

3/02/12

**OVERVIEW:
BONDING
REQUIREMENTS
FOR MAJOR
MINE
PROJECTS**

<TARGET><BILL></BILL><SUBJECT>3-02-12 OVERVIEW BONDING
REQUIREMENTS FOR MAJOR MINE
PROJECTS</SUBJECT><COMM>SJUD27</COMM></TARGET>

2012 March 2nd Judiciary Committee Hearing Witnesses

Dr. Margaret Palmer is a Professor of Entomology and Biology at the University of Maryland where she oversees a scientific research laboratory with approximately 120 staff, 20 buildings, and a research fleet. She has over 25 years of experience in research and teaching on coastal ecosystems, watershed science, and stream ecology and restoration. Her past work includes leading a large team of scientists in developing the first national database on river restoration in the U.S., coauthoring a book on The Foundations of Restoration Ecology and serving as an expert advisor on the design of multiple stream and river restoration projects.

Lance Trasky is the owner of Lance Trasky and Associates an environmental consulting company. Mr. Trasky received a Bachelor of Science degree from Michigan State University and did his graduate studies in fisheries at Central Michigan University. Mr. Trasky is a fisheries and habitat biologist with over 32 years of experience in fisheries research and analyzing potential adverse affects of many types of activities on fish and fish habitat. From 1971 to 1974 he served as the Alaska Department of Fish and Games Commercial Fisheries Division salmon area research biologist for the Arctic and Yukon River. Since 1974 he worked for the ADF&G Habitat and Restoration Division in a series of research, planning, and management positions with increasing responsibilities. In 1977 he was promoted to supervisor of the Marine and Coastal Habitat Management section, and in 1980 was made Regional Supervisor for the South Western, and Western Regions of Alaska. In 1983 his responsibilities were expanded to include ADF&G's South Central Region. This included Cook Inlet, Bristol Bay, Prince William Sound, Kodiak Island, and the lower Yukon Kuskokwim River which are the major salmon producing areas of Alaska.

Dr. David Chambers is the president of the CENTER for SCIENCE in PUBLIC PARTICIPATION, a non-profit corporation formed to provide technical assistance on mining and water quality to public interest groups and tribal governments. Dr. Chambers has 35 years of experience in mineral exploration and development – 15 years of technical and management experience in the mineral exploration industry, and for the past 20 years he has served as an advisor on the environmental effects of mining projects both nationally and internationally. He has Professional Engineering Degree in Physics from the Colorado School of Mines, a Master of Science Degree in Engineering from the University of California at Berkeley, and is a registered professional geophysicist in California (# GP 972). Dr. Chambers received his Ph.D. in Environmental Planning from Berkeley where his doctoral dissertation analyzed the U.S. Forest Service's efforts to plan for and manage minerals on the National Forests.



1 of 4 DOCUMENTS

**TRUSTEES FOR ALASKA, ALASKA CENTER FOR THE ENVIRONMENT,
TAMARA SMID and EDWIN TAYLOR, Appellants, v. LENNIE B. GORSUCH,
COMMISSIONER, and ALASKA DEPARTMENT OF NATURAL RESOURCES,
Appellees.**

No. 3879, Supreme Court File. No. S-4047

SUPREME COURT OF ALASKA

835 P.2d 1239; 1992 Alas. LEXIS 102; 23 ELR 20276

August 21, 1992, Decided

SUBSEQUENT HISTORY: Petition for Partial Rehearing Denied January 11, 1994.

PRIOR HISTORY: **[**1]** Appeal from the Superior Court of the State of Alaska, Third Judicial District, Anchorage, Karen L. Hunt, Judge. Superior Court No. 3AN-88-7646 Civil

DISPOSITION: AFFIRMED in part, REVERSED in part, REMANDED

CASE SUMMARY:

PROCEDURAL POSTURE: Appellants, Trustees for Alaska, Alaska Center for the Environment, and citizens (trustees), challenged an order of the Superior Court of the State of Alaska, Third Judicial District, Anchorage, which affirmed an order of appellee Commissioner of Natural Resources (commissioner), approving appellee Alaska Department of Natural Resources' (DNR) issuance of a surface coal mining and reclamation operations permit.

OVERVIEW: The trustees challenged the commissioner's issuance of a surface coal-mining permit and a bond, alleging that the commissioner acted in excess of its jurisdiction and contrary to the Alaska Surface Control Mining Reclamation Act. The lower court approved the commissioner's decision, which affirmed the DNR's issuance of a permit and bond for certain mining activity. The trustees appealed. The court partially reversed the lower court's judgment, concluding that the DNR improperly issued a permit because it refrained from exercising jurisdiction over disputed facilities without a rea-

sonable basis. Likewise, the bond was improperly issued because its amount was erroneously calculated not to cover the total cost of reclamation and its release was not contingent on the completion of wetlands restoration. Nevertheless, the court affirmed the commissioner's approval of the wetlands restoration plan because that decision was not arbitrary, capricious, or without reasonable basis.

OUTCOME: The court reversed the lower court's judgment to the extent that it affirmed the commissioner's approval of the DNR's issuance of a coal-mining permit and a bond. The matter was remanded for reconsideration of proper criteria as to the permit and for recalculation of the bond amount and reconsideration of the bond release criterion. The court affirmed the lower court's judgment to the extent it approved the wetlands restoration plan.

COUNSEL: Michael M. Wenig, Anchorage, for Appellants.

Ellen Toll, Assistant Attorney General, Anchorage, and Charles E. Cole, Attorney General, Juneau, for Appellees.

Richard M. Johannsen, Perkins Coie, Anchorage, Amicus Curiae of Diamond Shamrock-Chuitna Coal Joint Venture.

JUDGES: Before: Rabinowitz, Chief Justice, Burke, Matthews, Compton and Moore, Justices.

OPINION BY: COMPTON

OPINION

[*1241] *OPINION*

COMPTON, Justice.

RABINOWITZ, Chief Justice, with whom MATTHEWS, Justice, joins, dissenting in part.

This appeal challenges several aspects of a decision by the Commissioner of Natural Resources (commissioner) to issue a surface coal mining and reclamation operations permit under the Alaska Surface Coal Mining Control and Reclamation Act (ASCMCRA), *AS 27.21.010-999*. We affirm the commissioner's decision in part, reverse in part and remand for further proceedings consistent with this opinion.

I. FACTUAL AND PROCEDURAL BACKGROUND

Any person who conducts a surface coal mining and reclamation operation in Alaska [**2] must obtain a permit issued under ASCMCRA. *AS 27.21.060(a)*. In January 1985 Diamond Shamrock-Chuitna Coal Joint Venture (Diamond) applied for a permit to conduct surface coal mining on the western side of Cook Inlet. The Alaska Department of Natural Resources (DNR), Division of Mining (Division), approved Diamond's application on March 5 and August 21, 1987, after extensive review, public comment and revisions.

Trustees for Alaska, Alaska Center for the Environment, and several individuals who had participated in the comment and review process (collectively Trustees), appealed the decision to the commissioner under *AS 27.21.150*. After a hearing, the hearing officer issued a proposed decision rejecting Trustees' challenges relevant to this appeal. The commissioner adopted the hearing officer's proposed decision.

Trustees appealed the commissioner's decision to the superior court. *AS 22.10.020(d)*; Alaska Appellate Rule 602(a)(2). The superior court upheld the commissioner's decision, except to the extent that the permit coverage excluded an eleven mile access/haul road from the mine site to Cook Inlet. On rehearing, the superior [*1242] court concluded that the road could be permitted [**3] under a separate ASCMCRA permit. Trustees appeals the superior court's decision raising the following contentions:

1. DNR exceeded its discretion by "refusing to require that the following off-site facilities be covered under Diamond's permit: port stockpiling and loading facilities; coal conveyor to the port; gravel pits; employee housing; access/haul roads; and airstrip."

2. DNR violated ASCMCRA by approving a bond amount which "does not reflect the cost of all reclama-

tion which will need to be performed during the life of the permit."

3. DNR violated ASCMCRA by issuing a permit when Diamond failed to prove "that its wetlands 'revegetation' plan will restore prior 'uses' of the land that were supported by wetlands and . . . will satisfy the applicable performance standards for hydrology, water quality, and wildlife habitat."

4. DNR's bond release criteria violate ASCMCRA because they "do not appear to make bond release contingent on Diamond's successful completion of its wetlands plan."

II. APPLICABLE LAW

The parties disagree as to whether the federal Surface Mining Control and Reclamation Act of 1977 (SMCRA), *30 U.S.C. §§ 1201-1328 (1986)*, [**4] and the regulations promulgated thereunder, are controlling in this case.

SMCRA provides a process whereby a state may assume control of a program to regulate surface mining and reclamation operations. *30 U.S.C. § 1253 (1986)*. The state program must demonstrate, among other things:

that such State has the capability of carrying out the provisions of this chapter and meeting its purposes through --

(1) a State law which provides for the regulation of surface coal mining and reclamation operations in accordance with the requirements of this chapter

(7) rules and regulations consistent with regulations issued by the Secretary pursuant to this chapter.

30 U.S.C. § 1253(a) (1986). Ultimately, the Secretary of Interior must approve the program. *30 U.S.C. § 1353(b) (1986)*. States which do not have approved programs are subject to federally implemented programs. *30 U.S.C. § 1254 (1986)*.

In 1982 the state of Alaska passed ASCMCRA as part of its effort to assume exclusive jurisdiction of surface coal mining and reclamation within the [**5] state. Ch. 29, § 1, SLA 1982; *AS 27.21.010(a)(5)*. The legislature specifically expressed the state's intent "to assume exclusive jurisdiction over the regulation of surface coal mining and reclamation operations in the state under [SMCRA]." *AS 27.21.010(a)(5)*. In enacting ASCMCRA, the legislature also found that:

Section 503 [*30 U.S.C. § 1253*] of [SMCRA] provides that a state wishing to assume exclusive jurisdiction over the regulation of surface coal mining and reclamation operations in the state must have a state law

that provides for the regulation of surface coal mining and reclamation operations *in accordance with the requirements of* [SMCRA].

AS 27.21.010(4) (emphasis added).

In light of this finding and the legislature's express intent to assume exclusive jurisdiction, we do not believe the legislature intended the state act to be inconsistent with the federal act. Moreover, section 505(a) of SMCRA provides that state laws or regulations which are inconsistent with its provisions are superseded by the SMCRA provisions. 30 U.S.C. § 1255(a) (1986). *Accord Russell v. Island Creek Coal Co.*, 182 W.Va. 506, 389 S.E.2d 194, 199 (W. Va. 1989). [**6]

It is clear that both the Congress and the Alaska Legislature intended that the state program comply with SMCRA. Therefore, ASCMCRA should be construed to be consistent with SMCRA.¹

1 However, while federal *regulations* promulgated under SMCRA may provide helpful guidance, they do not set a standard against which state law must be measured. In this context, Alaska law is superseded only where it is inconsistent with the federal *statute*. 30 U.S.C. § 1255.

[*1243] III. FAILURE TO REQUIRE INCLUSION OF CERTAIN OFFSITE FACILITIES IN DIAMOND'S PERMIT.

Trustees argues that Diamond's permit should have covered the eleven mile access/haul road and adjacent conveyor from the mine site to a port, port facilities, a solid waste disposal facility, gravel pits, and a housing facility with an air strip and access road. Trustees asserts that these facilities fall within the broad statutory definition of "surface coal mining and reclamation operation" and therefore require an [**7] ASCMCRA permit. Trustees also argues that DNR's regulations implementing ASCMCRA plainly require a permit for these facilities. DNR argues that the determination of which facilities are "resulting from or incident to" the mine operation, which must be included in the permit, is within the special expertise of the commissioner and that the commissioner's decision was reasonable and based on policy considerations.

We defer to an agency decision which involves complex subject matter or fundamental policy considerations unless the decision is arbitrary, capricious or without a reasonable basis. *Trustees for Alaska v. State, Dep't of Natural Resources*, 795 P.2d 805, 809 (Alaska 1990). "The reasonable basis standard is appropriate for determining whether the agency decision has been undertaken 'in the manner required by law.' One indication whether

an agency has proceeded in the manner required by law is compliance with its own regulations." *Jager v. State*, 537 P.2d 1100, 1107-08 (Alaska 1975).

Any person who conducts a "surface coal mining and reclamation operation" must first obtain an ASCMCRA permit. AS 27.21.060. "'Surface [**8] coal mining and reclamation operation' means a surface coal mining operation and the activities necessary and incidental to the reclamation of that operation after August 3, 1977. . . ." AS 27.21.998(16).² The definition of "surface coal mining operations" in ASCMCRA is broad, and includes more than the actual mining activities. AS 27.21.998(17) provides:

"Surface coal mining operations" means:

(A) an activity

(i) conducted on the surface of land in connection with a surface coal mine or, to the extent that the activity affects the surface of land, conducted in connection with an underground coal mine;

(ii) the products of which enter commerce or the operation of which directly or indirectly affects interstate commerce;

(iii) which may include contour, strip, auger, mountain top removal, boxcut, open pit, and area mining; the use of explosives and blasting; on-site distillation or reorting, leaching, or other chemical or physical processing of coal; and loading of coal for interstate commerce at or near the mine site;

(iv) other than an activity related to the extraction of coal incidental to the extraction of other minerals under which the coal extracted does not exceed [**9] 16 2/3 percent of the total tonnage of coal and other minerals removed annually for purposes of commercial use or sale and other than a coal exploration activity subject to this chapter; and

(B) the areas on which an activity described in (A) of this paragraph occurs or where the activity disturbs the natural land surface, including adjacent land, the use of which is incidental to the activity; and affected by the construction of new roads or the improvement or use of existing roads to gain access to the site of the activity and for haulage; and excavation, workings, impoundments, dams, ventilation shafts, entry ways, refuse banks, dumps, stockpiles, overburden piles, spoil banks, culm banks, tailings, holes or depressions, repair areas, storage areas, processing areas, shipping areas, and [*1244] other areas upon which are situated structures, facilities, or other property or materials on the surface resulting from or incidental to the activity. . . .

AS 27.21.998(17).³

2 This is essentially identical to the federal definition of "surface coal mining and reclamation operations" found in SMCRA § 701, 30 U.S.C. § 1291(27) (1986).

[**10]

3 This definition closely parallels the federal definition of "surface coal mining operations" found in section 701 of SMCRA. 30 U.S.C. § 1291(28) (1986). The United States Court of Appeals for the District of Columbia Circuit has construed SMCRA as conferring considerable discretion on the regulatory authority in defining the scope of its own jurisdiction. See *National Wildlife Federation v. Lujan*, 928 F.2d 453, 461-63 (D.C. Cir. 1991); *National Wildlife Federation v. Hodel*, 839 F.2d 694, 743-45 (D.C. Cir. 1988).

In this case, the Division refused to exercise ASCMCRA jurisdiction over the disputed facilities, citing several reasons. ⁴ The Division made no mention in its decision of state regulations relating to the range of facilities which require permitting under ASCMCRA. Instead, it relied on the state statutory language and federal case law. On review, the commissioner's hearing officer accepted the Division's decision as a "reasonable one" in light of the "good policy reasons which have [**11] been articulated by the Division for terminating its jurisdiction at [the secondary crusher]." However, in the same decision, the hearing officer noted that "11 [Alaska Administrative Code (AAC)] 90.155 provides that a permit is required for roads and support facilities outside of a mine's permit area."

4 These reasons included:

(1) DNR has discretion in determining the extent of its jurisdiction with respect to offsite facilities which do not include coal processing;

(2) since coal processing is finished at the secondary crusher, the coal should be considered loaded for interstate commerce at that point and therefore DNR's jurisdiction under ASCMCRA ends;

(3) the hauling from the secondary crusher to the port will be operated by a separate entity;

(4) ASCMCRA "describes how a mining operation should be conducted, but provides little guidance to describe how facilities such as the port and employee housing should be operated."

(5) DNR does not have the expertise to regulate the construction of these offsite facilities;

(6) the facilities will require other permits which will address environmental concerns; and

(7) the location of the road, conveyor, and port have not yet been determined, therefore they could not have been included in the present permit.

[**12] We conclude that DNR's decision to refrain from exercising jurisdiction over the disputed facilities lacked a reasonable basis. Further, we conclude that the statutory definition of "surface coal mining operations" in AS 27.21.998(17) encompasses the facilities which are disputed in this case. Our conclusions are supported by the language of the statute and by regulations promulgated by DNR which clearly require permitting of many of the disputed facilities.

The state legislature defined "surface coal mining operations" to mean, inter alia, "other areas upon which are situated structures, facilities, or other property or materials on the surface *resulting from or incidental to* the activity." AS 27.21.998(17)(B) (emphasis added). The disputed facilities, including the conveyor, airstrip, access roads, gravel pit, solid waste disposal facility, employee housing facilities, port and the coal storage facilities, would not be necessary in the absence of the coal mining operation. They will be built to support the mining activity, will be proximate to the mine and will be located in an otherwise generally undeveloped area. The disputed facilities can only be characterized as facilities [**13] which result from or are incidental to the mining operation. The seven reasons DNR gave for declining jurisdiction simply do not provide a reasonable basis for a different conclusion.

The lack of a reasonable basis for DNR's determination is highlighted by DNR's failure to comply with its own regulations. An agency is bound by the regulations it promulgates. See 2 Kenneth C. Davis, *Administrative Law Treatise* § 7:21 at 98 (2d Ed. 1979). An agency has not acted in the manner required by law if its actions are not in compliance with its own regulations. *Jager*, 537 P.2d at 1107-08.

[*1245] In deciding that the disputed facilities were outside its jurisdiction, DNR apparently overlooked its own regulation which provides as follows:

A permit is required for all roads, transportation, support facilities and utility installations included in 11 AAC 90.491, whether or not these facilities are outside the permit area of any particular mine. These facilities must comply with all performance standards of this chapter determined to be applicable by the commissioner and must comply with the appropriate bonding provisions of 11 AAC 90.201 -- 11 AAC [**14] 90.207. In determining which requirements of this chapter are applicable, the commissioner will consider whether any given facility may be subject to the requirements of some other governmental permitting authority.

11 AAC 90.155.

The first sentence of this regulation is clear and unambiguous: a permit is required for all the offsite facilities listed in 11 AAC 90.491.

The facilities listed in 11 AAC 90.491 which must be designed, constructed, used and maintained in a manner which prevents or minimizes environmental damage include:

roads, railroad loops, spurs, sidings, surface conveyor systems, chutes, aerial tramways, airfields, ports, docks, or other transportation facilities, mine buildings, coal loading facilities at or near the minesite, coal storage facilities, storage facilities, fan buildings, hoist buildings, preparation plants, sheds, shops, and other support facilities

11 AAC 90.491(a) (emphasis added). Clearly many of the disputed facilities in this case are explicitly identified in this list. The facilities not explicitly identified are fairly encompassed by the phrase "other support facilities."

As defined by *AS 27.21.998(17)(B)*, [**15] "surface coal mining and reclamation operation" encompasses all of the disputed facilities, including the conveyor, airstrip, access roads, gravel pit, solid waste disposal facility, employee housing facilities, port and the coal storage facilities. Therefore, these facilities must be permitted in accordance with ASCMCRA.

IV. INCLUSION OF OFFSITE FACILITIES IN THE SAME ASCMCRA PERMIT AS THE MINE ITSELF.

Trustees argues that the superior court erred in its decision on rehearing in concluding that the access/haul road could be permitted under a separate ASCMCRA permit. Trustees asserts that the plain language and logic of ASCMCRA contemplate a single permit for an entire surface coal mining operation. It also asserts that allowing separate permits is inconsistent with the statute's remedial goals because it will allow DNR to ignore the cumulative or synergistic impacts of the combined activities.

DNR argues that neither ASCMCRA nor the regulations directly address whether a separate permit is required. It contends that 11 AAC 90.155 implies that a separate permit may be appropriate. DNR claims its interpretation of the regulation is reasonable and entitled to deference. DNR also [**16] asserts that cumulative impacts must be considered whether or not the offsite facilities are separately permitted.

"A permit is required for all roads, transportation, support facilities and utility installations included in 11 AAC 90.491, whether or not these facilities are outside

the permit area of any particular mine." 11 AAC 90.155. The implication of this language is that support facilities may have separate permits from the individual mines they support. DNR's interpretation of its own regulations is neither plainly erroneous nor inconsistent with the regulations. Therefore it should be given effect unless it is contrary to ASCMCRA. *AS 44.62.030*.

The portions of ASCMCRA cited by Trustees do not on their face require that a single permit cover the entire mine operation and related facilities. Trustees urges that ASCMCRA precludes DNR's interpretation because it prohibits a person from conducting a "surface coal mining and reclamation operation in the state without a [*1246] permit for that operation." *AS 27.21.060*. We find nothing in this statutory language which requires us to interfere with DNR's interpretation that ASCMCRA allows separate permits to be issued for individual [**17] mines or for support facilities within a larger mining area.

However, statutory language does support Trustees' related argument that DNR may not ignore cumulative effects of mining and related support facilities by unreasonably restricting its jurisdiction and disregarding the effect of activities outside that jurisdiction.

One of ASCMCRA's purposes is "to prevent the adverse effects to society and the environment resulting from unregulated surface coal mining operations." *AS 27.21.010(b)(1)*. Other express purposes are "to assure that surface coal mining operations are conducted in a manner that will prevent unreasonable degradation of land and water resources," *AS 27.21.010(b)(3)*, and "to strike a balance between protection of the environment and other uses of the land and the need for coal as an essential source of energy." *AS 27.21.010(b)(7)*. These purposes cannot be accomplished by ignoring cumulative impacts.⁵ Based on the policies inherent in these purposes, we conclude that DNR may not ignore cumulative effects of mining and related support facilities by unreasonably restricting its jurisdiction or by permitting facilities separately. These purposes require that at the [**18] time DNR reviews any ASCMCRA permit application it consider the probable cumulative impact of all anticipated activities which will be a part of a "surface coal mining operation," whether or not the activities are part of the permit under review. If DNR determines that the cumulative impact is problematic, the problems must be resolved before the initial permit is approved.⁶

⁵ DNR is specifically required to consider cumulative hydrologic impacts. *AS 27.21.180(c)(3)*.

⁶ This type of "concept approval" is necessary in order to avoid a situation where, because of industry investment and reliance upon a past

mining permit approval, DNR might feel compelled to approve a subsequent permit for a related but environmentally unsound support facility. In some cases, this may require concurrent, as opposed to serial, review of separate, related permit applications. In other cases, anticipated problems resulting from cumulative impacts may require that approval of an initial permit be conditioned upon satisfactory resolution of the problems anticipated in subsequent permits.

[**19] After reviewing the record, we are unable to conclude that in approving Diamond's permit application, DNR substantially complied with its obligation to consider the cumulative environmental effects of the entire mining operation. DNR had the benefit of the United States Environmental Protection Agency's (EPA) analysis of the cumulative impacts of the mine operation, including the effects of facilities which must be permitted but were excluded by DNR from the Diamond permit at issue.⁷ However, DNR has not directed this court to portions of its decision in which it meaningfully considered the effects of the facilities it erroneously determined were not within its jurisdiction.⁸ Because of this [*1247] lapse, this case must be remanded to DNR for consideration of the cumulative environmental effects of the entire "surface coal mining operation" including the conveyor, airstrip, access roads, gravel pit, solid waste disposal facility, employee housing facilities, port and the coal storage facilities.

7 The EPA specifically considered the effects of these offsite facilities on wildlife, groundwater hydrology, surface water hydrology, and biology. Further, the EPA considered the cumulative impacts resulting from the development of other coal or natural resource projects in addition to the Diamond project.

[**20]

8 In an appendix to its March 1987 findings, DNR made a "cumulative hydrologic impact assessment." However, it is not clear that the conveyor system or the port were considered in this assessment. Further, it appears that DNR was aware of but consciously chose not to consider the cumulative effects of the port and conveyor on moose in the area. DNR found as follows:

Through the development of all facilities associated with the mine operation (port, conveyor system, and mine site) a portion of the winter range will be disrupted, movement corridors may be changed due to the conveyor, and a section of one rutting area will be lost. The overall effect of these habitat disruptions may be quite different from the impacts associated with only the loss of

part of a rutting area. . . . Although it is necessary to be aware of the potential for these types of cumulative impacts to occur, the authority to require monitoring and mitigation under the Surface Mining Program extends only to impacts directly resulting from operations under this permit.

V. APPROVAL OF BOND AMOUNTS INADEQUATE TO COVER THE [**21] TOTAL COST OF RECLAMATION.

Trustees argues that DNR erred in calculating the bond amounts by assuming that Diamond will have complied with all the reclamation requirements on schedule up until the time of any default. Trustees contends that this assumption violates the plain meaning and spirit of the bonding requirements of *AS 27.21.160* and DNR's regulations on bonding amounts. Trustees asserts that there is no reasonable basis for assuming that all ongoing reclamation requirements will be fully complied with up until forfeiture. Trustees also argues that it is unreasonable to assume that DNR's enforcement power will promptly remedy violations.

DNR asserts that bond amounts are left to the discretion of the commissioner and that they cover the full cost of reclamation which may be required if the operation were to shut down at any given point. DNR points out that Diamond must submit annual status reports and that DNR can require additional bonding.

Trustees argues that the issue of the adequacy of the bond required is a legal one. In its view, the substitution of judgment standard applies. DNR urges review on the reasonable basis standard because bond calculations require administrative [**22] expertise.

Alaska Statute 27.21.160(a) provides:

The amount of the bond required for an area within the permit area shall be determined by the commissioner and shall reflect the probable difficulty of the reclamation considering the topography, geology, hydrology, revegetation potential, and similar factors relating to the area. The amount of the bond must be sufficient to assure the completion of the reclamation plan by the commissioner in the event of forfeiture . . .

AS 27.21.160(a).

Under the statute, the bond calculation involves technical analysis and the exercise of agency expertise and is clearly left to the discretion of the commissioner. We apply a "rational basis" review where an issue "requires resolution of policy questions which lie within the agency's area of expertise and are inseparable from the facts underlying the agency's decision." *Earth Resources Co. of Alaska v. State, Dep't of Revenue*, 665 P.2d 960, 964 (*Alaska* 1983).

However, Trustees does not challenge DNR's technical analysis or the factual sufficiency of the bond calculations. Rather, it asserts that DNR's assumption that a permittee will have no permit violations [**23] at the time of default is unreasonable and contrary to the statute.

This challenge does not implicate agency expertise. "Where the knowledge and experience of the agency is of little guidance to the court or where the case concerns 'statutory interpretation or other analysis of legal relationships about which the courts have specialized knowledge and experience,'" we may substitute our own judgment for that of the agency's. *Id.* at 965, quoting *Kelly v. Zamarello*, 486 P.2d 906, 916 (Alaska 1971).

In its decision, the Division rejected Trustees' criticism of its assumption that the regrading and reclamation schedules in the application will be followed:

To do as the commenter suggests, which is to determine the bond amount as though no reclamation at all has taken place during the permit term, is unreasonable and would result in the state holding a considerable [sic] larger bond than would ever be necessary to reclaim the site. If, as suggested . . . the applicant were to disregard regrading and revegetation schedules in the application, this would constitute a violation of the permit. [DNR] is required to inspect the [**24] site on a monthly basis, and has the [*1248] power to enforce the permit provisions should a violation occur. *Basing the bond amount on the assumption that the applicant will violate permit terms is unfair and unnecessary.*

(Emphasis added). DNR adopted the Division's reasoning.

We believe the Division's reasoning and its assumption are fundamentally flawed. We conclude that ASCMCRA *requires* DNR to "base[] the bond amount on the assumption that the applicant will violate permit terms."

The purpose of the bond is to insure "faithful performance of the requirements" of ASCMCRA and "to assure the completion of the reclamation plan . . . in the event of forfeiture." *AS 21.27.160(a)*. A performance bond is drawn upon only where there has been a failure of performance. The bond would be unnecessary absent the assumption that a permittee may not fully perform its obligations. The amount of the bond is academic absent a failure.

In light of these elementary facts, we believe it unreasonable and indeed illogical to conclude that DNR's enforcement efforts will assure a permittee's full compliance with reclamation obligations until a forfeiture. DNR's enforcement powers cannot [**25] prevent per-

mit violations. If they could, performance bonds would not be necessary.

The Division intimated that if reclamation does not progress as scheduled, adjustments could be made in the bond amount. But if the operation folds at the point where DNR discovers reclamation violations, a bond calculated under the assumption of compliance up to that point will necessarily be inadequate. The bonds required by DNR will only be adequate to assure full reclamation in the event that forfeiture occurs at a point when no violations exist. We conclude that the Division's assumption that no violations will exist at the time of forfeiture is unreasonable.⁹

9 One of the grounds for forfeiture of a bond is a willful or unwarranted pattern of violations. 11 AAC 90.617(a).

DNR should recalculate the bonds so that they are "sufficient to assure the completion of the reclamation plan by [DNR] in the event of forfeiture." *AS 27.21.160(a)*. This does not necessarily mean that DNR must require Diamond to post a bond equal to the [**26] total reclamation cost. DNR should calculate the bond assuming forfeiture at a time when unabated permit violations exist, though it need not assume that *no* reclamation will have taken place.

VI. APPROVAL OF DIAMOND'S WETLANDS RESTORATION PLAN.

A. Restoration of Ecological Functions and Revegetation.

Trustees argues that ASCMCRA and SMCRA require restoration of ecological functions provided by wetlands and that the revegetation plan approved by DNR does not satisfy those requirements. Trustees asserts that: (1) the plan is too vague; (2) restoration sites will not be chosen to maximize their effectiveness, but rather they will be based on the regrading; (3) the plan does not discuss how it will replace ecological functions or why that may be infeasible or unnecessary; (4) DNR could not have reasonably determined that the plan was adequate from a hydrologic standpoint because DNR did not have a hydrologist review it; (5) DNR did not consider the adequacy of the plan from a water quality standpoint; and (6) DNR did not consider whether the plan is sufficient from the standpoint of wildlife habitat.

ASCMCRA directs the commissioner to propose regulations consistent with [**27] the environmental performance standards of SMCRA and directs that all permits issued require compliance with those environmental performance standards. *AS 27.21.210*. Trustees has not pointed to any evidence that Diamond's application violates the performance standards, but claim that

DNR approved Diamond's application without [*1249] sufficient evidence that it will restore wetlands functions.¹⁰

10 The Division required by stipulation that Diamond submit a wetlands plan within six months of permit approval. The Division removed the stipulation when Diamond submitted the plan.

The pre-mining and post-mining use of the area to be disturbed is fish and wildlife habitat. The Division accepted the wetlands plan despite concerns that some of the peat-filled depressions Diamond proposed to create might be too small to function effectively. The Division did not require modification because the restoration plan was a trial program and it would be reevaluated at the permit midterm review. DNR found that the reclamation [**28] plan with the wetlands restoration plan was sufficient to restore the disturbed area to a condition capable of supporting fish and wildlife.

DNR's assessment of the adequacy of the wetlands restoration plan is necessarily speculative and it involves complex subject matter which is within the expertise of the agency. Therefore, we will defer to DNR's decision unless it is arbitrary, capricious, or without a reasonable basis. *Trustees for Alaska, 795 P.2d at 809.*

In our view, DNR's acceptance of the plan meets the reasonable basis standard. The plan describes how wildlife habitat will be recreated by constructing peat-filled depressions which will be replanted with various plant species. In addition, three sediment ponds will be inoculated with plant and insect life forms, and seedlings will be planted to provide a vegetation canopy layer for the benefit of wildlife. In light of the complexity of the subject matter, we will defer to DNR's conclusion that these measures will be adequate to restore wildlife habitat.¹¹

11 We are not persuaded by Trustees' other objections to the restoration plan.

[**29] B. *DNR's Bond Release Criteria.*

Trustees asserts that DNR must require Diamond to successfully reestablish wetlands as a criterion for bond release. Trustees argues that "completion of the reclamation plan" includes wetlands restoration.

In its decision, the Division made the following comments in response to Trustees' concern that DNR would not evaluate the success of the wetlands restoration before releasing the bond:

[DNR] intends to evaluate any bond release application in terms of the revegetation success criteria of plant cover, species diversity and woody plant density (11 AAC 90.451 - 11 AAC 90.457). Largely because the

wetlands areas are small, separate sampling of the restored wetlands has not been required. Rather, these would be considered as an inclusion within the surrounding vegetation type. Furthermore, there is no specific authority in [ASCMCRA] to support establishing additional bond release criteria to determine whether wetlands have been reestablished successfully (i.e., retention of water, utilization by wildlife, growth of *Sphagnum*, etc.). For this reason, and because of the trial nature of the program, no such demonstration has been required.

[**30] In our view, no reasonable basis exists for the Division's conclusions. Under ASCMCRA, bond release is "conditioned on faithful performance of the requirements of this chapter and the permit. . . . The amount of the bond must be sufficient to assure the *completion of the reclamation plan* by the commissioner in the event of forfeiture . . ." *AS 27.21.160(a)*. This makes it clear that a performance bond must be conditioned on completion of the reclamation plan contained in the permit, irrespective of other specific bond release criteria. The record demonstrates that wetlands restoration is part of the reclamation plan. The commissioner may not release all or part of a bond if part of the permit area covered by the bond is in violation of the performance standards established by regulation. *AS 27.21.170(d)*.

AFFIRMED in part, REVERSED in part and RE-MANDED. The superior court is directed to remand the permit application to DNR for consideration of the cumulative [*1250] effects of all activities which are part of the "surface coal mining operation," for reconsideration of the amount of the bond and for further proceedings in accordance with this opinion.

DISSENT BY: RABINOWITZ (In Part)

DISSENT

[**31] RABINOWITZ, Chief Justice, with whom MATTHEWS, Justice, joins dissenting in part.

I disagree with part IV of the court's opinion, holding that DNR's interpretation of its regulations as allowing separate ASCMCRA permits for different components of a surface coal mining operation is neither "plainly erroneous nor inconsistent with the regulations" or with ASCMCRA.

Alaska Statute 27.21.060 provides in part: "a person may not conduct a surface coal mining and reclamation operation in the state *without a permit* for that operation." (Emphasis added.) See also SMCRA § 506(a), 30 U.S.C.A. § 1256(a); 11 AAC 90.002(c). The language of *AS 27.21.060* contemplates that a single permit will control all components of a "surface coal mining operation."

The applicable definition of a "surface coal mining operation" includes the actual mine site and all facilities and structures, either off-site or on-site, that are "resulting from or incidental to" the mining. *AS 27.21.998(17)*. Subsection (A) defines "surface coal mining operation" in terms of "an activity" conducted at the actual mine site. *AS 27.21.998(17)(A)*. The definition of a surface coal mining [**32] operation is further broadened in subsection (B):

(B) the areas on which an activity described in (A) of this paragraph occurs or where the activity disturbs the natural land surface, including adjacent land, the use of which is incidental to the activity; and affected by the construction of new roads or the improvement or use of existing roads to gain access to the site of the activity and for haulage; and excavation, workings, impoundments, dams, ventilation shafts, entry ways, refuse banks, dumps, stockpiles, overburden piles, spoil banks, culm banks, tailings, holes or depressions, repair areas, storage areas, processing areas, shipping areas, and other areas upon which are situated structures, facilities, or other property or materials on the surface resulting from or incidental to the activity.

AS 27.21.998(17).

While DNR's assertion that "11 AAC 90.155 . . . infers that a separate permit is appropriate" for the access/haul road is a plausible interpretation of that regulation, I disagree with the court's conclusion that DNR's interpretation is not "inconsistent with the regulations." (Majority Op. 12) In my view, DNR's separate permit interpretation is in direct contravention [**33] with the text of another DNR regulation, 11 AAC 90.002, which is substantially similar to *AS 27.21.060(a)*. 11 AAC 90.002(a) provides in part "no person may conduct exploration activities or surface coal mining and reclamation operations without a permit." (Emphasis added.)

The DNR regulations and DNR's interpretation of those regulations and ASCMCRA, allowing the issuance of separate permits for the access/haul road and the remainder of the mining operation, are contrary to the express purposes of ASCMCRA. Among the enumerated purposes of the statute are "to prevent the adverse effects to society and the environment resulting from unregulated surface coal mining operations" and "to assure that surface coal mining operations are conducted in a manner that will prevent unreasonable degradation of land and water resources." *AS 27.21.010(b)(1)* and (3). The court reasons that to accomplish the purposes of the Act,

at the time DNR reviews any ASCMCRA permit application it [must] consider the probable cumulative impact of all anticipated activities which will be a part of a 'surface coal mining operation,' whether or not the activities are part of the permit under review.

(Majority [**34] Op. 14) I do not believe that the court's mandated "concept approval," in the context of an operation whose anticipated components will be covered by separate permits, is an adequate substitute for the safeguards of the single permit requirement of *AS 27.21.060* in light of the goal of assuring that the agency consider [*1251] the cumulative or synergistic effects of a coal mining operation. In contrast to the anticipated "concept approval" approach adopted by the court, I believe that the requirement, found in *AS 27.21.060*, of a single permit will compel the permit applicant to plan and design the operation and its various components in more concrete and greater detail. This should lead to consideration by the permit applicant and DNR of the operation's cumulative effect in a more careful and comprehensive manner.

Courts have disallowed segmentation of a proposed project for the purpose of preparing environmental impact statements (EISs) to assure that the cumulative effects of the project are adequately considered under the National Environmental Policy Act (NEPA). *Thomas v. Peterson*, 753 F.2d 754 (9th Cir. 1985); see also *Kleppe v. Sierra Club*, 427 U.S. 390, 410-411, 49 L. Ed. 2d 576, 96 S. Ct. 2718 (1976); [**35] *Save the Yaak Committee v. Block*, 840 F.2d 714 (9th Cir. 1988). In discussing a Forest Service plan to prepare an EIS for the logging access road and a separate EIS for each individual timber sale area afterward, *Thomas* cautioned that allowing consideration of cumulative impacts after a portion of the project is already approved "swings the balance decidedly in favor of timber sales even if such sales would have been disfavored had road and sales been considered together before the road was built." 753 F.2d at 760. While I recognize that in some instances phased implementation of a mining operation may require a reopening and modification of the ASCMCRA permit, the same danger that *Thomas* counselled against inheres in the instant case. Thus, I conclude that *AS 27.21.060* assures that the cumulative and synergistic effects are adequately addressed by its requirement of a single ASCMCRA permit for all components of a surface coal mining operation.

ALASKA STATE LEGISLATURE



SENATOR HOLLIS FRENCH

January 20, 2011

Commissioner Dan Sullivan
Department of Natural Resources
550 W. 7th. Avenue, Suite 1400
Anchorage, AK 99501

Commissioner Sullivan,

PacRim Coal has applied to the Department of Natural Resources for a permit to mine coal in the Chuitna watershed. I am writing to you out of concern regarding one aspect of the permitting process and that is the setting of a reclamation bond under AS 27.21.160 of the Alaska Surface Coal Mining Control and Reclamation Act (ASCMCRA).

PacRim's plan for the mine's development would remove 11 miles of Middle Creek, a major tributary of the Chuitna River and a stream identified by the Department of Fish and Game as "significant to salmon." By 'remove' I mean just that: the plan calls for diverting all of the water out of the streambed, the removal of more than 300 feet of overburden and then mining the exposed coal seams.

While there is currently no law on the books that prohibits mining through a stream – in contrast to the logging rules which require buffers around salmon streams – the reclamation bond statute stands as a significant hurdle for this project to clear. The bond is in place to make certain that PacRim fulfills its obligation to complete its reclamation plan. The difficult issue you face is setting the amount of the reclamation bond given the absence of any precedent in Alaska for permitting mining in active salmon streams.

There is some legal precedent, however, on this particular question. *Trustees of Alaska v. Gorsuch*, 835 P.2d 1239 (1992) involved several disputes surrounding a proposal to mine coal in the Chuitna area by the Diamond Shamrock-Chuitna Coal Joint Venture, a

company related to PacRim through the common ownership interests of Richard Bass and William Herbert Hunt and the Hunt family of Texas in both companies. I have attached a Legislative Research Report outlining this connection in detail. The *Trustees* case in part took up the question of whether DNR, in setting the amount of the reclamation bond, may assume compliance with the requirements of the reclamation plan. Drawing from earlier cases, the court concluded that ASCMCRA requires DNR to base the bond amount on the assumption that the applicant will violate its permit terms. 835 P. 2d at 1248. This assumption takes on a greater significance given the difficulty of PacRim's restoration obligations.

Indeed, many scientists are skeptical of PacRim's plans. For example, Professor Palmer of the University of Maryland in her "Report on Chuitna Coal Project of PacRim Coal" points out that the company will be attempting to "create a stream after all the natural flow paths and landscape topography have been destroyed. This is not even in the realm of anything that has been scientifically tested and is certainly not within the realm of what is considered ecological restoration." The report also notes that "Even with far less damage to a site, stream restoration projects that involve channel modification have an extremely high failure rate."

I hope it is clear from the foregoing that in my view the project as proposed should not be permitted. Should you come to a different conclusion, please keep these considerations in mind as you weigh the amount of the reclamation bond.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Hollis French", with a stylized flourish at the end.

Senator Hollis French



LEGISLATIVE RESEARCH SERVICES

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Division of Legal and Research Services
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Memorandum

TO: Senator Hollis French
FROM: Susan Haymes, Legislative Analyst
DATE: October 25, 2010
RE: Chuitna Coal Project Developers
LRS Report 11.062

You asked if there is any business connection between Diamond Shamrock Chuitna Coal Joint Venture and PacRim Coal, LP.

The short answer is yes, there is a business connection between Diamond Shamrock Chuitna Coal Joint Venture (DSCCJV) and PacRim Coal, LP. The two companies have been involved in efforts to develop the Chuitna Coal Project located 45 miles west of Anchorage.¹ The companies are connected through the ownership interest of Richard Bass and William Herbert Hunt and the Hunt family of Texas, in both companies. Mr. Bass and the Hunt family have been involved in the Chuitna coal property since 1968, first as the Bass-Hunt-Wilson (BHW) group, then as a partner in the DSCCJV, and more recently as controlling owners of PacRim.²

The Alaska Department of Natural Resources (DNR) granted coal leases to the Bass-Hunt-Wilson (BHW) group for the Chuitna area in the early 1970s. In 1981, the BHW group formed the Diamond Shamrock Chuitna Coal Joint Venture with the Diamond Shamrock Corporation, and began drilling and exploratory work.³ In October, 1983, Diamond Shamrock Joint Venture filed a Coal Exploration application with DNR to develop the coal leases held by BHW.⁴ Robert Stiles signed the application as the representative of the joint venture. The operating partner for the project was the Diamond Alaska Coal Company, a subsidiary of Diamond Shamrock Corporation. In 1990, the DRven Corporation became the managing partner in the project.⁵ Robert Stiles, now president of DRven, continued as the project manager.

In a presentation to the Resource Development Council in Anchorage, Alaska on December 1, 2005, Robert Stiles described the evolution of the companies involved in the Chuitna coal project. According to Mr. Stiles, the Diamond Shamrock Joint Venture was an owner and leaseholder in the Diamond Chuitna Coal

¹ The Chuitna Coal Project is a surface coal mining and export development proposal for an ultra low sulfur, sub bituminous coal resource located in the Beluga Coal Field of South-central Alaska, approximately 45 miles west of Anchorage.

² The BHW group included Richard D. Bass, William "Herbert" Hunt, and Starkey Wilson. William Herbert Hunt is the son of H.L. Hunt, the founder of Hunt Oil. Herbert Hunt founded Petro-Hunt, LLC, an independent energy corporation. The Hunt Family or "Hunt Group," through Petro-Hunt LLC and Petro-Hunt International LLC (Petro-Hunt Group) has business interests primarily in oil and gas exploration, development and production, gas processing, pipeline transportation and refining. More information on Petro-Hunt and the Hunt Group can be accessed at <http://www.petro-hunt.com/About.htm>.

³ In 1981, the Diamond Shamrock Corporation formed the Diamond Shamrock Coal Company with headquarters in Lexington, Kentucky. In 1987, the Arch Mineral Corporation, owned in equal parts by the Hunt family and Ashland Oil Company purchased Diamond Shamrock Coal. "Shamrock to Sell Coal Subsidiary," *New York Times*, April 17, 1987.

⁴ The 1983 Coal Exploration application can be accessed at http://dnr.alaska.gov/mlw/mining/largemine/chuitna/pdf/exploration_permit_0283795.pdf.

⁵ The DRven Corporation, a Texas company, registered in Alaska in April 1990. According to the Department of Commerce, Community and Economic Development, DRven filed its last Biennial Report in 2006, <https://myalaska.state.ak.us/business/soskb/Corp.asp?249391>. Russ Kirkham, coal regulatory program manager, Department of Natural Resources, notes that the Hunt family remained involved in the project throughout, but DRven held the permits for the project during this time. Mr. Kirkham can be reached at 907.269.8650.

