO: Mary Siroky, ADEC
907-465-5362

FROM: Pamela Bergmann

Verification Number: 907-271-5011

Telefax Number: 907-271-4102

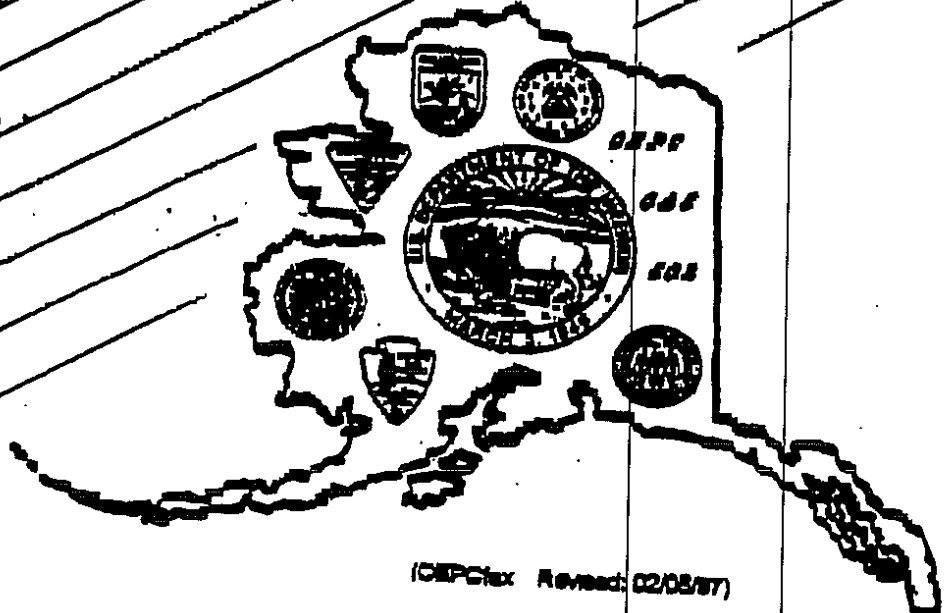
Number of Pages to Follow: TWO

Date: 7-19-99

Time: 3:50 pm

*Comments on the KPC uplands
Operable Unit. Original in the
mail.*

RECEIVED
JUL 19 1999
via fax





United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
1850 C Street, Room 118
Anchorage, Alaska 99501-5126

July 19, 1999
VIA TELEFAX

Alaska Department of Environmental Conservation
ATTN: Ms. Mary Siroky
KPC Project Coordinator
410 Willoughby Avenue
Juneau, Alaska 99801

Re: COMMENTS, Ketchikan Pulp Company Proposed Plan for the Uplands Operable Unit

Dear Ms. Siroky:

In response to your May 14, 1999 request, the Department of the Interior has reviewed the Proposed Plan and the supporting Remedial Investigation (RI) for the Uplands Operable Unit for the Ketchikan Pulp Company (KPC) site near Ketchikan, Alaska. The following comments are offered for your consideration.

Our major concern with the project is arsenic as a contaminant for the uplands operable unit of the KPC cleanup. While on-site soil arsenic concentrations are low enough (total arsenic and percent bioaccessible) to be below toxic concentrations to plants and aquatic organisms, arsenic can, however, bioconcentrate (but not biomagnify) in aquatic organisms. In addition, near-shore fill material could be an arsenic source to the aquatic environment through wind-carried dust, surface erosion, or leaching.

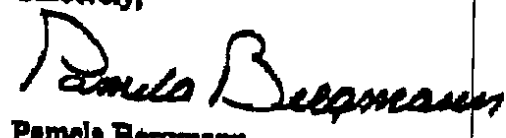
As noted in the July 1998, *Management Plan for Arsenic in Rock and Soil*, prepared by Exponent for the KPC site, final topsoil to be used as landfill cover will be tested for acceptable levels of arsenic (<275 ppm or mg/kg). This concentration would be too high for topsoil use adjacent to aquatic sites. The Washington State Sediment Management Standard for arsenic in marine sediments is 57 ppm. Without data on the bioavailability of arsenic in topsoil or fill material to aquatic organisms, we believe lower arsenic concentrations should be developed for the site that are comparable to the Washington State Standards.

We agree with the conclusions of the RI that arsenic concentrations do not pose a risk to terrestrial wildlife species. Appendix E14 of the RI discusses arsenic bioavailability/bioaccessibility tests replicating mammalian gastrointestinal tract conditions. While these tests have been developed for laboratory mammals, they are not applicable to arsenic bioavailability in fish or marine invertebrates. Fish and shellfish can bioaccumulate arsenic in their tissues, but most of it is as organoarsenicals, which are generally less toxic forms of arsenic (Eisler, R. 1988.

Arsenic Hazards to Fish, Wildlife, and Invertebrates: A Synoptic Review. U.S. Fish Wildl. Serv. Biol. Rep. 85(1.12). 92 pp.). Based on the information included in the RI and the Proposed Plan, it is unclear if an ecologically significant risk to aquatic organisms is present from arsenic concentrations in upland soils that are adjacent to aquatic habitats.

Thank you for the opportunity to provide these comments. Please contact Deborah Rudis of the Juneau Fish and Wildlife Service Office at 907-586-7648, if you have any questions regarding these comments.

Sincerely,



**Pamela Bergmann
Acting Regional Environmental Officer - Alaska**