Project until about 1994. However, Richard Bass and the Hunt family have had an ownership interest in the Chuitna Coal Project since its inception.⁶

In 2005, control of the project transferred to PacRim Coal, LP, a Delaware corporation, controlled by Richard D. Bass, William Herbert Hunt, and the William Herbert Hunt Trust Estate.⁷ PacRim is the current owner and developer of the Chuitna Coal Project.⁸ The current manager of the project is Dan Graham.

We hope this information is helpful. If you have questions or need additional information, please let us know.

⁶ The presentation can be accessed at <http://www.akrdc.org/membership/events/breakfast/0506/stiles.pdf>.

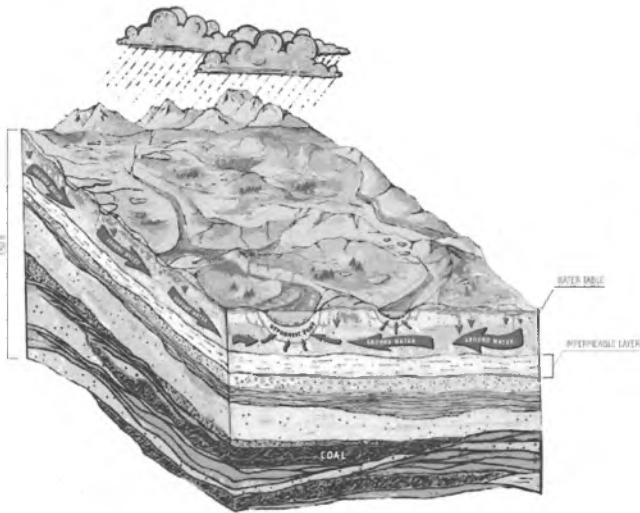
⁷ PacRim is part of the Hunt Group, more information can be accessed at <http://www.petro-hunt.com/Coal.htm>. Alaska corporate registration information for PacRim can be accessed at <https://myalaska.state.ak.us/business/soskb/Corp.asp?338563>. Paula Dobbyn, "Beluga Coal Deal Edges Within Reach: High Prices and Cutbacks in Exports from China Could Make the Long-Envisioned Project a Reality," *Anchorage Daily News*, November 3, 2005.

⁸ The current project proposed by PacRim consist of a surface coal mine and associated support facilities, mine access road, coal transport conveyor, housing and air strip facility, a logistics center, and coal export terminal. PacRim applied to renew its Coal Exploration Permit with the Alaska Department of Natural Resources on June 24, 2010. The public comment period on the application ended October 13, 2010. More information on the current project can be accessed at <http://dnr.alaska.gov/mlw/mining/largemine/chuitna/index.htm>.

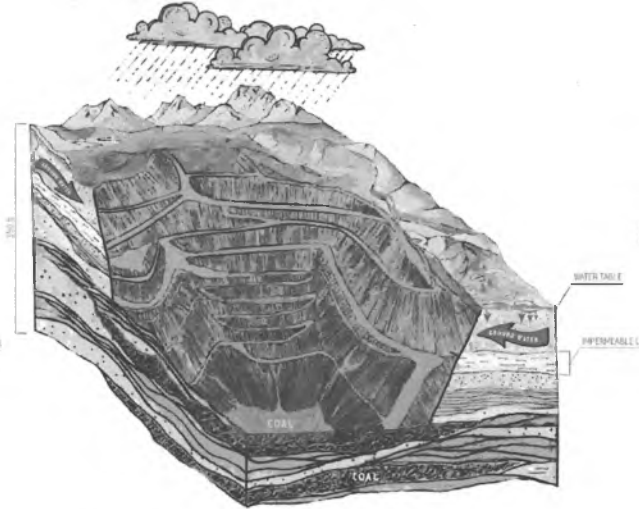
STRIP MINES & SALMON STREAMS

A salmon stream is more than a ditch that drains water: Salmon streams are crucial threads in the intricate fabric that comprises a watershed ecosystem. Once we start to pull out these threads, the very fabric of the watershed starts to unravel.

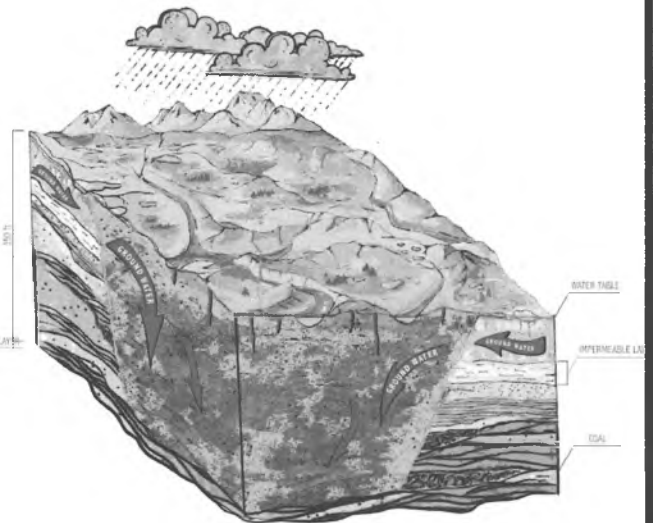
BEFORE



DURING



AFTER



The ecosystem is a woven fabric of wetlands, tundra, forests and tiny headwater streams that pour into the Chitna River, then Cook Inlet. Surface and groundwaters interact in a complex dynamic that provides the nutrients and conditions needed to support wild Alaskan salmon.

Impacts to the watershed and the headwater streams from mining activities will fundamentally alter the chemical, hydrologic and sediment regimes that are primary variables controlling the water quality and productivity downstream, which are all key factors for wild Alaskan salmon.

A new ditch can be dug where the old stream used to be, but a ditch atop a filled-in pit can never replace the complex physical and chemical conditions needed to support wild salmon and the loss of habitat guarantees the native wild Alaskan salmon population will be lost forever.

**JUST LIKE HUMPTY DUMPTY, ONCE IT'S BROKEN,
PACRIM CAN'T PUT IT BACK TOGETHER AGAIN - NO ONE CAN**

FACTS

- PacRim Coal, a Delaware corporation, is actively seeking state and federal permits to build and operate the Chuitna coal strip mine 45 miles west of Anchorage, near the communities of Tyonek and Beluga.
- PacRim clearly states: “approximately 17.4 km [11 miles] of total stream-channel [salmon] habitat will be removed during the mining operations;”
- Scientific experts concur, it is not possible to construct a new wild salmon spawning stream to the same level of productivity after mining ends.
- PacRim has not provided a single example of strip-mined wild salmon spawning and rearing habitat that has been restored to premining productivity.
- Extensive searches of scientific literature have not produced any examples of successful restoration of a strip mined-wild salmon stream.
- Strip mining will interrupt groundwater flow and destroy the shallow aquifers that currently provide groundwater to streams.
- The uninterrupted flow of shallow groundwater to wild salmon spawning streams is essential for over-winter survival of eggs and fry.
- Recreating the structural complexity and interconnectivity of the below-ground sediment layers responsible for the transport of ground water into salmon streams is impossible.
- The long-term loss of marine-derived nutrients and wetlands (primary sources of nutrients for wild salmon streams) from 25+ years of proposed mining makes the restoration of biological productivity impossible.
- The complex system of surface and groundwater exchange at the streambed is responsible for the year-round upwelling of water, critical for over-winter survival for wild salmon eggs and cannot be recreated.
- Mining through the tributaries and uplands of the Chuit River will permanently change the ecosystem and decrease the productivity of the river.
- Mining through the Chuit River headwaters will remove stored carbon and nutrients that are vital for the health of all downstream reaches; once removed they can not be replaced.
- There is no evidence that the proposed restoration and mitigation plans will compensate for the natural resource losses.
- The complex, genetically diverse wild Alaskan salmon stocks found in the Chuit River, a key to long term viability—cannot be recreated.
- Strip mining would destroy the watershed’s hydrologic and geomorphic functions, including the balance of stream flow and sediment supply that supports stream function and habitats over the long term.

WHY SHOULD ALASKANS TRADE RENEWABLE SALMON STREAMS FOR DIRTY COAL BOUND FOR CHINA?

REBUILDING A SALMON STREAM IS LIKE MOVING A \$100,000 WEDDING CAKE FROM ONE END OF TOWN TO THE OTHER WITH A TEASPOON.

**Testimony Before the
Alaska Senate Judiciary Committee
March 2, 2012**

Submitted by:

**Lance Trasky
Lance Trasky and Associates
3941 Truro Drive
Anchorage, Alaska 99507**

Introduction: Chairman French and members of the Judiciary Committee, my name is Lance Trasky. I have 42 years of experience as a fisheries research biologist, a habitat biologist, and a Regional Supervisor with the Alaska Department of Fish and Game.

Establishing a restoration bond for the proposed Chuitna Coal Strip Mine will be very difficult because there is nothing in the scientific literature or the projects cited by Pacrim and the Alaska Department of Natural Resources which supports the claim that re-creation of a wild Pacific salmon stream and its associated drainage has ever been successfully accomplished or is even feasible. It is also unlikely that the spawning channel and rearing ponds that Pacrim has offered as interim mitigation for the loss of salmon production from Chuitna River tributaries for 25 to 50 years would be successful in maintaining these runs.

The Problem

The Chuitna River supports substantial runs of all five species of Pacific salmon. It is an important contributor to the Cook Inlet commercial and subsistence fisheries. It is believed to be the major source of Chinook salmon to the Tyonek subsistence fishery. The Chuitna is the major Chinook salmon producing system on the west side of Cook Inlet and supports a Chinook sport fishery second only to the Deshka River. The Board of Fish has recently declared the Chuitna River a stock of concern because of shortfalls in escapement.

In the first phase of mining, Pacrim has proposed to strip mine 8,000 acres of the three major Chuitna River salmon producing tributaries. Mining would remove 11 miles of

one tributary and all surface and subsurface features to a depth of 300 feet. To create a new 11 mile long salmon spawning and rearing stream, Pacrim would have to re-construct the entire upper stream drainage from bedrock on up. Re-creation of both surface features such as wetlands and subsurface features such as the shallow and deep aquifers which provide critical ground water flow to these three major tributaries would be necessary. Because sockeye, Chinook, and coho salmon select areas of upwelling ground water for spawning and the input of ground water is essential to the overwinter survival of salmon eggs and larvae in cold climates, the creation of shallow aquifers would be one of the most critical elements in creation of a new salmon stream. Finally an 11 mile long stable stream channel and riparian area incorporating all the complex and interconnecting structures and processes that allow salmon to successfully spawn and rear would have to be constructed on top of 300 feet of mine tailings. This has never been done and it is likely not feasible.


ADNR and Pacrim Examples Are Not Relevant:

Both Pacrim and ADNR have provided examples of projects which they claim support their contention that creation of a productive salmon stream after strip mining is feasible. I have reviewed these projects and have personal experience with most of the Alaska projects cited. These projects do not support the contention that re-creation of a new salmon spawning and rearing stream is feasible. None of the examples provided by ADNR or Pacrim involved complete removal of an entire drainage with its associated salmon spawning stream, aquifers, wetlands, vegetation, and the subsequent creation of a new functioning salmon stream with all of these essential attributes on top of the mine overburden. The objective of most of these projects was to improve habitat in damaged fish streams, with no expectations that salmon or other fish species would be restored to pre-development levels of productivity. Only three of the projects cited by ADNR and Pacrim even involved salmon streams, and none of these streams were strip mined. Projects cited involving grayling or catfish have no relevance to the Chitna because these species have very different life histories. The available information for the projects cited did not mention restoring aquifers or ground water. All of the Alaskan projects cited by Commissioner Sullivan and Pacrim as examples of the feasibility of restoring the Chitna River drainage after strip mining are small-scale compared with the proposed Chitna Coal Project, which includes 21,000 acres of leases and over 8,000 acres in the first phase of mining. In contrast the Valdez Creek mine which was cited by ADNR and was the largest placer mine in Alaska was only 640 acres and only a mile of grayling stream was constructed.

A letter I wrote to Commissioner Sullivan describing in some detail why the projects that ADNR is using to support their decisions on this project are not relevant to the proposed Chuitna coal strip mine is included in the handouts.

Federal and state biologists question the feasibility of salmon stream restoration

In a 2007 letter to the Environmental Protection Agency, the National Marine Fisheries Service (NMFS) concluded the Chuitna Coal Strip Mine would cause permanent impacts to the Chuitna watershed and associated salmon habitat. NMFS stated, "We are aware of no example of successful salmon stream restoration at this scale". In the Diamond Chuitna Coal Project Final Environmental Impact Statement, EPA also concluded "that it is questionable whether mined through streams could be returned to pre-mining productivity: therefore, fish productivity loss could be a long term loss". The Alaska Department of Fish and Game provided the following response to a letter from ADNR asking whether reclamation of the Chuitna Coal Strip Mine was feasible: "while we are aware of small scale successes in reclaiming certain stream functions we are not aware of any evidence documenting whether large-scale reclamation of ecosystem function can or cannot be accomplished."



In the process of reviewing the Alaskan projects cited as examples of post-mining stream restoration by Commissioner Sullivan and PacRim, I asked a number of fisheries biologists and hydrologists who were involved in these projects if they believed that these projects demonstrate that restoring thousands of acres of strip mined salmon streams, aquifers and drainages was feasible. They all said no. They were also unaware of any example of where a salmon producing drainage has been removed by strip mining to depths of several hundred feet, and a new stream created on top of mine overburden.

Compensation for permanent loss of salmon production:

PacRim has proposed to construct a spawning channel and rearing ponds to replace salmon production from Chuitna tributaries lost due to mining during the 25 to 50 years before a new stream would be created. ADNR has cited salmon usage of USFS gravel pits adjacent to Granite Creek on the Kenai Peninsula and two Canadian spawning channels as confirmation that these methods could replace lost salmon production. However, we know that other Canadian spawning channels and all of the spawning channels that have been constructed in South Central Alaska in the last 30 years have failed over time. Similarly, other gravel pits such as the ADF&G's and ADOT's attempt to convert the Quartz Creek gravel pit on the Sterling Highway to salmon spawning and rearing habitat have failed. Most importantly, because of the

presence of invasive northern pike in the Chuitna drainage, any attempt to sustain salmon production by spawning channels and rearing ponds is unlikely to succeed. Pike thrive in these low gradient environments and have extirpated salmon and trout from all of the lakes, gravel pits (Cheney Lake in Anchorage) and slow moving streams pike have invaded in South Central Alaska.

Conclusion

I have not found any independent restoration experts, scientific studies or projects cited by ADNR and Pacrim that support the contention that reconstruction of a salmon stream with its associated drainage, confined and unconfined aquifers, wetlands, and other essential elements on top of 300 feet of mine overburden is feasible. Restoration of a strip mined salmon producing drainage would be exponentially more difficult than small scale projects to reroute a stream around a man made barrier, revegetate stream banks, or attempts to confine a unstable placer mined grayling stream to a single channel.

In considering standards for bonding mines such as Chuitna, legislators should keep in mind that all of the techniques cited by ADNR and Pacrim as examples of the feasibility of recreating salmon stream drainages were developed in the Pacific Northwest and British Columbia in an attempt to halt or reverse the continuing decline of anadromous salmon populations due to habitat loss. Billions of dollars have been spent in the U.S. and Canada with little success. If the projects cited by PacRim and ADNR as proof of the feasibility of re-creating a salmon stream worked, these methods would be used everywhere and salmon populations would not continue to decline. The problem is that from a salmon habitat perspective, the effect of permanent landscape changes such as the deep strip mining proposed for the Chuitna River drainage cannot be reversed.

Currently, ADNR has considerable discretion in setting bond amounts. It is important to recognize, if the state allows strip mining through a wild salmon stream at Chuitna, it will set state policy that will endure. So, in light of the fact that there is nothing to indicate that restoration of strip mined salmon drainages to pre-mining functions and values or that artificial maintenance of genetically unique runs is feasible, the Legislature should take a hard look at whether mining through salmon streams is a precedent the state should pursue. If so, there will need to be some very difficult discussions about how to put a value on the loss of a renewable resource – wild Alaska salmon – in perpetuity.

Thank you for the opportunity to comment.

Lance Trasky
Lance Trasky and Associates
3941 Truro Drive
Anchorage, Alaska 99507

Mr. Daniel S. Sullivan, Commissioner
Alaska Department of Natural Resources
550 W. 5th Avenue, Ste. 1400
Anchorage, Alaska 99501

Subject: Petition to Designate the Streambeds of Anadromous Water Bodies and Riparian Areas within the Chuitna River Watershed, Alaska as Unsuitable for Surface Coal Mining Pursuant to AS. 27.21.260

Dear Commissioner Sullivan:

I am a fisheries habitat consultant with 37 years of experience as a fisheries and habitat biologist and as a Habitat and Restoration Division Regional Supervisor with the Alaska Department of Fish and Game. I am writing in support of the petition to designate the streambeds of anadromous water bodies and riparian areas within the Chuitna River watershed, Alaska, as unsuitable for surface coal mining pursuant to AS. 27.21.260. I support the petition for the following reasons:

1. The Chuitna River is an important salmon producing system: Unlike current coal producing areas of Alaska the Chuitna River is located in a productive coastal ecosystem which supports a diversity of fish and wildlife species. Chuitna River supports all five species of pacific salmon as well as Dolly Varden, rainbow trout and whitefish. Chuitna River salmon are harvested by an in river sport fishery, the Northern district commercial fishery, and the Tyonek subsistence fishery. On the west side of Cook Inlet the Chuitna River sport fishery for Chinook salmon is the second only in importance to the Deshka River. Because of its importance the Chuitna River Chinook stock was listed as a stock of management concern by the Alaska Board of Fisheries in 2010 (Helsing 2010).

2. Strip mining for coal will destroy the shallow aquifers and interrupt the flow of ground water to anadromous streams in and adjacent to the mined area: Over the past several years I have conducted an extensive search of the scientific literature but have not found any examples of strip mine reclamation projects where phreatic ground water flow in streams has been restored to premine conditions by replacing mining tailings. However there is a large body of information documenting long term disruption of both surface and ground water flow as the result of recently permitted strip mining and reclamation (Bonta, 2007, Wilson 1978 and Schwartz and Crowe 1985). Bonta et al 2007 studied the effect of surface mining and reclamation on physical watershed conditions and ground water hydrology in three watersheds. This study found that mining disturbances in watersheds

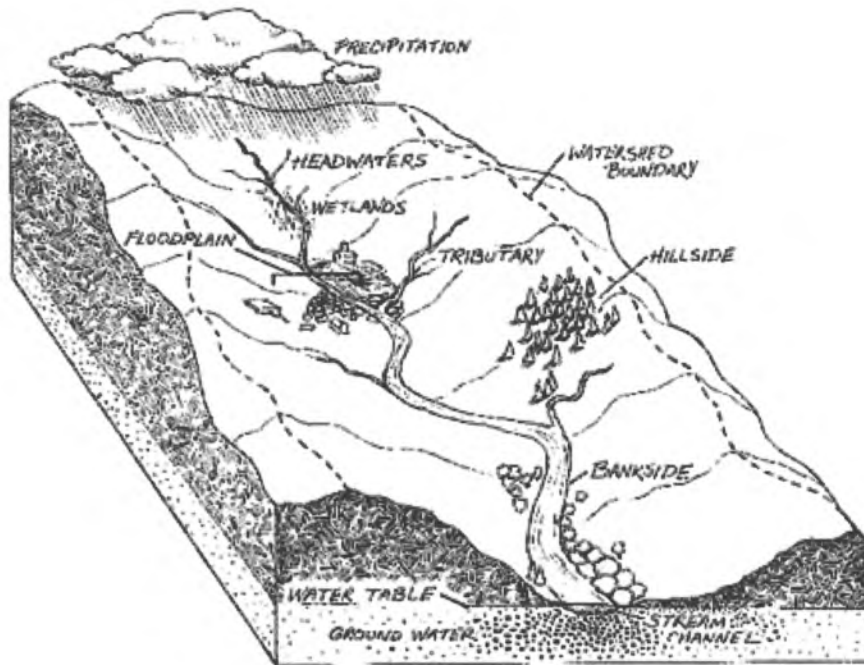


Figure 1: Cross Section of a Watershed (Source: USEPA)

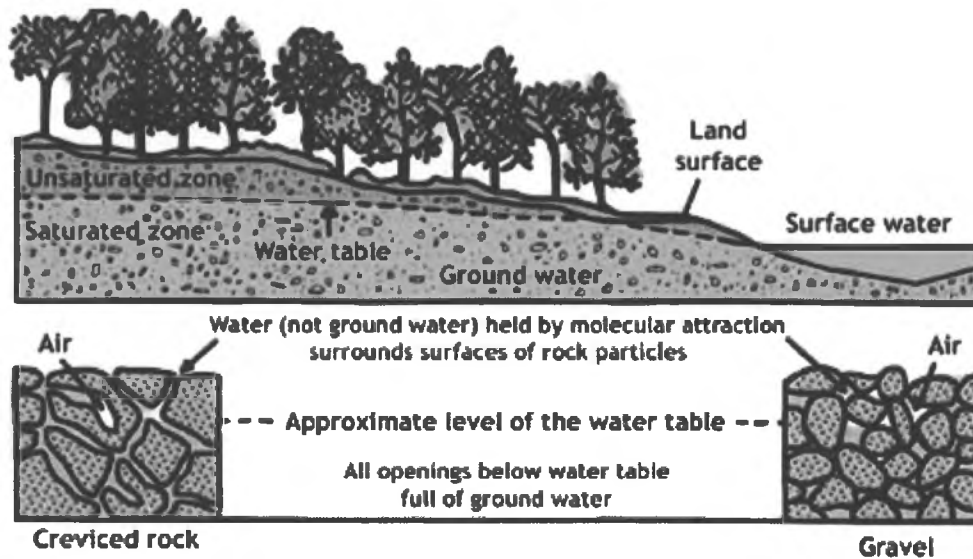


Figure 2: Cross Section of an Aquifer (Source: USGS)

Ground water is critical because it maintains stream base flow and moderates water level fluctuations, particularly in the winter when there is no precipitation. It provides stable temperatures and thermal refugia for fish. It provides water for riparian vegetation which controls bank strength and the rate of erosion (Douglas 2006). It also creates the hyporheic zone (Figure 3).

processes in the hyporheic zone play a central role in the functioning of stream ecosystems (Malcolm et al 2003).

To restore fish habitat in these streams after mining it, it would be necessary to restore the same quality and quantity of ground water. To successfully reconstruct a new stream that is as productive as mined streams, it would be necessary to reconstruct a new shallow aquifer to provide the same amount of phreatic and hyporheic flow, the same seasonal flow patterns and same quality (temperature, pH, dissolved elements, dissolved solids etc.) of ground water present prior to mining. I conducted an extensive search of the scientific literature to find examples of restoration of salmon streams after the type of strip mining proposed for the Chuitna River drainage. I also consulted with experts who have been involved in salmon habitat and strip mine restoration in Alaska and the continental United States. The search found many examples of how strip mining has dramatically altered local and regional ground water flow during and after mining, but no references to any scientific studies of mines where the aquifer's supplying phreatic ground water to the hyporheic zone of a salmon spawning and rearing stream has been successfully restored to premining productivity after strip mining. Most experts do not believe that it is possible to reconstruct a functioning shallow aquifer for an anadromous streams system in a deep mined system with any degree of confidence that it would work. Attempts to restore ground water flow to mined stream would be further hampered by the fact that the very complex geology of the Chuitna River drainage and how these shallow aquifers function is poorly understood except that ground water from these aquifers up well's at certain points in these streams and currently supports salmon spawning, rearing and overwintering.

3. Strip mining will result in the long loss of marine derived nutrients and organic carbon essential to stream productivity: Even if mined anadromous stream channel's in the Chuitna River drainage could be successfully reconstructed to full physical function, it is unlikely these streams could be restored to their former level of biological productivity because of the loss of marine derived nutrients (MDN) from salmon carcasses in the mined areas and the loss of organic carbon from the removal of all of the wetlands in the mine area. Significant loss of stream productivity from premining conditions has been documented in studies of streams in reclaimed stripmines. Matter and Ney (1981) found that "benthic invertebrate and fish populations were significantly lower in abundance in the reclaimed mine streams than in the reference stream and showed less taxonomic richness and stability: they were similar in these respects to the biota of unreclaimed mine streams."

Wetlands and MDN from salmon carcasses are the primary sources of stream nutrients and productivity in salmon streams. There is a large body of scientific literature showing that Pacific salmon are the major vehicle transporting marine nutrients across ecosystem boundaries from marine to freshwater and terrestrial ecosystems. Nutrients from salmon eggs and carcasses play a major role in the productivity of both freshwater and riparian ecosystems and in perpetuating future salmon runs. Most fisheries scientists and progressive fisheries managers have concluded that stream ecosystem health benefits from having the largest number of spawners possible which in turn produces a large number of carcasses (WDFW 1997). The eggs and carcasses from these spawning salmon provide an essential

wetlands can be replaced, stream productivity and fisheries production can not be restored to premining levels of productivity. The National Academy of Science recommends not destroying filling fens and bogs, both found in the Chuitna claims area, because they are "difficult or impossible to restore" (National Academy of Science 2001). For certain types of wetlands such as peat bogs which grow at a rate of less than 1mm annually, replacement is not feasible within geological time. Wetlands whether natural or constructed exist because of the presence of surface or near surface water. The extensive wetlands in the Chuitna River drainage exist in part because weathered volcanic ash a few feet below the surface forms clay like impermeable layer which holds water. Deeper layers of compacted ash act as an aquitard confining the water table below it and forcing seeps and springs out of the hillsides and into adjacent drainages. Once the existing wetlands and the impermeable soils that currently maintain these wetlands are removed by mining there is nothing to provide a base for construction of new wetlands. There are no studies in the scientific literature which indicates that wetlands have been restored on coal mine spoils on the scale which would be required in the Chuitna River drainage. The risk of failure for many wetlands restoration projects is high, particularly in Alaska where no projects of this type have been documented (Kusler, 2004 and National Academy of Sciences, 2001).

4. Mining will adversely affect water quality for fish and aquatic life: Information provided by Pac rim contractors indicates that water quality will change as a result of mining in the Chuitna River drainage. Potential water quality changes include lower Ph, higher turbidity, and releases of heavy metals such as copper. Fish and their food organisms in the Chuitna River drainage have adapted to the unique water quality conditions present in the Chuitna River and its tributaries over thousands of years. Water quality is defined by dissolved elements, marine derived and terrestrial nutrients, and physical factors such as temperature, pH, conductivity, and turbidity. Anadromous species such as salmon, trout, and whitefish also depend on subtle chemical clues present in surface waters in to locate both their natal streams, and spawning locations within tributaries.

Surface water chemistry will be altered by pumping water out of the pit to allow mining and rerouting surface water away from the pit area and into streams. Data collected by Pac Rim contractors indicates that one or more of the aquifers in the mine areas contains elevated levels of copper, zinc, iron, aluminum, manganese and lead. Zinc and manganese levels in ground water within the proposed Chuitna mine area are approximately 4 times and aluminum 20 times greater than average surface water levels in stream within the proposed Chuitna mine area . All of these metals are toxic to fish and aquatic life at levels in the part per billion to part per million ranges. Aluminum interferes with phosphorus metabolism in plants which form the basis of the aquatic food chain in streams. It also precipitates on fish gill membranes inhibiting exchange of oxygen and carbon dioxide which results in asphyxiation. Copper is toxic to rainbow trout at 1.4 parts per billion, and elevated levels (5-20 ppb.) destroys the olfactory organs which anadromous fish use to locate prey and spawning streams. Zinc is toxic in the part per billion range and accumulates in and damages gills, liver, and kidneys. Copper, zinc and lead bioconcentrate (build up to high levels over time) in aquatic organisms. Copper and zinc also act synergistically in the aquatic environment so that the toxicity of the combination is greater than the individual elements.

Moose Creek in the Matanuska River drainage. The damage to salmon streams from alluvial placer mining and is very different from strip mining, which may encompass entire drainages and alter both the surface topography, subsurface geology and the aquifers down to several hundred feet. The objective of most of these stream projects has been to stabilize a short section of an existing stream channel and not reconstruct an entire drainage, stream channel and aquifer.

Although there may have been some benefits to fish, I have not been able to find any reports or scientific studies documenting that these stream relocation or stabilization projects have benefitted fish. Most of these projects such as the USFS projects on Resurrection Creek have attempted to restore both sinuosity and rearing habitat to a stream impacted by placer mining in the early 1900's by moving and grading spoil piles and providing instream cover. Placer miners channelized the stream and left spoil piles in the flood plain but did not destroy the shallow aquifer that provides ground water flow to the stream. It appears that the USFS projects have increased rearing habitat for Chinook and Coho salmon by connecting formerly isolated channels in mine spoils, but no data has been made available to document this. Similarly, it is likely that the rerouting of Moose Creek back into its original channel has provided access to additional upstream spawning and rearing habitat for salmon in previously inaccessible upstream waters but no scientific data is provided to support this. However, this project like the others does not provide any indication of the likelihood of success in completely reconstructing a salmon stream, recreating the existing water chemistry, recontouring and revegetating its drainage, reconstructing all of its wetlands and rebuilding its aquifers from basement sediments on up in the Chuitna River drainage.

7. A great deal of new information that raises questions about the feasibility of restoring anadromous within the Chuitna River drainage to their premining level of productivity has become available since the 1990 Diamond Chuitna Coal Project Final Environmental Impact Statement. When the Diamond Chuitna Coal Project Final Environmental Impact Statement was completed in 1990 very little was known about the physical, chemical and biological components of salmon habitat, and the function of in stream flow and ground water, marine derived nutrients, and wetlands in the productivity of salmon streams. Studies of salmon genetics, the effects of mining on salmon streams, and the restoration of salmon streams were in their infancy. The impetus for much of this research was the continued decline of salmon stocks due to human activities. Since 1990 a great deal of scientific research on these subjects has been completed and information has become available. This information support the conclusion that strip mining for coal will severely impact current anadromous waters in the Chuitna River drainage and that it is very unlikely that these waters could be restored to their premining level of productivity

Thank you for your consideration of my request that you grant the Petition to Designate the Streambeds of Anadromous Water Bodies and Riparian Areas within the Chuitna River Watershed, Alaska. as Unsuitable for Surface Coal Mining Pursuant to AS. 27.21.260. If you have any questions you can contact me at the address shown above.

Sincerely,

Literature Cited:

Helsing, 2010. Upper Cook Inlet Stock of Concern. Letter to Alaska Board of Fisheries October 1, 2010.

Hood, E, R Edwards, D. D'Amore, and B. Lange. 2003. Organic Carbon Sources in Coastal Southeast Alaskan Streams. American Geophysical Union. Fall meeting 2003. Abstract #B31C-0317.

Kusler, 2004. Multi-Objective Wetland Restoration In Watershed Contexts. Association of State Wetlands Managers. 108 p.

National Academy of Sciences, 2001. Compensating for Wetlands Losses Under the Clean Water Act. National Academies Press. 322 p.

For citations not listed here please refer to my 2009 report, Report on Chuitna Coal Project Aquatic Studies and Fish and Wildlife Protection Plan which has been previously provided to ADNR

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"Technical Support for Grassroots Public Interest Groups"



March 2, 2012

Re: Testimony on the feasibility of reclamation for the proposed Chuitna coal mine, before the Alaska Senate Judiciary Committee on March 2, 2012

Fm: David M. Chambers, Ph.D., P. Geop.

Reclamation of a minesite is not restoration to its former function, but involves returning a minesite to a functional use after mining has been completed. The functional uses are typically things like wildlife habitat, grazing, and/or industrial use. The goals for reclamation functional use are, or have, always been aimed primarily at a surface use.

Recreating the subsurface hydrological regime that existed before mining would be extremely difficult, likely impossible, very expensive, and to my knowledge has never been the primary goal of any reclamation effort. Recreating the pre-mining hydrologic regime would be technically challenging at best, but more likely is not a viable option. At a minimum it would require a very detailed pre-mining data collection effort in order to understand the physical layout and function of the existing hydrologic (groundwater) regime. Where water moves and how fast it moves are functions that would have to be well understood before the groundwater strata are disturbed by mining. Some of the reclamation at Chuitna would involve attempting to restore up to 200 feet in thickness of potentially water-bearing strata.

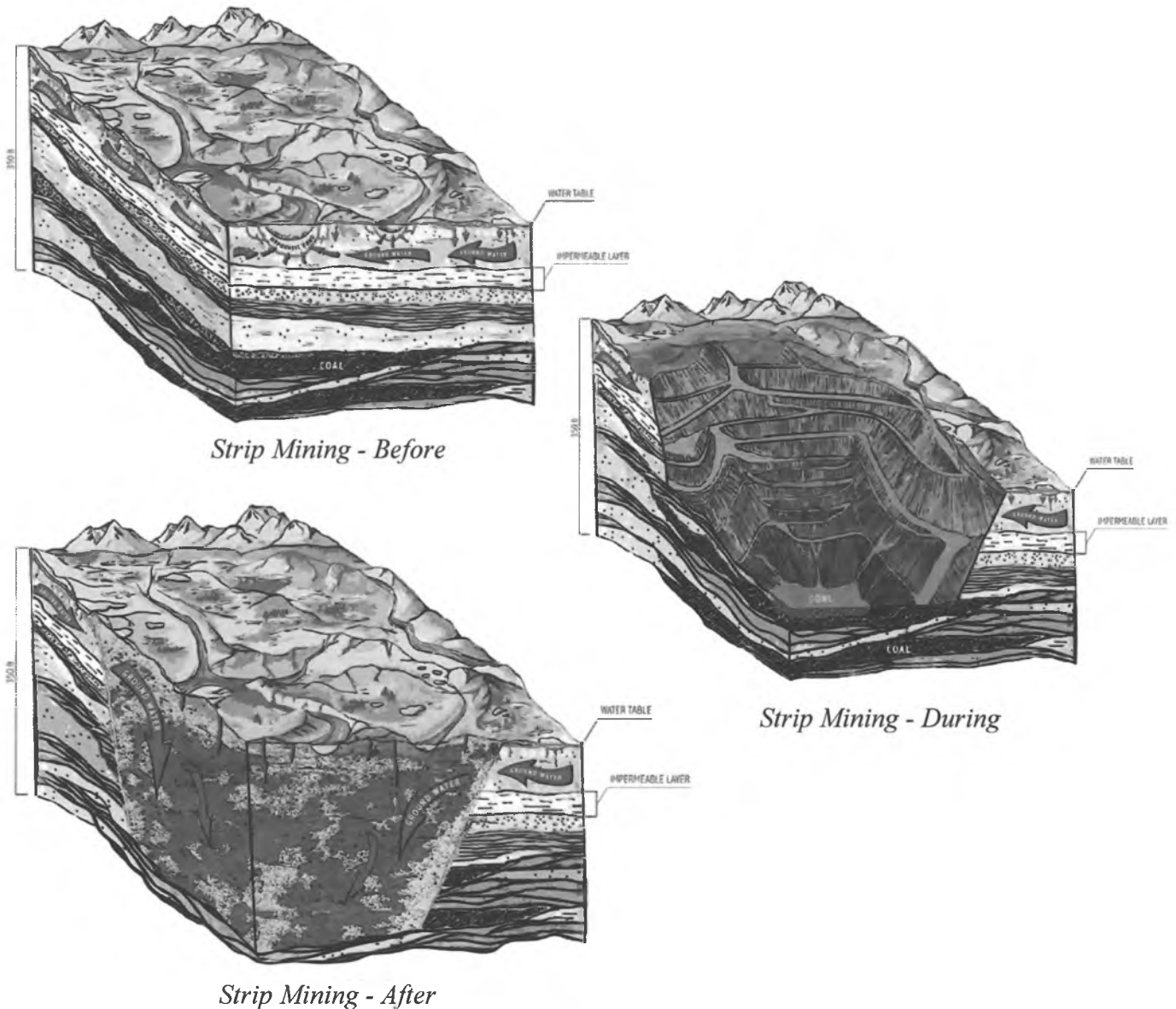
Complicating the restoration would be the Chuit and South Pit faults, and several anticlines (structural features) that have warped the underlying strata since its deposition. Faults can either be zones of high permeability that promote preferential flow of groundwater, or zones of low permeability that act as barriers to the transmission of groundwater. Mining through fault zones means that the groundwater hydrology must be thoroughly understood in order to have any chance of restoring groundwater flow patterns during reclamation. Similarly, anticlines and similar geomorphic structures will influence groundwater flow, and must be carefully mapped in order that restoration of pre-mining hydrologic effects might be attempted. It is not evident from the information presented in the pre-mining work¹ that these important hydrologic factors have been adequately examined.

If the original hydrology were to be adequately mapped in three dimensions, the flow patterns, temperature and water quality variations documented, getting similar materials back into these configurations would be very difficult. When waste material is mined, stockpiled, and then moved back into the mined out pit, there is a tendency for homogenization of the backfill material. From a hydrologic perspective the original strata will consist of zones that conduct water (aquifers), and zones that do not conduct water (aquitards). The aquitards are as important as the aquifers because they control the flow of groundwater. A normal pit backfill would tend to create a relatively uniform aquifer, with hydraulic conductivity that could be greater than or less than that of the original strata. Backfill could also negatively impact groundwater, and potentially surface water, quality.

In order to recreate the original hydrologic regime, backfill material would need to be sorted, stored separately, and selectively replaced into the mined out areas. This sorting, with perhaps screening, and separate storage would be more expensive than traditional pit backfill methodology. Quality control of the backfill segregation and placement would also be a significant management issue. If backfilled material is not sorted, stored, and replaced to meet locational and hydrologic parameters, then the restored hydrologic system would function differently than the original.

¹ Chuitna Coal Project Geology Baseline Information, PacRim Coal, L.P., August, 2006

It is highly unlikely that the original hydrologic system could be restored. This is due to the disruption of the original strata due to mining that would cause a change in the physical character of the rock. There would be changes in rock size (therefore hydraulic conductivity), and changes in rock volume. The volume would increase on a unit basis due to breaking up the rock, but there might be a decrease in total volume due to the removal of the coal – coal layers that cannot be replaced physically or hydrologically.



Because of all of these complications – of adequately defining the existing hydrology; of sorting and storing the mined waste; and, of putting it back in the same hydrologic configuration as the original material – it is likely that the restored hydrologic regime would only be a rough approximation of the original. The significant increase in cost to provide only a rough approximation of what was there before explains why restoration of the original hydrologic regime at a minesite is not typically attempted.

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Alaskans Must Stand Firm to Protect Salmon Habitat

By
Dr. Jim Rearden

February 25, 2012

Some folks from Texas want to strip-mine the Chuitna River watershed on the west side of Cook Inlet so they can send coal to China. To get to the coal, they want to destroy 11 miles of Middle Creek, a beautiful stream that is home to several species of wild Alaskan salmon. This would be the first time in our great State's history we would allow mining directly through a wild salmon stream. If our Governor and the state agencies allow this project to proceed, it will set a horrendous precedent that will jeopardize wild Alaska salmon forever.

Alaska's Department of Natural Resources is moving ahead with a permitting process for this monstrous misuse of the land. That an Alaska agency would consider such a proposal is an insult to Alaskans and to the land. In my 61 years being involved with Alaska's fish and game resources, the only other comparable, seriously-proposed rape of Alaska's land I can remember was when Gov. Gruening wanted to dam the Yukon River.

The federal government almost destroyed Alaska's salmon fishery. Since statehood in 1959, Alaska's Department of Fish and Game has rebuilt our salmon runs to equal to or even better than the greatest runs of the earliest years. But now, politics and money have crept in, and sound science is no longer driving our agency decision making.

The future of our salmon depends upon the health of our salmon streams. Since territorial days we have prohibited dams that could keep salmon from spawning grounds. To protect spawning grounds and prevent silting, one cannot legally drive a tractor or all-terrain vehicle across an Alaska salmon stream. We require logging projects to protect riparian habitat for fish. We say no to fish stream pollution of any kind.

At statehood, Alaska's salmon managers -- I was one -- had mostly pristine rivers to manage. The Texans presume they can replace the 11 miles of Middle Creek they plan to destroy. That is impossible; any Alaskan knows that. If they could build new salmon streams, they could make a heck of a lot more money doing that than exporting coal. Only God could create a wild Alaska salmon stream and all its fixings, and it might even take Him a few centuries.

Equally important, it's impossible to set a dollar value on the loss of salmon from Middle Creek. The reason is simple: salmon are an eternally renewable resource. What would be the value of salmon from Middle Creek over the next 10,000 years? Compare that with 25 years of income from coal shipped to China, most of which would fill the pockets of Outside investors.

Governor Parnell has promised on numerous occasions he would “never trade one resource for another.” Yet he rejected a petition from local hunters and fishermen asking the state to remove salmon streams from the proposed mining area. I’m all for mining, it’s vitally important to our state – just not through our salmon streams. The Governor wants us to believe the permitting system can somehow magically mitigate away the devastating effects of coal strip mining on wild salmon streams. But anyone who’s lived with salmon knows that’s untrue.

Alaska is the last stronghold for wild salmon. The once-magnificent runs in Oregon and Washington and Maine have fallen to the very same shortsighted decisions we’re faced today with the Chuitna coal strip mine. If we set state policy by allowing mining through salmon streams at Chuitna, it won’t be long before our kids and grandkids are asking: why didn’t you learn from the mistakes they made in the Lower 48?

In 1950, Dr. Jim Rearden organized the wildlife department at the University of Alaska Fairbanks and taught as head of that department for four years. He has been an area biologist for commercial fisheries for the Alaska Department of Fish and Game in Cook Inlet, served on the old Board of Fish and Game and later on the Board of Game and was a member of the National Advisory Committee on Oceans and Atmosphere. He was outdoors editor of Alaska magazine for 20 years and has written more than 500 magazine stories and 27 books on Alaska subjects.



Panelist Bios

Dr. Margaret Palmer is a Professor of Entomology and Biology at the University of Maryland where she oversees a scientific research laboratory with approximately 120 staff, 20 buildings, and a research fleet. She has over 25 years of experience in research and teaching on coastal ecosystems, watershed science, and stream ecology and restoration. Her past work includes leading a large team of scientists in developing the first national database on river restoration in the U.S., coauthoring a book on *The Foundations of Restoration Ecology* and serving as an expert advisor on the design of multiple stream and river restoration projects.

Lance Trasky is the owner of Lance Trasky and Associates an environmental consulting company. Mr. Trasky received a Bachelor of Science degree from Michigan State University and did his graduate studies in fisheries at Central Michigan University. Mr. Trasky is a fisheries and habitat biologist with over 32 years of experience in fisheries research and analyzing potential adverse affects of many types of activities on fish and fish habitat. From 1971 to 1974 he served as the Alaska Department of Fish and Games Commercial Fisheries Division salmon area research biologist for the Arctic and Yukon River. Since 1974 he worked for the ADF&G Habitat and Restoration Division in a series of research, planning, and management positions with increasing responsibilities. In 1977 he was promoted to supervisor of the Marine and Coastal Habitat Management section, and in 1980 was made Regional Supervisor for the South Western, and Western Regions of Alaska. In 1983 his responsibilities were expanded to include ADF&G's South Central Region. This included Cook Inlet, Bristol Bay, Prince William Sound, Kodiak Island, and the lower Yukon Kuskokwim River which are the major salmon producing areas of Alaska.

Dr. David Chambers is the president of the Center for Science in Public Participation, a non-profit corporation formed to provide technical assistance on mining and water quality to public interest groups and tribal governments. Dr. Chambers has 35 years of experience in mineral exploration and development – 15 years of technical and management experience in the mineral exploration industry, and for the past 20 years he has served as an advisor on the environmental effects of mining projects both nationally and internationally. He has Professional Engineering Degree in Physics from the Colorado School of Mines, a Master of Science Degree in Engineering from the University of California at Berkeley, and is a registered professional geophysicist in California (# GP 972). Dr. Chambers received his Ph.D. in Environmental Planning from Berkeley where his doctoral dissertation analyzed the U.S. Forest Service's efforts to plan for and manage minerals on the National Forests.

Testimony of

Margaret A. Palmer, Ph.D.
Professor and Director
Socio-Environmental Synthesis Center
University of Maryland

to the

Alaska Senate Judiciary Committee

March 2, 2012

Good afternoon Chairman French and members of the Senate Judiciary Committee. My name is Margaret Palmer and I thank you for allowing me to speak to you today.

I am a Professor at the University of Maryland and Director of the National Science Foundation's National Socio-environmental Synthesis Center. I've been researching streams and watersheds for over 25 years and am an expert on stream restoration and the impacts of surface mining on streams.

As you know, PacRim Coal has proposed a large mining project in the Chuitna River watershed. This is a 25 year project that will impact a very large track of land not only due to the footprint of the mine itself but due to all the infrastructure and access needs for mining. Impacts to the Chuitna watershed will include destruction of fragile wetlands and 11 miles of salmon spawning streams.

I am here to describe irrefutable scientific evidence that the impacts of the proposed Chuitna mining project will be irreversible and that reclamation to support future salmon populations is not technologically feasible.

I wish to make three major points today:

- First, the examples of reclamation and restoration projects that have been provided by PacRim and others do not demonstrate that restoration at Chuitna is achievable.
- Second, reclamation at the Chuitna site to support salmon would require creation of streams and rivers, not restoration or reclamation, yet creation of streams is outside the realm of credible science.

- Third, there is extensive scientific documentation of widespread failures of restoration projects in watersheds far less impacted than what is proposed for the Chuitna watershed; and, thus the likelihood of reclamation success to support salmon populations is at or near zero.

Point 1: Irrelevance of PacRim reclamation examples

PacRim has put forward a number of examples of projects that they suggest are evidence that reclamation of wetlands and salmon streams lost due to the Chuitna project is technologically feasible. In fact, they are not evidence because the projects they describe are on sites only minimally impacted – this is nothing like what will happen to the Chuitna watershed if the proposed mining occurs.

The PacRim referenced projects have no bearing on what will be needed at Chuitna:

First, the referenced examples are in watersheds that still have intact headwaters and the streams are still connected longitudinally, which is not the case for Chuitna.

Second, groundwater flow paths in the examples they cite are still intact yet in the Chuitna case, with mining to depths of 300 feet or more, the existing groundwater flow paths will be destroyed. Keep in mind that groundwater is what feeds streams.

Third, many of the examples PacRim cites deal with restoration of stream *sections* that had been previously diverted or degraded ...not streams whose watersheds have been destroyed. The restoration actions required for their examples typically are just adding more bends in the existing stream, widening channels, or removing the diversion channels.

Fourth, the PacRim examples were not of mined-through streams in which the entire channel including its headwaters was exposed to major earth-moving activities. Such activities (which are to occur at the Chuitna sites) not only result in mining waste rock and soil being placed where streams once were but that material is seriously compacted.

Fifth, they provide examples from Illinois and Indiana for streams that are warm-water and do not support sensitive species like salmon.

Point 2: Stream creation is outside the realm of modern science

What PacRim is proposing is nothing like stream reclamation that is commonly practiced today. Instead it is an attempt to create a stream *de novo*. In other words,

streams and wetlands, including headwaters are to be completely destroyed, fill added and packed then after mining is complete, PacRim will dig ditches and route water to them.

In practice, ecological stream restoration varies along a continuum from: removing on-going impacts to a stream (e.g., preventing toxic inputs) and letting the system recover on its own; to enhancing in-stream habitat or the surrounding riparian zone (e.g., adding coarse woody debris to streams and planting vegetation) in an otherwise healthy stream; to full scale restoration that involves manipulations of an *existing* stream channel (e.g., re-grading banks and planting trees along a stream with eroding banks).

Yet under the plan proposed for Chuitna, there will be no existing channels remaining to 'restore'. They will be gone. Unfortunately, simply ditches and routing water to them does not create a living, breathing stream that will support insects, fish, wildlife and certainly not salmon.

Streams that are healthy enough to support salmon and other valuable species, must have the organically rich soils, wetlands, and mature native vegetation common to the region. Rainwater and snowmelt percolate into the ground, reaching the water table and then move laterally into streams and/or wetlands. Thus groundwater inputs to streams have moved through rich soils where nutrients and essential elements that are necessary for healthy streams and wetlands.

Claiming that a structure like a ditch dug on mined land is similar to a functional ecosystem because it has the same width and depth is analogous to claiming that all people of the same height are equally healthy. It's easy to understand the important difference between physical features and biological functioning when you think about people's health. For instance, my husband looks great, he is 6'2" and weighs 185. But guess what? He has really high blood pressure. Can you imagine a doctor saying he is healthy without ensuring his essential systems are working, like heart rate, blood pressure, glucose metabolism?

From a scientific point of view, it is equally unacceptable to say a stream will be healthy ecologically just because it happens to have rocks and water. It is particularly

remarkable to make such a claim in this case given the extensive watershed destruction.

Point 3: Widespread failures in much simpler reclamation projects mean large scale failure at Chuitna

The status of research evaluating the effectiveness of stream and wetland reclamation has advanced significantly in the last decade and there is now clear evidence of widespread ecological failures of projects attempted on sites far less damaged than what will occur at the Chuitna sites.

Recently, I led a national project that developed the first comprehensive database on stream and river restoration for the U.S. (38,000 projects in the database) and there is not a single case in which building streams in the manner they outline has been shown to work, much less fully compensate for what is lost when a stream is destroyed.

Additionally, there is a long list of peer-reviewed studies documenting failures from stream restoration projects. For example:

A study published in 2010 evaluated 78 independent stream restoration projects to determine if aquatic biodiversity recovered. Only 2 of those 78 showed improvement.

A special issue of the leading ecological journal, *Ecological Applications* was devoted to stream restoration in 2011 and there was not a single example provided of ecological recovery.

There are two recent publications demonstrating failure of recovery when reclamation of streams was attempted on previously minded land in ecoregions similar to the Chuitna site. The locations of those sites were in the North West Territories of Canada and in the Arctic.

The fact is, the current status of technology for stream reclamation is limited to small scales (usually single reaches), is only useful in intact water networks, and is certainly not designed nor tested for situations in which the underlying soils, geology, and associated groundwater flow paths are destroyed.

Summary

I would like to leave you with the understanding that there is no evidence that reclamation of streams and wetlands at the Chuitna site is feasible. And that in fact

there is strong evidence that it is not feasible based on strong science and extensive research. The current technology for reclamation has not yet been successful in watersheds or in streams with far less impact that what Chuitna will experience. You should recognize that if the watershed is mined as proposed, you will not regain the salmon populations that frequent the streams now.

Thank you Mr. Chairman and Members of the Committee.

A handwritten signature in black ink, appearing to read "Margaret A. Palmer". The signature is fluid and cursive, with a long horizontal flourish extending to the right.

Margaret A. Palmer

February 19, 2012

**Testimony Before the
Alaska Senate Judiciary Committee
March 2, 2012**

Submitted by:

**Lance Trasky
Lance Trasky and Associates
3941 Truro Drive
Anchorage, Alaska 99507**

Introduction: Chairman French and members of the Judiciary Committee, my name is Lance Trasky. I have 42 years of experience as a fisheries research biologist, a habitat biologist, and a Regional Supervisor with the Alaska Department of Fish and Game.

Establishing a restoration bond for the proposed Chuitna Coal Strip Mine will be very difficult because there is nothing in the scientific literature or the projects cited by Pacrim and the Alaska Department of Natural Resources which supports the claim that re-creation of a wild Pacific salmon stream and its associated drainage has ever been successfully accomplished or is even feasible. It is also unlikely that the spawning channel and rearing ponds that Pacrim has offered as interim mitigation for the loss of salmon production from Chuitna River tributaries for 25 to 50 years would be successful in maintaining these runs.

The Problem

The Chuitna River supports substantial runs of all five species of Pacific salmon. It is an important contributor to the Cook Inlet commercial and subsistence fisheries. It is believed to be the major source of Chinook salmon to the Tyonek subsistence fishery. The Chuitna is the major Chinook salmon producing system on the west side of Cook Inlet and supports a Chinook sport fishery second only to the Deshka River. The Board of Fish has recently declared the Chuitna River a stock of concern because of shortfalls in escapement.

In the first phase of mining, Pacrim has proposed to strip mine 8,000 acres of the three major Chuitna River salmon producing tributaries. Mining would remove 11 miles of

one tributary and all surface and subsurface features to a depth of 300 feet. To create a new 11 mile long salmon spawning and rearing stream, Pacrim would have to reconstruct the entire upper stream drainage from bedrock on up. Re-creation of both surface features such as wetlands and subsurface features such as the shallow and deep aquifers which provide critical ground water flow to these three major tributaries would be necessary. Because sockeye, Chinook, and coho salmon select areas of upwelling ground water for spawning and the input of ground water is essential to the overwinter survival of salmon eggs and larvae in cold climates, the creation of shallow aquifers would be one of the most critical elements in creation of a new salmon stream. Finally an 11 mile long stable stream channel and riparian area incorporating all the complex and interconnecting structures and processes that allow salmon to successfully spawn and rear would have to be constructed on top of 300 feet of mine tailings. This has never been done and it is likely not feasible.

ADNR and Pacrim Examples Are Not Relevant:

Both Pacrim and ADNR have provided examples of projects which they claim support their contention that creation of a productive salmon stream after strip mining is feasible. I have reviewed these projects and have personal experience with most of the Alaska projects cited. These projects do not support the contention that re-creation of a new salmon spawning and rearing stream is feasible. None of the examples provided by ADNR or Pacrim involved complete removal of an entire drainage with its associated salmon spawning stream, aquifers, wetlands, vegetation, and the subsequent creation of a new functioning salmon stream with all of these essential attributes on top of the mine overburden. The objective of most of these projects was to improve habitat in damaged fish streams, with no expectations that salmon or other fish species would be restored to pre-development levels of productivity. Only three of the projects cited by ADNR and Pacrim even involved salmon streams, and none of these streams were strip mined. Projects cited involving grayling or catfish have no relevance to the Chitna because these species have very different life histories. The available information for the projects cited did not mention restoring aquifers or ground water. All of the Alaskan projects cited by Commissioner Sullivan and Pacrim as examples of the feasibility of restoring the Chitna River drainage after strip mining are small-scale compared with the proposed Chitna Coal Project, which includes 21,000 acres of leases and over 8,000 acres in the first phase of mining. In contrast the Valdez Creek mine which was cited by ADNR and was the largest placer mine in Alaska was only 640 acres and only a mile of grayling stream was constructed.

A letter I wrote to Commissioner Sullivan describing in some detail why the projects that ADNR is using to support their decisions on this project are not relevant to the proposed Chuitna coal strip mine is included in the handouts.

Federal and state biologists question the feasibility of salmon stream restoration

In a 2007 letter to the Environmental Protection Agency, the National Marine Fisheries Service (NMFS) concluded the Chuitna Coal Strip Mine would cause permanent impacts to the Chuitna watershed and associated salmon habitat. NMFS stated, "We are aware of no example of successful salmon stream restoration at this scale". In the Diamond Chuitna Coal Project Final Environmental Impact Statement, EPA also concluded "that it is questionable whether mined through streams could be returned to pre-mining productivity: therefore, fish productivity loss could be a long term loss". The Alaska Department of Fish and Game provided the following response to a letter from ADNR asking whether reclamation of the Chuitna Coal Strip Mine was feasible: "while we are aware of small scale successes in reclaiming certain stream functions we are not aware of any evidence documenting whether large-scale reclamation of ecosystem function can or cannot be accomplished."

In the process of reviewing the Alaskan projects cited as examples of post-mining stream restoration by Commissioner Sullivan and PacRim, I asked a number of fisheries biologists and hydrologists who were involved in these projects if they believed that these projects demonstrate that restoring thousands of acres of strip mined salmon streams, aquifers and drainages was feasible. They all said no. They were also unaware of any example of where a salmon producing drainage has been removed by strip mining to depths of several hundred feet, and a new stream created on top of mine overburden.

Compensation for permanent loss of salmon production:

PacRim has proposed to construct a spawning channel and rearing ponds to replace salmon production from Chuitna tributaries lost due to mining during the 25 to 50 years before a new stream would be created. ADNR has cited salmon usage of USFS gravel pits adjacent to Granite Creek on the Kenai Peninsula and two Canadian spawning channels as confirmation that these methods could replace lost salmon production. However, we know that other Canadian spawning channels and all of the spawning channels that have been constructed in South Central Alaska in the last 30 years have failed over time. Similarly, other gravel pits such as the ADF&G's and ADOT's attempt to convert the Quartz Creek gravel pit on the Sterling Highway to salmon spawning and rearing habitat have failed. Most importantly, because of the

presence of invasive northern pike in the Chuitna drainage, any attempt to sustain salmon production by spawning channels and rearing ponds is unlikely to succeed. Pike thrive in these low gradient environments and have extirpated salmon and trout from all of the lakes, gravel pits (Cheney Lake in Anchorage) and slow moving streams pike have invaded in South Central Alaska.

Conclusion

I have not found any independent restoration experts, scientific studies or projects cited by ADNR and Pacrim that support the contention that reconstruction of a salmon stream with its associated drainage, confined and unconfined aquifers, wetlands, and other essential elements on top of 300 feet of mine overburden is feasible. Restoration of a strip mined salmon producing drainage would be exponentially more difficult than small scale projects to reroute a stream around a man made barrier, revegetate stream banks, or attempts to confine a unstable placer mined grayling stream to a single channel.

In considering standards for bonding mines such as Chuitna, legislators should keep in mind that all of the techniques cited by ADNR and Pacrim as examples of the feasibility of recreating salmon stream drainages were developed in the Pacific Northwest and British Columbia in an attempt to halt or reverse the continuing decline of anadromous salmon populations due to habitat loss. Billions of dollars have been ~~spent in the U.S. and Canada with little success.~~ If the projects cited by PacRim and ADNR as proof of the feasibility of re-creating a salmon stream worked, these methods would be used everywhere and salmon populations would not continue to decline. The problem is that from a salmon habitat perspective, the effect of permanent landscape changes such as the deep strip mining proposed for the Chuitna River drainage cannot be reversed.

Currently, ADNR has considerable discretion in setting bond amounts. It is important to recognize, if the state allows strip mining through a wild salmon stream at Chuitna, it will set state policy that will endure. So, in light of the fact that there is nothing to indicate that restoration of strip mined salmon drainages to pre-mining functions and values or that artificial maintenance of genetically unique runs is feasible, the Legislature should take a hard look at whether mining through salmon streams is a precedent the state should pursue. If so, there will need to be some very difficult discussions about how to put a value on the loss of a renewable resource – wild Alaska salmon – in perpetuity.

Thank you for the opportunity to comment.

CENTER for SCIENCE in PUBLIC PARTICIPATION

224 North Church Avenue, Bozeman, MT 59715

Phone (406) 585-9854 / Fax (406) 585-2260 / web: www.csp2.org / e-mail: csp2@csp2.org

"Technical Support for Grassroots Public Interest Groups"



March 2, 2012

Re: Testimony on the feasibility of reclamation for the proposed Chuitna coal mine, before the Alaska Senate Judiciary Committee on March 2, 2012

Fm: David M. Chambers, Ph.D., P. Geop.

Reclamation of a minesite is not restoration to its former function, but involves returning a minesite to a functional use after mining has been completed. The functional uses are typically things like wildlife habitat, grazing, and/or industrial use. The goals for reclamation functional use are, or have, always been aimed primarily at a surface use.

Recreating the subsurface hydrological regime that existed before mining would be extremely difficult, likely impossible, very expensive, and to my knowledge has never been the primary goal of any reclamation effort. Recreating the pre-mining hydrologic regime would be technically challenging at best, but more likely is not a viable option. At a minimum it would require a very detailed pre-mining data collection effort in order to understand the physical layout and function of the existing hydrologic (groundwater) regime. Where water moves and how fast it moves are functions that would have to be well understood before the groundwater strata are disturbed by mining. Some of the reclamation at Chuitna would involve attempting to restore up to 200 feet in thickness of potentially water-bearing strata.

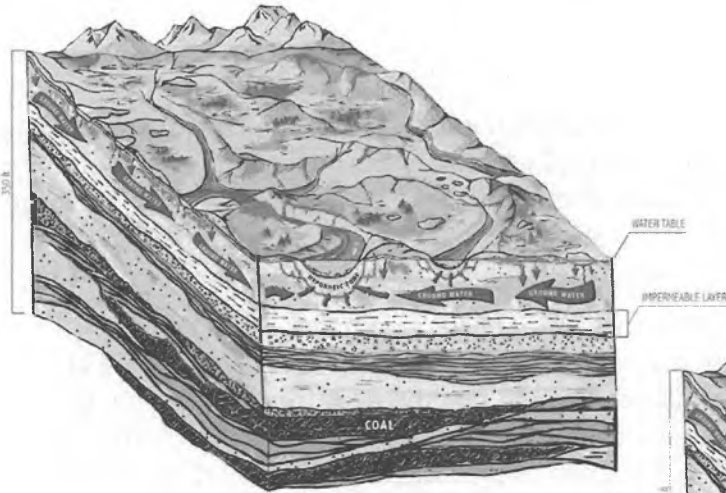
Complicating the restoration would be the Chuit and South Pit faults, and several anticlines (structural features) that have warped the underlying strata since its deposition. Faults can either be zones of high permeability that promote preferential flow of groundwater, or zones of low permeability that act as barriers to the transmission of groundwater. Mining through fault zones means that the groundwater hydrology must be thoroughly understood in order to have any chance of restoring groundwater flow patterns during reclamation. Similarly, anticlines and similar geomorphic structures will influence groundwater flow, and must be carefully mapped in order that restoration of pre-mining hydrologic effects might be attempted. It is not evident from the information presented in the pre-mining work¹ that these important hydrologic factors have been adequately examined.

If the original hydrology were to be adequately mapped in three dimensions, the flow patterns, temperature and water quality variations documented, getting similar materials back into these configurations would be very difficult. When waste material is mined, stockpiled, and then moved back into the mined out pit, there is a tendency for homogenization of the backfill material. From a hydrologic perspective the original strata will consist of zones that conduct water (aquifers), and zones that do not conduct water (aquitards). The aquitards are as important as the aquifers because they control the flow of groundwater. A normal pit backfill would tend to create a relatively uniform aquifer, with hydraulic conductivity that could be greater than or less than that of the original strata. Backfill could also negatively impact groundwater, and potentially surface water, quality.

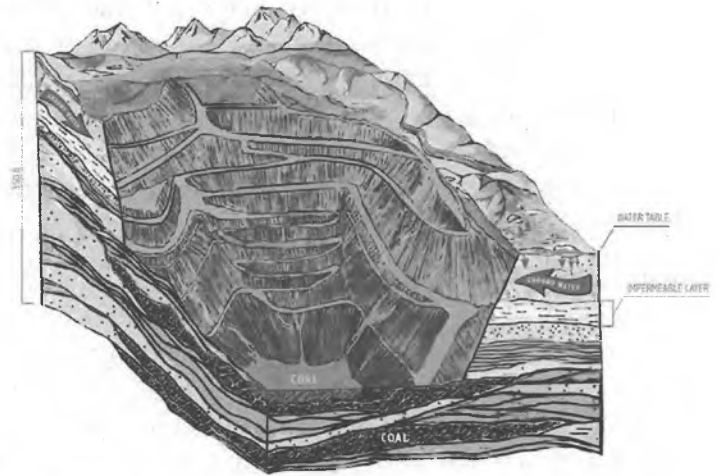
In order to recreate the original hydrologic regime, backfill material would need to be sorted, stored separately, and selectively replaced into the mined out areas. This sorting, with perhaps screening, and separate storage would be more expensive than traditional pit backfill methodology. Quality control of the backfill segregation and placement would also be a significant management issue. If backfilled material is not sorted, stored, and replaced to meet locational and hydrologic parameters, then the restored hydrologic system would function differently than the original.

¹ Chuitna Coal Project Geology Baseline Information, PacRim Coal, L.P., August, 2006

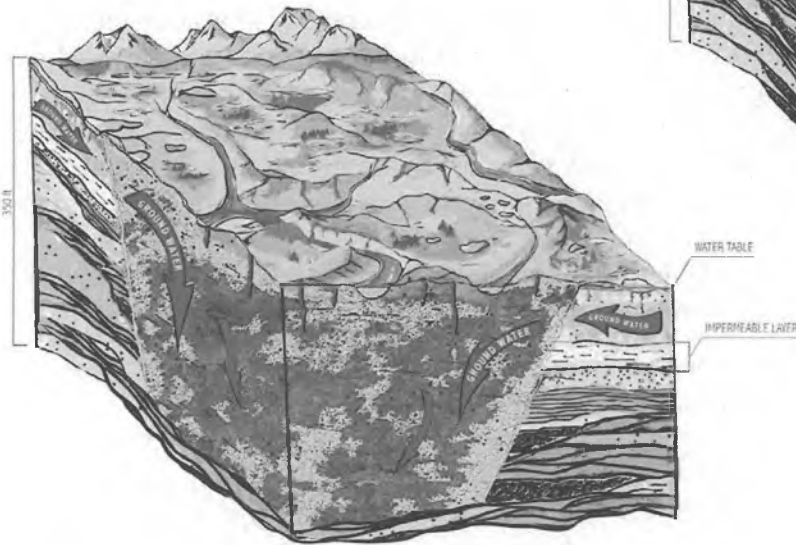
It is highly unlikely that the original hydrologic system could be restored. This is due to the disruption of the original strata due to mining that would cause a change in the physical character of the rock. There would be changes in rock size (therefore hydraulic conductivity), and changes in rock volume. The volume would increase on a unit basis due to breaking up the rock, but there might be a decrease in total volume due to the removal of the coal – coal layers that cannot be replaced physically or hydrologically.



Strip Mining - Before



Strip Mining - During



Strip Mining - After

Because of all of these complications – of adequately defining the existing hydrology; of sorting and storing the mined waste; and, of putting it back in the same hydrologic configuration as the original material – it is likely that the restored hydrologic regime would only be a rough approximation of the original. The significant increase in cost to provide only a rough approximation of what was there before explains why restoration of the original hydrologic regime at a minesite is not typically attempted.

#####



Dr. Tom Myers, researcher and consultant in hydrogeology and water resource specializing in groundwater modeling, hydrogeology, environmental forensics, regulatory compliance, water rights, NEPA analysis, and environmental and water policy.

- The current unique combination of groundwater storage, artesian pressure, horizontal and vertical conductivity, compaction and recharge cause the baseflow hydrograph that sustains streamflows during the low-flow periods of the year. The best available technology would dig up and remove the current layering and completely change the properties that control the flow through the backfill. Consequently, based on best available reclamation technology, it is not technologically feasible to restore water balances to pre-mining conditions.

Download the full report: <http://bit.ly/Juneau2012-Myers>

Lance Trasky, fisheries habitat consultant with 37 years of experience as a fisheries and habitat biologist and as a Habitat and Restoration Division Regional Supervisor with the Alaska Department of Fish and Game.

- None of the examples provided by the Alaska Department of Natural Resources (ADNR) or PacRim demonstrate that reclamation is technologically feasible for streams and riparian corridors in the Chuitna watershed. The proposed project would remove 300 feet of overburden, mine the coal, then replace the overburden, in an attempt to build an entirely new stream and create a functioning stream ecosystem that supports anadromous salmon productivity similar to that which existed pre-mining. As none of the examples provided by ADNR or PacRim involved complete removal of an entire drainage with its associated salmon spawning stream, aquifers, wetlands, vegetation, and the subsequent creation of a new functioning stream on top of the mine overburden, no support is provided for the feasibility of reclamation of a coal strip mine in streams of the Chuitna watershed.

Download the full report: <http://bit.ly/Juneau2012-Trasky>

John Talberth, Ph.D and Evan Branosky, Net Public Benefits of the Chuitna Coal Project

- Chuitna coal strip mine development could cost Alaska \$2 billion in economic losses over the 25 year life of the mine based on the loss of intact freshwater and marine habitats including fish, flood control, water purification, subsistence resources, recreation and scenery.
- The social costs passed on to individuals could range between 193 and 604% of market price of the extracted coal, meaning the cost to Alaskans from the mining of the coal greatly exceeds the coals low value. A finding that corroborates the range published in existing literature.

Download the full report: <http://bit.ly/Juneau2012-Talberth>



Expert Comments and Report Summary
RE: The Proposed Chuitna Coal Strip Mine and the Petition to Designate
Lands Unsuitable for Surface Coal Strip Mining

Dr. Margaret A. Palmer, Professor of Entomology and Biology at the University of Maryland

- Stream 2003" also called Middle Creek, will be completely destroyed. It will not be "impacted", but rather mining will go down hundreds of feet beneath it, completely removing the stream bed and any remnant of the stream for 11 miles. While stream reconstruction has been done successfully by re-grading and re-vegetating banks, or adding or removing debris to create habitat, no one has simply created a new stream where none exists. A new ditch can be dug where the old stream used to be, and can have the same curves and shape. But it will not have the exchange of surface and groundwater at the streambed, upwelling areas for fish to lay their eggs in, biodiversity of insects that headwater streams provide as food for fish, the purity of water and nutrients wetlands provided.

Download the full report: <http://bit.ly/Juneau2012-Palmer1>

- [C]urrent and highly relevant science shows that the scientific technology and knowledge is not sufficient to reclaim salmon streams and riparian habitats post-mining in the Chuitna Watershed. Therefore if the mining proceeds, the damage done to streams and wetlands will be permanent – the damage is irreversible.

Dr. Palmer's comments can be found at: <http://bit.ly/Juneau2012-Palmer2>

Mitchell Swanson, Geomorphologist and River Restoration Scientist

- "Constructing stream channels on reclaimed overburden alone is not the primary factor upon which to demonstrate success – one must somehow create specific watershed conditions for the stream channel to receive and move sediment, [and] recreate and retain habitat features and a stable morphology after construction."
- "...successful stream restoration examples from other locations [are] inappropriate for conditions in the Chuitna Watershed primarily because the cited examples all retained pre-project watershed conditions above the mined sites, which left the pre-project hydrology and sediment supply regimes intact..."

Download the full report: <http://bit.ly/Juneau2012-Swanson>.



Other Resources

COMMENTS: Expert Comments on DNR denial of petition to designate the stream beds and riparian areas of the Chuitna Watershed as unsuitable for coal strip mining (ULP)

by The Center for Sustainable Economy, Mitchell Swanson, Lance Trasky, Dr. Tom Myers and Dr. Margaret Palmer

November 2011

Abstract: On October 24, 2011, the Alaska Department of Natural Resources denied the petition by the Chuitna Citizens Coalition and Cook Inletkeeper seeking to designate stream beds and riparian areas of the Chuitna watershed as unsuitable for coal strip mining (ULP). Relying on the word of PacRim Coal, DNR claims the re-creation of a vibrant, wild Alaskan salmon stream is “technically feasible.” Independent, scientific experts disagree. A survey of existing literature failed to provide a single example of the successful re-creation of a wild salmon stream after its total removal. Below are the comments submitted to DNR regarding the denial of the petition.

REPORT: Net Public Benefits of the Chuitna Coal Project

by The Center for Sustainable Economy

September 2011

Abstract: Report confirming that the Chuitna Coal Project (CCP) could result in net losses to Alaskans of over \$2 billion over the life of the mine. The \$2B figure includes all profits from lease fees, royalty fees, taxes, salaries and the expenditures for the project. In the end the CCP could cost up to 6 times more in economic losses than it creates in economic output.

REPORT: Economic Analysis of the Chuitna Watershed & Cook Inlet

by ECONorthwest

March 23, 2010

Abstract: The information provided in this report is intended to assist citizens and decision makers understand the magnitude of the economic value Alaskans currently enjoy and would place at risk from short- and long-term negative impacts associated with large-scale extractive development—such as the proposed Chuitna Coal Strip Mine.



Other Resources

REPORT: Report on Chuitna Coal Project Aquatic Studies and Fish and Wildlife Protection Plan

by Lance Trasky and Associates
Released August 17, 2009

Abstract: This report summarizes a review of seven environmental reports and documents developed for the proposed Chuitna Coal Project with a full analysis determining the quantity and quality of aquatic resource studies. Additionally, whether those studies provide for an adequate foundation for a successful fish and wildlife protection plan that will successfully protect aquatic resources and provide adequate information for the U. S. Army Corps to make the required determinations under the 404(b) (1) Guidelines.

REPORT: Chuitna Coal Mine Baseline Monitoring and Restoration Plan Review

by Dr. Mark S. Wipfli, Institute of Arctic Biology, University of Alaska Fairbanks
Released July 22, 2009

Abstract: This scientific review of the Chuitna Coal Mine baseline monitoring and restoration plan found critical elements missing from the Chuitna system baseline aquatic reports. The failure to address food webs, trophic linkages, interactions among upstream-downstream, stream-riparian, stream-marine, and basin-wide linkages (below and above ground) severely undermined the ability of the mining plans to protect ecosystem function during mining and to restore it post-mining. Additionally, the lack of consistent, long-term sampling fails to provide the needed estimate of annual biological variability or range of variability, and therefore does not provide a reference to which post-mining rehabilitation effects can be compared.

REPORT: Report on Chuitna Coal Project of PacRim Coal

by Margaret A. Palmer, Professor and Director, Chesapeake Biological Laboratory,
University of Maryland
Released March 16, 2009

Abstract: This report, reviewing documents prepared for PacRim Coal's Chuitna Coal Project, focuses primarily on concerns with the mitigation plan for streams. Primary areas of concern include: 1) PacRim has not directly measured ecosystem functions, without these functional assessments they do not know what natural resource values are being lost, and thus how to develop a mitigation plan. 2) The approach proposed for replacing Stream 2003 (Middle Creek) is outside the realm of stream restoration practices. 3) Impacts to the watershed and the headwater streams from the mining activities will fundamentally alter



Other Resources

the chemical, hydrologic and sediment regimes which are master variables controlling the water quality and productivity downstream.

Letter from the CCC to Sean Parnell, Governor of Alaska

September 29, 2010

Abstract: Letter from the Chuitna Citizens Coalition asking the Governor to explain why the State of Alaska is referring to a proposed, but un-permitted, coal strip mine project with a clear and obvious implication that the project has a predetermined outcome, and that production – regardless of public input, the rule of law or scientific data – will invariably commence.

Parnell Administration Response to Citizen Letter and response from the Chuitna Citizens Coalition

December 2011

The Parnell Administration responded to comments from hundreds of Alaskans asking for common sense protection for the Chuitna River with a form letter full of misstatements and half-truths regarding the State's refusal to protect salmon from large scale coal strip mining.

View and download any of these documents at:

www.chuitna.org/documents/



Opposition Resolutions

Native Village of Tyonek
Chickaloon Village Traditional Council
Nanwalek IRA Council
Kenaitze Indian Tribe
Old Harbor Tribal Council
United Fishermen of Alaska (UFA)
United Cook Inlet Drift Association (UCIDA)
Kenai Peninsula Fishermen's Association
Tyonek Fish & Game Advisory Committee
Anchorage Fish & Game Advisory Committee
Homer Fish & Game Advisory Committee
Central Peninsula Fish & Game Advisory Committee
Nunamta Aulukestai
Renewable Resources Coalition

98% of the people of Tyonek oppose the proposed Chuitna coal strip mine.

Download Resolutions at: <http://bit.ly/Juneau2012-Resolutions>

THE PROPOSED CHUITNA COAL STRIP MINE: A PRECEDENT-SETTING THREAT TO ALL WILD ALASKAN SALMON STREAMS

PREPARED FOR

THE ALASKA STATE LEGISLATURE
SENATE JUDICIARY COMMITTEE

SENATOR FRENCH, CHAIR
SENATOR WIELECHOWSKI, VICE-CHAIR
SENATOR PASKVAN
SENATOR MCGUIRE
SENATOR COGHILL

BY





THE CHUITNA CITIZENS COALITION
&
COOK INLETKEEPER

Summary: PacRim Coal, a Delaware corporation funded by Texas millionaires is working to develop Alaska's largest coal strip mine on the western shores of Cook Inlet near the communities of Tyonek and Beluga.

The Chuitna coal strip mine:

- Sets a statewide precedent of mining through and completely removing salmon spawning and rearing habitat.
- Despite a complete lack of viable examples, PacRim Coal claims they can recreate a salmon stream from scratch.**
- Destroys a renewable resource, salmon, for short-term gain by extracting coal, a finite resource.

Chuitna Coal Mine

-  PacRim Coal Leases (Chuitna Coal)
-  Barrick Gold Coal Leases
-  Strip-Mine Area
-  Anadromous River (Important for salmon, trout, etc.)

Sources: Alaska Department of Natural Resources (2006); PacRim Coal (August 16, 2006)

INTRODUCTION

The Chuitna coal project would be the first strip mine in state history allowed to mine directly through 11 miles of salmon spawning and rearing habitat, completely removing the streambed, from bank to bank, to a depth of 350 feet. According to fisheries biologists and restoration experts, the level of impact PacRim proposes will make reclamation functionally impossible. Middle Creek, a tributary to the Chuit River (recognized as important to salmon by the Alaska Department of Fish and Game) will be destroyed and adjacent streams will have their water flows significantly altered.

There is **NO** law in Alaska that bans the wholesale removal of a salmon stream; the decision is left to the discretion of state agency personnel. If the Chuitna coal strip mine is permitted, a precedent will be set that has far reaching implications to all anadromous streams across the state – **if they can mine through the Chuitna Watershed tributaries they can mine through any salmon stream.**

CURRENT STATUS

October 24, 2011: Alaska Governor Sean Parnell and the Alaska Department of Natural Resources rejected the petition to protect the Chuit River and its tributaries from coal strip mining. **This decision puts all wild salmon in the Chuit River watershed in danger.**

WHO OPPOSES THE PROPOSED CHUITNA COAL STRIP MINE?

United Fishermen of Alaska (UFA)
Native Village of Tyonek
Native Village of Nanwalek
United Cook Inlet Drift Association (UCIDA)
Kodiak Old Harbor
Chickaloon Village Traditional Council
Kenaitze Indian Tribe
Nunamta Aulukestai
Renewable Resources Coalition
Tyonek Fish & Game Advisory Committee
Anchorage Fish & Game Advisory Committee
Homer Fish & Game Advisory Committee
Central Pen. Fish & Game Advisory Committee
Kenai Peninsula Fishermen's Association

See the complete and current list at:
<http://chuitna.org/resolutions/>

98% of the people of Tyonek oppose the proposed Chuitna coal strip mine.



“This proposal would result in both direct and indirect impacts to fish and the natural ecosystem function of the Chuit River drainage in the short- and long-term.”

-- Letter from EPA to PacRim Coal
November 15, 2007

LMU 1 Boundary

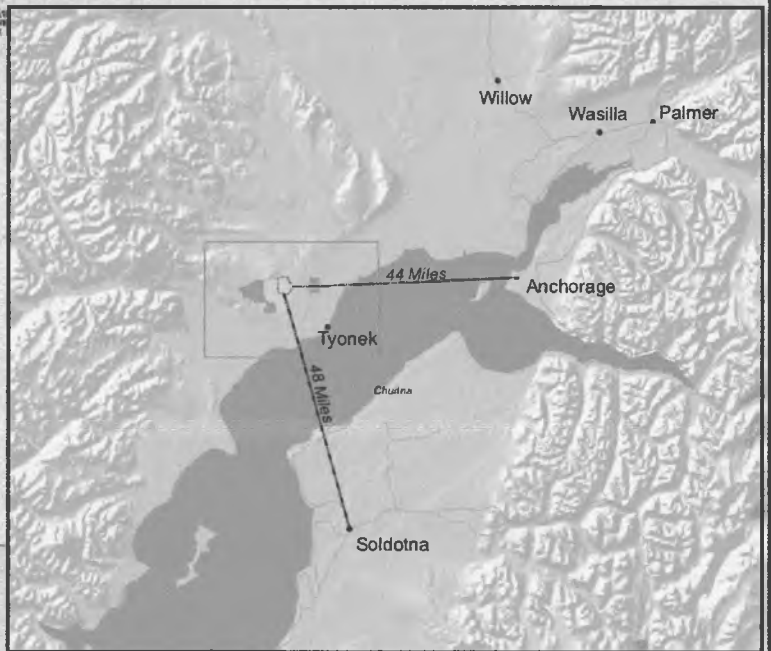
Stream 2003

Ladd Development
Boundary

Trestle and Island

Tyonek

COOK
INLET



What Experts Say About Chuitna

“Re-creating the complex three-dimensional diversity of interconnected underground sediments in salmon habitat, such as Middle Creek, would be impossible.”

Dr. Mark Wipfli, avssociate professor with the University of Alaska in Fairbanks conducting research in aquatic-riparian interactions, freshwater foodwebs, and understanding how riparian forests affect aquatic productivity.

“An extensive search of scientific literature, and discussions with stream restoration and in-stream flow experts did not yield a single documented example of strip-mined salmon habitat being successfully restored.”

Lance Trasky, Former ADF&G Fisheries and Habitat Biologist with over 30 years experience in fisheries research.

“PacRim’s reclamation plan is based on digging a “new stream” to replicate the physical appearance of the original. There is no evidence that simply restoring the shape of a channel will bring back salmon runs, riparian corridors or other essential biological functions. Past stream restoration projects involving channel modifications with much less damage have been unsuccessful, making PacRim’s plans a grand experiment with a stream that produces a significant portion of Chuitna’s salmon.”

Dr. Margaret Palmer, Professor of Entomology and Biology at the University of Maryland with over 25 years experience in stream ecology and restoration.

“Only God would be capable of reproducing a viable 11 miles of salmon stream and all its fixings, and it might even take Him some time.”

Dr. Jim Rearden organized the wildlife department at the University of Alaska Fairbanks in 1950 and taught as head of that department for four years. He has been an area biologist for commercial fisheries for the Alaska Department of Fish and Game in Cook Inlet, served on the old Board of Fish and Game and later on the Board of Game and was a member of the National Advisory Committee on Oceans and Atmosphere. He was outdoors editor of Alaska magazine for 20 years and has written more than 500 magazine stories and 27 books on Alaska subjects.

“Strip mining the streams and their contributing watersheds significantly changes how the watershed converts rainfall into surface runoff, and how, when and if sediment is dislodged by erosion and transported to and within the stream. It is simply not feasible to re-create these characteristics after destroying soil and vegetation cover that were formed and evolved over thousands of years.”

Mitchell Swanson, Geomorphologist and River Restoration Scientist

For more information:

<http://www.chutina.org/>

<http://inletkeeper.org>

<http://www.chuitnascis.com/>

<http://dnr.alaska.gov/mlw/mining/largemine/chuitna/index.htm>

info@chuitna.org

keeper@inletkeeper.org

Overview: Bonding Requirements for Major Mine Projects

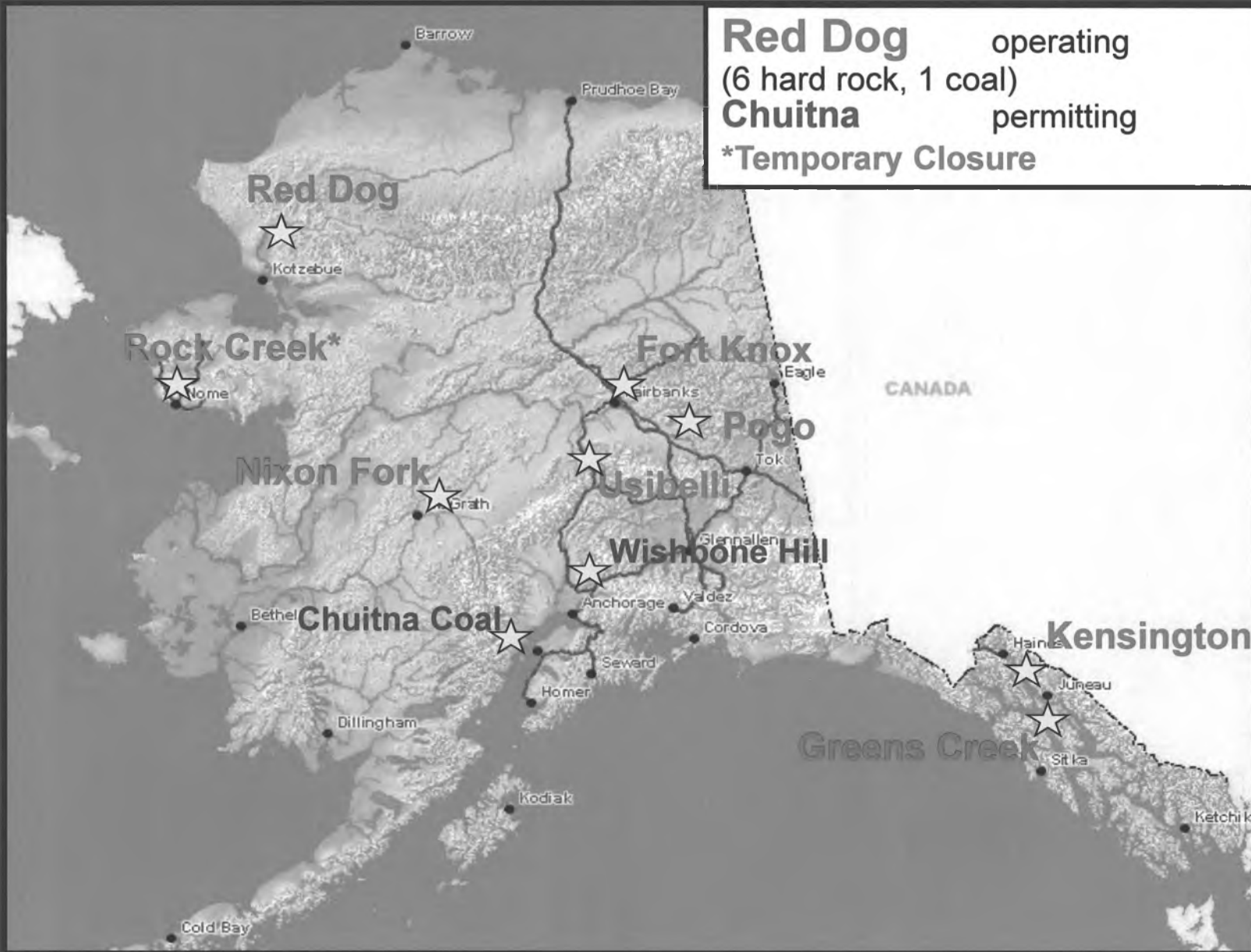
Senate Judiciary Committee Hearing

March 2, 2012



Tom Crafford, Director
Alaska Department of Natural Resources
Office of Project Management and Permitting

Large mining projects in Alaska



A Brief(!) Mine Permitting Primer

No Single Permit to Mine: there are many permits & authorizations

STATE

- Plan of Operations (DNR)
- Reclamation and Bonding (DNR)
- Waste Management Permits and Bonding (ADEC)
- CWA Section 402 APDES Water Discharge Permit
- Certification of ACOE Permits (ADEC)
- Sewage Treatment System Approval (ADEC)
- Air Quality Permits (ADEC)
- Fish Habitat and Fishway Permits (ADF&G)
- Water Rights (DNR)
- Right of Way/Access (DNR/DOT)
- Tidelands Leases (DNR)
- Dam Safety Certification (DNR)
- Cultural Resource Protection (DNR)
- Monitoring Plan (Surface/Groundwater/Wildlife) (DNR/DEC)

FEDERAL

- US EPA Air Quality Permit review
- US EPA Safe Drinking Water Act (UIC Permit)
- US ACOE Section 404 Dredge and Fill Permit
- US ACOE Section 10 Rivers and Harbors Act
- US ACOE Section 106 Historical and Cultural Resources Protection
- NMFS Threatened and Endangered Species Act Consultation
- NMFS Marine Mammal Protection Act
- NMFS Essential Fish Habitat
- NMFS Fish and Wildlife Coordination Act
- USFWS Threatened and Endangered Species Act Consultation
- USFWS Bald Eagle Protection Act Clearance
- USFWS Migratory Bird Protection
- USFWS Fish and Wildlife Coordination Act

(These are only some of the authorizations required)

State Agencies

(LARGE MINE PERMITTING TEAM)

- Dept of Natural Resources
--Lead State agency for coordination: AS 27.05.010(b)
- Dept of Environmental Conservation
- Dept of Fish and Game
- Dept of Health & Social Services
- Dept of Law
- Dept of Transportation & Public Facilities
- Dept of Commerce, Community and Economic Development

Federal Agencies

- US Environmental Protection Agency
- US Army Corps of Engineers
- US Fish and Wildlife Service
- National Marine Fisheries Service

Federal Land Managers

- Bureau of Land Management
- US Forest Service
- National Park Service
- US Fish and Wildlife Service

State Large Mine Permitting Team

- Coordinates review of applications and numerous State permit requirements
- Reviews, analyzes, and evaluates complex technical documents for adequacy and soundness
- Benefits from multi-disciplinary expertise of team of experienced professionals (geologists, hydrologists, mining/civil/environmental engineers, biologists, environmental scientists)
- If the Team does not have the expertise, it can hire additional experts.
- Team members conduct mine inspections and evaluate permit updates during operations.
- The Team is involved from pre-permitting to post-closure.

National Environmental Policy Act (NEPA) Process for an Environmental Impact Statement

A means for considering and evaluating alternatives

Not a permit

- Triggered by major federal action (Notice of Intent)
- Contents:
 - proposed project, purpose & need, and project alternatives (must include No Action alternative)
 - description of the affected environment
 - analysis of environmental consequences of proposed project and alternatives
- Designation of Lead Federal Agency & selection of 3rd party contractor to manage the EIS
- Multiple Public Notice and Comment Requirements
- State participates as a Cooperating Agency and works to dovetail its permitting processes with the EIS timetable and public notice requirements

Baseline Studies

- Surface Water Quality & Quantity
- Groundwater Quality & Quantity
- Aquatic Life (Includes Marine & Freshwater Fish, Invertebrates, etc.)
- Wildlife
- Wetlands
- Socioeconomics
- Subsistence
- Traditional Ecological Knowledge
- Cultural Resources
- Air Quality
- Meteorology
- Health Impact Assessment
- Visual Resources
- Noise

State and federal agencies consult in advance with project applicants to help ensure the right information is collected

Monitoring Plans & Environmental Audits

- Air Qual, Water Qual, Fish & Wildlife are monitored according to approved plan
- Environmental Audits on 5 year schedule tied to re-crafting & reissuance of permits
- All environmental systems audited
- Audits evaluate Agencies as well as operations
- Audits by 3rd party experts
- Financial Assurances revisited and recalculated based on Audit results

Summary

- Many permits required, many state/federal agencies involved
- Experienced agency professionals involved in permitting and regulation
- Third-party experts utilized if agencies don't have the expertise
- Comprehensive analysis of potential environmental, socioeconomic, and health impacts for each project
- Air, Water, Fish & Wildlife Monitoring required
- Financial assurances are required and regularly updated

Financial Assurances i.e., Bonding

Underlying Philosophy

- At no time is the financial assurance to be less than the amount required by the State to complete reclamation
- The bond amount can be increased any time the mine is shown to have inadequate financial assurance.

Authorities

- Reclamation Bonding is required in Alaska (AS 27.19) for mining projects
 - State reclamation standards apply to state, federal, municipal, and private lands and waters subject to mining
 - The bond is based on a Reclamation Plan that must be approved by the DNR prior to mining (AS 27.19.030)
 - DEC has separate bonding requirements that can be included with the DNR into a single bond.

Reclamation Standard (AS 29.19.020)

“A mining operation shall be conducted in a manner that prevents unnecessary and undue degradation of land and water resources, and the mining operation shall be reclaimed as contemporaneously as practicable with the mining operation to leave the site in a **stable condition.**”

Reclamation Performance Standards (11 AAC 97.200-240)

- Return waterborne soil erosion to pre-mining levels in one year.
- Achieve revegetation, where feasible, in five years without reseeding or fertilizer
- Topsoil is to be salvaged, stockpiled and protected for later use in reclamation
- Surface contours are to be made conducive to natural revegetation
- Site shall be reclaimed such that it retains sufficient moisture for natural revegetation
- **Stream channels disturbed need to be reestablished in a stable condition or location**
- Pit and quarry walls and subsidence features need to be made stable.
- Buildings and structures are to be removed unless authorized to stay.
- Scrap iron, equipment, tools, piping, hardware, chemicals, fuels, waste, and general construction debris are to be removed or properly disposed.
- Facilities associated with heap leach facilities are to be reclaimed.
- Underground openings are to be sealed after closure.
- “A miner shall reclaim a mined area that has potential to generate acid rock drainage (acid mine drainage) in a manner that prevents the generation of acid rock drainage or prevents the offsite discharge of acid rock drainage.”

Reclamation Plan General Elements

11 AAC 97.310

- Property descriptions and maps
- Description of mining plan and schedule
- Reclamation measures for treatment of:
 - Topsoil and revegetation
 - Tailings ponds, reservoirs, dumps, pits, etc.
 - Stream replacement
 - Roads, airstrips, and access
 - Buildings

Bonding Statute (AS 27.19.040)

- Bond amount not to exceed an amount reasonably necessary to ensure performance of the reclamation plan
- DNR Commissioner shall establish the bond amount
- A cooperative management agreement with the Federal agencies (land manager) or another State agency is allowed

DEC Statute AS46.03.100(f) for Waste Management and Disposal

- Financial assurance required for closure and monitoring:
 - Of a solid waste facility with chemical treatment of ores (tailings and rock dumps)
 - Of a facility with potential to generate or generates Acid Rock Drainage

Bond Calculation Elements

- Calculation needs to agree with Reclamation and Closure Plan and include inflation.
- Rental Equipment to be used at current rates – quotes required
- Labor with burden at little Davis-Bacon rates
- Mob-Demob estimated for the site (not % of directs)
- Salvage value of buildings and equipment cannot be utilized
- Includes water treatment and post closure monitoring
- Indirect costs include: engineering redesign, contingency, contractor profit, agency administration costs, etc.

Updates to the Financial Assurance Package

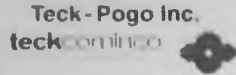
- At least every 5 years when permits are renewed
- After an environmental audit
- Upon significant mine design changes that would affect the bond calculation
- Major changes in prices of fuel or consumables
- Anytime it is believed that the project is under-bonded

Bonding Instruments – Large Mines

(11 AAC 97.4)

- Performance Bond to be placed with DNR
 - Corporate Surety Bond
 - Personal Bond accompanied by:
 - Letter of Credit
 - Certificate of Deposit
 - Deposit of cash
 - Deposit of gold bullion (25% greater than bond am't)
 - General Performance Bond
 - Payments to the Mine Reclamation Trust Fund (AS 37.14.800)
- Interest earned may stay with the bond

Financial assurances are based on a detailed engineering analysis



Reclamation & Closure Plan Update

Table F.1: Demolition Hourly Labor Wage Rates

Description		General Demolition Crew	Mechanical Crew	Heavy Equipment Operator	Electrical Crew	Foreman	Laborer
Base Hourly Rate - straight time		\$26.55	\$26.04	\$27.77	\$30.83	\$30.55	\$23.43
Overtime for 50 hour week	10.0%	\$2.66	\$2.60	\$2.78	\$3.08	\$3.06	\$2.34
Adjusted Hourly Base Rate		\$29.21	\$28.64	\$30.55	\$33.91	\$33.61	\$25.77
Social Security, Medicaid, Unemployment, Liability, and Workers Comp Insurance	21.7%	\$6.34	\$6.22	\$6.63	\$7.36	\$7.29	\$5.59
Total Direct						\$40.90	\$31.37



Reclamation & Closure Plan Update

Labor Indirect						\$4.87	\$3.74
Benefits - per						\$8.24	\$6.32
Field Overhead						\$3.00	\$3.00
Small Tools /						\$8.00	\$8.00
Camp and/or						24.11	\$21.06
Total Indirect							

Table F.2: Hourly Equipment Rates (\$)

Equipment	Equipment Lease Rate	Maintenance & Fuel	Support & Transport	Total		
Excavator 330	31.00	52.00	16.60	100.00	65.01	\$52.42
Excavator 375L	48.00	89.00	27.40	164.00		
Excavator 235	31.00	52.00	16.60	100.00		
Dozer D10R	73.00					
Dozer D6R	42.00					
D6R Dozer	30.00					
Grader 16G	34.00					
Water Truck	20.00					
Tamrock Drill	48.00					
Shotcrete Machine	20.00					
Pickup Truck	30.00					
Re-seeding	15.00					
Shear on 375L	65.00					
FE Loader 950	30.00					
FE Loader 980G	45.00					
FE Loader 992C	62.00					
Dump Truck 14Cy	25.00					
Sell Load Flat Bed	50.00					
Low Bed Truck	35.00					
Dump Truck 17cy	31.00					
Crane Truck 20T	45.00					
Crane Truck 50T	70.00					
Track Skidder 528	50.00					



POGO: RECLAMATION COST ESTIMATE (SEPTEMBER 2003)

Project Number: U419F
Currency: USD 4Q2002

Description	Qty	Unit	Unit Direct Hr	Total Direct Hr	Total Direct Lab Cost	Unit Mat	Total Mat Cost	Unit Sub	Total Sub Cost	Unit Equip	Total Equip Cost	Total Cost
Phase I: Post-Construction			4,988	287,345	13,213	26,400	156,977	483,935				
Phase II: Reclamation Concurrent with Mining												
A-07 WELLS	115		6,294	1,200	0	0	7,494					
A-09 GRAVEL PADS	363		21,312	900	0	25,013	47,224					
A-12 ROCK PILES	2,928		165,891	0	0	197,786	363,677					
A-13 LINERS UNDER ROCK PILES	609		35,340	0	0	41,040	76,381					
A-14 PADS UNDER ROCK PILES	340		19,996	870	0	23,866	44,726					
A-15 EXPLOSIVES STORAGE	406		23,515	0	0	10,904	34,419					
R-01 SURFACE BOREHOLES	2,000		114,060	50,000	0	31,260	195,320					
S-00 WATER QUALITY ASSURANCE	0		0	0	0	10,000	0	10,000				
Phase II: Reclamation Concurrent with Mining			6,781	386,408	52,970	10,000	329,862	779,241				

Financial Assurances for Alaska Mines

Audited & recalculated every 5 years
or when significant changes occur

<i>Operation</i>	<i>Total Bond (\$ Millions)</i> <small>29Feb2012</small>
Greens Creek Mine	\$30.5
Red Dog Mine	\$304.5
Fort Knox (& True North) Mine	\$37.6
Usibelli Coal Mine & Exploration	\$11.6
Kensington Project	\$7.4
Rock Creek Mine	\$6.8
Pogo Mine	\$49.2
Nixon Fork Mine	\$3.5
TOTAL	\$451.1

Alaska Dept. of Fish & Game specific roles/authorities

Title 16 Permits

Fishway & Fish Habitat

Issued by ADFG
Div. of Habitat

- AS 16.05.841: Fishway Act

For activities within or across a stream used by fish that could represent an impediment to the efficient passage of fish. e.g., culverts; water withdrawals; stream realignments or diversion; dams; low-water crossings; and construction, placement, deposition, or removal of any material or structure below ordinary high water

- AS 16.05.871: Anadromous Fish Act

All activities within or across a specified anadromous waterbody and all instream activities affecting a specified anadromous waterbody require approval from the OHMP, including construction; road crossings; gravel removal; mining; water withdrawals; the use of vehicles or equipment in the waterway; stream realignment or diversion; bank stabilization; blasting; and the placement, excavation, deposition, or removal of any material.



ADF&G Project Permitting

- Activities associated with large project development that would typically require permits from the ADF&G include:
 - Fish Habitat Permits for:
 - Construction of fish barriers (i.e., dams);
 - Flow reduction;
 - Bridges, culverts, buried pipelines, etc.;
 - Water withdrawal and intake structures;
 - Stream re-alignment; and
 - Instream mitigation projects.
 - Fish Resource Permits from the Sport Fish and Commercial Fish Divisions associated with project monitoring.

Avoid - Minimize - Mitigate



- Examples of mitigation projects that may be appropriate for large projects include:
 - Construction of wetland complexes;
 - Fish habitat improvement projects
 - Riparian planting of native species;
 - Clean-up of old abandoned sites in the area; and
 - Bank stabilization.

Coal Specific Requirements

per Alaska Surface Coal Mining Control and
Reclamation Act (ASCMCRA)
AS 27.21 & 11 AAC 90

Fish and Wildlife Protection Plan

11 AAC 90.081

- (a) Each application must include a plan to prevent or minimize disturbance and adverse impacts on fish, wildlife, and related environmental values in accordance with 11 AAC 90.423, including impact control measures, management techniques, and monitoring methods to protect, enhance, or mitigate the following, if they can reasonably be expected to be affected by the proposed activities:
 - (2) important species, as determined by the commissioner, including fish and game of economic, recreational, or subsistence importance; eagles, migratory birds, other animals protected by state or federal law, and their habitats; and
 - (3) habitats of unusually high value for fish or wildlife.
- (b) Except as provided in (c) of this section, the plan must include protective measures to be used during the active mining phase of the operation, and enhancement measures to be used during the reclamation and postmining phases of the operation to develop aquatic and terrestrial habitats.

Coal Regulatory Program consults with ADF&G Habitat to accomplish the above

Reclamation Bonding

- The ASCMCRA requires under 11 AAC 90.201 - 213 that, as a prerequisite for obtaining a coal mining permit, a person must post a reclamation bond to ensure that the regulatory authority will have funds to reclaim the site if the permittee fails to complete the reclamation plan approved in the permit.
- Reclamation performance bonds are posted to cover all operations during the term of the permit. Prior to permit issuance, the permittee must post a bond to cover one of the following areas:
 - The entire permit area;
 - The initial area of land to be affected under a cumulative bond schedule; or
 - The initial area of land to be affected under an incremental bond schedule.

Bond Amount

- Minimum bond amount based on regulatory authority's independent analysis of the amount that would be necessary for a third party to complete the reclamation plan in the event of bond forfeiture.
- The bond amount generally reflects reclamation costs at the projected point of maximum reclamation liability (usually the point of maximum disturbance) within the permit area or an initial increment of that area.
- Bond updated prior to additional disturbance or when cost of reclamation increases

Bond Release

- When all reclamation requirements of the approved permit and regulatory program have been met, the regulatory authority may release the reclamation bond.
- Permittee may apply for release of the bond on all or part of the permit or increment as reclamation is completed. (Encourages concurrent reclamation)
- Regulations recognize three discrete phases of reclamation for purposes of bond release.
 - Phase I – Backfilling, grading, and drainage control (60% of total bond)
 - Phase II – Replacement of topsoil and the establishment of vegetation (~30% of total bond)
 - Phase III – Completion of all surface coal mining and reclamation activities

End of Presentation

Questions?

Coal Regulatory Program Additional Informational Slides

Additional Coal Regulatory Info

- One of the purposes of the Alaska Surface Coal Mining and Control Act (AS 27.21) is to assure that reclamation of land on which surface coal mining takes place is accomplished as contemporaneously as practicable with the surface coal mining activity, and to assure that the rights of surface landowners and other persons with an interest in the land are protected.
- Alaska Statute 27.21.160 requires that, prior to permit issuance, the applicant file a performance bond, sufficient to cover the cost of reclamation in accordance with the approved reclamation plan.

Additional Coal Regulatory Info (Cont.)

- 11 AAC 90.083. RECLAMATION PLAN GENERAL REQUIREMENTS. (a) Each application must contain a plan for reclamation of the proposed permit area showing how the applicant will comply with 11 AAC 90.301 - 11 AAC 90.501. The plan must include, at a minimum, all information required under 11 AAC 90.083 - 11 AAC 90.101.

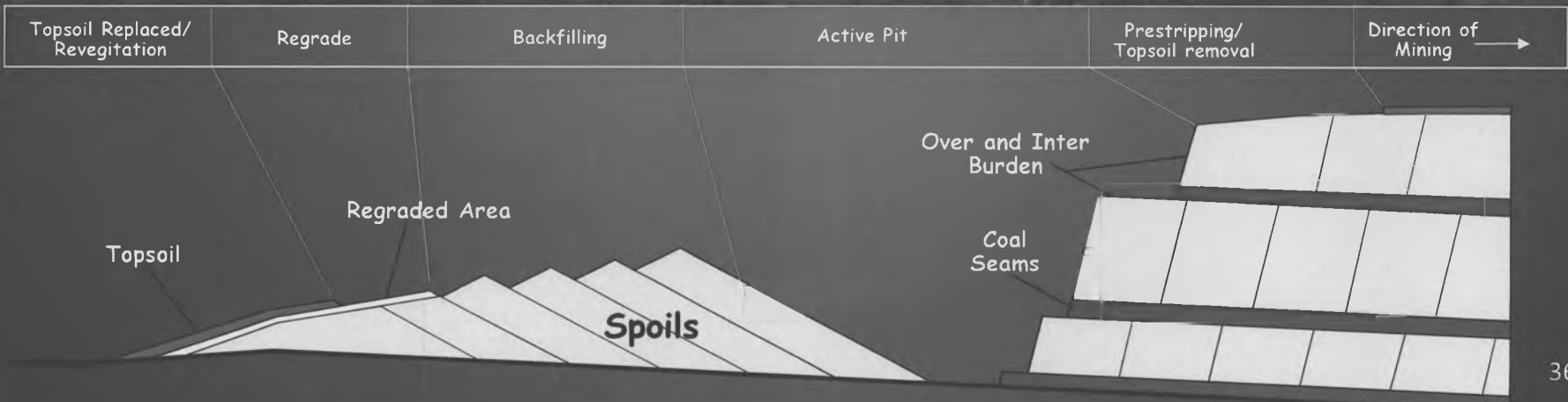
Additional Coal Regulatory Info (Cont.)

- The reclamation plan must contain a detailed description of the intended post mining land use, including how the proposed post mining land use will be achieved.
- The description must be accompanied by comments concerning the proposed use by the legal or equitable owner of record of the surface of the proposed permit area and state and local government agencies which would have to initiate, implement, approve, or authorize the proposed land use following reclamation.

Reclamation Practices



Two Bull Ridge
Usibelli Coal Mine
Healy Alaska



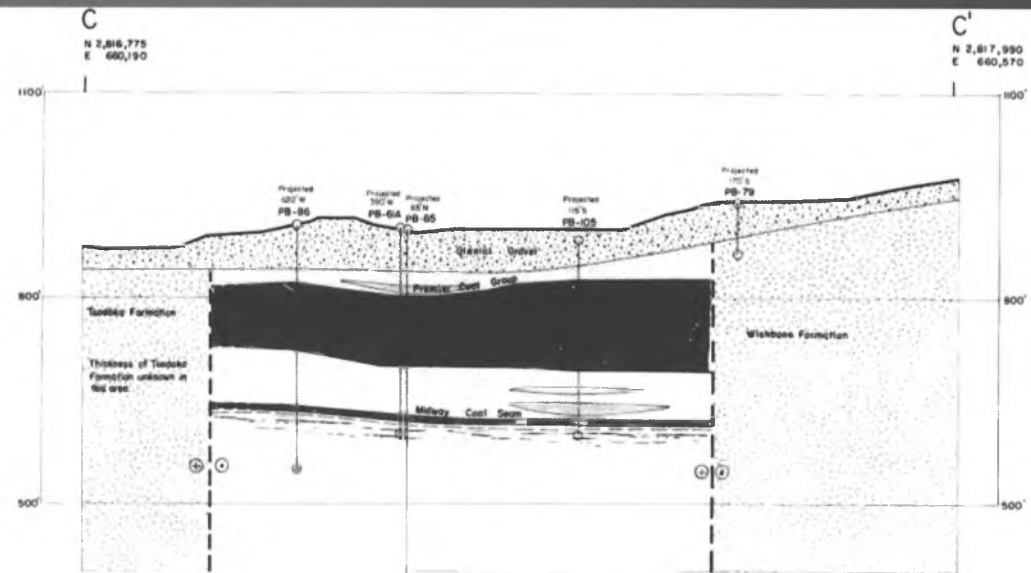
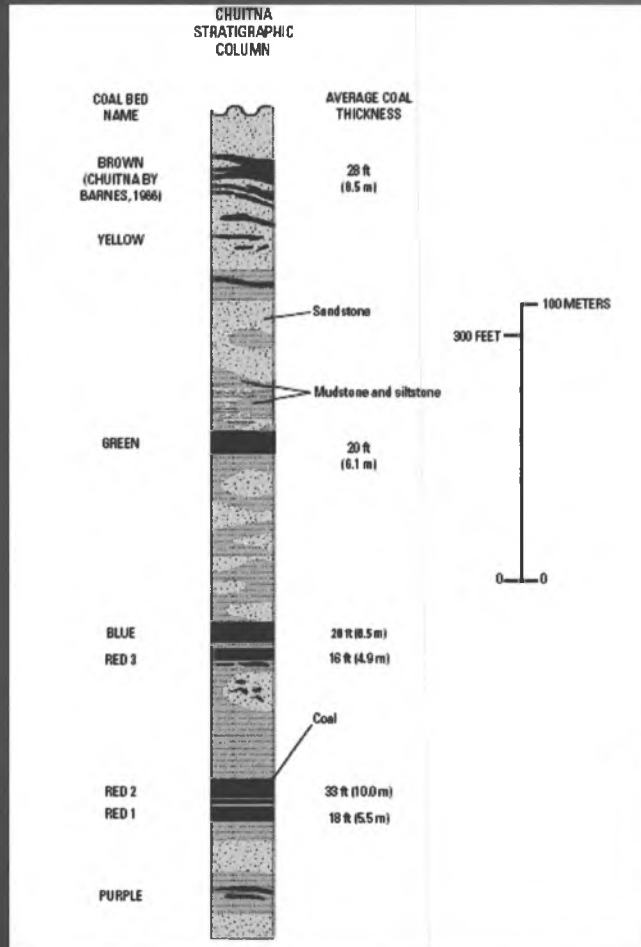
First steps: Environmental resource Information (baseline Studies)

- Hydrology and geology
 - (11 AAC 90.043-045)
- Ground water information
 - (11 AAC 90.047)
- Surface water information
 - (11 AAC 90.049)
- Alternative water supply information
 - (11 AAC 90.051)

11 AAC 90.043. HYDROLOGY AND GEOLOGY

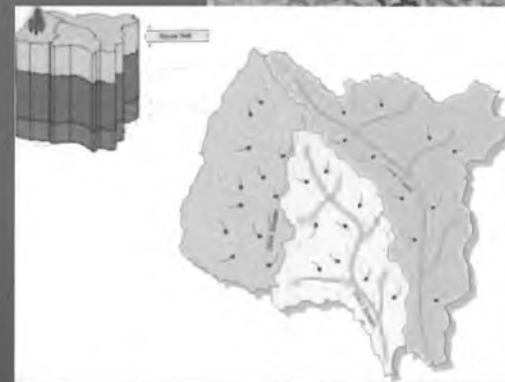
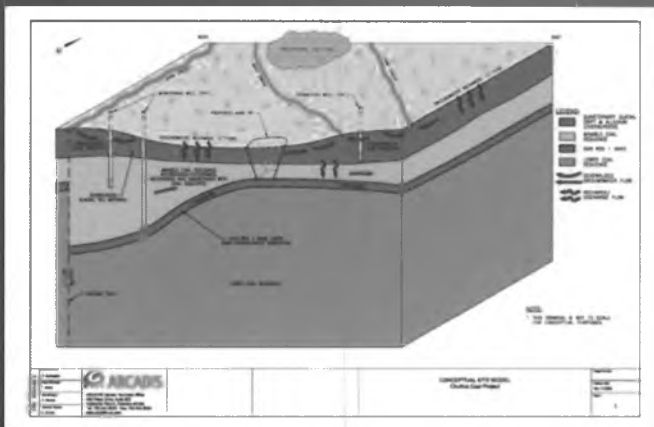
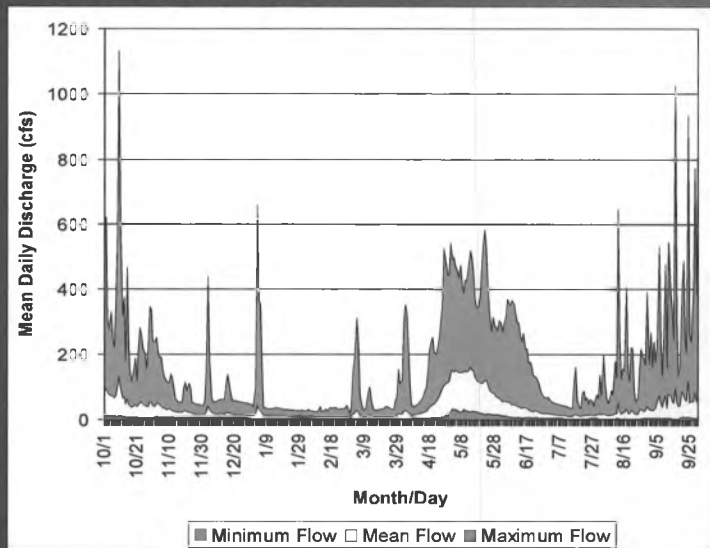
- (a) Each application must describe the geology, hydrology, and water quality and quantity of all land within the permit area, adjacent area, and the general area. The description must include information on the characteristics of all surface and ground water within the general area and any other water that will flow into or receive discharge of water from the general area.
- (b) All water quality analyses performed to meet the requirements of this section, 11 AAC 90.047, or 11 AAC 90.049 [,] must be conducted according to the methodology in *Standard Methods for the Examination of Water and Wastewater, 21st edition*, adopted by reference in 11 AAC 90.001(c), or the methodology in 40 C.F.R. Part 136 and 40 C.F.R. Part 434, adopted by reference in 11 AAC 90.001(b).
- (c) Information on hydrology, water quality and quantity, and geology related to hydrology of the area outside the proposed permit area and within the general area will be provided by the commissioner to the extent that the data are available from an appropriate federal or state agency. The permit will not be approved without this information unless the commissioner determines that the information is not necessary to determine the impact the proposed operation will have on environmental and other resources within the permit area and general area.

Geology



Surface & Groundwater Hydrology and Hydrogeology

Daily Flow Variation at Station 180 – 2003 Creek



Water Quality

Station 141 on 2003 Creek											
Date	TSS	Hardness	Al - T	Cu - T	Cu - D	Fe - T	Fe - D	Mn - T	Mn - D	Zn - T	Zn - D
	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Aug-06	10	20	180	1	< 1	1,420	860	90	100	6	6
Feb-07	< 5	40	50	< 1	< 1	3,170	1,520	270	210	< 5	< 5
May-07	23	20	530	< 1	< 1	3,590	1,670	170	100	8	< 5
Jul-07	< 5	30	50	< 1	< 1	3,350	1,740	230	210	< 5	< 5
Oct-07	< 5	10	100	< 1	< 1	1,280	870	70	< 10	< 5	< 5
Feb-08	< 5	30	60	< 1	< 1	2,910	1,450	220	220	< 5	< 5
May-08	11	< 10	130	< 1	< 1	480	250	80	70	< 5	< 5
Aug-08	< 5	20	60	< 1	< 1	3,090	970	350	340	< 5	< 5
Sep-08	8	< 10	140	1	< 1	930	610	40	< 10	< 5	< 5

First steps: Environmental resource Information (Cont.)

- Climatological information
 - (11 AAC 90.053)
- Vegetation information
 - (11 AAC 90.055)
- Fish and wildlife information
 - (11 AAC 90.057)
- Soil resources information
 - (11 AAC 90.059)
- Land use information
 - (11 AAC 90.061)

Climatological (Local and Regional Weather Data)

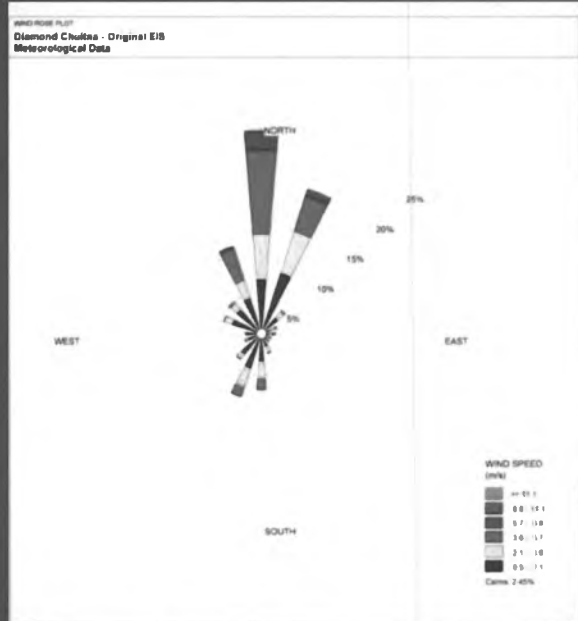
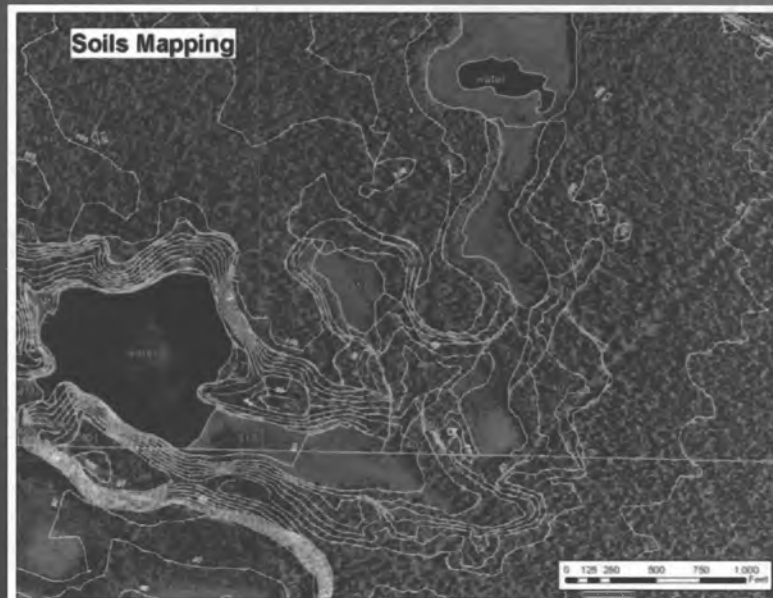


Table 5.2c AVERAGE SNOW DEPTH AND SNOW WATER EQUIVALENT
FIRST OF MONTH MEASUREMENTS (INCHES)

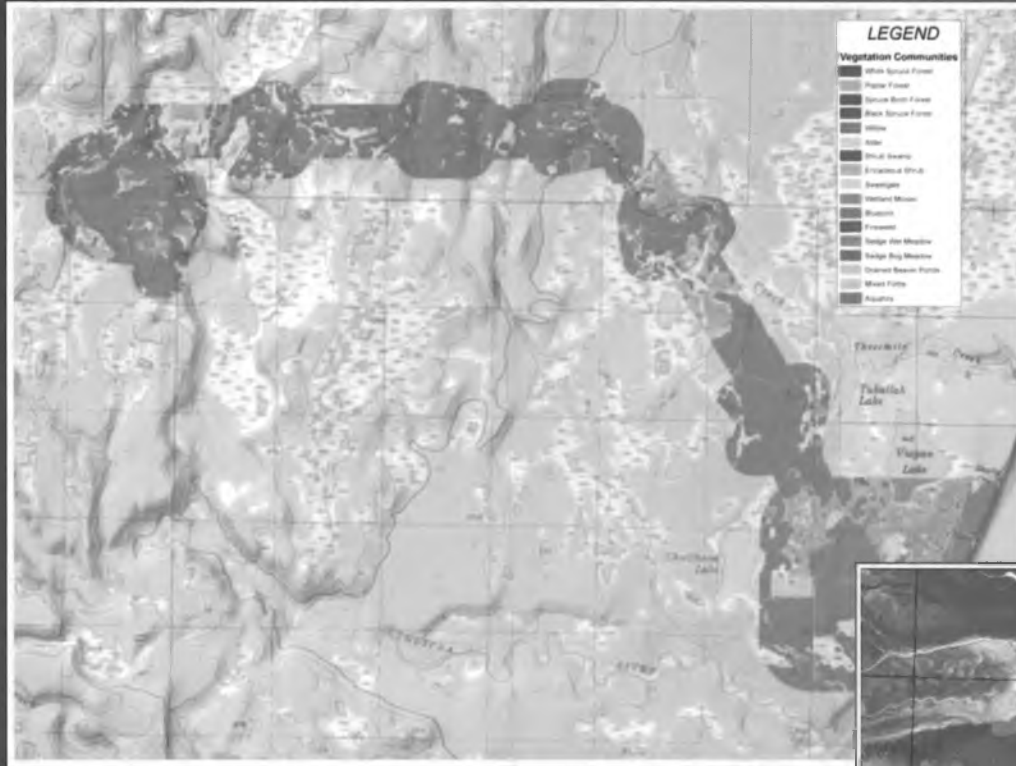
Station	POR	February		March		April		May	
		depth	swe	depth	Swe	depth	swe	depth	swe
Chuitna Plateau	1982-2005	62.0	21.2	69.0	24.7	71.0	28.2	70.0	29.4
	# years in avg	11	11	23	23	23	23	9	9
Congahbuna Lake	1982-2005	30.0	7.7	34.0	9.3	37.0	11.2	25.0	8.5
	# years in avg	14	14	23	23	24	24	11	11
Lone Ridge	1983-2005	68.0	23.3	80.0	28.9	84.0	31.6	64.0	34.9
	# years in avg	6	6	21	21	20	20	6	6
Granite Point	1982-2004	20.0	5.4	20.0	5.2	17.0	5.3	4.0	1.4
	# years in avg	11	11	22	22	23	23	6	7
Heartbreak Hill	1983-1987	45.0	11.5	53.0	14.7	50.0	16.1	37.0	14.1
	# years in avg	4	4	4	4	4	4	4	4
Hunt Creek	1983-1987	49.0	13.5	56.0	16.4	54.0	17.7	46.0	17.6
	# years in avg	4	4	4	4	4	4	3	3
Lone Creek	1983-1987	34.0	8.2	42.0	10.6	39.0	11.6	33.0	12.8
	# years in avg	4	4	4	4	4	4	3	3
Capps Plateau	1982-1987	68.0	33.3	93.0	39.7	46.0	38.4	57.0	48.6
	# years in avg	6	6	6	6	7	7	6	6

Soils

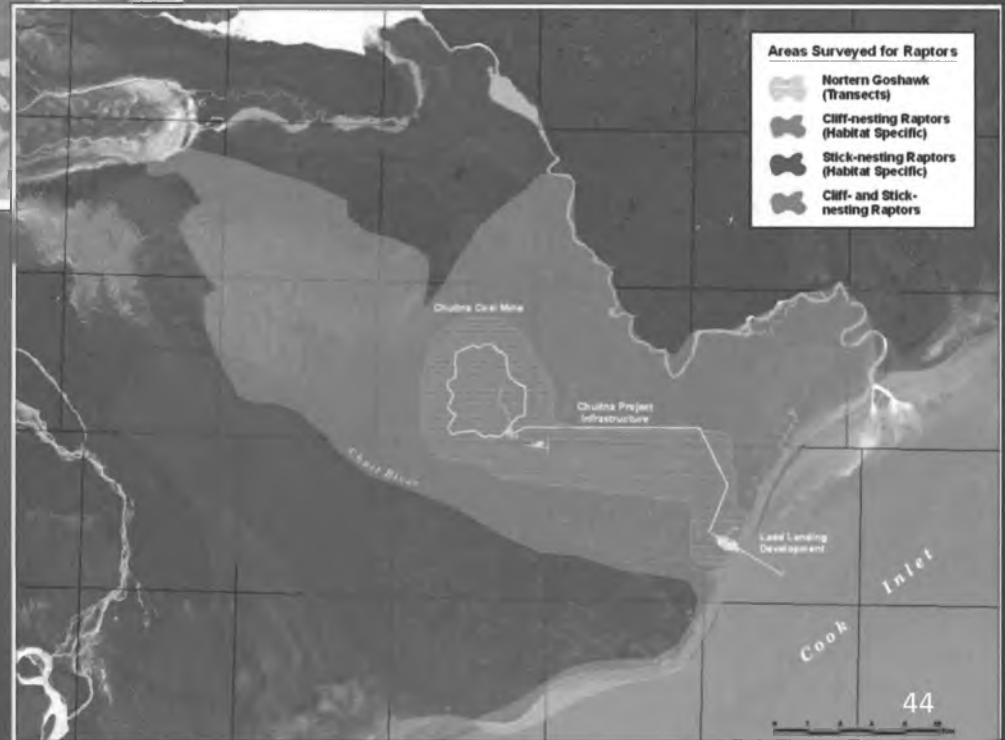
Wetland Organic Soils, MU 310
Chichantna Muck



Vegetation & Wetlands



Fish & Wildlife

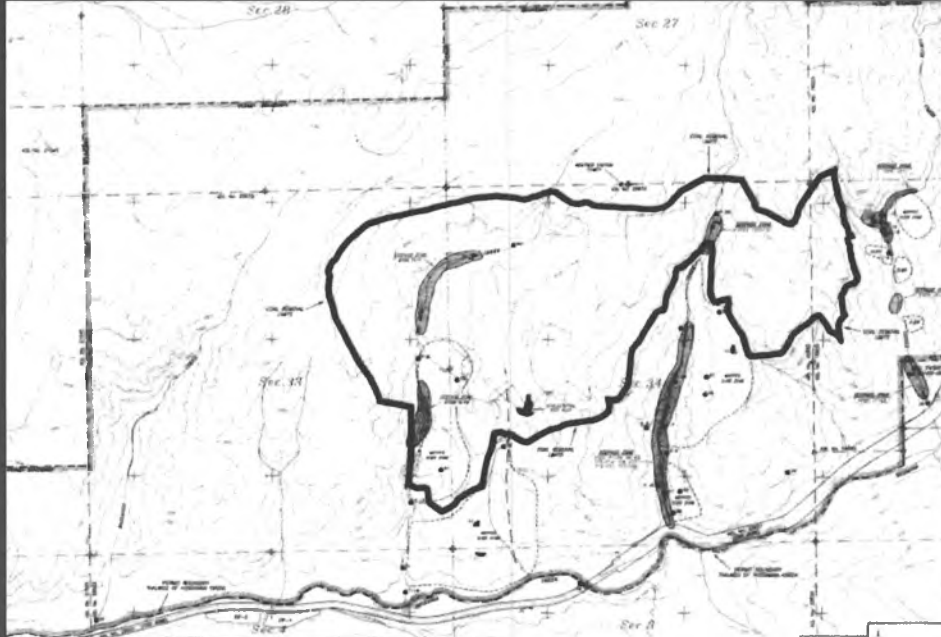


Pre- & Post- Mining Topography

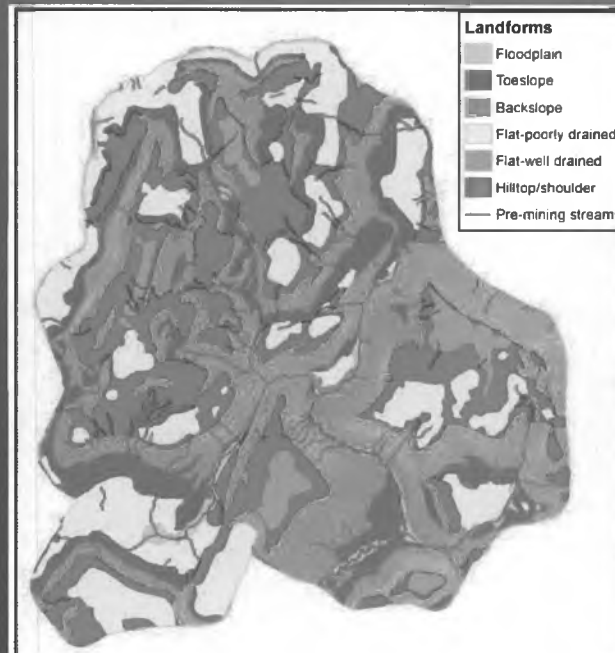
Approximate Original Contour (AOC)

- Means that surface configuration achieved by backfilling and grading of the mined area so that the reclaimed area, including any terracing or access roads, closely resembles the general surface configuration of the land before mining and blends into and complements the drainage pattern of the surrounding terrain in accordance with the performance standards of this chapter.

Pre- & Post- Mining Topography



Post-mining
vegetation

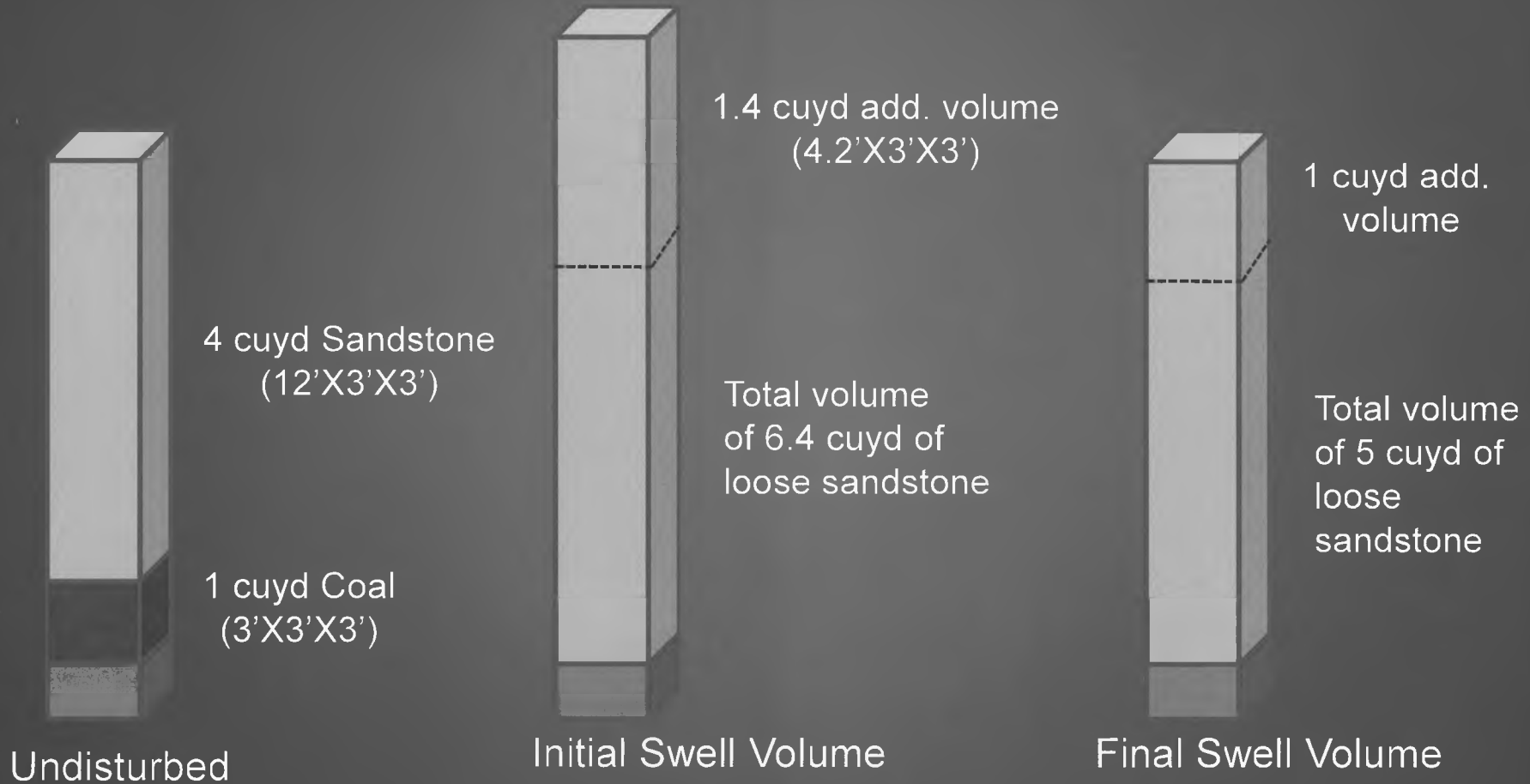


Landform	Slope Range (%)	Actively Reclaimed Communities	Communities That Will Establish Naturally	Postmine Topo (%)
Hilltop and shoulder	0-25	Mixed forest	Alder scrub Bluejoint meadow Fireweed meadow	23
Backslope	7-25	Mixed forest	Alder scrub Bluejoint meadow Fireweed meadow	37
Drainage	0-25	Shrub swamp in shallower, less sloping drainages. Forest in more incised, steeper drain ages.	Bluejoint meadow Alder	**
Toeslope	0-7	Shrub swamp Low scrub	Bluejoint meadow Wet mixed forests may develop	15
Flat, well-drained	0-3	Mixed forest	Alder scrub Bluejoint meadow Fireweed meadow	3
Flat, poorly drained	0-3	Low scrub Sedge meadow Vegetated pond	Shrub swamp Bluejoint meadow	20
Depression	0-3	Sedge meadow Vegetated pond	Shrub swamp Bluejoint meadow	**
Floodplain	0-3	Shrub swamp Sedge meadow	Bluejoint meadow	2

** Drainages and depressions are part of meso-scale topography created during backfilling and grading; they are not mapped on the post-mining topography.

Swell Factor

60% initial swell volume
25% final swell Volume



Backfilling and Regrading



Topsoil Placement



Seeding



Sec. 38.05.005. Division of lands.

The commissioner shall control and supervise the division of lands created and established under the Department of Natural Resources. The director has administrative powers and other delegated duties, as prescribed by law or regulation.

Sec. 38.05.010. Appointment of director.

The commissioner shall appoint a director. The director is the executive officer of the division of lands.

Sec. 38.05.015. Director serves at pleasure of commissioner.

The director serves at the pleasure of the commissioner.

Sec. 38.05.020. Authority and duties of the commissioner.

(a) The commissioner shall supervise the administration of the division of lands.

(b) The commissioner may

(1) establish reasonable procedures and adopt reasonable regulations necessary to carry out this chapter and, whenever necessary, issue directives or orders to the director to carry out specific functions and duties; regulations adopted by the commissioner shall be adopted under AS 44.62 (Administrative Procedure Act); orders by the commissioner classifying land, issued after January 3, 1959, are not required to be adopted under AS 44.62 (Administrative Procedure Act);

(2) enter into agreements considered necessary to carry out the purposes of this chapter, including agreements with federal and state agencies;

(3) review any order or action of the director;

(4) exercise the powers and do the acts necessary to carry out the provisions and objectives of this chapter;

(5) notwithstanding the provisions of any other section of this chapter, grant an extension of the time within which payments due on any exploration license, lease, or sale of state land, minerals, or materials may be made, including payment of rental and royalties, on a finding that compliance with the requirements is or was prevented by reason of war, riots, or acts of God;

(6) classify tracts for agricultural uses;

(7) after consulting with the Board of Agriculture and Conservation (AS 03.09.010), waive, postpone, or otherwise modify the development requirements of a contract for the sale of agricultural land if

(A) the land is inaccessible by road; or

(B) transportation, marketing, and development costs render the required development uneconomic;

(8) reconvey or relinquish land or an interest in land to the federal government if

(A) the land is described in an amended application for an allotment under 43 U.S.C. 1617; and

(B) the reconveyance or relinquishment is

(i) for the purposes provided in 43 U.S.C. 1617; and

(ii) in the best interests of the state;

(9) lead and coordinate all matters relating to the state's review and authorization of resource development projects;

(10) exercise the powers and do the acts necessary to carry out the provisions and objectives of AS 43.90 that relate to this chapter.

Sec. 38.05.025. Continuing regulations, agreements, etc.

All rules, regulations, procedures, funds, contracts, and agreements established or entered into by the Department of Lands before May 2, 1959, under the authority of ch. 126, SLA 1953, as amended, and ch. 184, SLA 1957, are continued, and are subject to amendment by the commissioner except where inconsistent with this chapter.

Sec. 38.05.027. Cooperative resource management or development agreements.

(a) Consistent with the authority of the commissioner under law, the commissioner, after determining that the agreement is in the best interests of the public and the state, may enter into cooperative resource management or development agreements with the federal government, a state agency, a village or municipality, or a person. Specific guidelines to protect the state and public interest shall be established, if necessary, by the commissioner before entering into an agreement under this section.

(b) A summary of agreements entered into under this section shall be submitted to the legislature within five days of the beginning of each regular session.

Sec. 38.05.030. Exceptions.

(a) *[Repealed, Sec. 88 ch 152 SLA 1984].*



11 AAC 82.600. Bonding

- (a) Every mineral lease and permit may contain a provision requiring that an acceptable bond in the minimum amount required by the section of this title dealing with the specific mineral involved be filed before beginning any permit or lease operation.
- (b) The amount of the bond is the amount determined by the commissioner to be justified by the nature of the surface, its uses and improvements in the vicinity of the lands, and the degree of the risks involved in the types of operations to be carried on under the lease or permit.
- (c) Every bond must be either
- (1) a corporate surety bond with a corporate surety qualified to do business as such in Alaska; or
 - (2) a personal bond accompanied by a deposit of cash in the amount of the bond, or negotiable federal or Alaska securities in a sum equal at par value to the amount of the bond together with a sufficient conveyance to the commissioner of full authority to sell the securities in the event of default in the performance of the conditions of the bond.
- (d) Every bond must be conditioned upon faithful compliance with all the provisions of the lease or permit.
- (e) The principal on any bond must be the lessee of record unless the lease is subject to an operating agreement which has been approved by the commissioner, in which case the operator may be the principal in place of the lessee of record.
- (f) Bonds must be furnished on forms provided by the department.

History: Eff. 9/5/74, Register 51; am 7/22/79, Register 71

Authority: AS 38.05.020

AS 38.05.145(a)

11 AAC 82.605. Assignments

- (a) Leases, oil and gas exploration licenses, permits, or interests in leases, oil and gas exploration licenses, or permits, may, with the approval of the commissioner, be assigned or subleased as provided in this section to a person or persons qualified to hold a lease.
- (b) No transfer of an interest in a lease, oil and gas exploration license, or permit, including assignments of working or royalty interest, operating agreements, and subleases, is binding upon the state unless approved by the commissioner. The transferor is liable for all obligations under the lease or oil and gas exploration license accruing before the approval of the transfer. When transfers of overriding royalty are made after the initial separation from the working interest of the lease, executed or image copies of these transfers must be transmitted to the department without charge for filing in the appropriate case file. However, the commissioner will take no action and official

status records will not be posted to reflect these transfers.

(c) The commissioner will approve a transfer of an undivided interest in a lease, oil and gas exploration license, or permit unless the commissioner makes a written finding that the transfer would adversely affect the interests of the state or the application does not comply with applicable regulations. The commissioner will state the reasons for denial of an application in the finding.

(d) The commissioner will disapprove a transfer of a divided interest in a lease, oil and gas exploration license, or permit if the transfer covers only a portion of the lease, oil and gas exploration license, or permit or a separate and distinct zone or geological horizon, unless the transfer would not adversely affect the interests of the state, the transfer complies with applicable regulations, and the

(1) applicant demonstrates to the commissioner's satisfaction that the proposed transfer of a divided interest is reasonably necessary to accomplish exploration of the area subject to an oil and gas exploration license and exploration or development of the lease or permit;

(2) lease is committed to a unit agreement approved by the commissioner;

(3) lease is allocated production within a participating area approved by the commissioner; or

(4) lease or area subject to an oil and gas exploration license has an oil, gas, or geothermal well certified as capable of production in paying quantities.

(e) The commissioner will make a written finding stating the reasons for disapproval of a transfer of a divided interest under (d) of this section.

(f) When a corporate merger or consolidation occurs, transferring all of the interests of one corporation to another, the surviving or new corporation shall submit to the department

(1) a signed, notarized statement by an officer of the surviving or new corporation describing the transfer of interests;

(2) a certificate of merger or certificate of consolidation issued by the State of Alaska, Department of Commerce;

(3) applications for approval of assignments transferring all interests to the surviving or new corporation, in compliance with 11 AAC 82.615;

(4) if not filed on a form provided by the department, the request for approval must contain the same information for each interest transferred as is required on the assignment application form;

(5) a filing fee is required for each affected lease or oil and gas exploration license; and

(6) the surviving or new corporation must comply with the statement of qualifications required by 11 AAC 82.205.

History: Eff. 9/5/74, Register 51; am 7/22/79, Register 71; am 3/30/84, Register 89; am 7/1/89, Register 110; am 9/22/95, Register 135

Authority: AS 38.05.020

AS 38.05.131

AS 38.05.132

AS 38.05.133

AS 38.05.920

11 AAC 82.610. Permits or leases segregated by partial assignment

If a transfer is made of all or a part of the lessee's or permittee's working interest in a portion of the acreage in a lease or permit, the acreage as to which the transfer is made will, at the option of the commissioner, and may, upon the request of the transferee and with the approval of the commissioner, be segregated into a separate and distinct lease having the same effective date as the original lease or permit.

History: Eff. 9/5/74, Register 51; am 7/22/79, Register 71

Authority: AS 38.05.020

11 AAC 82.615. Application for approval of assignment

(a) An application for approval of assignment or transfer must

(1) be filed in triplicate and comply with 11 AAC 88.105;

(2) be filed within 90 days after the date of final signing of the transfer by the assignor; however, an assignment not filed within 90 days may be approved, at the discretion of the commissioner, where no intervening interest is filed;

(3) unless filed on forms provided by the department, be accompanied by a request for approval of assignment essentially like that used in the appropriate department form; and

(4) be accompanied by a bond, if required by the commissioner, which clearly binds the assignee and the assignee's surety to any unperformed obligations of the assignor.

(b) If the transfer is solely an assignment by the lessee or licensee of a state-issued oil and gas exploration license of record of all or a divided or undivided portion of the record title to a lease or oil and gas exploration license, forms provided by the department or facsimile must be used.

(c) Each application for approval of assignment must provide for the transfer of interest from a single assignor to a single assignee. The department form may not be altered to provide for any type of multiple party assignments.

(d) If a single instrument affects two or more leases, oil and gas exploration licenses, or permits, the applicant shall file three signed counterparts of the instrument and sufficient exact image copies of it to provide one copy of each lease, oil and gas exploration license, or permit covered by the application. A separate filing fee is required for each lease, oil and gas exploration license, or

permit affected.

(e) The assignee shall also file or refer to the current statement of qualifications required by 11 AAC 82.205.

(f) Ownership interests must be expressed in percentages with any fraction of a percent expressed in decimals with five or fewer digits to the right of the decimal point. All ownership percentages in the lease, when added, must total 100 percent.

(g) Filing fees will be assessed in accordance with 11 AAC 05.010 for each application for approval of assignments.

History: Eff. 9/5/74, Register 51; am 7/22/79, Register 71; am 7/1/89, Register 110; am 9/22/95, Register 135

Authority: AS 38.05.020

AS 38.05.131

AS 38.05.132

AS 38.05.133

AS 38.05.920

11 AAC 82.620. Transfer by death

If the applicant claims to be the heir or devisee of a deceased holder of a lease or permit or interest in it, he must furnish evidence satisfactory to the commissioner of his status and identity as an heir or devisee.

History: Eff. 9/5/74, Register 51; am 7/22/79, Register 71

Authority: AS 38.05.020

AS 38.05.920



Kensington Gold Mine
Project

Reclamation Plan Approval

DEPARTMENT OF NATURAL RESOURCES
Division of Mining, Land and Water

June 3, 2005

The Alaska Department of Natural Resources, Division of Mining, Land and Water (DNR), in accordance with and subject to Alaska Statutes 27.19 (Reclamation) and 38.05 (Alaska Land Act) and the Alaska Administrative Code, Title 11 and Chapter 97 (Mining Reclamation), approves the Reclamation Plan for the Kensington Gold Mine Project submitted by:

Coeur Alaska, Inc
3031 Clinton Dr. Suite 202
Juneau, AK 99801

The Reclamation Plan is considered to consist of Appendix 1 of the Kensington Gold Project Final Plan of Operations, dated May 2005. The Reclamation Plan applies to both private lands and lands managed by the United States Forest Service (USFS).

Effective dates of this plan approval are **June 3, 2005 through June 3, 2011**, unless sooner revoked for cause; however, Coeur Alaska's obligations under the terms and conditions of this plan approval shall continue, unless sooner terminated in accordance with the provisions of this plan approval, until completion of all requirements under and pursuant to the Plan of Operations.

This plan approval does not constitute certification of any property right or land status claimed by the applicant.

The Reclamation Plan was found to be complete and is approved by DNR with the following conditions:

Financial Assurance. This Reclamation Plan Approval does not take effect until Coeur Alaska submits a financial assurance in a form and substance approved by DNR and the USFS. The financial assurance shall not be released until all affected areas have been reclaimed and are approved by the Authorized Officer and the USFS, and all other terms of this plan of operations are met. Modifications to this Reclamation Plan may, at DNR's discretion, require bond review and update. The total financial assurance of **\$7,354,015.00** has been accepted for the Kensington Gold Project, with the conditions that the financial assurance amount be reviewed prior to construction of the Tailings Storage Facility dam to determine if premature closure of the dam at Stage I or Stage II would change the closure cost estimate, and also that the financial assurance be reviewed as part of the Reclamation Plan update scheduled for 2008.

Terms of this Plan Approval. The Terms and Conditions contained within the Reclamation Plan (May 2005) are hereby included as stipulations of this Plan Approval. If there is a difference between the Reclamation Plan as submitted and the terms contained within this Plan Approval, the terms contained within this Plan Approval take precedence.

The Authorized Officer for DNR is the Director of the Division of Mining, Land and Water or his designee. The Authorized Officer may be contacted at 550 West 7th Avenue, Suite 900D, Anchorage, AK 99501-3577, telephone (907) 269-8621, and fax (907) 269-8930 or at tom_crafford@dnr.state.ak.us. Coeur Alaska will be notified of changes to the authorized officer as needed.

Monitoring Plan. Monitoring results obtained during a reporting period shall be summarized and reported to the Authorized Officer quarterly, on or before the 15th day of the month following the quarter, in an electronic format acceptable to DNR. Electronic copies should also be sent to ADNR (Carl Schrader at Carl_Schrader@dnr.state.ak.us). Amendments to this distribution list will be provided to Coeur Alaska as needed.

As-Built Maps. Coeur Alaska shall submit to ADNR an annual "as built" map illustrating the current development of all project facilities. The plan maps shall show cleared and grubbed areas; growth medium stockpiles; roads; waste rock dump development; material site development; and facility construction. Maps shall be both in a digital format and hard copy at 1"=500' or other appropriate scale necessary to review the development of individual facilities.

Inspection and Entry. Coeur Alaska shall permit authorized representatives of DNR and DEC to enter into and upon the area and facilities covered under this plan approval at all reasonable times without notice for the purpose of inspecting the area and activities covered under this plan approval. Said inspections shall be subject to such safety and security procedures as Coeur Alaska may from time to time adopt.

At any time upon DNR's written request, Coeur Alaska shall promptly make any and all records, documents, or other information required to be kept or maintained by law, regulation, ordinance or this plan approval available to DNR for inspection and copying as reasonably required by DNR to determine if Coeur Alaska is in compliance with local, state and federal laws applicable to the operations authorized under this plan approval.

Environmental Audit. A third-party environmental audit shall be conducted every six years (and prior to final closure, unless otherwise approved by DNR and the USFS). This audit will include all aspects of the project, including access roads, material sites, waste rock storage facilities, and the tailings storage facility. The third-party contractor should be mutually agreed on by the State, USFS, and Coeur Alaska, but in the event that agreement cannot be reached, the State and USFS retains the final selection decision. Costs for the third-party environmental audit shall be borne by

Coeur Alaska. The environmental audit shall include an evaluation of the adequacy of the reclamation financial sureties.

Violations. This authorization is revocable immediately upon violation of any of its terms, conditions, stipulations, or upon failure to comply with any other applicable laws, statutes and regulations (federal and State).

Assignment. This plan approval may be transferred or assigned with prior written approval from DNR. DNR will only disapprove a transfer with good cause and will evaluate whether the proposed assignee (1) is qualified to acquire all other permits and authorizations necessary to conduct operations under the plan; (2) is on notice of default or subject to an enforcement action by any state agency on any lease, reclamation bond, or other permit within the state. Any assignee must commit in writing to be bound by this plan approval to the same extent as Coeur Alaska, and must provide to DNR all proofs of bonds, or undertakings required by this plan approval. Transfer of this plan approval may, at DNR's discretion, require bond review and update.

Other Authorizations. The issuance of this authorization does not alleviate the necessity of Coeur Alaska to obtain authorizations required by other agencies for this activity.

Valid Existing Rights. This authorization is subject to all valid existing rights in and to the land under this authorization. The State of Alaska makes no representations or warranties whatsoever, either expressed or implied, as to the existence, number, or nature of such valid existing rights.

Change of Address. Any change of address must be submitted in writing to the Authorized Officer.

Modifications. Any request for modification of the plan of operations and any other affected permits or authorizations must be made by written application to DNR. Amendments to the Reclamation Plan may, at the discretion of DNR, require bond review and update.

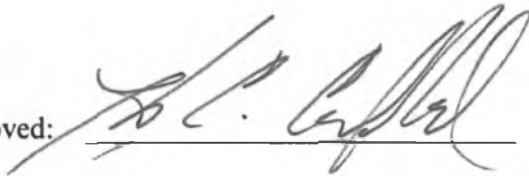
Statutes and Regulations. This plan approval is subject to all applicable state and federal statutes, including state, federal, and any local statutes and ordinances in effect on the effective date of this plan approval, new statutes, regulations, and

ordinances enacted or promulgated after said effective date, and changes to existing statutes and regulations made after the effective date, to the extent constitutionally permissible.

Severability. If any clause or provision herein contained shall be adjudicated to be invalid, it shall not affect the validity or effect of any other clause or provision of this plan approval, nor constitute any cause of action in favor of either Coeur Alaska or DNR as against the other.

Commencement of permitted activities will be considered an acceptance by Coeur Alaska of these special stipulations.

Approved: _____

A handwritten signature in black ink, appearing to be "S. L. ...", written over a horizontal line.

June 3, 2005
Date



**STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF MINING, LAND AND WATER**

MINING RECLAMATION BOND (PERSONAL BOND)

The Miner, Abacus Alaska, Inc., a corporation existing under the laws of the State of Alaska, whose address is c/o CBR Gold Corp, Suite 220, 9797 45 Avenue NW, Edmonton, Alberta T6E 5V8, Canada, as Obligor, is firmly bound unto the State of Alaska Department of Natural Resources and the State of Alaska Department of Environmental Conservation ("the State") in the sum of One Million, Two Hundred Twenty One Thousand, Four Hundred and Eight U.S. Dollars (\$1,221,408), lawful money of the United States, for the payment of which the Obligor hereby binds itself, its successors, and assigns.

Contemporaneously with the execution and delivery of this Personal Bond, the Obligor delivers to the State as collateral to secure the obligation described herein a Letter of Credit numbered BMTO184657OS pursuant to 11 AAC 97.410 and 18 AAC 60.265.

Whereas, the Obligor has submitted reclamation plans for mining exploration operations under an approved reclamation plan, and obtained waste disposal or management permits at the Niblack Mine exploration property, which approved reclamation plans (hereinafter "the reclamation plans") and waste disposal or management permits (hereinafter "the Permits") are listed in Table 1 below, and are incorporated fully herein in all its terms and made a part of this bond; and

Table 1

Plan/Permit/Lease #	USD Amount	Description
ADNR Reclamation Plan Approval J092711 and ADEC Waste Management Permit 2006-DB0037	\$ 1,221,408	Permits issued for the Underground Exploration Program
TOTAL	\$ 1,221,408	

Whereas, the Obligor is required to post a performance bond with the State to ensure complete compliance with AS 27.19, 11 AAC Chapter 97, 18 AAC Chapter 60, the reclamation plans and the Permits; and

Whereas, the Obligor is required to post this Personal Bond with the State to ensure the Obligor's complete compliance with the requirements of the reclamation plans, AS 27.19 and attendant regulations at 11 AAC Chapter 97, and the Permits and attendant regulations at 18 AAC Chapter 60; and

Whereas, in accordance with 11 AAC 97.430, Obligor is liable for the full costs of reclamation to the standards of AS 27.19, the requirements of 11 AAC Chapter 97, and the approved reclamation plans, regardless of the amount of the bond; and

Whereas, the Obligor agrees that unless the Obligor has replaced this bond with another personal bond or with another form of financial assurance authorized under 11 AAC 97.400 and 18 AAC 60.265 providing security for compliance with all terms of the reclamation plans and Permits, coverage under this bond shall extend to and include the approved reclamation plans, Permits, and any amendments to the plan approved by the State.

Now, therefore, the terms of this Personal Bond are as follows:

Upon a determination by the State that the Obligor has satisfactorily complied with the reclamation plans (in accordance with the standards of AS 27.19.020 and of 11 AAC 97.200-250) and the Permits, the obligations of this personal bond and accompanying instrument shall terminate and the commissioner shall release this bond and the accompanying instrument.

This personal bond and accompanying instrument shall remain in full force and effect until their release is approved in writing by the State (1) in accordance with 11 AAC 97.410(b) and 18 AAC 60; or (2) upon delivery of substitute financial assurance acceptable to the State.

The State may approve replacement of this personal bond or the collateral securing it in accordance with 11 AAC 97.400 and 18 AAC 60. In the event of replacement, the substitute bond must assume all remaining reclamation obligations and liabilities.

If the State determines that the Obligor has violated or permitted a violation of the reclamation plans or Permits and failed to comply with a lawful order of the State, the Obligor forfeits this personal bond or the relevant portion thereof in accordance with AS 27.19.040(c) and AS 27.19.070(a) or and 18 AAC 60. Upon the Obligor's receipt of a notice of the Obligor's default from the State, the Obligor shall promptly pay the face value of this personal bond to the State or forfeit the funds secured by the Letter of Credit # BMT0184657OS referenced above.

All correspondence pertaining to the Personal Bond shall be sent to:

State of Alaska, Department of Natural Resources
Division of Mining Land and Water
550 West 7th Avenue, Suite 900D
Anchorage, AK 99501-3577

OBLIGOR

Date Feb 12/10

(Affix seal)

Obligor Abacus Alaska, Inc.

By: [Signature]
DIRECTOR
(Title)

ACKNOWLEDGMENT OF OBLIGOR

The foregoing instrument was acknowledged before me by Sean Hager,
this 12 day of February, 2009¹⁰.

Witness my hand and official seal. [Signature]
(Notary Public or other authorized officer)

My Commission Expires: non-expires

**PRATHAVAN P VENKATRAMAN
BARRISTER & SOLICITOR
A NOTARY PUBLIC AND COMMISSIONER
FOR OATHS IN AND FOR THE PROVINCE
OF ALBERTA**

**APPROVAL AND ACCEPTANCE BY STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES**

By: [Signature]
Dick Mylius, Director, Division of Mining, Land and Water

Date 9-10-2010

**APPROVAL AND ACCEPTANCE BY STATE OF ALASKA
DEPARTMENT OF ENVIRONMENTAL CONSERVATION**

By: [Signature]
Lynn Kent, Director, Division of Water
FKV

Date 10/20/2010



CONSENT RESOLUTION OF ALL THE DIRECTORS
OF
ABACUS ALASKA, INC.
(the "Company")

We, the undersigned, being all the Directors of the Company, hereby consent to and adopt in writing the following resolutions as of the ____ day of _____, 2009.

GENERAL SIGNING AUTHORITY

BE IT RESOLVED THAT:

1. Sean Mager, or such other person or persons as the Directors may from time to time by resolution appoint, be and is hereby authorized and directed to do all such acts and things and to execute or cause to be executed, whether under corporate seal or otherwise, all such agreements, deeds, transfers, assignments, reclamation bonds or other instruments which may be necessary or desirable and in the best interest of the Company.
2. These resolutions may be executed in counterparts and delivered by hand or facsimile, each of which shall be deemed an original but which together shall constitute one and the same instrument.

Sean Mager

Peter Kleespies

John Williamson

Sean Mager hereby confirms that he is a director of the Company and acknowledges his interest in the transaction referred to above and to the extent necessary abstains from voting on the transaction, his signature above being necessary to comply with the requirement that a consent resolution be signed by all the Directors of the Company.

Sean Mager

STATE OF ALASKA

DEPARTMENT OF NATURAL RESOURCES
OFFICE OF THE COMMISSIONER

SEAN PARNELL, GOVERNOR

- P.O. BOX 111000
JUNEAU, ALASKA 99811-1000
PHONE: (907) 465-2400
FAX: (907) 465-3886
- 550 WEST 7TH AVENUE, SUITE 1400
ANCHORAGE, ALASKA 99501-3650
PHONE: (907) 269-8431
FAX: (907) 269-8918

Detailed Statement of Findings and Decision on Petition Requesting that the Streambeds of Anadromous Waterbodies and Associated Riparian Areas in the Chuitna River Watershed be Designated as Lands Unsuitable for All Types of Surface Coal Mining Operations

SUMMARY AND BACKGROUND OF THE PETITION

On January 21, 2010, Trustees for Alaska (Trustees), on behalf of two organizations, submitted a petition (referenced herein as the "petition," or where context is required, the "2010 Petition") to the Commissioner of the Department of Natural Resources (DNR), requesting that certain lands within the Chuitna River¹ watershed (Chuitna watershed) be designated unsuitable for all types of surface coal mining operations. Trustees submitted the petition on behalf of the Chuitna Citizens Coalition and Cook InletKeeper. Both groups are collectively referenced herein as petitioners.

The present action is one in a continuing series of attempts dating back to the 1980s to prohibit surface coal mining operations in the Chuitna watershed. More recently, this is the second time in three years that petitioners have filed a petition requesting that DNR find the Chuitna watershed unsuitable for surface coal mining operations. In the 2007 Petition, these petitioners alleged that reclamation was not technologically feasible; the petition was litigated, and the appeal was eventually dismissed with prejudice. This procedural history and the state and federal decisions denying earlier attempts to prohibit surface coal mining are integral to the present decision.

The 2010 Petition raises many of the same arguments and reads much like the 2007 Petition. More specifically, the 2010 Petition requests that streambeds underlying anadromous water bodies and their associated riparian areas within the Chuitna watershed be designated unsuitable for surface coal mining.

¹ The river is also commonly referred to, including by petitioners, as the Chuit River.

This petition is based on the Alaska Surface Coal Mining Control and Reclamation Act, which authorizes the DNR Commissioner to designate state lands as off-limits for all surface coal mining operations if scientifically sound data and information justifies a finding that state lands are unsuitable for surface coal mining operations. The State of Alaska has never granted a “lands unsuitable” petition. The result of granting such a petition for the Chuitna watershed would be that the petition area would be preemptively closed for all surface coal mining operations. Thus, entities with a property interest in the land would be precluded from even applying for a permit to mine coal from the Chuitna watershed.

For that reason, three different entities -- Alaska Mental Health Trust Land Office, Tyonek Native Corporation, and PacRim Coal, LP (intervenors) -- have sought to intervene to protect their property interests and requested that DNR deny the 2010 Petition, which, if granted, would have substantial negative impacts on their property interests and on potential economic developments in the region. Tyonek Native Corporation (TNC) explained that it opposes the 2010 Petition because the petition “seeks to end most development of the coal reserves in the region where TNC’s lands are located and mostly TNC shareholders reside. Such a determination would frustrate TNC’s efforts to increase local employment opportunities for its shareholders, who are the Native people and the majority of the population of the region. Developing the region’s substantial coal resources is critical to economic growth.”

Similarly, Alaska Mental Health Trust Land Office, which is a state corporation that administers the Alaska Mental Health Trust for the benefit of individuals with mental illness, developmental disabilities, chronic alcoholism and Alzheimer’s disease and related dementia,² stated: “The Trust is the predominant landowner within the Chuitna River Watershed, and lessor of the coal resources located within the areas subject to the petition. As the owner of the coal resources proposed for development pursuant to the existing coal leases held by PacRim Coal, LP (PRC) in the subject area, The Trust has a significant stake in the outcome of the petition proceeding. . . . To allow [the petition] to go forward would significantly affect the ability of The Trust and its lessee to develop this resource and would result in a major negative economic

²

http://www.mhtrust.org/layouts/mhtrust/files/documents/about_aboutdocs/Trust_Overview_update2011.pdf.

impact to The Trust and its beneficiaries.” The Alaska Mental Health Trust Land Office has taken this position because it is obliged to manage the Trust’s assets for the “maximization of long-term revenue from trust land,” “protection and enhancement of the long-term productivity of trust land,” and “encouragement of a diversity of revenue-producing uses of trust land.”³

SUMMARY OF THE DECISION

Alaska Surface Coal Mining Control and Reclamation Act⁴ (ASCMCRA), which is modeled after the federal Surface Mining Control and Reclamation Act⁵ (SMCRA), authorizes DNR to preemptively disallow any surface coal mining operations and project development in a particular area by granting a “lands unsuitable” petition. State law authorizes the DNR Commissioner to grant such a petition if the Commissioner finds that: reclamation is not technologically feasible; surface coal mining operations would have long-lasting damage to the ecosystem or harm important cultural or aesthetic values; or mining operations would take place in an area prone to natural hazards that could substantially endanger life and property.⁶

To support a lands unsuitable petition, a petitioner must assume “that contemporary mining practices required under AS 27.21 and this chapter would be followed if the area were mined.”⁷ Thus, a petitioner may not base a petition on the

³ 11 AAC 90.020(c).

⁴ AS 27.21.010, *et seq.*

⁵ 30 U.S.C. § 1202, *et seq.*

⁶ Specifically, AS 27.21.260(c) provides the “commissioner (1) shall designate an area as unsuitable for all or certain types of surface coal mining operations if the commissioner determines that reclamation in accordance with this chapter and regulations adopted under it is not technologically feasible in the area; (2) may designate an area as unsuitable for all or certain types of surface coal mining operations if the commissioner determines that the operations in the area will may designate an area as unsuitable for all or certain types of surface coal mining operations if the commissioner determines that the operations in the area will (A) be incompatible with existing state or local land use programs; (B) affect fragile or historic land in which the operations could result in significant damage to important historic, cultural, scientific, and aesthetic values and natural systems; (C) affect aquifer recharge areas or other renewable resource land in which the operations could result in a substantial loss or reduction of long-range productivity of water supply or food or fiber products; or (D) affect areas subject to frequent flooding and areas of unstable geology, or other natural hazard land in which the operations could substantially endanger life and property.”

⁷ 11 AAC 90.701(a)(5). *See also* AS 27.21.210 (stating that all permits issued under the Act shall require that surface coal mining and reclamation must comply with environmental performance standards). The federal Office of Surface Mining (OSM) has also stated that a

A

assumption that adverse mining impacts will occur that otherwise would be prevented by the environmental protection requirements mandated by ASCMCRA or other state regulations.⁸ Indeed, the federal Office of Surface Mining (OSM) has stated that a petition that simply assumes non-compliance with state law is a meritless petition that should be rejected.⁹

Also embedded in ~~SMCRA~~ and ASCMCRA is the recognition that coal mining will significantly impact an area.¹⁰ Indeed, state and federal law authorize surface coal mining despite its effects on the environment. Both Congress and the Alaska Legislature, in respectively enacting SMCRA and ASCMCRA, anticipated that impacts will necessarily occur during construction and coal mining. The provisions contained in SMCRA and ASCMCRA also recognize that coal mining will have adverse impacts to surface and groundwater within the disturbed mining area and that a balancing of responsible resource development and environmental protection is necessary.¹¹

Contrast
w/
bonding

The extensive permitting and litigation history that preceded the 2010 Petition provides a critical backdrop to this decision. Trustees, along with other entities, opposed a coal mining project in the Chuitna watershed in the 1980s that underwent extensive regulatory review and received permit approvals from several state and federal agencies (including DNR, the Alaska Department of Fish and Game (ADF&G), and the U.S. Environmental Protection Agency (EPA)).

After this coal project received state permitting approvals, Trustees sued the state and appealed the Cowper Administration's permitting decision to the Alaska Superior Court. One of the major issues in that appeal, which is also one of the key issues in the present petition, centered on former DNR Commissioner Judith Brady's determination that reclamation was, in fact, feasible. The Superior Court rejected Trustees' claim that DNR erred in making this finding. Trustees then appealed to the

petitioner "must assume that contemporary mining practices required under the applicable regulatory program will be followed." 48 Fed. Reg. 41312, 41328-29 (Sept. 14, 1983). *Accord In re Permanent Surface Mining Regulation Litigation*, 620 F. Supp. 1519 (D.D.C. 1985).

⁸ 48 Fed. Reg. at 41328-29.

⁹ *Id.*

¹⁰ 30 U.S.C. § 1202; AS 27.21.010.

¹¹ 30 U.S.C. § 1202; AS 27.21.010.

Alaska Supreme Court. In *Trustees for Alaska v. Gorsuch*,¹² the Supreme Court upheld DNR's decision concerning the feasibility of reclamation in the Chuitna watershed area. Specifically, in addressing the contention that DNR erred in approving the proposed plan for restoration, the *Gorsuch* Court held that DNR had properly found that the proposed reclamation and wetlands restoration plans for the leased lands were "sufficient to restore the disturbed area to a condition capable of supporting fish and wildlife."¹³ On this point, the Court was unanimous.

The EPA also conducted an environmental review of the same proposed coal mine in the Chuitna watershed through its 1990 Final Environmental Impact Statement (FEIS) and issued a 1990 Record of Decision (ROD) approving the project proposal. Thereafter, the EPA issued a National Pollutant Discharge Elimination System (NPDES) permit for the mine's wastewater discharges.

This proposed coal mining project eventually stalled in the 1990s due to market conditions. Since the mid-2000s, however, the Chuitna area has seen renewed development efforts.

In response to this renewed interest, Trustees, on behalf of petitioners, filed a lands unsuitable petition in 2007 (2007 Petition). The 2007 Petition sought to have the entire Chuitna watershed deemed unsuitable for surface coal mining activities. Petitioners raised concerns regarding the feasibility of reclamation in the Chuitna watershed disturbed by coal mining, as well as allegations that essentially unjustifiable significant harm would occur. Former DNR Commissioner Tom Irwin rejected the 2007 Petition, finding that the petition was incomplete and without merit.¹⁴ Trustees appealed Commissioner Irwin's decision to the Superior Court.¹⁵ The Commissioner and petitioners later settled the litigation, and with the exception of one issue (discussed below) no other aspect of Commissioner Irwin's decision on the 2007 Petition was withdrawn or changed, and Trustees' appeal to the Superior Court was dismissed with prejudice.

¹² 835 P.2d 1239 (Alaska 1992).

¹³ *Id.* at 1249.

¹⁴ July 16, 2007 Petition Decision, at 1.

¹⁵ *Chuitna Citizens NO-COALition, Inc., v. Irwin, et al.*, Case No. 3AN-08-6009CI.

On January 21, 2010, Trustees, on behalf of petitioners, once again submitted a new petition (2010 Petition) under ASCMCRA. To support the 2010 Petition, petitioners essentially recycle the two central claims raised in the 2007 Petition: first, that reclamation of the petition area in accordance with the ASCMCRA¹⁶ is not technologically feasible; and second, that surface coal mining operations will destroy habitat and adversely impact fragile lands resulting in significant damage to important cultural, scientific, and aesthetic values and natural systems within the watershed.

The evidence contained in the administrative record does not support the designation of any of the petition area as lands unsuitable for surface coal mining operations. The evidence in the administrative record provided by the petitioners and intervenors, and compiled by DNR, demonstrates that reclamation throughout the Chuitna watershed is, in fact, technologically feasible. Moreover, there is not sufficient evidence to support a finding that surface coal mining operations -- that comply with the applicable statutes and regulations -- will adversely affect the environment in such a manner that would justify granting this petition.

In particular, there is insufficient evidence to suggest that prior permitting decisions issued by the state and federal government wrongly concluded that reclamation was feasible. For example, in DNR's 1987 Permitting Decision determining that the restoration and reclamation plans were sufficient (including to restore disturbed fish and wildlife habitats), DNR found "that reclamation as required by AS 27.21 and 11 AAC 90 can be accomplished under the reclamation plan," subject to DNR-required modifications.¹⁷ As mentioned above, this finding was upheld by the Alaska Supreme Court in *Trustees for Alaska v. Gorsuch*, and is also consistent with EPA's 1990 findings that reclamation was feasible.

While the petitioners provide a few new studies to support the 2010 Petition, this information does not contradict DNR's earlier findings with respect to reclamation and restoration of wetlands and fish and wildlife habitat. Nor does it overcome the significant evidence in the record -- discussed in detail below -- which demonstrates that reclamation is technologically feasible. Nevertheless, as this lengthy statement of

¹⁶ AS 27.21.010, *et seq.*

¹⁷ August 21, 1987 Decision (1987 Permitting Decision) on the Diamond Shamrock Chuitna Coal Project, issued by J.M. Brady, at 125 and at 326-361.

findings and decision shows, DNR has again undertaken a comprehensive review of these issues and will continue to do so as the permitting process continues.

More broadly, petitioners' arguments also suffer from thematic flaws repeated throughout the petition. *First*, petitioners do not give appropriate weight to previous federal and state decisions, including the Alaska Supreme Court *Gorsuch* decision, which found that reclamation in the Chuitna watershed is feasible. When petitioners do cite some of these decisions, they often do so by selectively quoting portions of the decision to leave a misleading impression that the decisions support their allegations.

Second, petitioners make many of the same allegations, often verbatim, that were raised in the 2007 Petition, which was dismissed with prejudice by the Alaska Superior Court. A dismissal with prejudice "is treated as a dismissal on the merits and is, therefore, a final judgment on the merits ... operating as *res judicata*." *Smith v. CSK Auto, Inc.*, 132 P.3d 818, 820 (Alaska 2006). *Res judicata* (claim preclusion) and collateral estoppel (issue preclusion) "bind the parties and their privies to factual findings, as well as legal conclusions, that have been the subject of prior litigation," and "administrative agency decisions can have preclusive effect on later court proceedings, so that if a party participates in an administrative adjudication, ... the adjudication may foreclose the possibility of a later lawsuit on the same factual issues." *Alaska Public Interest Group v. State*, 167 P.3d 27, 44 (Alaska 2007).

Third, petitioners assume that DNR will permit a surface coal mine that cannot comply with ASCMRCA and other state laws, and they assume that if a mine is permitted, a mining operator will not be able to comply with such laws and regulations. As discussed above, these assumptions conflict with the requirements of an ASCMCRA lands unsuitable petition.¹⁸ And, as the OSM has stated, a petition that simply assumes non-compliance with state law is meritless.¹⁹

The 2010 Petition also fails to consider other important policy objectives of ASCMCRA including:

- assuring "that the coal supply essential to the nation's energy requirements and to its economic and social well-being is provided and to strike a balance

¹⁸ 11 AAC 90.701(a)(5).

¹⁹ 48 Fed. Reg. at 41328-29.

between protection of the environment and other uses of the land and the need for coal as an essential source of energy;"²⁰ and

- assuring "that reclamation of land on which surface coal mining takes place is accomplished as contemporaneously as practicable with the surface coal mining, recognizing that the responsible extraction of coal by responsible mining operators is an essential and beneficial economic activity."²¹

Notably, as discussed by the intervenors and set out in detail below, this decision recognizes that the majority of landowners in the Chuitna watershed selected their lands because of the presence of significant coal resources and the financial prosperity, employment opportunities, and enhanced social well-being that development of those lands would bring, not just to private industry, but to Native corporation shareholders and Mental Health Trust beneficiaries, as well as local residents and the public at large. Thus, to the extent that any landowner or lessee in the area may propose a surface coal mining project capable of demonstrating compliance with applicable state, federal, and local requirements, and that such operations can be responsibly conducted, then such operations would further these important statutory directives.

Although this decision addresses the merits of all of petitioners' allegations, this decision expressly preserves, and in no way holds contrary to, the final findings of former DNR Commissioner Irwin on the evidence and allegations that Trustees asserted in the 2007 Petition and which petitioners now reassert, in many places verbatim, in the 2010 Petition. Today's decision also expressly preserves the defenses of res judicata and collateral estoppel for Commissioner Irwin's final findings for purposes of any future litigation that may be brought on the 2010 Petition because many of the allegations and arguments raised in the 2007 Petition, and repeated here, were dismissed with prejudice by the Alaska Superior Court.

Finally, it is worth noting that petitioners raise some reasonable concerns regarding the impact of surface coal mining operations on water quality, wetlands, the hydrologic balance of the larger Chuitna watershed, and fish and wildlife habitat.

²⁰ AS 27.21.010(b)(7).

²¹ AS 27.21.010(b)(5).

These concerns are, however, more effectively and appropriately addressed during the permitting phase of any proposed project. Accordingly, it is important to note that this decision to not designate the petition area as unsuitable for all or certain types of coal mining activities does not mean that surface coal mining will automatically be approved in this area for a specific project. The lands unsuitable designation process is independent of the permitting and mine planning processes that are subject to multi-agency regulatory reviews by several state, federal and local agencies, and these processes may prohibit, curtail, or modify coal mining activities depending on the project proposal. Moreover, DNR will not issue a permit for a specific project unless a specific coal mining proposal demonstrates the capacity to comply with all applicable legal requirements.

THE PETITION PROCESS, STANDARDS FOR REVIEWING PETITIONS, AND OTHER APPLICABLE AUTHORITIES

The Alaska Surface Coal Mining Control and Reclamation Act (ASCMCRA)²² authorizes the DNR Commissioner to determine if certain lands are unsuitable for surface coal mining operations.²³ Under ASCMCRA, a person or a municipality adversely affected by potential surface coal mining operations may file a petition asking the Commissioner to designate lands unsuitable for mining.²⁴ A petition “must contain allegations of facts with supporting evidence that would tend to establish the allegations.”²⁵

Because ASCMCRA is modeled after the federal Surface Mining Control and Reclamation Act (SMCRA),²⁶ both congressional and federal regulatory commentary on the federal act informs the petition review process. In discussing Section 522(a) of SMCRA,²⁷ the House Committee on Interior and Insular Affairs stated that the petition process “is structured to be applied on an area basis, rather than a site-by-site

²² AS 27.21.010, *et seq.*

²³ AS 27.21.260(a).

²⁴ AS 27.21.260(b).

²⁵ *Id.*

²⁶ ASCMCRA, the state counterpart to SMCRA, was enacted in 1982. Ch. 29, § 1, SLA 1982. The State of Alaska subsequently obtained federal approval in 1983 to exercise exclusive jurisdiction over surface coal mining and reclamation under ASCMCRA, which act is based on its federal counterpart, SMCRA, 30 U.S.C. §§ 1201-1328.

²⁷ 30 U.S.C. § 1272.

determination, which presents issues more appropriately addressed in the permit application process.”²⁸ The committee also stated that the petition process, whether administered by a federal or state regulatory authority, “does not require the designation of areas as unsuitable for surface mining” unless “it is demonstrated that reclamation of an area is not physically or economically feasible under the standards of the act. The other criteria for designation ... are discretionary.”²⁹

In considering a lands unsuitable petition under state law, the Commissioner “shall use competent and scientifically sound data and information in order to make objective decisions as to which areas of land are unsuitable for all or certain types of surface coal operations.”³⁰ Such decisions shall also include consideration of “the planning activities of federal, state, and municipal governments.”³¹ The petition decision shall “use a data base and inventory system that will permit the evaluation of areas of the state to support and permit reclamation for surface coal mining operations.”³² In reaching a decision on a petition, the Commissioner will use (1) relevant information from the data base and inventory system, (2) relevant information and analysis submitted during the comment period, and (3) relevant information provided by other governmental entities.³³ The Commissioner shall include a statement of reasons for the Commissioner’s decision.³⁴

Before designating an area as unsuitable, the Commissioner shall prepare “a detailed statement of potential coal resources in the area, the demand for coal resources, and the impact of the designation on the environment, the economy, and the supply of coal.”³⁵ Any potential designation must consider “present and future land use planning and regulation processes at the federal, state, and local levels.”³⁶ In response to a petition, the Commissioner may determine to designate the entire

²⁸ House Committee Report No. 95-218 (1977), at 630.

²⁹ *Id.*

³⁰ AS 27.21.260(a).

³¹ AS 27.21.260(a)(1).

³² AS 27.21.260(a)(2).

³³ 11 AAC 90.711(a).

³⁴ 11 AAC 90.711(b).

³⁵ AS 27.21.260(e).

³⁶ AS 27.21.260(f).

petition area unsuitable for all or certain types of surface coal mining operations, designate only certain portions of the petition area as unsuitable for all or certain types of surface coal mining operations, deny the petition in its entirety, or direct that future permits issued in the petition area “contain specific requirements for mitigating the impact of operations on the feature that was the subject of the petition.”³⁷

Federal and state coal mining laws provide a plan for assuring that surface coal mining will be conducted in such a manner as to minimize the adverse impact of coal mining, while assuring the nation an adequate supply of coal.³⁸ These laws and their attendant regulations contain requirements regarding contemporary coal mining practices, including “performance standards” for mine operations and reclamation.³⁹

What is critical to underscore is that a petition requesting that lands be designated as unsuitable for surface coal mining operations must assume “that contemporary mining practices required under AS 27.21 and this chapter would be followed if the area were mined.”⁴⁰ These practices include the performance standards provided at 11 AAC 90.301 – 90.501. Thus, any mine would have to meet the requirements of the state and federal law and a petitioner may not assume mining impacts will occur that would be prevented by the environmental protection requirements mandated by the such laws and other state regulations.⁴¹ Indeed, the federal Office of Surface Mining (OSM) has stated that a petition that simply assumes non-compliance with state law is meritless.⁴²

³⁷ AS 27.21.260(c); 11 AAC 90.711(c).

³⁸ See, e.g., *Prager v. Hodel*, 793 F.2d 730 (5th Cir. 1986), cert. den. 479 U.S. 988 (1986).

³⁹ Performance standards provide a basic level of compliance during coal mining and reclamation. See generally 11 AAC 90.301 – 90.501. These standards ensure that the environment and the public are protected during mining by requiring avoidance and mitigation of impacts, and the requirement that all land disturbed by mining is restored to a productive postmining land use. *Alaska Coal Mining and the Law* (DNR, March 2007).

⁴⁰ 11 AAC 90.701(a)(5). See also AS 27.21.210 (stating that all permits issued under the Act shall require that surface coal mining and reclamation must comply with environmental performance standards). The federal Office of Surface Mining (OSM) has also stated that a petitioner “must assume that contemporary mining practices required under the applicable regulatory program will be followed.” 48 Fed. Reg. 41312, 41328-29 (Sept. 14, 1983). *Accord In re Permanent Surface Mining Regulation Litigation*, 620 F. Supp. 1519 (D.D.C. 1985).

⁴¹ 48 Fed. Reg. at 41328-29.

⁴² *Id.*

Beyond the statutes and regulations specifically dealing with the petition process, the review of a petition includes consideration of ASCMCRA's primary purposes. These include, but are not limited to, the following:

- assuring "that surface coal mining operations are conducted in a manner that will prevent unreasonable degradation of land and water resources;"⁴³
- assuring "that surface coal mining operations are not conducted where reclamation required by this chapter and the regulations adopted under it is not feasible;"⁴⁴
- assuring "that reclamation of land on which surface coal mining takes place is accomplished as contemporaneously as practicable with the surface coal mining, recognizing that the responsible extraction of coal by responsible mining operators is an essential and beneficial economic activity;"⁴⁵
- assuring "that the coal supply essential to the nation's energy requirements and to its economic and social well-being is provided and to strike a balance between protection of the environment and other uses of the land and the need for coal as an essential source of energy."⁴⁶

Additionally, a critical component of DNR's mandate, which has been promulgated by the Alaska Legislature and is derived from the Alaska Constitution, is to allow responsible resource development. This duty flows from article VIII of the Alaska Constitution. Section 1 states that "[i]t is the policy of the State to encourage the settlement of its land and the development of its resources by making them available for the maximum use consistent with the public interest." Section 2 provides that the legislature shall provide for the

⁴³ AS 27.21.010(b)(3).

⁴⁴ AS 27.21.010(b)(4).

⁴⁵ AS 27.21.010(b)(5).

⁴⁶ AS 27.21.010(b)(7).

utilization, development and conservation of all natural resources belonging to the State, including land and waters, for the maximum benefit of its people.”

The Legislature has, in turn, charged DNR with administering state lands for the “conservation and development of natural resources, including forests, parks, and recreational areas, land, water, agriculture, soil conservation, and minerals including petroleum and natural gas.”⁴⁷ As former Commissioner Tom Irwin stated in a July 16, 2007 decision on the previous lands unsuitable petition filed by Trustees for the entire Chuitna watershed, both the federal and state statutory regimes “reflect the goal of allowing, where possible, multiple uses of coal bearing lands, and that balanced consideration would be given to regulated coal mining operations and other uses/resources.”⁴⁸

The ASCMCRA goals complement the state’s economic development, energy, and mineral policies, as declared by the legislature, including the proper conservation and development of mineral resources such as coal for the “further economic development of the state, to maintain a sound economy and stable employment, and to encourage responsible economic development within the state for the benefit of present and future generations.”⁴⁹

DETAILED STATEMENT OF FINDINGS AND CONCLUSIONS

Having considered the administrative record in this matter, including the petition and supporting materials, public comments, as well as intervenors’ submittals, the following is a detailed statement of findings relative to the petition, along with conclusions on the petition, including reasons for those conclusions, pursuant to AS 27.21.260 and 11 AAC 90.711, and other applicable authorities.

Background on the 2010 Petition and Prior Related Decisions

1. The petition area is 45 miles west of Anchorage, on the west side of Cook Inlet. The petition area is 3,560 acres (5.5 square miles): streams in the petition area total approximately 118 miles in length in the larger Chuitna watershed. The Chuitna

⁴⁷ AS 44.37.025(a).

⁴⁸ Commissioner Tom Irwin’s July 16, 2007 Decision on Petition Requesting that the Chuitna River Watershed be Determined Lands Unsuitable for Surface Coal Mining, at 13 (citing 30 U.S.C. §§ 1201-1202; AS 27.21.010(b)).

⁴⁹ AS 44.99.110 (mineral policy); *accord* AS 44.99.100 (economic policy) and AS 44.99.115 (energy policy).

watershed is subject to multiple uses, including residential, subsistence, recreational, and industrial uses. The communities of Tyonek Native Village and Beluga are adjacent to the watershed and the petition area. A variety of mammals, fish (including salmon), and bird species occur in the petition area.

2. The petition area, and the Chuitna watershed throughout which the petition area pervades, falls within the Susitna/Beluga Coal Field, which is one of the most significant coal fields in Alaska.⁵⁰ Since at least statehood in 1959,⁵¹ as well as after enactment of the Alaska Native Claims Settlement Act (ANCSA) in 1971,⁵² lands within the area were selected for their mineral, coal, and oil and gas resource potential. Many of the landowners and state and local land use plans identify these areas for coal resource development.

3. Exploration on at least two separate projects in the area has been conducted for decades. One proposed project, the Diamond Shamrock Chuitna Coal Project, underwent extensive regulatory review by several state and federal agencies (including DNR, the Alaska Department of Fish and Game (ADF&G), and the U.S. Environmental Protection Agency (EPA)), from the mid-1980s until the early 1990s.

4. Based on the ASCMCRA permit application submitted on the Diamond Shamrock Chuitna Coal Project, DNR, under the Cowper Administration, issued a permitting decision in 1987 approving the construction and operation of the proposed coal mine. The findings supporting DNR's approval are recorded in (i) a March 5, 1987, "Conditions of Decision and Findings of Compliance for the Diamond Chuitna Mine" and (ii) an August 21, 1987, "Decision to Issue a Surface Mining Permit Diamond Shamrock Chuitna Coal Joint Venture Diamond Chuitna Mine." These documents were later combined into a single document referenced herein as the "1987 Permitting Decision." DNR made a number of key findings in these documents regarding reclamation and hydrologic impacts:

⁵⁰ The Beluga Coal Field has the largest identified resource of any coal field in Alaska, south of the Brooks Range. Merritt, R.D. and Hawley, C.C., 1986, Map of Alaska coal resources, 1:2,500,000: Alaska DGGs Special Report No. 37, Table 2.

⁵¹ 72 Stat. 339 Public Law 85-508 (1958).

⁵² 43 U.S.C. § 1601, *et seq.*

- Diamond Shamrock's Wetland Revegetation Plan satisfactorily addressed DNR's initial concerns about whether wetland habitat could be restored. The agency noted, however, that the plan would be subject to continuing DNR review and that, if appropriate, changes could be made to the plan during actual mine operation.⁵³
- The project was subject to several DNR stipulations relative to reclamation measures and activities that would be required contemporaneous with mining. These included measures for sediment and drainage control (including sediment control ponds),⁵⁴ and measures for protecting surface and groundwater hydrology (including additional hydrologic monitoring).⁵⁵
- In accordance with AS 27.21.180(c)(2), Diamond Shamrock had "demonstrated that reclamation as required by AS 27.21 and 11 AAC 90 can be accomplished under the reclamation plan," subject to DNR-required modifications.⁵⁶
- In accordance with AS 27.21.180(c)(3), "an assessment of the probable cumulative impact of all anticipated mining in the area on the hydrologic balance has been made and the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area."⁵⁷
- Regarding stream restoration, DNR -- while acknowledging that "post-mining baseflows will take ten to fifteen years to reach pre-mining levels and that it was important that enhancement techniques be maintained until the pre-mining flows are reached" -- found that the application

⁵³ August 21, 1987 Decision (1987 Permitting Decision) on the Diamond Shamrock Chuitna Coal Project, issued by J.M. Brady, at 33-34.

⁵⁴ *Id.* at 40-42, and at 53-92 (consisting of an August 16, 1987 report prepared for DNR by Arctic Hydrologic Consultants that provides a technical review on the proposed Sediment and Drainage Control Plan).

⁵⁵ *Id.* at 44-48.

⁵⁶ *Id.* at 125, and at 326-361 (containing Section IV findings).

⁵⁷ *Id.* at 125, and at 362-404 (containing Section V findings).

complied with 11 AAC 90.327 (Stream Channel Diversion) for the initial permit term.⁵⁸

5. On June 28, 1988, then DNR Commissioner Judith Brady adopted, with minor modifications, the Hearing Officer's May 21, 1988, proposed decision (1988 Administrative Appeal Decision) on the consolidated administrative appeals brought on the 1987 Permitting Decision by Trustees for Alaska, the project proponent Diamond Shamrock, and others. The Hearing Officer's proposed decision recommended certain modifications to the permitting decision, including lengthening the permit term from five to ten years.⁵⁹ Based on the administrative record, the Hearing Officer also found that "Diamond's reclamation plan, including its wetlands restoration plan, is sufficient to restore the disturbed area to a condition that is capable of supporting fish and wildlife."⁶⁰ With this 1988 Administrative Appeal Decision, Commissioner Brady affirmed the 1987 Permitting Decision.

6. EPA also conducted an environmental review of the proposed coal mine through its 1990 FEIS and issued a 1990 ROD approving the proposal. Thereafter, EPA issued an NPDES permit for the mine's wastewater discharges. In the two-volume 1990 FEIS and the 1990 ROD, EPA considered several factors and made a number of key findings:

- EPA considered numerous impacts the project potentially could have on the environment, including possible impacts to wetlands, subsistence, fish and wildlife, and associated habitat impacts.⁶¹
- EPA concluded that the area in which the project was to be located was not pristine. For example, it had been previously entered for logging and oil and gas purposes.⁶²
- EPA stated the following regarding potential impacts to wetlands:

⁵⁸ *Id.* at 202.

⁵⁹ 1988 Administrative Appeal Decision at 5-7.

⁶⁰ *Id.* at 33-35.

⁶¹ 1990 FEIS at 5-11, 5-16, and 5-75.

⁶² *Id.* at 5-136.

The acidic, muskeg-type wetlands which are widely dispersed throughout the area are not highly productive and the net primary productivity of replacement communities could be as high or higher than the communities that now exist. Therefore, adverse impacts to primary wetland productivity would not be significant on a regional scale. Food webs would be interrupted in the immediate vicinity of pre-mining wetland areas, but such interruption would probably not be significant on a regional basis because of the isolated nature of most area wetlands and the large extent of similar wetlands outside the project area.⁶³

- EPA noted that the wetlands within the Diamond Shamrock Chuitna Coal Project area were similar to wetlands found outside the project area (i.e., the Chuitna watershed/drainage).⁶⁴
- In the ROD, EPA stated that the authorizing agencies, including EPA and DNR, anticipated that reclamation within the project area would be undertaken in accordance with specific requirements, and therefore feasible.⁶⁵

7. After the commissioner upheld DNR's permitting decision upon appeal, multiple plaintiffs, including Trustees for Alaska, appealed the commissioner's decision in the *Gorsuch* litigation.⁶⁶ With the exception of one modification, which required a separate ASCMCRA permit for an eleven mile access/haul road from the mine site, the Alaska Superior Court upheld the permitting decision. Upon Trustees' appeal of the Superior Court's decision, the Alaska Supreme Court -- while remanding the decision to DNR for further consideration of cumulative effects of activities associated with the permit, and reconsideration of the reclamation bond amount -- addressed Trustees' contention that DNR erred in approving the proposed plan for restoration of ecological functions and revegetation. Among other things, the Court held:

⁶³ *Id.* at Appendix F, at 2-3.

⁶⁴ *Id.* at 3.

⁶⁵ 1990 ROD at 6, and at 9-12. *See also* 1990 FEIS, at 2-31 to 2-34.

⁶⁶ 835 P.2d at 1239.

- that DNR had found that the proposed reclamation and wetlands restoration plans for the leased lands were “sufficient to restore the disturbed area to a condition capable of supporting fish and wildlife.”⁶⁷
- that DNR acted reasonably in accepting the restoration plan, because the plan

describes how wildlife habitat will be recreated by constructing peat-filled depressions which will be planted with various plant species. In addition, three sediment ponds will be inoculated with plant and insect life forms, and seedlings will be planted to provide a vegetation canopy layer for the benefit of wildlife.⁶⁸

8. Diamond Shamrock Chuitna Coal Project project, however, ultimately stalled due to market conditions.

9. Since the mid-2000s, the area has seen renewed development efforts, and the former Diamond Shamrock Chuitna Coal Project is now simply referred to as the Chuitna Coal Project. The current proponent of the project, PacRim Coal, is developing baseline information and coordinating with state and federal agencies, with the expectation that permit applications for the project will be submitted in the next year.

10. The petitioners submitted a petition in 2007 (2007 Petition) seeking to have the entire Chuitna watershed be deemed lands unsuitable for surface coal mining activities. In this petition, petitioners’ counsel, Trustees for Alaska, raised concerns regarding the feasibility of reclaiming areas disturbed by coal mining, as well as allegations that essentially unjustifiable significant harm would occur.

11. In a decision issued on July 16, 2007, then-Commissioner Tom Irwin returned the 2007 Petition to petitioners, finding that the petition was incomplete and without merit.⁶⁹ In that decision, which contained multiple findings of fact and law, Commissioner Irwin informed petitioners that they could submit a new petition, and described the types of evidence which would be needed to support the petition, so that

⁶⁷ *Id.* at 1249.

⁶⁸ *Id.*

⁶⁹ July 16, 2007 Petition Decision, at 1.

it could be reviewed on the merits.⁷⁰ Commissioner Irwin also informed petitioners, in accordance with 11 AAC 90.701(a)(5), that the petition needed to assume that contemporary mining practices, required under AS 27.21 and this chapter, would be followed if the area were mined, and that the 2007 Petition failed to do that.⁷¹

12. In a letter dated February 14, 2008, Commissioner Irwin upheld his decision upon petitioners' request for reconsideration. Petitioners appealed Commissioner Irwin's decision on the 2007 Petition to the Superior Court.⁷² The Commissioner and petitioners later settled the litigation, and with the exception of one issue (*see* discussion of Allegation V, below), no other aspect of Commissioner Irwin's decision on the 2007 Petition was withdrawn or changed, and the petitioners' appeal to the Superior Court was dismissed with prejudice.⁷³

13. On January 21, 2010, Trustees submitted a new petition (2010 Petition) under AS 27.21.260 on behalf of Chuitna Citizens Coalition and Cook Inlet Keeper.

14. Petitioner Chuitna Citizens Coalition is an organization whose members are "full-time and part-time residents of Beluga," a small community located near the petition area. The petitioner describes three of its members' interest in the recreational, fish and wildlife, and subsistence values of the petition area. Two of its members, Judy and Larry Heilman, are residents of Beluga, and state they use the watershed for hunting and fishing opportunities, but do not describe where in the petition area they specifically conduct their activities. Another member, Terry Jorgenson, engages in commercial fishing in the marine waters/Ladd Landing area in Cook Inlet. Ladd Landing is adjacent, rather than within, the petition area. Ladd Landing has been proposed as a potential transfer site for the Chuitna Coal Project for loading coal to freighters for marine shipping.⁷⁴

15. Petitioner Cook Inlet Keeper "is a community-based nonprofit organization that combines advocacy, education and science towards its mission to

⁷⁰ *Id.* at 5-15.

⁷¹ *Id.*

⁷² *Chuitna Citizens NO-COALition, Inc., v. Irwin, et al.*, Case No. 3AN-08-6009CI.

⁷³ For this reason, arguments in the 2010 Petition consistent with the arguments made in the 2007 Petition are likely barred by *res judicata* and collateral estoppel.

⁷⁴ Petition at 12-13.

protect Alaska's Cook Inlet Watershed and the life it sustains."⁷⁵ Cook Inlet Keeper asserts that it has members living in the petition area "that would be adversely affected by surface coal mining operations in the Chuitna River watershed," including with respect to members' subsistence activities.⁷⁶

16. The 2010 Petition was more refined than the 2007 Petition because it requests that streambeds underlying anadromous water bodies and their associated riparian areas within the Chuitna watershed be designated unsuitable for surface coal mining as opposed to the broader request in 2007 to have the entire watershed deemed lands unsuitable for surface coal mining. Nonetheless, Petitioners submitted essentially the same evidentiary information that was provided with the 2007 Petition, and only included a handful of additional new documents as evidence to support the petition's allegations. Thus, many of the allegations and supportive materials cited by the petitioners in their 2010 Petition are the same as those that petitioners cited in their 2007 Petition and are also similar to the issues litigated in the *Gorsuch* case.⁷⁷

17. While this more focused specification of the petition area might initially be viewed as a reduction in the area that was sought for designation under the 2007 Petition, the practical effect of the designation would not be so limited, given the geographical reach of the petition area. The specified streambeds and riparian areas have a wide-ranging, meandering trace throughout the Chuitna watershed,⁷⁸ repeatedly crossing over the coal resources that likewise pervade throughout the watershed. The designation of the petition area would therefore have a fragmenting effect on the coal resources, jeopardizing the feasibility and extraction of any of the coal resources present in the watershed, even if those resources are not within the petitioners' identified petition area.

18. On February 22, 2010, former Commissioner Tom Irwin found the 2010 Petition to be administratively complete under 11 AAC 90.703(a), and that it contained

⁷⁵ *Id.* at 13.

⁷⁶ *Id.* at 13-14.

⁷⁷ Petitioners in this 2010 petition, Chuitna Citizens Coalition (formerly Chuitna Citizens NO-COALition) and Cook Inlet Keeper, were among the petitioners listed in the 2007 Petition.

⁷⁸ See Figure 1 and "Description of the Petition Area."

the information required under 11 AAC 90.701(a). At the time, the commissioner made no other determinations as to the adequacy of the petition.

19. The petition alleges in Allegation I that reclamation of impacts from any type of surface coal mining operations in the petition area (*i.e.*, the streambeds of anadromous streams and their riparian areas), as well as the streams that overlie the delineated area, is not technologically feasible in accordance with ASCMCRA.⁷⁹ The petition specifically states that:

- surface coal mining would irreparably harm the area's hydrologic balance, including scrub/sweetgale fen and peat soils ecosystems for which few examples of successful reclamation exist;⁸⁰
- reclamation would not restore the groundwater recharge capacity in the area, violating the performance standards requiring such restoration;⁸¹
- reclamation would not restore aquatic productivity to premining levels, altering highly productive spawning, migratory, and rearing habitat;⁸² and
- surface coal mining on the identified lands cannot be designed and operated to minimize changes in water quality and hydrology enough to ensure no adverse effects to fish and wildlife habitat.⁸³

20. The petition alleges in Allegation II that all types of surface coal mining operations will affect fragile land within the meaning of the ASCMCRA regulations and would result in significant damage to important cultural, scientific, and aesthetic values and natural systems.⁸⁴

⁷⁹ *Id.* at 14-16.

⁸⁰ *Id.* at 16-24.

⁸¹ *Id.* at 24-25.

⁸² *Id.* at 25-29.

⁸³ *Id.* at 29-33.

⁸⁴ *Id.* at 33-45.

21. The petition alleges in Allegation III that all types of surface coal mining operations will affect renewable resource land which could result in a substantial loss or reduction of long-range productivity of water supply or food or fiber products.⁸⁵

22. The petition alleges in Allegation IV that all types of surface coal mining operations could substantially endanger life and property because these operations will occur in areas of unstable geology and where other natural hazards are present. This would include local faults which experience frequent seismic activity, the possibility of volcanic eruptions, strong currents and severe winter ice conditions that would make transport dangerous and spills more likely, and strong winds that would contribute to coal dust being blown offsite.⁸⁶

23. The petition alleges in Allegation V that all of the delineated petition area, including streambeds underlying anadromous water bodies and associated riparian areas that occur within Logical Mining Unit-1 (LMU-1),⁸⁷ must be considered in a decision on the petition, and that none of the delineated petition area is exempt from petition review, asserting that there were no substantial legal or financial commitments for an operation in this area before January 4, 1977.

24. In support of the 2010 Petition, the petitioners cite earlier reviews and decisions that were issued in the late 1980s and early 1990s by DNR, the EPA, and other agencies when the project was identified as the Diamond Shamrock Chuitna Coal Project. The petitioners cite DNR's August 21, 1987, permitting decision (1987 Permitting Decision) approving the project; the 1988 administrative appeal decision (1988 Administrative Appeal Decision) affirming that decision; EPA's 1990 final environmental impact statement (1990 FEIS) and 1990 Record of Decision (ROD) on the project;⁸⁸ and *Trustees for Alaska v. Gorsuch*,⁸⁹ a 1992 Alaska Supreme Court

⁸⁵ *Id.* at 45-46.

⁸⁶ *Id.* at 46-48.

⁸⁷ LMU-1 is the area which was proposed for permitting in the Diamond Shamrock Chuitna Coal Project. This area is now held by PacRim, and is promoted as the "Chuitna Coal Project."

⁸⁸ The FEIS was actually issued in late 1989, but because EPA's ROD was issued in 1990, and because the petitioners, intervenors, and commenters identify it as the 1990 FEIS, this decision does so as well, for ease of reference.

⁸⁹ 835 P.2d 1239 (Alaska 1992).

decision involving Trustees for Alaska's challenge on DNR's 1987 Permitting Decision that authorized the Diamond Shamrock Chuitna Coal Project.

25. Petitioners also submitted a few more recent reports that had not been submitted with the petitioners' 2007 Petition. They submitted reports by Palmer M.A., Trasky L., and Wipfli M.S., which are reports based on a review of draft aquatic baseline studies and PacRim's draft Fish and Wildlife Protection plan associated with the Chuitna Coal Project. Petitioners also submitted a report on Valley Fills in Appalachia, *Mountaintop Mining Consequences*,⁹⁰ in which the report discusses the burial of headwater streams by overburden during coal mining, along with the reports cited by Palmer, *et al.*, and quoted in the 2010 Petition. And petitioners submitted a report that discusses the development of Circumarctic peatlands, *Rapid Early Development of Circumarctic Peatlands and Atmosphere CH4 and CO2 Variations*.⁹¹

26. Thus, other than the refinements to the petition area, portions of the narrative that reclamation would not be technologically feasible, and the submittal of the above-referenced reports, the allegations and referenced materials in the 2010 Petition are largely the same, even verbatim, to that set forth in the 2007 Petition.

27. Under AS 27.21.260(b) and 11 AAC 90.709(a), the Commissioner may, in his or her discretion, extend the time for holding a hearing for "up to five additional months if the delay is necessary to provide a field season and a reasonable period of time to review the results of field season surveys." This option was exercised, and during the summer and fall of 2010, DNR conducted field work within the Chuitna River watershed in order to adequately review the petition. Field work consisted of multiple full day trips, conducted throughout the summer and fall of 2010, to different portions of the watershed. Field work included aerial and ground investigation of stream and riparian areas, as well as a review of the condition of reclaimed bulk coal sample sites within the 2003 and Lone Creek watersheds that are within the PacRim Chuitna Coal Project area. The additional time also allowed for the collection of additional surface and ground water information and fish population estimates by third party contractors working on the proposed Chuitna Coal Project. This information was used to more fully understand and address the potential impacts to

⁹⁰ Palmer, Margaret A., *et al.*, 327 Science 148 (2010).

⁹¹ MacDonald, Glen M., *et al.*, 312 Science 385 (2006).

resources within the watershed from surface coal mining activities as they related to petitioners' allegations.

28. The following entities sought and were granted intervenor status under 11 AAC 90.705(e) in opposition to the petition:

- (a) Alaska Mental Health Trust Land Office ("the Trust")
by Gregory Jones, Executive Director
718 L Street Suite 202
Anchorage, Alaska 99501
- (b) PacRim Coal, LP ("PacRim")
by Joe Lucas
1007 W 3rd Ave, Suite 304
Anchorage, AK 99501
- (c) Tyonek Native Cooperation ("TNC")
by Michaelene Stephan, President
1689 C Street, Suite 219
Anchorage, Alaska 99501

29. No person or entity sought intervenor status under 11 AAC 90.705(e) in support of the petition.

30. Intervenors PacRim, TNC and the Trust all strongly oppose an unsuitability designation based on the petition, and request that it be denied.

31. Both TNC and the Trust are substantial landowners in the petition area. They both submitted letters regarding their land interests and expressing their significant economic interests associated with the coal resources located within the petition area.⁹² TNC specifically stated that the petition "seeks to end most development of the coal reserves in the region where TNC's lands are located and mostly TNC shareholders reside. Such a determination would frustrate TNC's efforts to increase local employment opportunities for its shareholders, who are the Native people and the majority of the population of the region. Developing the region's substantial coal resources is critical to economic growth."

⁹² See, e.g., TNC comment letter on the petition, dated January 5, 2011, at 4; Trust comment letter on the petition, dated January 5, 2011, at 2.

32. The Trust wrote: "The Trust is the predominant landowner within the Chuitna River Watershed, and lessor of the coal resources located within the areas subject to the petition. As the owner of the coal resources proposed for development pursuant to the existing coal leases held by PacRim Coal, LP (PRC) in the subject area, The Trust has a significant stake in the outcome of the petition proceeding. . . . To allow it [the petition] to go forward would significantly affect the ability of The Trust and its lessee to develop this resource and would result in a major negative economic impact to The Trust and its beneficiaries."

33. PacRim, a leaseholder, also submitted similar letters.⁹³

34. On January 19, 2011, DNR held a public hearing in Kenai, Alaska. One hundred and fifty individuals signed in attendance, representing many Southcentral Alaska communities. Fifty-seven individuals provided oral comments, with some individuals getting up a second time during the course of the proceedings to provide additional comments. Nearly all of the comments were in support of the petition, with one individual speaking against the petition.

35. On February 19, 2011, DNR held another public hearing in the Village of Tyonek. This second hearing was primarily scheduled to allow oral comments from those people who were unable to attend the January 19th hearing in Kenai due to adverse weather in Tyonek. Approximately 60 individuals attended the hearing, including individuals from Anchorage. Approximately eighteen people provided comments at the hearing. Nearly all of the comments were in support of the petition.

36. Public Comments: DNR received a total of approximately 550 comment submittals (letters, comment forms, e-mails and other oral comments documented in the hearing transcripts) during the petition review. Comments addressed both the petition and permitting issues directly relating to PacRim's proposed Chuitna Coal Project. Of the approximately 550 comments submitted, approximately 525 came from private individuals. Fifteen resolutions were submitted by trade organizations (fishery councils). Seven comment letters were from non-Governmental organizations; one comment letter came from a community council, and three comment letters were from Native Corporations. Eight papers supporting the petition were submitted.

⁹³ See, e.g., PacRim's January 5 and 19, 2011, comment letters on the petition.

Approximately 30 comments favored dismissing the petition, while approximately 500 comments supported the petition. Comments received on the petition that were within the scope of and relevant to the petition process were considered in reviewing the petition and the formulation of this decision, and these comments and DNR's summary of comments and responses thereto are part of the agency's administrative record relative to the petition, and those written responses are expressly incorporated into this decision by reference.⁹⁴ Many of the comments focused on the Chuitna Coal Project -- both the project's location and PacRim's more recent efforts in seeking permits, environmental reviews and project development.

37. In accordance with AS 27.21.260(a), 11 AAC 90.701(a)(6), and 11 AAC 90.711, DNR has compiled information and data relating to the petition area and the petition's allegations (including detailed site-specific data required from companies as part of their permit applications) in order to develop this detailed statement and to render this decision. Detailed and relevant information regarding any petition area, including detailed soils and hydrologic data for the petition area is, as a practical matter, iterative and acquired over a period of several years. Among the key documents containing relevant, competent and scientifically sound data and information regarding the condition and environment of the Chuitna watershed are the 1990 FEIS, 1990 ROD, the 1987 Permitting Decision, and the Alaska Supreme Court *Gorsuch* decision.

Description of the Petition Area

38. The petition area is located in Southcentral Alaska, approximately 45 miles west of Anchorage (see Figure 1). The lands for which petitioners seek an unsuitability determination involve 3,560 acres (5.5 square miles), and cover stream reaches totaling approximately 118 miles (Chuitna watershed) (see Figures 2 and 3). As such, the streambeds and riparian areas do not occur in one or two confined areas on the west side of Cook Inlet, but rather meander and spread throughout the larger Chuitna watershed area. The Chuitna watershed is very large, encompassing approximately 95,600 acres (~150 square miles) and containing approximately 200 miles of streams. The main stem of the Chuitna River is approximately 25 miles in length, and courses from its headwaters at the base of the Alaska Range to the point

⁹⁴ 11 AAC 90.711(a).

where it empties into Cook Inlet between the communities of Tyonek (population 171⁹⁵) and Beluga (population 20⁹⁶). The Chuitna watershed is situated within the Beluga Plateau and consists of streams cutting through the underlying Tertiary sedimentary strata creating moderate relief, with elevations ranging up to 1400 feet.

39. The Beluga Plateau is characterized as having typical glacial moraine-controlled topography of irregular ridges and depressions. To the northwest of the watershed are higher plateaus and foothills leading to the Alaska Range. Approximately 30 miles west is Mt. Spurr, a volcano active since at least the Tertiary period, and to the southwest, the estuarine and alluvial lowlands of the Chakachatna embayment, and Cook Inlet borders the area to the south. The plateau is described as a “sedimentary plateau mantled by Quaternary glacial deposits.”⁹⁷

40. The general geology of the watershed consists of semi-consolidated, coal-bearing sedimentary rocks of the Tyonek Formation, overlain by a mantle of younger, unconsolidated sediments that include glacial deposits and alluvium located along stream reaches.⁹⁸ The Tyonek Formation is a sequence of fluvial and deltaic silts, clays, and sands with occasional gravel beds and coal seams.⁹⁹ The formation has been fairly compacted after burial and is poorly cemented.¹⁰⁰

41. The hydrostratigraphic units within the watershed¹⁰¹ consist of recent alluvium, glacial deposits, coals of the Tyonek Formation and the Sub-Red 1 Sands

⁹⁵ Dept. of Commerce Community Database, http://www.commerce.state.ak.us/dca/commdb/CF_BLOCK.cfm?Comm_Boro_Name=Tyonek&Data_Type=2010Census&submit2=Get+Data

⁹⁶ Dept. of Commerce Community Database Online at http://www.commerce.state.ak.us/dca/commdb/CF_BLOCK.cfm?Comm_Boro_Name=Beluga&Data_Type=2010Census&submit2=Get+Data

⁹⁷ PacRim Coal, L.P., *Chuitna Coal Project Geology Baseline Information* (August 2006), at 3; 27 p.

⁹⁸ Wahrhaftig, *et al.*, *Coal in Alaska*, in *The Geology of Alaska*, Plafker and Berg editor (1994), pp 937-78, at 953.

⁹⁹ 1987 Permitting Decision at 366.

¹⁰⁰ *Id.*

¹⁰¹ The detailed studies and information of the hydrogeology and the hydrology for the watershed are limited, and much of the information used to process the 2010 petition is specifically focused upon the area within and around the proposed Chuitna Coal Project. Because similar lithologies are observed present throughout the watershed, this information has been used to provide a general description of the hydrology of the larger Chuitna

within the Tyonek Formation.¹⁰² Alluvium consists of the sands and gravels within the course of present day stream channels. Glacial deposits consist of unconsolidated sediments characterized as unsorted mixtures of clay to boulder-sized material with lenticular bodies of well-sorted sands and gravels.¹⁰³ Coals consist of the Blue Coal, Red 3, Red 2, and Red 1 seams.¹⁰⁴ The interburden between the coal seams consists of interbedded and interfingering sequences of poorly consolidated and weakly cemented sandstones, siltstones, and mudstones.¹⁰⁵ This interburden material between coal seams and the overlying glacial deposit generally acts as an aquitard.¹⁰⁶ The Sub Red 1 aquifer is a fine to medium grained sandstone that underlies portions of the Chuitna watershed.¹⁰⁷ Coal seams within the Tyonek formation also occur below the Sub Red 1 sands.¹⁰⁸

42. The near surface groundwater table generally mimics the surface topography, with flow towards streams and tributaries. This topography provides for surface-water collection and for ground-water recharge into the alluvium, coal seams, and overburden.¹⁰⁹ With these units, groundwater generally flows from higher elevations to lower elevations where it discharges as seeps or to the stream channels where the channel is below the local groundwater's piezometric surfaces.¹¹⁰

43. Recharge to the glacial deposits is by direct infiltration of precipitation (rain or snowmelt), infiltration from muskeg bogs in depressions, and from stream

watershed, but it is important to note that certain areas within the watershed may be markedly different from the available information due to erosion of the Tyonek Formation and/or displacement of lithologies due to faulting.

¹⁰² Chuitna Coal Project Hydrology Component Baseline Report Historical Data Summary, Riverside Technology Inc. 2007, at 5-5.

¹⁰³ *Id.*

¹⁰⁴ 1990 FEIS at 4-24.

¹⁰⁵ Chuitna Coal Project Hydrology Component Baseline Report Historical Data Summary, Riverside Technology Inc. 2007 at 5-5.

¹⁰⁶ *Id.* at 5-6.

¹⁰⁷ *Id.*

¹⁰⁸ Wahrhaftig, *et al.*, *Coal in Alaska, in The Geology of Alaska*, Plaker and Berg editor (1994), pp 937-78, at 953.

¹⁰⁹ 1987 Permitting Decision at 366-67.

¹¹⁰ 1990 FEIS at 4-25 to 4-26.

channels that are above the water table.¹¹¹ Overall, the storage capacity of the glacial deposits is relatively large compared to the other units, and the glacial material is the main source of recharge to the underlying coal and sand aquifers of the Tyonek Formation.

44. The groundwater direction in the upper portions of the Tyonek Formation is predominantly from west to east.¹¹² Groundwater flow direction is controlled locally by the presence of faulting and folding within the formation.¹¹³ Within the watershed, the coal seams and the Sub Red 1 sands may interact with streams where these units outcrop or subcrop in the streams or alluvium.¹¹⁴ This interaction with the streams may be in the form of upwelling to the stream or local recharge from the stream, depending on local structures influencing groundwater flow.¹¹⁵

45. Recharge to the coal seams occurs by direct infiltration on outcrops, downward flow from saturated glacial deposits, and by diffuse leakage through confining interburden layers.¹¹⁶ Within the glacial deposits there is a small amount of vertical leakage which contributes to the recharge of the interburden, coal seams, and the Sub Red 1 sands.¹¹⁷ Recharge for the Sub Red 1 sands can be inferred from well data to occur predominately at higher elevations in the western most part of the watershed and beyond.¹¹⁸

46. Discharge of groundwater into streams as baseflow contributes up to 30 percent of the total stream flow in streams in the Chuitna watershed.¹¹⁹ Contributions to baseflow from the glacial deposits and aquifers in the Tyonek

¹¹¹ 1987 Permitting Decision at 367.

¹¹² 1990 FEIS at 4-26.

¹¹³ *Id.* at 4-25.

¹¹⁴ Chuitna Coal Project Hydrology Component Baseline Report Historical Data Summary, Riverside Technology Inc., 2007, at 5-4.

¹¹⁵ *Id.*

¹¹⁶ 1987 Permitting Decision at 367.

¹¹⁷ Addendum D12-B Groundwater Model, Chuitna Coal Project, August 2007, at 6-7.

¹¹⁸ Chuitna Coal Project Hydrology Component Baseline Report Historical Data Summary, Riverside Technology Inc. 2007, at 5-16.

¹¹⁹ *Id.* at 3-27.

Formation are estimated to be approximately 89 percent and 11 percent, respectively.¹²⁰

47. Poorly drained organic soils dominate much of the Chuitna Coal Project area, and materials underlying the surface consist primarily of alluvium, peat, glacial deposits and minor amounts of loess and volcanic ash.¹²¹ The vegetation in the area is generally characterized as a combination of the following: closed spruce-hardwood forest, bottomland spruce-poplar forest, high brush communities and wet tundra.¹²² Alder thickets and willow stands form a large portion of the Chuitna watershed.¹²³ No threatened or endangered plant species are known to exist in the area.¹²⁴ Of the wetland communities, open low shrub grass fen is the most common.¹²⁵

48. A number of mammals exist in the region, most notably moose, beaver, and brown and black bear. Avian surveys have noted waterfowl, shorebirds, and raptors, though the habitat for birds is considered relatively poor in comparison to the Trading Bay and Susitna Flats State Game Refuges blanketing the area to the south and east, respectively.¹²⁶

49. The waterbodies in the area support an array of primary, secondary, and tertiary producers (algae, invertebrates, and vertebrates).¹²⁷ These streams can be characterized as clear-water streams with moderate to high organic staining, stable channels and flows, good benthic productivity, and good to excellent fish habitat.¹²⁸

50. Freshwater habitats in the project area support abundant resident and anadromous fish populations that have significant subsistence, commercial, and sport value. The entire main stem of the Chuitna River is accessible to adult anadromous

¹²⁰ 1987 Permitting Decision at 386.

¹²¹ 1990 FEIS at 4-7.

¹²² *Id.*

¹²³ HDR, 2007 Baseline Report for Vegetation and Wetlands, at 7.

¹²⁴ *Id.*

¹²⁵ 1990 FEIS at 4-7.

¹²⁶ 1990 FEIS at 4-14.

¹²⁷ *Id.* at 4-10.

¹²⁸ *Id.* at 4-41.

fish and is also utilized by juveniles for rearing and by resident fish populations.¹²⁹ By far the greatest fishery value of the Chuitna River system is represented by the production of Pacific salmon, especially Chinook, and coho.¹³⁰ Pink, chum, and red (sockeye) salmon are also present.¹³¹ Important resident species include rainbow trout, arctic lamprey, slimy sculpin, coastrange sculpin, and threespine stickleback.¹³² Pacific lamprey and Dolly Varden are also present within the Chuitna watershed.¹³³ Spawning activity was noted as far upstream as 11.4 km (7.2 mi) above the mouth of Stream 2003. In Lone Creek, pinks were seen as far up as 14.6 km (9.1 mi) above the mouth (at the confluence of Stream 2002).¹³⁴ Below Stream 2003, the Chuitna River was rated as very high in habitat values for Chinook and high for all other species.¹³⁵

51. No threatened or endangered fish or wildlife species are known to be present within the petition area. The federal National Marine Fisheries Service (NMFS), with the National Oceanic and Atmospheric Administration (NOAA), has designated Cook Inlet beluga whales as depleted under the Marine Mammal Protection Act (MMPA), and as endangered under the Endangered Species Act (ESA). NMFS has also designated critical habitat for the Cook Inlet beluga whale within the waters of Cook Inlet.¹³⁶ The federally designated critical habitat is directly adjacent to the far east end of the petition area.

52. Recreational uses of the area include sport hunting, trapping, and fishing. The primary target for hunters in the area is moose. A limited number of brown and black bear are also taken.¹³⁷ In the fall and winter, waterfowl, spruce grouse, and ptarmigan are hunted. Trapping is limited to the fall and winter months,

¹²⁹ *Id.* at 4-40.

¹³⁰ OASIS Environmental Inc., 2007 Freshwater Aquatic Biology Study Program, at xiv.

¹³¹ *Id.*

¹³² 1990 FEIS at 4-41.

¹³³ *Id.*

¹³⁴ *Id.*

¹³⁵ *Id.* at 50.

¹³⁶ More information is provided at the following link:
<http://www.nmfs.noaa.gov/pr/species/mammals/cetaceans/belugawhale.htm>

¹³⁷ OASIS Environmental Inc., *Land Use Baseline Summary Report for the Chuitna Coal Project*, (October 2006).

and targets fur bearers such as beaver, river otter, lynx, marten, and wolverine.¹³⁸ Sport fishing in the Chuitna River is primarily for Chinook and coho salmon.¹³⁹

53. The region was initially settled by the Dena'ina (Tanaina) people who lived along the coast near the present day settlement of Tyonek.¹⁴⁰ The Moquawkie Indian Reservation was established in 1915, and in 1970, the members elected to participate as a village corporation under the Alaska Native Claims Settlement Act (ANCSA).¹⁴¹ Oil, gas, and coal exploration began in the area in the early 1960s, and the Chugach Electric Association's natural gas power plant at Beluga began operations in 1968.¹⁴² In the mid-1970s, the state sold salvage rights to the beetle-killed spruce in the area and the resultant logging operations created a network of roads throughout the area.¹⁴³ A lumber mill was built at Tyonek in 1973, where lumber was chipped and exported. Logging occurred both south and north of the Chuitna River.¹⁴⁴

54. Subsistence use of the petition area and the larger Chuitna watershed area through which the petition area meanders is similar to the recreational uses.¹⁴⁵ A report by the Alaska Department of Fish and Game on subsistence harvest in the Chuitna watershed area stated that “[s]almon made up the largest portion of harvests for home use in the study communities, but harvests of large land mammals, other fish, small game such as birds and furbearers, marine invertebrates, and wild plants

¹³⁸ *Id.*

¹³⁹ *Id.*

¹⁴⁰ *Id.* at 4-1.

¹⁴¹ *Id.*

¹⁴² *Id.*

¹⁴³ *Id.* at 4-3.

¹⁴⁴ 1990 FEIS at 4-3 and 4-10. Environmental Research and Technology, Inc., *Diamond Chuitna Project, Mine Component Vegetation Baseline Report*, prepared for Diamond Shamrock-Chuitna Coal Joint Venture, Anchorage, AK, at 23 (February 1985).

¹⁴⁵ Stanek, Ronald T., and Holen, Davin L., *Update of Wild Resource Harvest And Use Information For Tyonek and Beluga, Alaska*, Technical Paper 321, 2005/2006, 2006.

were also important. Marine mammal harvests were important in Tyonek.¹⁴⁶ Subsistence uses also include a collection of edible plants and berries.¹⁴⁷

Potential Coal Resources in the Petition Area and the Effect on the Demand for and Supply of Alaska Coal

55. The petition area meanders throughout the Chuitna watershed. The watershed is within the Susitna/Beluga Coal Field. This coal field is one of the most significant coal fields in Alaska,¹⁴⁸ containing a resource estimated at 2.2 billion metric tonnes (MT) of low-sulfur coal.¹⁴⁹ The occurrence of coal seams in the west Cook Inlet area has been known for decades and large exposures of coal occur in the Chuitna River valley. These coal seams or coal measures are readily observed outcroppings in the Chuitna River itself and on banks and bluffs at many locations in the watershed. Evaluation of the coal resources in the area show that it has a low-sulfur content, and this resource would provide a cleaner burning fuel than many other coal resources currently in production in the United States.¹⁵⁰

56. The lands in the Susitna/Beluga Coal Field are owned by various private and public entities, including the State of Alaska, the Mental Health Trust, Tyonek Native Corporation, Cook Inlet Region, Inc. (CIRI), and the Kenai Peninsula Borough.¹⁵¹ Since statehood in 1959,¹⁵² as well as following enactment of ANCSA in 1971,¹⁵³ many of the lands within the area were selected by the state and third parties

¹⁴⁶ Stanek, Ronald T., and Holen, Davin L., *Update of Wild Resource Harvest And Use Information For Tyonek and Beluga, Alaska*, Technical Paper 321, 2005/2006, 2006.

¹⁴⁷ *Id.*

¹⁴⁸ In terms of identified resources, the Beluga coal field is slightly larger than the total of the coal fields of the Nenana Province near Healy, Alaska. Merritt, R.D. and Hawley, C.C., 1986, Map of Alaska coal resources, 1:2,500,000: Alaska DGGs Special Report No. 37, Table 2.

¹⁴⁹ DDS-77, Alaska Coal Geology, Resources, and Coalbed Methane Potential by Romeo M. Flores, Gary D. Stricker, and Scott A. Kinney, 2004.

¹⁵⁰ Acid Rain Program Benefits Exceeds Expectation, USEPA Clean Air Market Programs: <http://www.epa.gov/capandtrade/documents/benefits.pdf>, and Considerations For Low Sulfur Coal Blending At B. L. England Station, Russell, *et al.*

¹⁵¹ See Figure 1.

¹⁵² 72 Stat. 339 Public Law 85-508 (1958).

¹⁵³ 43 U.S.C. § 1601, *et seq.*

based upon the coal resources present in the area.¹⁵⁴ For example, the core townships in the Chuitna watershed are original Mental Health Land Trust selections, filed in 1960 with patent received in 1966.¹⁵⁵ The Trust selections were made on known resource lands containing large deposits of coal, sand and gravel, heavily timbered areas, and areas with significant oil and gas potential. It was anticipated that resource development leases on the lands would provide rental and royalty income for the Trust over the long term.¹⁵⁶ DNR estimates that an aggregate of at least \$127 million has been expended on coal exploration and potential development within the Chuitna watershed.

57. In the 1970s, exploration drilling was conducted by the Diamond Alaska Coal Company¹⁵⁷ and the Beluga Coal Company.¹⁵⁸ This exploration continued into the late 1980s, with over 200 holes being drilled and four test pits being mined in the watershed. The exploration permits associated with these activities (Beluga-Center Ridge Exploration Permit No. 01-84-795 and Chuitna Exploration Permit Nos. 01-85-795 and 02-83-795) have been maintained and renewed continuously since first being issued.

58. The coal leases currently issued to PacRim (ADLs 36911, 36913, 36914, 37002, and 59502) were originally issued as Coal Prospecting Permits (CPPs) in early 1968. These CPPs were converted to Coal Leases in May of 1972 and 1978. The coal leases issued to the Barrick/Beluga Coal Company (ADLs 33795, 36282, 37471, 56982, 79816, 56982, and 79816) were issued as CPPs in 1967 and 1968, and converted to Coal Leases over a period between 1971 and 1976.

59. The State of Alaska and the Kenai Peninsula Borough have long recognized the potential importance of this resource to the people of Alaska. Land use plans, specifically the 2000 Kenai Area Plan,¹⁵⁹ and -- although no longer controlling --

¹⁵⁴ Alaska Department of Natural Resources, 1996, 1990s land selection project, final State of Alaska land selection from federal public domain lands, final report draft: ADNDR Division of Land, Resource Assessment Section (May 29, 1996), 164p.

¹⁵⁵ DNR case file abstracts.

¹⁵⁶ Mental Health Annotated Chronology (updated July, 1991), at 1.

¹⁵⁷ PacRim comment letter January 19, 2010, at 3.

¹⁵⁸ Beluga (Center Ridge) Exploration Permit # 01-84-795.

¹⁵⁹ 2000 Kenai Area Plan at 3-296 to 3-298, 3-308, and 3-313.

the area's predecessor plan, the 1985 Susitna Area Plan for Management Unit 3,¹⁶⁰ identified and designated state land in the petition area for coal mineral development and activities. The planning processes for these two area plans were subject to extensive public review and comment. The Kenai Peninsula Borough's 2005 Comprehensive Plan and the 1988 Chuitna Area Resource Development Plan recognize coal as an economic resource within the Chuitna watershed.¹⁶¹ The 2000 Kenai Area Plan states that these resources should "[c]ontribute to Alaska's economy by making subsurface resources available for development, which will provide job opportunities, stimulate economic growth, and establish a source of state revenues."¹⁶²

60. Within the watershed there are currently two active coal exploration projects, PacRim's Chuitna Coal Project and Beluga Coal Company/Barrick's Beluga Coal Project. Coal reserves in the Chuitna River basin are estimated at 2.2 billion MT.¹⁶³ Estimated reserves within the Pac Rim Coal Leases are reported to be 771 million MT.¹⁶⁴ Areas leased as part of Beluga Coal Project are estimated to hold 600 million MT.¹⁶⁵ These project estimates do not include significant reserves located on CIRI lands and Trust lands not currently under lease within the watershed.

61. Work on the Diamond Shamrock Chuitna Coal Project (predecessor to PacRim's Chuitna Coal Project) intensified in the early to mid-1980s, with compilation of environmental baseline studies, preparation of mine engineering plans, market studies, and measurement of coal reserves, as well as applications for permits. In 1985, the Diamond Shamrock Chuitna Coal Project applied to the state for a permit to mine and DNR issued a permitting decision in 1987 approving the project, which then DNR Commissioner Judith Brady affirmed, with minor modifications, upon

¹⁶⁰ 1985 Susitna Area Plan at 295-97.

¹⁶¹ 2000 Kenai Area Plan at 3-296 to 3-298, 3-308, and 3-313.

¹⁶² 2000 Kenai Area Plan at 2-34.

¹⁶³ DDS-77, Alaska Coal Geology, Resources, and Coalbed Methane Potential by Romeo M. Flores, Gary D. Stricker, and Scott A. Kinney, 2004.

¹⁶⁴ ALASKA'S MINERAL INDUSTRY 2007: A SUMMARY, D.J. Szumigala and R.A. Hughes, at 11.

¹⁶⁵ DDS-77, Alaska Coal Geology, Resources, and Coalbed Methane Potential by Romeo M. Flores, Gary D. Stricker, and Scott A. Kinney, 2004.

reconsideration in 1988.¹⁶⁶ The EPA prepared the 1990 FEIS and issued its 1990 ROD in accordance with the National Environmental Policy Act (NEPA),¹⁶⁷ along with a national pollutant discharge elimination system permit (NPDES or wastewater discharge permit)¹⁶⁸ for the project. ADF&G issued Fish Habitat Permits for in-stream mining in one of the area streams (Stream 2003) and approved the sedimentation pond construction in the same vicinity. Subsequently, Diamond Shamrock did not proceed with the project due to economic conditions.

62. More recently, during the early to mid-2000s, coal prices began to rise and PacRim has renewed efforts to develop the project as the Chuitna Coal Project. PacRim applied for an NPDES permit triggering the need for a Supplemental EIS (SEIS) in 2006 that is in ongoing preparation. PacRim is also preparing new mine applications for an updated and reconfigured operation.

63. DNR has determined that, from a logistical and operational standpoint, because of the area that petitioners have delineated for a lands unsuitable determination, designation of those lands as unsuitable for surface coal mining operations would significantly fragment the coal resource within the watershed. This conclusion is based on simple geometry; the mosaic that would be created by the petition and overlay the footprint of the proposed Chuitna coal mine would leave almost no place for such a mine to fit and produce at an economic level.¹⁶⁹ Thus, it is DNR's opinion that this designation and the resulting fragmentation of the coal resource would negatively impact the economics of coal development on undesignated lands within the watershed.

64. The demand for coal in the United States and foreign markets has steadily increased over the last 50 years and coal is expected to remain an important

¹⁶⁶ Environmental groups administratively appealed DNR's 1987 Permitting Decision, which was ultimately litigated in state court, with Alaska Supreme Court issuing a decision in 1992. *Trustees for Alaska v. Gorsuch*, 835 P.2d 1239.

¹⁶⁷ 42 U.S.C. § 4321, *et seq.*

¹⁶⁸ 33 U.S.C. § 1342.

¹⁶⁹ *See, e.g.*, Figure 4 attached to this decision.

energy source into the future.¹⁷⁰ The U.S. Department of Energy has projected national coal consumption through 2035.¹⁷¹ Even so, coal energy faces competition from other energy sources, such as natural gas and oil, as well as the evolving solar and wind energy sectors.¹⁷² This competition will affect market demand for coal in domestic and foreign markets, but it will not eliminate coal as one of the world's principal energy resources.¹⁷³ The U.S. Energy Information Administration predicts that coal use will continue to grow, with most of it destined to generate electricity and the production of synthetic liquids.¹⁷⁴ The report predicts that coal will remain the largest source of electrical generation through 2035.¹⁷⁵

65. In 2010, the United States produced approximately 984 million MT of coal.¹⁷⁶ Of that amount, approximately 74 million MT were exported to foreign markets.¹⁷⁷ In 2010, the primary destination for U.S. coal exports was the European market, with approximately 38 million MT delivered to various European countries.¹⁷⁸ The European market was followed by markets in Asia, North America, South America, and Africa, in order of decreasing imports of US coal.¹⁷⁹ Within the United States, the primary destination in 2010 of all coal produced is for electrical generation (885 MT); the other use is for steel production.¹⁸⁰

66. Regarding the demand for, and supply of, Alaska coal, there is currently one active producer in Alaska, Usibelli Coal Mine in Healy, Alaska. In 2010, Usibelli

¹⁷⁰ J. Fallows, *Dirty Coal, Clean Future*, The Atlantic Magazine (noting that coal produces approximately 46% of U.S. electricity), <http://www.theatlantic.com/magazine/archive/2010/12/dirty-coal-clean-future/8307/> .

¹⁷¹ *Id.*

¹⁷² *Id.*

¹⁷³ *Id.*

¹⁷⁴ Annual Energy Outlook 2011, U.S. Energy Information Administration, April 2011, at 85.

¹⁷⁵ *Id.* at 49.

¹⁷⁶ U.S. Coal Summary Statistics; U.S. Energy Information Administration January 2011, <http://www.eia.gov/cneaf/coal/quarterly/html/tes1p01p1.html> .

¹⁷⁷ *Id.*

¹⁷⁸ U.S. Coal Supply and Demand: 2010 Year in Review by Watson, *et al.*

¹⁷⁹ *Id.*

¹⁸⁰ *Id.*

produced approximately two million MT of coal.¹⁸¹ Approximately half of this was shipped to overseas markets including Chile, South Korea, and Japan. The rest of the coal produced by Usibelli is used at power plants located in Interior Alaska. The amount of coal used at six interior power plants is approximately a million tonnes a year and is not expected to increase in the near future.¹⁸² The demand from overseas markets for Usibelli coal has been steadily increasing. Usibelli reported a 24% increase in exports over the same period in 2009.¹⁸³ Statewide, DNR has observed an increased interest by companies looking at Alaska coal for overseas markets as seen by an increase in requests to DNR for information on coal resources, particularly those in Southcentral Alaska. Also, "Alaskan coals have a lower sulfur content (averaging 0.3 percent) than most coals in the conterminous United States and are within or below minimum sulfur value mandated by the Clean Air Act amendments"¹⁸⁴, thus making Alaska coal an environmentally attractive fuel source.

67. There are two other projects approaching development and actively developing information to acquire permits. The first is the proposed Chuitna Coal Mine, through which some of the petition area crosses. At full production, this project is estimated to produce 12 million MT of coal per year, with an estimated mine life of 25 years.¹⁸⁵ Any coal produced from this project is expected to be exported to overseas markets. The other coal project in Southcentral Alaska that may start production in the relatively near future is Usibelli's Wishbone Hill Project. The potential minable reserves at this project are estimated at 14 million MT.¹⁸⁶ This

¹⁸¹ *Usibelli 2010 Coal Sales Set New Record* (North of 60 Mining News Dec 2010).

¹⁸² This statement does not include the Healy Clean Coal Plant becoming operational in the next several years. Golden Valley Electric Association is currently exploring the possibility to bring this power plant online. If so, it would require approximately 200,000 tons of coal a year to produce 50 megawatts of power.

¹⁸³ *Usibelli 2010 Coal Sales Set New Record* (North of 60 Mining News Dec 2010).

¹⁸⁴ Flores, *et al.*, Alaska Coal Geology, Resources, and Coalbed Methane Potential (Nov. 2005), at USGS website: <http://pubs.usgs.gov/dds/dds-077/> .

¹⁸⁵ Applicant's Proposed Project (as of April 2011), at 2, EPA's website for Proposed Chuitna Supplemental Environmental Impact Statement (SEIS), <http://www.chuitnaseis.com/seis-process.html> .

¹⁸⁶ Usibelli Coal Mine website: http://www.usibelli.com/Coal_leases.asp .

project is proposed to produce less than a million MT a year of coal for the export market.¹⁸⁷

68. Regarding the economy of Alaska and its coal mining regions, the estimated value of Alaska coal in 2009 was approximately \$65 million.¹⁸⁸ Based on the 2007-2009 values, the estimated value of coal produced in 2010 will be over \$75 million.¹⁸⁹ The currently active Usibelli Coal Mine provides 130 full time jobs.¹⁹⁰ This number does not include additional jobs provided by support services and vendors. Using the most recently available information for the value of coal produced at Usibelli Coal Mine, the value of the coal produced at the proposed Chuitna coal project at full production would be approximately \$430 million a year. According to the project description for the proposed Chuitna Coal mine, the project would employ up to 250 workers.¹⁹¹

Petitioners' Interests and Standing

69. Based on the petition, it appears that the Chuitna Citizens Coalition has provided sufficient information to support that at least three of its members -- Judy Heilman, Larry Heilman, and Terry Jorgensen -- have interests that could be adversely affected if surface coal mining operations occurred on some portion of the petition area, and that Chuitna Citizens Coalition, by virtue of these members' interests, therefore has standing to seek this merits review of the petition under AS 27.21.260. The Heilmans are residents of Beluga, one of two communities adjacent to the lowest reaches of the petition area,¹⁹² and they use the petition area for various fish and game opportunities, though it is unclear where within the petition area they conduct these uses. Mr. Jorgenson routinely conducts commercial fishing activities near Ladd Landing in Cook Inlet, in a location approximately one mile from the mouth of the

¹⁸⁷ Usibelli Coal Mine, Inc., 2011 Wishbone Hill Mine, information and frequently asked questions, website: <http://www.usibelli.com/wishbone-brochure-web.pdf>.

¹⁸⁸ Szumigala, D.J., Harbo, L.A., and Hughes, R., *Alaska's Mineral Industry 2009*, Alaska Division of Geological and Geophysical Surveys Special Report 64, at 28, 82p.

¹⁸⁹ *Id.*

¹⁹⁰ The Economic Benefits of Alaska Mining Industry January 2010, Alaska Miners Association.

¹⁹¹ Applicant's Proposed Project (as of April 2011), at 6, <http://www.chuitnaseis.com/seis-process.html>.

¹⁹² See Figures 1 and 2.

Chuitna River at its confluence with Cook Inlet. All three express general environmental concerns about potential impacts from coal mining operations in the watershed and how those operations might affect their interests, but they provide little other detail in describing their interests.¹⁹³

70. It is not clear that these members' interests would be affected by mining activities that might occur throughout the entire petition area. Former Commissioner Irwin had urged petitioners in his decision on the 2007 Petition to provide "evidence that supports the scope of the lands requested for designation bears some reasonable correlation to the asserted allegations [and] petitioners' interests."¹⁹⁴ In his decision, Commissioner Irwin also cited and quoted a 2006 OSM decision involving a large petition area that echoed his concern:

Even though there is no specific size limit for a petition area, a basic regulatory criterion is that the petitioner must present "allegations of fact and supporting evidence, *covering all lands in the petition area*, which tend to establish that the area is unsuitable for all or certain types of surface coal mining operations" [30 CFR 764.13(b)(1)(v)]. Therefore, the large size of the petition area means that it is unlikely that the evidence presented can relate to the criteria for designation throughout the entire petition area. This is consistent with OSM's comments in the 1983 preamble that "OSM has found that under the previous regulation, very large areas for which no evidence was presented were included in petitions (Alton petition, Tongue River petition), thus requiring significant efforts by OSM and other interested parties on issues of questionable merit," 48 FR 41329 (September 14, 1983).¹⁹⁵

71. While there are concerns that petitioners still have not provided, with this new petition, the evidence to sustain a review of the entire area for which they seek designation, and that these specific members' interests are actually more

¹⁹³ Petition at 12-13.

¹⁹⁴ July 16, 2007 decision on 2007 petition. *See also, id.*, at 6, 9, 10, 11, and 12 (stating, *e.g.*, that "petitioners have failed to sufficiently describe how any of the allegations and any particular type of coal mining activities that might occur on the petitioned lands would adversely affect petitioners' various interests"). And, as the Trust points out, a good deal of the land which the petition area traverses, such as Stream 2003 across the LMU-1 land leased by PacRim Coal, is 10 miles away from the Beluga community, and is "remote and inaccessible without written authority from TLO," and not located within any residential viewshed. Trust's January 5, 2011 comment letter on the petition, at 5.

¹⁹⁵ July 16, 2007 Decision, at 13-14, n. 11 (emphasis added), quoting OSM's January 13, 2006 Statement of Reasons for Determination of Completeness for the New River Lands for Mining Petition, at 12, in which OSM returned the petition to petitioners as incomplete and without merit. The OSM statement on the New River petition is available on OSM's website, <http://www.osmre.gov/resources/newsroom/News/Archive/2006/011306.pdf> .

narrowly concerned with the site-specific Chuitna Coal Project, this decision nonetheless reflects consideration of the entire petition area, and not just areas where coal mining might affect the community of Beluga and nearby lands, or the proposed Ladd Landing location (which proposed site is also actually outside the delineated petition area).

72. Cook Inlet Keeper, the second organizational petitioner, stated that it “combines advocacy, education, and science toward its mission to protect Alaska’s Cook Inlet watershed and the life it sustains.”¹⁹⁶ It cites the goals of preserving clean water, abundant fish and wildlife, and other policies “that are necessary to sustain healthy communities and strong local economies.”¹⁹⁷ Cook Inlet Keeper asserts that it has members who live and undertake activities and work throughout Cook Inlet, and that it has members in the area that would be directly and adversely affected by mining activities in the Chuitna watershed.¹⁹⁸

73. The statutory standing requirements require a sufficient description of how a petitioner’s interests would be adversely affected with respect to both the potential coal mining activities, as well as to the lands for which designation of unsuitability is sought.¹⁹⁹ General assertions regarding an organization’s goals or mission do not, alone, establish that a person (in the organization’s case, a member) is adversely affected,” nor does the general assertion that members are “directly affected,” without more evidence demonstrating direct affects, necessarily support standing.²⁰⁰

74. While it is questionable whether Cook Inlet Keeper has provided adequate information to show its members’ interests could be adversely affected by coal mining activities anywhere within the petition area, Chuitna Citizens Coalition has substantiated that at least three of its members’ hold such interests, at least for portions of the petition area, and therefore the petition is subject to this merit review.

¹⁹⁶ Petition at 13.

¹⁹⁷ *Id.*

¹⁹⁸ *Id.*

¹⁹⁹ AS 27.21.260(b).

²⁰⁰ *Sisters of Providence in Washington, Inc. v. Department of Health and Social Services*, 648 P.2d 970 (Alaska 1982).

Intervenors' Interests

75. The three intervenors on the petition hold unique interests, including significant property interests, which could be adversely affected if the petition area is designated unsuitable for surface coal mining.

76. In accordance with the land conveyance system established under ANCSA,²⁰¹ the surface estate of 47,000 acres in the Chuitna watershed have been conveyed to the local Village Corporation, TNC, and the subsurface estate for that acreage was conveyed to a Regional Corporation, in this instance CIRI. TNC asserts that responsible coal mining in the Chuitna watershed, throughout which the delineated petition area meanders, would bring economic development, infrastructure projects, and job opportunities for the benefit of its shareholders, approximately 200 of whom live in the Village of Tyonek. TNC describes that at present this is especially true with respect to PacRim's Chuitna Coal Project, and TNC has entered into contracts with PacRim which relate to development of the project. The same benefits for TNC shareholders could also be realized through contractual relationships if CIRI were to pursue coal mining in the future. In addition, were CIRI to develop coal resources in the Chuitna watershed, all shareholders of Alaska Native Corporations, including TNC shareholders, will receive dividends and other potential benefits through revenue-sharing required under ANCSA.²⁰² TNC also cites other non-coal economic development plans that it wishes to undertake, but those plans are predicated on development of coal mining activities in the petition area. If the petition area is designated unsuitable for surface coal mining, TNC expects the designation will frustrate or deprive TNC's ability to secure economic benefits for its shareholders.²⁰³

77. The Trust owns a large portion of the lands in the petition area, and efforts to obtain that ownership go back to 1960.²⁰⁴ The Trust Land Office (TLO) manages Trust lands, and its "primary responsibility is to maximize revenue from Trust land over time and to protect and enhance the value of Trust land ... on behalf

²⁰¹ 43 U.S.C. § 1613.

²⁰² 43 U.S.C. § 1606(i) and (j).

²⁰³ TNC's January 5, 2011 comment letter on the petition.

²⁰⁴ DNR Land Administration System case file abstracts.

of Trust beneficiaries.”²⁰⁵ The Trust is a state corporation that administers the Alaska Mental Health Trust, whose beneficiaries include individuals with mental illness, developmental disabilities, chronic alcoholism and Alzheimer’s disease and related dementia.²⁰⁶ The TLO is obliged to consider a number of trust management principals in managing the Trust’s assets, including “maximization of long-term revenue from trust land,” “protection and enhancement of the long-term productivity of trust land,” and “encouragement of a diversity of revenue-producing uses of trust land.”²⁰⁷ Many of these lands are coal-bearing, and a significant subset of these lands is leased to PacRim Coal, including the Chuitna Coal Project area (*e.g.*, LMU-1). If coal production at the Chuitna Coal Project occurs, TLO estimates that it will provide significant revenue to the Trust over time, generating a 5% royalty that would equate to \$300 million dollars over the 25-year projected life of the mine. If the petition area is designated unsuitable for surface coal mining and the effect of that designation deters coal mining at the Chuitna Coal Project, TLO will not be able to attain these royalties for mental health programs that support Trust beneficiaries.²⁰⁸

78. PacRim holds the leases for coal deposits in the petition area. These leases originated more than 30 years ago.²⁰⁹ As noted earlier, many of the petition’s allegations, supporting evidence, as well as public comment, focus on PacRim’s efforts to develop the Chuitna Coal Project. PacRim has made a significant financial investment in its efforts to develop the project.²¹⁰ As PacRim notes, the predecessor Diamond Shamrock Chuitna Coal Project was designed and permitted in the late 1980s and early 1990s, but due to market conditions, the project did not go forward. PacRim has restarted efforts to obtain new permits for the Chuitna Coal Project, and is working with the federal agencies on preparation of a SEIS. PacRim’s more recent

²⁰⁵ Trust’s January 5, 2011 comment letter on the petition, at 2.

²⁰⁶ Trust website, http://www.mhtrust.org/lavouts/mhtrust/files/documents/about_aboutdocs/Trust_Overview_update2011.pdf.

²⁰⁷ 11 AAC 90.020(c).

²⁰⁸ *Id.*

²⁰⁹ PacRim’s January 19, 2011 comment letter on the petition, at 2.

²¹⁰ PacRim’s January 5, 2011 comment letter on the petition, at 1.

efforts have been underway since 2005.²¹¹ Thus, if the petition were granted, PacRim's property interests would be adversely impacted.

79. Attached Figure 2 delineates surface estate ownership within the Chuitna watershed. With the exception of TNC, all of the entities listed also own the subsurface estates, including the right to any coal resources and the financial returns from the extraction and sale of that coal. As noted earlier, CIRI owns the subsurface estate to TNC's lands. And, as Figure 2 shows, the petition area meanders throughout the larger Chuitna watershed area.

Consequences Associated with Granting, Granting in Part, or Denying the Requested Unsuitability Designation

80. In rendering a decision on a petition, a number of alternative outcomes can be reached, and with each come certain consequences. These outcomes include: designating the petition area in its entirety as unsuitable for surface coal mining operations; designating only a portion of the petition area as unsuitable; denying any of the petition area as unsuitable; or denying to designate any of the petition area as unsuitable but setting forth conditions to apply to future coal mine permitting. Each option is discussed below.

A. Consequences of Designating the Petition Area in its Entirety as Unsuitable for All Types of Surface Coal Mining Operations

81. In order to designate the petition area in its entirety, the Commissioner would have to find from a review and evaluation of the petition's allegations that the mandatory or discretionary criteria applicable to the allegations are supported by competent and scientifically sound data and information, and consider planning activities of federal, state, and local governments.²¹² From an on-the-ground disturbance perspective, designation of the entire delineated petition area as unsuitable for all types of surface coal mining operations (including activities to extract the coal and to transport the coal from the deposit site to Cook Inlet shore facilities), as the petition requests, would essentially eliminate the potential future impacts of those operations to the petition area's current environmental condition.

²¹¹ PacRim's January 19, 2011 comment letter on the petition, at 2.

²¹² AS 27.21.260(a) and AS 27.21.260(c).

82. However, the actual consequences of granting the requested designation would likely have farther-reaching geographical ramifications beyond the identified streambed and riparian land features delineated by petitioners in the petition. While coal exploration could still occur in the designated area,²¹³ and coal mining could theoretically occur outside the petition area within the Chuitna watershed, it is DNR's judgment that the designation would likely render most, if not all, coal mining in the watershed economically unfeasible to efficiently extract and transfer coal out of the watershed, given the fragmenting effect that the designation would have on the watershed's coal resources. This conclusion is based on simple geometry; the mosaic that would be created by the petition and (at the same scale) overlay the footprint of the proposed Chuitna coal mine, existing Usibelli coal mine, or the proposed Wishbone Hill mine, there is almost no place where such a mine could fit and produce at an economic level.

83. Thus, if the petition area were designated in its entirety for all types of surface coal mining operations, it is likely that the larger Chuitna watershed, *i.e.*, the petition area's streambeds and associated riparian areas, as well as other lands, vegetation, soils, hydrological regime, and the areas used by fish and wildlife surrounding the petition area, would not be impacted by coal mining development and operations. In the absence of feasible mining projects, and absent any changes to land management plans or uses, an area more expansive than the petition area -- quite likely the 96,000 acres of the Chuitna watershed -- would essentially remain as it is today. The area would only reflect impacts from those activities that variably have occurred in the area over the past several decades, activities which include coal exploration, recreational and subsistence uses, fishing and hunting, fulltime and seasonal residential use, episodic road building, natural gas exploration and production projects, and logging activities.²¹⁴

84. The requested designation, if granted, and the ramifications perceived from that designation for surface coal mining in the greater Chuitna watershed, would mean that up to 2.2 billion MT of low sulfur, cleaner burning coal present in the

²¹³ AS 27.21.260(h).

²¹⁴ OASIS Environmental Inc., *Land Use Baseline Summary Report for the Chuitna Coal Project*, (October 2006).

Chuitna watershed, could not be extracted and used for power generation. Land owners in the area would not be able to realize -- for themselves or for those members on whose behalf they manage the coal resource in trust -- financial gains and program benefits from the extraction and sale of that resource. No local employment (such as the potential 250 direct jobs relating to the Chuitna Coal Project) would be realized from surface coal mining activities. Future surface coal mining in the area could only be conducted if the unsuitability designation were terminated through a petition.²¹⁵ The possibility of terminating a designation means that the coal resource is not irreversibly lost.

85. Based on Department of Energy data, while national coal consumption should not, at least in the foreseeable future, be limited by supply constraints caused by a designation of the petition area, the low-sulfur content of the watershed's coal resources and its resultant cleaner-burning fuel emissions provide incentive for seeking to develop this coal resource.

B. Consequences of Designating Parts of the Petition Area as Unsuitable for All or Certain Types of Surface Coal Mining Operations

86. The petitioners have not requested, as an alternative, that only certain portions of the petition area be designated as unsuitable, nor have they specified a narrower range of types of surface coal mining operations that could be prohibited, while other operations could be permitted. Nonetheless, the Commissioner has the authority, based on a review of a petition, to designate a more discrete portion or portions of the petition area as unsuitable for surface coal mining operations, or to prohibit some rather than all types of surface coal mining activities if he or she finds such action is warranted, and in accordance with applicable statutory and regulatory criteria. In order to designate any portion of the petition area as unsuitable for surface coal mining operations, the Commissioner would have to find from a review and evaluation of the petition's allegations that the mandatory or discretionary criteria applicable to the allegations are supported by competent and scientifically sound data and information, and take into consideration planning activities of federal, state, and local governments.²¹⁶

²¹⁵ AS 27.21.260(b).

²¹⁶ AS 27.21.260(a) and AS 27.21.260(c).

87. For more discrete portions of the petition area that may, as a consequence of the evaluation, be designated by the Commissioner as unsuitable for all or certain types of surface coal mining, the on-the-ground consequences would generally be similar to those if the entire petition area were designated, except not on a watershed-wide scale. For example, if only streambeds and riparian areas within the LMU-1 lands were designated as unsuitable, while that, due to feasibility factors, would likely preclude any mining at all for the LMU-1 lands as part of the Chuitna Coal Project, it probably would not preclude surface coal mining operations elsewhere in the larger Chuitna watershed -- although those other operations may have fewer infrastructure options (*e.g.*, potential shared port facility) in the absence of the Chuitna Coal Project. It is likely that the partial designations would mean that streambeds, associated riparian areas, wetlands, vegetation, soils, hydrological regime, and the areas used by fish and wildlife through which the petition area crosses would not be impacted by coal mine development and operations.

88. Partial designation also would likely mean that coal resources for those designated areas would not be extracted or sold, due to feasibility factors. For example, if streambeds and riparian areas within the LMU-1 lands were designated, it is unlikely that it would be feasible to mine the LMU-1 area, and that would mean that at least 300 million MT of low sulfur, cleaner burning coal present in the area would not be extracted and used for power generation. The Trust land owner would not realize -- for the benefit of those beneficiaries on whose behalf the TLO manages the coal resource -- financial gains and mental health program improvement from the extraction and sale of that resource, and that unrealized gain, based on a 5% royalty, could equate to as much as \$300 million dollars. Local employment anticipated from the potential 250 jobs relating to the Chuitna Coal Project would not be realized. Future surface coal mining in the designated portion could only be conducted if the unsuitability designation were terminated through a petition.²¹⁷ The possibility of terminating a designation means that the coal resource is not irreversibly lost.

89. Based on Department of Energy data, while national coal consumption should not, at least in the foreseeable future, be limited by supply constraints caused by a designation of a portion or portions of the petition area, the low-sulfur content of

²¹⁷ AS 27.21.260(b).

the watershed's coal resources and its resultant cleaner-burning fuel emissions provide incentive for seeking to develop this coal resource.

C. Consequences of Denying Designation of the Petition Area in its Entirety

90. The Commissioner may find that there is insufficient evidence to support the allegations and deny the designation of the petition area in its entirety. Nevertheless, and this point must be emphasized, such denial would *not* constitute approval of surface coal mining operations in the petition area, and those approvals would still need to be gained through project-specific permitting processes conducted by multiple state and federal agencies.

91. Because denial to designate any portion of the petition area would mean that the area is not closed to potential future coal mining, this decision would leave open the possibility of coal development, including the realization of potential financial and employment associated with coal mining activities, as well as the opportunity to develop low sulfur coal as a fuel burning resource on national and international markets.

92. At the same time, however, potential impacts to fish and wildlife, subsistence or recreational uses, water resources, air quality, soils, cultural resources, and esthetics (visual and noise), associated with surface coal mining activities may occur or be observed. The significant scale of those impacts would depend on a variety of factors, including the following: permit conditions placed on any specific coal mining operation; the scale of the coal mining operations (its footprint/size) and the anticipated mine life; the postmining land use; the viewshed(s) involved; and whether subsistence or recreational users have access or authority to access lands in a given project area.

D. Consequences of Denying Designation of the Petition Area, But Setting Forth Certain Requirements to Apply to Future Permits

93. As a consequence of evaluating the petition and a determination not to designate a petitioned area as unsuitable, the Commissioner may determine that certain requirements should routinely apply to coal mining permits issued in the future in order to mitigate potential impacts of any project-specific operations to the

land and resources in the petition area.²¹⁸ However, the administrative record, including petitioner's allegations and evidence, would need to provide a basis for determining the need for any requirements that might be delineated in advance of project-specific permitting. Having evaluated the 2010 Petition and the administrative record, I do not find any evidence that would cause me to impose any mitigation requirements for coal mining operations in advance of project-specific permitting that may be proposed for the petition area.

The Petition's Allegations

Petitioners' Allegation I: For surface coal mining operations in the petition area, reclamation in accordance with ASCMCRA is not technologically feasible.

94. Under AS 27.21.260(c)(1), the Commissioner "shall designate an area as unsuitable for all or certain" coal mining activities "if the commissioner determines that reclamation in accordance with this chapter and regulations adopted under it is not technologically feasible." This provision is considered mandatory, that is, the Commissioner must designate lands as unsuitable if the Commissioner determines that reclamation in accordance with the applicable authorities is not technologically feasible.

95. At the outset of Allegation I, petitioners argue that reclamation is not technologically feasible under ASCMCRA. To support this argument, petitioners assert: (i) reclamation means that the disturbed areas are restored in a timely manner to conditions that support pre-mining land uses or "higher and better uses"; (ii) there is no "higher and better" use of this area than its pre-mining use as high quality fish and wildlife habitat; (iii) surface coal mining will "cause irreversible damage to fish and wildlife habitat;" (iv) reclamation cannot return the disturbed areas to pre-mining condition; and (v) therefore reclamation is not technologically feasible.²¹⁹ In essence, this is a syllogism. Coupled with this syllogism, petitioners argue that reclamation is not technologically feasible because mining operations cannot meet the state's "performance standards."²²⁰ These arguments, which for reasons that are discussed in

²¹⁸ 11 AAC 90.711(c).

²¹⁹ *Id.* at 14-16.

²²⁰ *Id.* at 15-16.

detail below, misstate and misapply the applicable law, and are constant themes threaded throughout Allegation I.

96. From this mistaken premise, petitioners' Allegation I makes four specific arguments to support their contention that reclamation of impacts from surface coal mining activities in the petition area would not be technologically feasible.²²¹ These arguments are:

- construction and operation of a surface coal mine on the identified lands would irreparably harm the area's hydrologic balance;
- reclamation would not restore groundwater recharge capacity in the area;
- reclamation would not restore aquatic productivity to pre-mining levels; and
- surface coal mining in the identified lands cannot be designed and operated to minimize changes in water quality and quantity and hydrology enough to ensure no adverse effects to fish and wildlife habitat.

97. In reviewing petitioners' allegation that reclamation of impacts from surface coal mining activities in the petition area would not be technologically feasible, consideration was given to DNR's 1987 Permitting Decision on the Diamond Shamrock Chuitna Coal Project, the 1988 Administrative Appeal Decision affirming the 1987 Permitting Decision, EPA's 1990 FEIS and ROD on the same project, and the Alaska Supreme Court's *Gorsuch* decision on DNR's 1987 Permitting Decision. Additional background relative to these documents is required to understand why they are relevant to an analysis of petitioners' allegations that reclamation in the petition area in accordance with ASCMCRA is not technologically feasible. Significantly, these documents all contained findings, or affirmed findings, that reclamation in the petition area *would be* technologically feasible.

98. Based on the ASCMCRA permit application submitted on the Diamond Shamrock Chuitna Coal Project, DNR issued a permitting decision in 1987, approving the construction and operation of the proposed coal mine. The findings supporting DNR's approval are recorded in (1) a March 5, 1987, "Conditions of Decision and

²²¹ Petition, Allegation I, subparts A-D, at 14-33.

Findings of Compliance for the Diamond Chuitna Mine” and (2) an August 21, 1987, “Decision to Issue a Surface Mining Permit Diamond Shamrock Chuitna Coal Joint Venture Diamond Chuitna Mine.” These documents were later combined into a single document referenced herein as the “1987 Permitting Decision.” While the petitioners and intervenors cite the permitting approval in general ways, DNR made a number of key findings in these documents regarding reclamation and hydrologic impacts:

- Diamond Shamrock’s Wetland Revegetation Plan satisfactorily addressed DNR’s initial concerns about whether wetland habitat could be restored. The agency noted, however, that the plan would be subject to continuing DNR review and that, if appropriate, changes could be made to the plan during actual mine operation.²²²
- The project was subject to several DNR stipulations relative to reclamation measures and activities that would be required contemporaneous with mining. These included measures for sediment and drainage control (including sediment control ponds),²²³ and measures for protecting surface and groundwater hydrology (including additional hydrologic monitoring).²²⁴
- In accordance with AS 27.21.180(c)(2), Diamond Shamrock had “demonstrated that reclamation as required by AS 27.21 and 11 AAC 90 can be accomplished under the reclamation plan,” subject to DNR-required modifications.²²⁵
- In accordance with AS 27.21.180(c)(3), “an assessment of the probable cumulative impact of all anticipated mining in the area on the hydrologic balance has been made and the proposed operation has been designed to

²²² August 21, 1987 Decision (1987 Permitting Decision) on the Diamond Shamrock Chuitna Coal Project, issued by J.M. Brady, at 33-34.

²²³ *Id.* at 40-42, and at 53-92 (consisting of an August 16, 1987 report prepared for DNR by Arctic Hydrologic Consultants that provides a technical review on the proposed Sediment and Drainage Control Plan).

²²⁴ *Id.* at 44-48.

²²⁵ *Id.* at 125, and at 326-361 (containing Section IV findings).

prevent material damage to the hydrologic balance outside the permit area.”²²⁶

- Regarding stream restoration, DNR -- while acknowledging that “post-mining baseflows will take ten to fifteen years to reach pre-mining levels and that it was important that enhancement techniques be maintained until the pre-mining flows are reached” -- found that the application complied with 11 AAC 90.327 (Stream Channel Diversion) for the initial permit term.²²⁷

99. On June 28, 1988, then DNR Commissioner Judith Brady adopted, with minor modifications, the Hearing Officer’s May 21, 1988, proposed decision (1988 Administrative Appeal Decision) on the consolidated administrative appeals brought on the 1987 Permitting Decision by Trustees for Alaska, the project proponent Diamond Shamrock, and others. The Hearing Officer’s proposed decision recommended certain modifications to the permitting decision, including lengthening the permit term from five to ten years.²²⁸ Based on the administrative record, the Hearing Officer also found that “Diamond’s reclamation plan, including its wetlands restoration plan, is sufficient to restore the disturbed area to a condition that is capable of supporting fish and wildlife.”²²⁹ With this 1988 Administrative Appeal Decision, Commissioner Brady affirmed the 1987 Permitting Decision.

100. EPA also conducted an environmental review of the proposed coal mine through its 1990 FEIS and issued a 1990 ROD approving the proposal. Thereafter, EPA issued an NPDES permit for the mine’s wastewater discharges. In the two-volume 1990 FEIS and the 1990 ROD, EPA considered several factors and made a number of key findings:

²²⁶ *Id.* at 125, and at 362-404 (containing Section V findings).

²²⁷ *Id.* at 202.

²²⁸ 1988 Administrative Appeal Decision at 5-7.

²²⁹ *Id.* at 33-35.

- EPA considered numerous impacts the project potentially could have on the environment, including possible impacts to wetlands, subsistence, fish and wildlife, and associated habitat impacts.²³⁰
- EPA concluded that the area in which the project was to be located was not pristine. For example, it had been previously entered for logging and oil and gas purposes.²³¹
- EPA stated the following regarding potential impacts to wetlands:

The acidic, muskeg-type wetlands which are widely dispersed throughout the area are not highly productive and the net primary productivity of replacement communities could be as high or higher than the communities that now exist. Therefore, adverse impacts to primary wetland productivity would not be significant on a regional scale. Food webs would be interrupted in the immediate vicinity of pre-mining wetland areas, but such interruption would probably not be significant on a regional basis because of the isolated nature of most area wetlands and the large extent of similar wetlands outside the project area.²³²

- EPA noted that the wetlands within the Diamond Shamrock Chuitna Coal Project area were similar to wetlands found outside the project area (i.e., the Chuitna watershed/drainage).²³³
- In the ROD, EPA stated that the authorizing agencies, including EPA and DNR, anticipated that reclamation within the project area would be undertaken in accordance with specific requirements, and therefore feasible.²³⁴

101. After the Commissioner upheld DNR's permitting decision upon appeal, multiple plaintiffs, including Trustees for Alaska, appealed the Commissioner's

²³⁰ 1990 FEIS at 5-11, 5-16, and 5-75.

²³¹ *Id.* at 5-136.

²³² *Id.* at Appendix F, at 2-3.

²³³ *Id.* at 3.

²³⁴ 1990 ROD at 6, and at 9-12. *See also* 1990 FEIS, at 2-31 to 2-34.

decision.²³⁵ With the exception of one modification, which required a separate ASCMCRA permit for an eleven mile access/haul road from the mine site, the superior court upheld the permitting decision. Upon Trustees' appeal of the superior court's decision, the Alaska Supreme Court -- while remanding the decision to DNR for further consideration of cumulative effects of activities associated with the permit, and reconsideration of the reclamation bond amount -- addressed Trustees' contention that DNR erred in approving the proposed plan for restoration of ecological functions and revegetation. Among other things, the Court held:

- that DNR had found that the proposed reclamation and wetlands restoration plans for the leased lands were "sufficient to restore the disturbed area to a condition capable of supporting fish and wildlife."²³⁶
- that DNR acted reasonably in accepting the restoration plan, because the plan

describes how wildlife habitat will be recreated by constructing peat-filled depressions which will be planted with various plant species. In addition, three sediment ponds will be inoculated with plant and insect life forms, and seedlings will be planted to provide a vegetation canopy layer for the benefit of wildlife.²³⁷

102. The petitioners fail to provide convincing evidence with their petition to suggest that anything has changed since DNR's 1987 Permitting Decision determining that the restoration and reclamation plans were sufficient (including to restore disturbed fish and wildlife habitats), EPA's 1990 findings that reclamation was feasible, and the *Gorsuch* decision, in which the Alaska Supreme Court upheld DNR's decision concerning the feasibility of reclamation. Nor is there any evidence in the administrative record, or in the petition, that justifies issuing a finding that contradicts these earlier decisions.

103. The findings and other information contained in the foregoing documents provide an important backdrop for the following discussion. Allegation I relies on a number of faulty premises, speculative information, misinterpretation of regulatory

²³⁵ *Gorsuch*, 835 P.2d at 1239.

²³⁶ *Id.* at 1249.

²³⁷ *Id.*

requirements and performance standards, a failure to assume that contemporary coal mining practices will be followed, as well as selective citation to information that, as a whole, does not support the contention that reclamation in accordance with ASCMCRA is not technologically feasible. Indeed, with respect to each of the petitioners' allegations (I, II, III, and IV), rather than assuming that contemporary mining practices will be followed and that any approved site-specific project must show it will comply with performance standards or the project will not be approved, the petitioners essentially assume that these practices and standards will not be met. That is not the basis upon which an unsuitability petition is reviewed and decided.²³⁸

A. Petitioner's overarching assertion that reclamation requires restoration of the petition area to the premining condition and that there is no higher and better use of the area than for fish and wildlife habitat.

104. Petitioners' overarching assumption in Allegation I is that the petition area must be returned to its premining condition and that "there is no higher and better use" of anadromous water bodies and the riparian areas than to support fish and wildlife habitat.²³⁹ This allegation calls into play the state's postmining land use regulation at 11 AAC 90.481, which states, in relevant part, the following:

- (a) All disturbed areas must be restored in a timely manner to conditions that are capable of supporting
 - (1) the uses which they were capable of supporting before any mining; or
 - (2) higher or better uses achievable under the provisions of this section.

105. Petitioners are mistaken that the petition area must be returned to its pre-mining condition for at least five primary reasons. First, as an initial matter, embedded in SMCRA and ASCMCRA is the recognition that coal mining will

²³⁸ 11 AAC 90.701(a)(5)(a petition must assume "that contemporary mining practices required under AS 27.21 and this chapter would be followed if the area were mined"). *See also* AS 27.21.210 (stating that all permits issued under the Act shall require that surface coal mining and reclamation must comply with environmental performance standards). OSM has also stated that a petitioner "must assume that contemporary mining practices required under the applicable regulatory program will be followed." 48 Fed. Reg. 41312, 41328-29 (Sept. 14, 1983). *Accord In re Permanent Surface Mining Regulation Litigation*, 620 F. Supp. 1519 (D.D.C. 1985).

²³⁹ Petition at 15.

significantly impact an area.²⁴⁰ Thus, state and federal law authorize surface coal mining despite its effects on the environment.

106. Second, petitioners' argument related to the appropriate postmining land use is premature. Under state law, determining the "higher or better" postmining use will be addressed during the permitting phase when the operator must present a postmining reclamation plan, which "must contain a detailed description of the proposed use, following reclamation, of the land to be affected by surface operations or facilities."²⁴¹

107. Third, a petition must assume that "that contemporary mining practices required under AS 27.21 and this chapter would be followed if the area were mined."²⁴² DNR's regulation is consistent with federal law, where the OSM has also stated that a petitioner "must assume that contemporary mining practices required under the applicable regulatory program will be followed."²⁴³ Yet petitioners turn this standards on its head -- i.e., Trustees argues that "in order for reclamation in accordance with SMCRA and ASCMCRA to be considered feasible, it must meet the performance standards that the DNR has established to Surface coal mining and reclamation on lands within the Chuit River watershed . . . would be incapable of meeting a number of these performance standards[.]"²⁴⁴ Consequently, petitioners, by assuming that any mine in the Chuitna watershed will not be able to comply with DNR's performance standards, have misconstrued the petition process.

108. Fourth, petitioners fail to acknowledge that a mine operator will not receive the requisite permits if it cannot satisfy the performance standards set out in 11 AAC 90.481. Thus, to the extent that an operator cannot meet the performance standard cited by petitioners (11 AAC 90.481), it will not receive the requisite permits.

²⁴⁰ 30 U.S.C. § 1202; AS 27.21.010. This issue is discussed in more detail below.

²⁴¹ 11 AAC 90.087.

²⁴² 11 AAC 90.701(a)(5).

²⁴³ 48 Fed. Reg. 41312, 41328-29 (Sept. 14, 1983).

²⁴⁴ Petition at 16.

109. And fifth, petitioners assume inaccurately that an area's premining uses must dictate the appropriate postmining uses.²⁴⁵ But one cannot simply assume that the premining land use is the "higher and better use" for an area. Instead, as discussed below, the landowner and the regulatory authorities determine the appropriate postmining land use.

110. More specifically, petitioners' arguments related to the "higher and better use" of these lands must be considered in connection with several other applicable provisions, including 11 AAC 90.481(c) and 11 AAC 90.087, area management plans,²⁴⁶ as well as in consultation with the affected landowner.

111. State regulation defines "higher and better uses" as those "postmining land uses that have a higher value or other benefit to the landowner or community than the premining land use."²⁴⁷ Determination of the postmining land use may be generally identified by the land owner prior to any coal mining activity, and then with more specificity in the permitting phase. Thus, there is no presumption, as petitioners assert, that the "higher and better" postmining land use for the petition area is the support of fish and wildlife habitat, although those uses would certainly be considered at the appropriate time. And under 11 AAC 90.481(c), when considering higher and better use, the Commissioner would consider measures to prevent or mitigate adverse effects on fish, wildlife, and related environmental values and threatened or endangered plants as identified and incorporated into the postmining land use plan, if appropriate.

112. As noted previously, ownership of land within the petition area and the larger Chuitna watershed is mixed, and consists of the following: State lands, private lands (with the surface estate belonging to Tyonek Native Corporation), CIRI lands, Kenai Peninsula Borough lands, Trust lands (managed by the Trust Land Office (TLO)), and parcels owned by private individuals. For those lands lying in the petition area, as well as for any areas in the larger Chuitna watershed, "higher and better uses" of these lands would be determined after consultation with the relevant land holders during the permitting phase of a specific coal mining project.

²⁴⁵ Petition at 15.

²⁴⁶ AS 27.21.260(a)(1).

²⁴⁷ 11 AAC 90.911(50).

113. In its January 5, 2011, letter commenting on the petition, the TLO correctly points out some of the regulatory requirements applied in considering postmining uses:

While fish and wildlife habitat may be an ancillary use of this land, the TLO is obligated to consider any viable use of this land in the future that could be (sic) produce benefits to The Trust and its beneficiaries. The TLO fully anticipates having input into the reclamation plan to enhance the value of this land for future uses. The provisions of 11 AAC 90.087 and 11 AAC 90.481 address post mining land use and provide that consideration be given to making the proposed operation consistent with surface owner plans and creating conditions that are capable of supporting higher and better land uses.²⁴⁸

Thus, for the Chuitna Coal Project, TLO is the landowner that has a major stake in determining, in consultation with regulatory authorities, the postmining land use for this specific project's affected area.

114. Moreover, as required by AS 27.21.260(a)(1), reviews of available land planning documents for the Chuitna watershed, through which the petition area meanders, have been conducted. Area plans provide a useful tool to guide permitting decisions both before and after mining.

115. The primary guide for state decisions on state land in the petition area is the 2000 Kenai Area Plan. This plan specifically excludes federal, borough, private, Native Corporation, and Trust Lands.²⁴⁹ Prior to the transfer of landownership of the PacRim Chuitna coal leases to the Trust, those leased lands were owned by the State. Coal development was one of the primary uses designated for the area under both the 2000 Kenai Area Plan (specifically indentifying the "Chuitna Area Coal Leases")²⁵⁰ and the previously applicable 1985 Susitna Area Plan.²⁵¹ The Kenai Area Plan anticipates mining of fish streams and fish habitat by noting that when DNR issues a permit for mining in or adjacent to a fish stream, the activity will be conditioned by the permit to be protective of fish, and noting that mining in fish streams requires permits from DEC and ADF&G.²⁵² The 2000 Kenai Area Plan also states that the postmining land

²⁴⁸ January 5, 2011 Trust letter at 4.

²⁴⁹ 2000 Kenai Area Plan at 1-9.

²⁵⁰ *Id.* at 3-308.

²⁵¹ 1985 Susitna Area Plan at 295-96.

²⁵² 2000 Kenai Area Plan at 2-34.

use is to “provide high value habitat for moose and provide water quality for downstream fisheries.”²⁵³ With the transfer of ownership of the lands, identification of postmining land uses are subject to the Trust’s discretion.²⁵⁴

116. Review of the Kenai Peninsula Borough’s 2005 Comprehensive Plan shows that it recognizes coal as an economic resource within the borough, but does not specifically discuss land use plans within the watershed. The 1988 Chuitna Area Resource Development Plan discusses the borough’s “keen interest in potential large scale development of coal”²⁵⁵ in the Chuitna watershed, including roads, conveyors, and ports, but does not discuss postmining land use. Instead, it relies on the State’s planning documents to guide land use. The remainder of the land is either Native Corporation or Mental Health Trust lands which are guided by their own planning and development strategies, and these landowners support responsible coal mining operations.

117. For the foregoing reasons, the petitioners’ allegation rests on a misinterpretation of the regulatory requirements and the misapplication of these requirements. The above discussion shows that the determination of the postmining land use is at the discretion of the landowner, with some input and approval necessary by the regulatory authority, and that, as a practical matter, postmining land uses are more formally fashioned during the permitting phase of a specific proposed coal mining operation. Therefore, declaring that there can only be one higher and better use at this stage is premature.

B. Petitioners’ allegation that construction and operation of a surface coal mine in the petition area would irreparably harm the area’s hydrological balance.

118. Petitioners’ contend that surface coal mining would irreparably harm the area’s hydrological balance, destroying streams, riparian areas and wetlands in the

²⁵³ *Id.* at 3-307.

²⁵⁴ Transfer of ownership of lands within the petition area, including the PacRim leased lands, to the Trust, had actually been contemplated since 1956, but delayed due to litigation. Transfer of the lands was finalized in 2010. Case abstracts for ADLs 36911, 36913, 36914, 37002, and 59502.

²⁵⁵ Kenai Peninsula Borough’s 2005 Comprehensive Plan at I-1.

Chuitna watershed, and dramatically affecting the local hydrology.²⁵⁶ To support this argument, petitioners cite one performance standards (11 AAC 90.321) that protects the area's hydrologic balance and claim that a coal mine in the petition area cannot meet this standard.

119. The petitioners' argument is unavailing because they (i) take the apparent position that coal mining operations can have no adverse impacts on areas where mining activities occur; (ii) improperly assume that performance standards will not be followed; and (iii) ignore several other performance standards that would apply to any coal mining operations in the area to protect the Chuitna watershed's hydrological balance.²⁵⁷

120. Both Congress and the Alaska Legislature, in respectively enacting SMCRA and ASCMCRA, anticipated that adverse impacts will necessarily occur during construction and coal mining. Indeed, the provisions contained in SMCRA and ASCMCRA recognize that coal mining will have impacts to surface and groundwater within the disturbed mining area and that a balancing of resource development and environmental protection is necessary.²⁵⁸ The legislative history and discussion related to hydrologic balance assumes that there will be significant impacts within the mine area itself: "The total prevention of adverse hydrologic effects from mining is impossible and thus the bill sets attainable standards to protect the hydrologic balance of impacted areas within the limits of feasibility."²⁵⁹ Put simply, the standard for a lands unsuitable petition and a mandatory designation is not whether operations will have substantial impacts as petitioners allege at times, but rather whether there will be irreparable harm that makes reclamation in accordance with ASCMCRA technologically infeasible.

²⁵⁶ Petition at 16-29.

²⁵⁷ These include the following regulations set out in Article 11, Chapter 90, of the Alaska Administrative Code: .311, .313, and .315, regarding removal, conservation and storage, and reapplication of top soil; .343, .085, regarding preventative practices that must be taken to prevent long-term adverse changes to area hydrology; .451, .453, .455, and .457 regarding measures for revegetation during reclamation.

²⁵⁸ 30 U.S.C. § 1202; AS 27.21.010.

²⁵⁹ H.R. REP. No. 218, 95th Cong. 1st Sess. 109 (H.R. 2 April 22, 1977). *Elements of mine regulation program; Mining impacts on hydrologic balance*, OSMRE COALEX Report at 235.

121. To reduce, reclaim, and avoid coal mining's adverse impacts, state law imposes performance standards and reclamation requirements. For purposes of the petition, we must assume the performance standards will be followed.²⁶⁰ 11 AAC 90.321 (Hydrologic Balance) provides performance standards that, among other things, require that "[o]perations must be planned and conducted to prevent long-term adverse changes in the hydrologic balance *in both the permit area and adjacent areas.*"²⁶¹ The regulation also provides that "[c]hanges in water quality and quantity, in the depth and flow patterns of ground water, and in the location of surface and subsurface drainage channels must be minimized so that the approved postmining land use of the permit area is not adversely affected."²⁶² Further, an "operator shall comply with all applicable federal and state water quality statutes and regulations."²⁶³ A recurring flaw in the petitioners' argument is the assumption that a permitted project would not be held to these performance standards.²⁶⁴ This position directly conflicts with what the law requires, which is the presumption "that contemporary mining practices required under AS 27.21 and this chapter would be followed if the area were mined."²⁶⁵

122. The petition correctly states that reclamation consists of those actions taken to restore mined land as required by AS 27.21 and 11 AAC 90. But petitioners presume that restoration must be to the premining use. As discussed above, such a standard is not supported by statute or regulation.

123. The petitioners state that some of the wetland types within the Chuitna watershed (not just the petition area), specifically fen and bog wetlands, are difficult, if not impossible, to restore.²⁶⁶ The argument that there should be no impacts to wetlands or that the same type of wetland needs to be reclaimed is not supported by

²⁶⁰ AS 27.21.210; 11 AAC 90.701(a)(5).

²⁶¹ 11 AAC 90.321(a) (emphasis added).

²⁶² 11 AAC 90.321(b).

²⁶³ 11 AAC 90.321(c).

²⁶⁴ See, e.g., Petition at 16.

²⁶⁵ 11 AAC 90.701(a)(5). See also AS 27.21.210 (stating that all permits issued under the Act shall require that surface coal mining and reclamation must comply with environmental performance standards).

²⁶⁶ Petition at 20-25.

the applicable law. Instead, the reestablishment of wetlands is based on the approved postmining land use and any proposed project meeting the requirements of 11 AAC 90.337 – 317 dealing with topsoil, 11 AAC 90.321 dealing with the protection of hydrologic balance, 11 AAC 90.451 dealing with revegetation, and 11 AAC 90.451 dealing with standards for assessing revegetation success.

124. Petitioners' argument also overlooks the fact that state and federal agencies have made findings that reclamation in this area is technologically feasible. In the 1990 FEIS on the Diamond Shamrock Chuitna Coal Project, EPA stated that "[r]eclamation of the mine area would at least partly reverse the ground-water impacts from mining. After removal of the surface-water diversion systems, surface water together with incident precipitation would recharge the underlying spoil materials and with time result in the reestablishment of a ground-water regime similar but not identical to the premining condition."²⁶⁷ DNR also found in its 1987 Permitting Decision that reclamation of the activities proposed for the Diamond-Shamrock Chuitna Coal Project was technologically feasible and that the Reclamation Plan met the requirements of 11 AAC 90.²⁶⁸ Thus, the findings in both the 1990 FEIS and DNR's 1987 Permitting Decision contradict the petitioners' allegation that reclamation, including of wetlands, is not feasible.

125. Nonetheless, the petitioners selectively cite portions of the 1990 FEIS to assert that reclamation of wetlands and riparian areas is not technologically feasible. The petitioners cite statements that, at first blush, appear to support their allegations, but omit other statements that discuss potential impacts and proposed reclamation that ultimately negate the contention that reclamation of coal mining activities is not technologically feasible. For example, petitioners quote the following from the 1990 FEIS regarding impacts to groundwater: "Impacts to groundwater regime as a result of mining operations would be substantial and would affect recharge and discharge relationships; quantity, quality, and direction of groundwater flows; and quantity and quality of surface water."²⁶⁹ However, petitioners fail to mention two other key

²⁶⁷ 1990 FEIS at 5-20.

²⁶⁸ 1987 Permitting Decision at 125.

²⁶⁹ 2010 Petition at 25 (quoting 1990 FEIS at 5-16).

observations EPA reached: "These impacts are unavoidable; however, with proper planning, the impacts can be minimized."²⁷⁰

126. Petitioners also selectively cite the 1990 FEIS to support their contention that reclamation is not technologically feasible:

Because of the long period required for soil formation, soils in the Diamond Chuitna mine area are highly susceptible to irreversible, disruptive impacts from surface mining. A major long-term disturbance would result from the removal of soils and overburden to reach the coal seams.²⁷¹

127. Perhaps more importantly, petitioners omit what EPA concluded regarding feasibility of reclamation: "The initial construction impact to soils would be eventually mitigated by implementation of the reclamation plan and successful revegetation."²⁷²

128. In addition, EPA concluded in the 1990 FEIS that the reclamation plan was consistent with legal requirements:

The project reclamation plan, as required by the State Surface Coal Mining Permit, includes a plan for the restoration of wetlands in the mining area. This plan provides for the enhancement of wetlands development throughout the reclaimed mine area, and the rehabilitation of certain sediment control ponds. The permit also requires construction of a minimum of four 1/2 acre coho salmon rearing ponds. These requirements are subject to review and possible revisions as necessary with the goal of achieving the desired restoration of wetland functions. The wetland restoration measures would reduce net wetland losses expected as a result of the project. Post reclamation wildlife habitat value could be less than premining conditions due to reductions in habitat diversity now contributed by the interspersed wetland/upland areas; however, this diversity is expected to re-establish over the long-term. An extensive sediment pond system is planned, which is expected to reduce the hydrologic and water quality impacts associated with the direct loss of wetlands during the period of mining, as reclamation proceeds.²⁷³

129. Significantly, in 1987, DNR, in its review of the Diamond Shamrock surface coal mining permit application for the Chuitna Coal project, found that the mining and reclamation plans met the requirements of 11 AAC 90.083, 11 AAC

²⁷⁰ 1990 FEIS at 5-16.

²⁷¹ 1990 FEIS at 5-4.

²⁷² *Id.*

²⁷³ 1990 FEIS, App. F, at 2-3.

90.085, 11 AAC 90.321, 11 AAC 90.323, and 11 AAC 90.335 - 90.353, and were protective of the hydrologic balance within the proposed mining area.²⁷⁴

130. In 1990, while remanding the permitting decision on other grounds, the Alaska Supreme Court upheld DNR's decision concerning reclamation.²⁷⁵ The Supreme Court stated:

In our view, DNR's acceptance of the plan meets the reasonable basis standard. The plan describes how wildlife habitat will be recreated by constructing peat-filled depressions which will be replanted with various plant species. In addition, three sediment ponds will be inoculated with plant and insect life forms, and seedlings will be planted to provide a vegetation canopy layer for the benefit of wildlife. In light of the complexity of the subject matter, we will defer to DNR's conclusion that these measures will be adequate to restore wildlife habitat.²⁷⁶

131. The petitioners fail to provide compelling evidence with their petition to suggest that there has been significant changes since DNR's 1987 Permitting Decision determining that the restoration and reclamation plans were sufficient (including to restore disturbed fish and wildlife habitats), EPA's 1990 findings that reclamation was feasible, and the proceedings in *Trustees for Alaska v. Gorsuch*, in which the Alaska Supreme Court upheld DNR's decision concerning the feasibility of reclamation. Wetlands of a similar type occur throughout the petition area. While the petitioners cite several passages from the 1990 EIS that discuss wetlands in the area and their functions, this information does not contradict DNR's earlier findings with respect to reclamation and restoration of wetlands and fish and wildlife habitat. Moreover, even though EPA found that there would be significant wetland impacts during operations in the Chuitna Coal project area, EPA made no finding that reclamation was not technologically feasible.

132. Not only have petitioners' argument been addressed in previous decisions, but the petitioners continue to rely on information that they submitted with their 2007 petition and which Commissioner Irwin found either did not provide competent evidence to support their allegations, or which, when inspected more

²⁷⁴ 1987 Permitting Decision at 125, 283, and 383.

²⁷⁵ *Gorsuch*, 835 P.2d 1239.

²⁷⁶ *Id.* at 1249.

closely, contradicted petitioners' allegations.²⁷⁷ The petitioners did not seek further review of these final findings, and dismissed with prejudice their lawsuit on Commissioner Irwin's July 16, 2007 decision and corresponding February 14, 2008 decision on reconsideration.²⁷⁸

133. Additionally, the petitioners continue to rely on a 1998 report by Cooper, *et al.*, *Hydrologic Restoration of a Fen in Rocky Mountain National Park, Colorado, USA*²⁷⁹ -- regarding 1990 wetland restoration efforts for fen wetlands systems in the Rocky Mountains, which does not support their allegations. The efforts documented in that paper were devoted to restoring fen systems for lands disturbed by agricultural activities that took place roughly one hundred years ago and relating to activities not likely subject to the regulations and practices used in contemporary agricultural activities, much less contemporary surface coal mining activities.²⁸⁰ These lands are also located in a much more arid environment than the petition lands in the Chuitna watershed. Additionally, at least one conclusion in the report appears to contradict the petitioners' claim that fen systems cannot be restored:

The ditch was blocked in an attempt to restore the hydrologic regime in the central and southern portions of the fen. Water-level data from three years prior to the restoration and four years after restoration show that blocking the ditch successfully restored surface sheet flow, high later summer water levels, and anaerobic soil conditions.²⁸¹

134. The other reports that the petitioners continue to rely on that were included with the 2007 Petition deal with studies of restoration efforts for sphagnum moss in Quebec,²⁸² a wetlands restoration project in Hungary in a primarily agricultural and urban development area,²⁸³ as well as a report of modeling approaches for the "prediction of effective water and lands use management aimed at

²⁷⁷ July 16, 2007 Decision on 2007 Petition at 8-9.

²⁷⁸ For this reason, these arguments are likely barred by *res judicata* and collateral estoppel.

²⁷⁹ 18 Wetlands 3 (1998), and Exhibit 6 to the current petition, and Exhibit 4 to the 2007 petition.

²⁸⁰ Petition, Exhibit 6 at 336-37.

²⁸¹ 2010 Petition, Exhibit 6 at 335.

²⁸² 2010 Petition, Exhibit 15, Shantz, *et al.*, *Hydrological changes following restoration of the Bois-des-Bel Peatland, Quebec, 1991-2002*, 331 *Journal of Hydrology* 543 (2006).

²⁸³ 2010 Petition, Exhibit 9, Middleton, *et al.*, *Fen Management and Research Perspectives: An Overview, in Wetlands: Functioning, Biodiversity Conservation, and Restoration* 191 (2006).

mire conservation and restoration in primarily Western Siberia.²⁸⁴ These studies discuss the difficulties of restoring wetlands but do not provide relevant data and information to support petitioners' argument in Allegation I that restoring wetlands, particularly fens, is not technologically feasible.

135. Petitioners also continue to rely on another report they assert shows that fens and bogs cannot be restored, *Compensating for Wetland Losses Under the Clean Water Act*,²⁸⁵ but the excerpts from the report do not discuss any restoration measures that might be applicable to further aid analysis of the validity of this assertion, including contemporary coal mining practices and performance standards. The primary purpose of the report is to provide guidance to the U.S. Army Corps of Engineers and EPA in making permitting decisions and to develop mitigation strategies that the agencies can use in their decisions under section 404 of the Clean Water Act.²⁸⁶ While the report is cited in the petition to support the claim that any proposed fen/bog restoration is not technologically feasible, petitioners' claims are contradicted by other competent and scientifically sound information discussed in detail below, which demonstrates that, while it may be difficult, it is possible to restore fens.

136. In short, as Commissioner Irwin previously found, none of these reports deal with disturbances caused by surface coal mines or mining in general, nor do they assess the effectiveness of contemporary coal mining practices and performance standards applicable to both operational and reclamation phases of surface coal mining activities, thus rendering the reports not competent for purposes of review to determine lands unsuitable for surface coal mining operations. Moreover, these reports do not show that reclamation in accordance with ASCMCRA of lands in the petition area disturbed by construction and operation of surface coal mining operations would not be technologically feasible.

137. In addition to the foregoing decisions that have found the hydrological balance and wetlands can be restored, there is evidence of contemporary techniques

²⁸⁴ 2010 Petition, Exhibit 5, Bleuten, *et al.*, *Hydrological Processes, Nutrient Flows and Patterns of Fens and Bogs*, Wetlands and Resource Management 190 (2006).

²⁸⁵ 2010 Petition at 23-24, discussing Exhibit 10, a National Research Council report entitled *Compensating For Wetland Losses Under The Clean Water Act*, at 2 (2001).

²⁸⁶ 33 U.S.C. § 1344.

that can be used to restore wetlands after mining. For example, in its intervention on the petition, PacRim notes other contemporary coal mining practices that are considered to promote reclamation success, including:

- Modern mining operations are conducted and reclaimed in a manner addressing sequential changes in the hydrologic control infrastructure, which minimizes impacts during mining and shortens the period of hydrologic restoration;
- Modern mine operations also incorporate material handling plans, which often include segregation of materials according to specific properties and reclamation or hydrologic benefits (i.e., topsoil, alluvium, surface gravels, aquiclude or aquitard materials) and dictate how these materials will be placed into the reclamation areas; and
- Modern groundwater models, such as MODFLOW developed by the USGS, are able to predict mining impacts to groundwater and in-stream flows, allowing a mine operator to formulate plans to mitigate potential water table declines and associated stream flow losses during mining, as well as proving a means to mitigate impacts after mining while groundwater elevations naturally recover.²⁸⁷

138. In fact, many examples of where high value wetlands have been reclaimed after disturbance by mining do exist. Within the Chuitna watershed, Exhibit 2 to PacRim's January 19, 2011, letter on the petition, shows compelling evidence of wetlands reestablishing after disturbance by mining activities. PacRim also provided recent reports concerning revegetation of disturbed areas in Alaska, including Barclay's willow and Diamond-leaf willow,²⁸⁸ as well as sedges in wetland areas.²⁸⁹ DNR reviewed these reports, and found them to be competent and scientifically sound data and information documenting successful revegetation efforts that are viable techniques that should be considered for reclamation planning in the coal-mine permitting context.

139. Examples of the ability to reclaim areas in the Chuitna watershed -- while small scale -- also exist. At the headwaters of Stream 2003, a test pit was dug to a depth of approximately seventeen feet to the top of a coal seam. The area was backfilled and graded with little additional work conducted to encourage vegetation or wetlands regrowth. During recent environmental

²⁸⁷ PacRim's January 19, 2011 letter commenting on the 2010 Petition, at 13.

²⁸⁸ Walter, *et al.* (2005).

²⁸⁹ Nolan and Wright (2007).

baseline work, including wetlands and vegetation mapping, this area was delineated as undisturbed natural ground. The report on this site stated that “[t]he lake and surrounding area are characterized as a vegetated pond with high value wetlands which contribute to carbon export and food chain support to adjacent streams.”²⁹⁰

140. Although small in scale, this site is important because it shows that a functional wetland was established without additional mitigation or maintenance that would be required as part of a reclamation plan under 11 AAC 90.083. This site, along with several other sites disturbed by exploration activities within the Chuitna watershed, were inspected as part of the department’s field work on the petition.

141. With its 2010 Petition, the petitioners included three recent reports that they commissioned which they assert support their allegation that reclamation is not technologically feasible. These reports are the “Chuitna Coal Mine baseline monitoring and restoration plan review” by Mark Wipfli (2009 Wipfli Report),²⁹¹ “Report on Chuitna Coal Project of PacRim Coal” (2009 Palmer Report),²⁹² and a “Report on Chuitna Coal Project Aquatic Studies and Fish and Wildlife Protection Plan” by Lance Trasky (2009 Trasky Report).²⁹³ These reports include analyses of the potential impacts from surface coal mining based on a review of draft project and baseline documents that PacRim Coal is developing for its proposed Chuitna Coal Project. As the permitting process for the proposed Chuitna Coal Project has progressed, these draft project and baseline documents have changed considerably in response to comments and concerns raised by state and federal agencies. Consequently, the three reports commissioned by the petitioners have limited applicability in relation to the evolving proposed project.

142. In any event, petitioners’ reports discuss the importance of the existing food web and hydrologic linkages in understanding the premining ecosystem and they

²⁹⁰ HDR Alaska (2008).

²⁹¹ Exhibit 19 to the petition. Exhibit 20 is an executive summary of the conclusions presented in Exhibit 19.

²⁹² Exhibit 12 to the petition. Exhibit 13 is a summary of the conclusions presented in Exhibit 12.

²⁹³ Exhibit 17 to the petition. Exhibit 18 is a summary of the conclusions presented in Exhibit 17.

assert that the data is not adequate to support a permitting decision, *e.g.*, “stream restoration presented in the Fish and Wildlife Protection Plan is conceptual and few specifics are provided.”²⁹⁴ The ADF&G agreed with the author that there was not enough information in these reports to address their concerns about reclamation,²⁹⁵ but goes on to state ADF&G could not “conduct a thorough analysis until finalized plans are submitted.”²⁹⁶ The 2009 Wipfli Report states that the reports reviewed contain important biological information but are missing important baseline studies and potential impacts to the Chuitna watershed. From these reports, the petitioners argue that the understanding of streams and riparian areas has changed since the original Diamond Shamrock surface coal mining permit application was reviewed and use this as their basis for requesting designation of the petition area as lands unsuitable for mining.

143. The 2009 Palmer Report²⁹⁷ is a review of draft baseline documents for the proposed Chuitna Coal Mine. The report focuses on the potential impacts the proposed Chuitna Coal Mine would have on streams and the environment both in the project area and downstream, and raises concerns with the baseline studies associated with the Chuitna Coal Project.²⁹⁸ The petitioners cite the 2009 Palmer Report to support their allegation that the reclamation of streams is not technologically feasible.²⁹⁹ However, in light of stream restoration projects associated with mining projects that are discussed in this decision, the 2009 Palmer Report fails to demonstrate that reclamation, or stream restoration, is not technologically feasible.³⁰⁰ Examples discussed in this decision dealing with stream restoration after both large and small scale mining, including surface coal mining, show where streams

²⁹⁴ 2009 Trasky Report at 53.

²⁹⁵ Informal Comments on Three Reports Associated with the Proposed PacRim Chuitna Coal Project, ADF&G (December 2010).

²⁹⁶ *Id.* at 2.

²⁹⁷ Exhibit 12 and 13 to the petition.

²⁹⁸ These concerns have also been expressed by state and federal agencies reviewing the project, and staff with the agencies has asked PacRim for additional information and baseline studies, which are currently ongoing.

²⁹⁹ Petition at 28.

³⁰⁰ See Section F, below, relating to Allegation I.

have been successfully reclaimed, along with the ecological functions of the restored portions of those streams.

144. The 2009 Trasky Report, which is another report cited by petitioners, stresses the importance of nutrients that support fish populations, *e.g.*, “Nutrients from salmon eggs and carcasses play a major role in the productivity of both freshwater and riparian ecosystems and in perpetuating future salmon runs.” However, the report fails to take into account proposed or mandated mitigation that would require the addition of nutrients such as pollock bone meal, transported salmon carcasses, and salmon carcass analogs. Selected examples of nutrient addition to salmon bearing waters include those from Revillagigedo Island, Southeast Alaska³⁰¹ Grilse Creek³⁰², and Cluxewe River in British Columbia³⁰³, and these examples confirmed an increase in salmonids size and weight, as well as an increase in abundance of other food chain organisms. These examples support the proposition that nutrient addition can be used to mitigate the loss of any marine derived nutrient caused by mining operations and can be continued as mitigation throughout the reclamation period until natural sources can be re-established.

145. The ADF&G also reviewed the petition, including the 2009 reports prepared by Wipfli, Palmer, and Trasky. ADF&G concluded that “information submitted with, or in response to the petition, is insufficient at this time to determine whether reclamation of anadromous water bodies or riparian areas anywhere within the entire Chuitna River watershed is not technologically feasible.”³⁰⁴ The letter goes on to state that many of the concerns raised by the petitioners with regard to reclaiming anadromous water bodies and their associated riparian areas need to be addressed on a project-specific basis, when performance standards and other requirements are considered.³⁰⁵ This is a sound conclusion.

³⁰¹ Restoring Productivity of Salmon-Based Food Webs: Contrasting Effects of Salmon Carcass and Salmon Carcass Analog Additions on Stream-Resident Salmonids, Wipfli and others (2004).

³⁰² Salmon River Nutrient Enrichment for Fish Habitat Restoration (2006).

³⁰³ Nutrient Enrichment of Vancouver Island’s Cluxewe River (2007).

³⁰⁴ Alaska Department of Fish and Game Letter dated May 26, 2011, at 2.

³⁰⁵ *Id.*

146. Where the petitioners' commissioned reports do discuss reclamation, the reports either do not apply the appropriate reclamation standards based on the postmining land use authorities, or the conclusions reached in these reports are speculative and not supported by competent and scientifically sound data. It is also important to note that contemporary mining practices have also changed with the advance of new technology and increased understanding of reclamation processes.³⁰⁶ Contemporary mining practices require continuous monitoring and mitigation of reclaimed areas. The petitioners and the authors of the commissioned reports base their arguments on the erroneous assumption that no adverse impacts at all are allowed to fish and wildlife habitat, wetlands, and site hydrology as a result of surface coal mining operations.

147. The petitioners also cite a 2010 report (Mountaintop Mining Consequences, Palmer, *et al.*) documenting the impacts of valley fills³⁰⁷ on headwater streams in the Appalachian region. Mine operators create valley fills when they dispose of excess spoil/overburden material on valley floors. This material consists of spoil and overburden that is not used in reclaiming the postmining topography after mining has been completed. This activity is typically associated with "mountain top removal"³⁰⁸ operations in the Appalachian region. In Alaska, there is only one permitted valley fill, located at the Two Bull Ridge Mine near Healy, Alaska. The petitioners cite the valley fill report³⁰⁹ to raise concerns that it would be impossible to reclaim premining vegetation, especially woody vegetation.

³⁰⁶ Examples of contemporary mining practices include mining and reclamation plans that consider the roles landforms have on the function of reclaimed areas, the use of GPS controlled mining equipment, and extensive monitoring and mitigation plans that allow the mining and reclamation operation to adapt to real world conditions.

³⁰⁷ "Valley fill" is defined as a "fill structure consisting of any material other than organic material that is placed in a valley where side slopes of the existing valley measured at the steepest point are greater than 20 degrees or the average slope of the profile of the valley from the toe of the fill to the top of the fill is greater than 10 degrees." 11 AAC 90.911(120).

³⁰⁸ "Mountaintop removal" is defined as "surface mining which removes an entire coal seam or seams running through the upper fraction of a mountain, ridge, or hill, by removing substantially all of the overburden off the bench and creating a level plateau or a gently rolling contour, with no highwalls remaining, and capable of supporting postmining land uses approved in accordance with 11 AAC 90.141." 11 AAC 90.911(64).

³⁰⁹ Petition at 22.

148. However, the potential circumstance petitioners cite has not been an issue in Alaska, even in areas where the reclamation effort did not involve a valley fill. For example, based on documentation in both an evaluation report and a recent final bond release for the Gold Run Pass permit, revegetation of wood species was well above the standard required by 11 AAC 90.457.³¹⁰

149. At present, there are no planned or anticipated valley fills in the petition area. Notwithstanding, there is documentation noting successful reclamation of woody vegetation at the Lone Creek Bulk Sample sites in the Chuitna watershed.³¹¹

150. The petitioners assert that the valley fill report provides evidence that surface coal mining causes permanent damage to streambeds and riparian areas and that there are no examples of large scale reclamation associated with mining.³¹² However, the valley fill report is narrowly focused on impacts of mountaintop removal and the disposal of valley fill in West Virginia. This information is countered by the information discussed elsewhere in this document, including competent information relevant to the Alaska environment and stream reclamation efforts in Alaska. Moreover, it is noteworthy that the Palmer, *et al.*, valley fill report does not discuss or consider successful stream restoration efforts at surface coal mining operations in other parts of the United States, some of which are documented in this decision.

151. During review of the petition, DNR found reports that recommended management practices to successfully restore fen/bogs. A 2003 study by the University of Minnesota on fen restoration, *Fen Restoration Final Project Report*,³¹³ recommended a number of measures to promote successful fen restoration, including direct haul of soil material to its final location, timing targets for soil removal and placement, methods for transplanting desired vegetation and controlling water levels. Another paper, *Covering Bare Ground Suppresses Unwanted Willows and Aids a Fen*

³¹⁰ Revegetation Evaluation of Gold Run Pass July 2006-August 2008 Report for Bond Release (Dot Helm, November 2008); Gold Run Pass Phase III Bond Release (March 3, 2011).

³¹¹ Inspection Report Diamond Chuitna Mine Phase 0 (October 1, 2011). This site is also discussed in Exhibit 2 to PacRim's January 19, 2011 comment letter on the petition, at 9 (blue and red test pits).

³¹² Petition at 21.

³¹³ Johnson, K. W. and Valppu, S. H. (2003).

Meadow Restoration in Switzerland,³¹⁴ provides recommendations for controlling unwanted vegetation within a restored fen to limit competition and enhance the regrowth of desired vegetative species associated with fens. A study on the restoration of fens, *Restoration of Degraded Boreal Peatlands*,³¹⁵ cited the 1998 study by Cooper, et al., *Hydrologic Restoration of a Fen in Rocky Mountain National Park, Colorado, USA*,³¹⁶ as an example of a successful fen restoration project. The Cooper study is the same study cited by petitioners at pages 22-23 of the petition, and was also submitted with the 2007 petition. While the Cooper study addressed the difficulties the project encountered during and after completion of the project, it described mitigation measures that can be taken to minimize these difficulties and the study describes success at restoring fens.³¹⁷ The management practices suggested by these reports is already required by 11 AAC 90.313 (Topsoil Storage) and is consistent with contemporary mining practices to direct haul soils to maintain their ecologic viability. Reclamation of wetlands, including type and location, is driven by the approved postmining land use. For any new projects within the Chuitna watershed, any disturbance to or loss of wetlands would have to be approved by DNR under AS 27.21 and by the Army Corps of Engineers under the Clean Water Act section 404 provisions. Ultimately, the decision to restore fens as part of reclamation is significantly tied to the landowner's proposed postmining land use and consultation with DNR regarding that proposed use.

152. In accordance with AS 27.21.260(c)(1), the evidence in the administrative record-- particularly in light of the contrary evidence discussed in this decision -- is insufficient to require my determination that, for the petition area's hydrologic balance, reclamation in accordance with ASCMCRA is not technologically feasible. Moreover, the petitioners' evidence is insufficient to support the conclusion that surface coal mining operations would irreparably harm the area's hydrologic balance. Finally, many of the arguments and concerns raised by petitioners will also be addressed again at the permitting stage, based on project specific proposals.

³¹⁴ Matthias Suter, Christine Prohaska and Dieter Ramseier (2006)

³¹⁵ Rochefort, Line and Lode, Elve, Ecological Studies, Vol. 188 (2006)

³¹⁶ 18 Wetlands 3 (1998).

³¹⁷ 2010 Petition, Exhibit 6 at 344.

C. Petitioners' allegation that reclamation would not restore groundwater recharge capacity in the petition area.

153. Petitioners claim that any surface mining within the Chuitna watershed would not restore the recharge capacity, as required by the performance standard in 11 AAC 90.343 (Protection of Groundwater Recharge Capacity).³¹⁸ The petitioners assert that this allegation is reviewed under the mandatory designation standard set forth in AS 27.21.260(c)(1). This assertion is mistaken. Allegations regarding aquifer recharge are subject to the discretionary designation standard. Under AS 27.21.260(c)(2)(C), the Commissioner "*may* designate an area as unsuitable...if the commissioner determines that the operations in the area will affect aquifer recharge areas..."³¹⁹ In any event, whether the petitioners' allegation that surface coal mining operations would not restore recharge capacity is reviewed under the nondiscretionary or discretionary designation standards, the evidence is insufficient to support their allegation.

154. In making this allegation, the petitioners quote selective portions of the 1990 FEIS.³²⁰ A full examination of the 1990 FEIS, however, contradicts petitioners' allegation:

Reclamation of the mine area would at least partly reverse the ground-water impacts from mining. After removal of the surface-water diversion systems, surface water together with incident precipitation would recharge the underlying spoil materials and with time result in the reestablishment of a ground-water regime similar but not identical to the premining condition.³²¹

155. As stated earlier, one of ASCMCA's purposes is to *minimize* adverse impacts to the hydrologic balance, including the recharge capacity within the mine area, and this is reflected in 11 AAC 90.343. As expressed in the 1990 FEIS, the EPA concluded that the proposed reclamation was essential to minimizing adverse impacts and would facilitate recharge of the "groundwater regime similar but not identical to the premining condition."³²² This finding is again supported by DNR's 1987 Permitting Decision to issue the permit for the Diamond Shamrock Chuitna Coal

³¹⁸ Petition at 24-25.

³¹⁹ Emphasis added.

³²⁰ Petition at 25.

³²¹ 1990 FEIS at 5-20.

³²² *Id.*

Mine.³²³ As required by AS 27.21.180(c)(3), the permitting decision found that there would be no material damage to the project or surrounding areas.³²⁴

156. The petitioners assert that because “groundwater recharge capacity cannot be achieved within a reasonable timeframe,”³²⁵ the performance standard at 11 AAC 90.343 could not be met. Specification of a reasonable time frame is not set forth in the regulations. Moreover, the absence of a given time frame does not alone warrant an unsuitability determination, when there are a myriad of performance standards and other countervailing competent and scientifically sound data and information identified in this decision that support the conclusion that reclamation is technologically feasible.³²⁶

157. Petitioners also question the ability to preserve water quality during coal mining operations and cite a few studies relating to those concerns.³²⁷ These concerns, however, can be addressed, and potential impacts prevented, by applying the performance standards and requiring adherence to Alaska Water Quality standards.

158. In sum, in accordance with AS 27.21.260(c)(1), for groundwater recharge, the evidence in the administrative record is insufficient to require my determination that reclamation is not technologically feasible. In accordance with AS 27.21.260(c)(2)(C), the evidence is insufficient to sway me to designate, in my discretion, any part of the petition area as unsuitable for surface coal mining operations due to groundwater recharge issues, because the evidence does not support a conclusion that operations anywhere in the petition area would “affect aquifer recharge areas or other renewable resource land in which the operations could

³²³ DNR’s 1987 Permitting Decision, at 386.

³²⁴ *Id.* at 39.

³²⁵ Petition at 25.

³²⁶ For example, under 11 AAC 90.085(a) and (c)(3), an application for a proposed mining operation would have to describe anticipated impacts to the recharge capacity and include plans for restoring the “approximate recharge capacity in the area” after mining is complete in accordance with 11 AAC 90.343.11 AAC 90.085(c)(3). Under 11 AAC 90.083(a) and (b)(1) and 11 AAC 90.085(c)(3), DNR requires that a reclamation plan include “a detailed timetable for the completion of each major step in the reclamation plan,” and that would include a timetable for restoration of the approximate recharge capacity.

³²⁷ Petition at 25.

result in a substantial loss or reduction to the long-range productivity of water supply,” in this instance, groundwater recharge.

D. Petitioners’ allegation that reclamation would not restore aquatic productivity to premining levels.

159. The petitioners allege that reclamation would not restore aquatic productivity for fish habitat to premining levels. This allegation cites the importance of the petition area as highly productive fish habitat, and that invertebrates within the petition area are an important food source for fish.³²⁸ This argument is based on an interpretation of 11 AAC 90.327(d)(3).³²⁹ 11 AAC 90.327(d)(3) provides:

(d)When permanent diversions are constructed or stream channels restored after temporary diversions, the operator shall ...

...

(3) establish or restore the stream to a longitudinal profile and cross section, including aquatic habitats that approximate refining stream channel characteristics and *which may, using the best technology currently available*, be expected to restore aquatic productivity to premining levels.³³⁰

This regulation means that any coal mining operation that plans to construct permanent diversions (*i.e.*, rebuild stream channels) is directed to use the “best technology available” as part of the reclamation and mitigation plan that may be expected to restore aquatic productivity to premining level. As with other requirements of ASCMCRA, there is the understanding that mining will have adverse impacts to the environment,³³¹ including aquatic productivity, and that any adverse impact must be minimized or mitigated. Accordingly, there is no

³²⁸ The petitioners assert that this allegation is reviewed under the mandatory designation standard set forth in AS 27.21.260(c)(1). Petitioners are again mistaken. Allegations regarding restoration of aquatic productivity -- or, in other words, to reclaim losses or reduction to productivity that may be sustained as a consequence of surface coal mining -- are subject to the discretionary designation standard. Under AS 27.21.260(c)(2)(C), the commissioner “may designate an area as unsuitable...if the commissioner determines that the operations in the area will affect aquifer recharge areas in which the operations could result in a substantial loss or reduction of long-range productivity of water supply or food or fiber products.” But even if this allegation is reviewed under the nondiscretionary designation standard, the evidence is insufficient to support their allegation.

³²⁹ Petition at 25-29.

³³⁰ Emphasis added.

³³¹ See discussion at Allegation I, subsection B, above.

requirement, as petitioners argue, that a petition must be granted if there is a showing that mining activity will have an adverse impact on the environment.

160. Petitioners' interpretation of 11 AAC 90.327(d)(3) also ignores the emphasized portion of this performance standard -- i.e., petitioners do not consider the application of "best available technology" and how this technology can be used to restore habitat.

161. The petitioners' argument is misplaced for an additional reason: other applicable performance standards will operate to protect water quality and hydrology, and seek to minimize adverse impacts on fish and wildlife.³³²

162. Petitioners next cite examples of impacts to fish productivity that were considered in the 1990 FEIS³³³ as evidence demonstrating that aquatic productivity could not be restored. The cited examples are comments set forth in Chapter 5 of the 1990 FEIS, dealing with "Environmental Consequences." A closer reading of Chapter 5 and the cited comments regarding potential impacts to aquatic productivity show the comments themselves were speculation, and not conclusions.³³⁴

163. Petitioners also fail to account for the mitigation required by DNR's 1987 Permitting Decision,³³⁵ or how mitigation might be required by other state and federal permits,³³⁶ and how that mitigation was addressed in the 1990 FEIS:

To mitigate for the unavoidable loss of approximately two miles of anadromous fish habitat in tributaries 200305, 200304, and 20030502 (ADF&G Nos. 247-20-10010-2030 - 3018 and 3012) the applicant shall construct replacement fish habitat. Replacement fish habitat shall consist of the construction and maintenance of at least four one-half acre coho salmon rearing ponds to be located adjacent to coho salmon spawning habitat in tributary 2003.

The requirement also insists upon a monitoring plan to address the effectiveness of the mitigation:

³³² 11 AAC 90.323 (water quality); 11 AAC 90.343, 11 AAC 90.085, 11 AAC 90.321 (hydrology); and 11 AAC 90.423 (fish and wildlife).

³³³ Petition at 27.

³³⁴ 1990 FEIS at 5-139.

³³⁵ 1987 Permitting Decision at 11.

³³⁶ 1990 FEIS at 5-1.

Should the monitoring show that the ponds are not providing satisfactory coho salmon rearing habitat, as determined by ADNR in consultation with ADF&G, alternative mitigation may be prescribed as necessary to compensate for the lost fish habitat.³³⁷

164. Moreover, information regarding anadromous fish streams has advanced since the 1990 FEIS, as has the understanding of the technology used to restore fish productivity in disturbed areas. In Alaska, several mitigation measures have been used successfully to restore productivity to impacted streams. Examples include the construction of off-channel rearing pond at the Granite Creek Material Site,³³⁸ which is used for coho and Dolly Varden rearing, and the restoration of Resurrection Creek for pink, coho, Chinook, chum and sockeye salmon.³³⁹ Another mitigation measure used successfully was the Alaska Resource & Economic Development Inc.³⁴⁰ (ARED) system on the Moose Creek Restoration project.³⁴¹ The ARED system is designed to use existing wild salmon in an impacted stream to enhance fish population. This enhancement is accomplished by improving the survival rate of the salmon in their early life stages. In the Moose Creek project this technique has been used to help reestablish the Chinook and coho salmon populations. Other mitigation that has been used successfully in restoration projects, and discussed elsewhere in this decision, includes the addition of nutrients such as pollock bone meal, transported salmon carcasses, and salmon carcass analogs.

165. In addition, for reasons discussed above, the application of 11 AAC 90.327(d)(3) needs to be on a project-specific basis, using site specific information, including a detailed mining and reclamation plan, not area-wide information using the petition process.

166. In accordance with AS 27.21.260(c)(1), the evidence in the administrative record is insufficient to require my determination that, for aquatic productivity (specifically fish habitat), reclamation in accordance with statutory and regulatory authorities is not technologically feasible. In accordance with AS 27.21.260(c)(2)(C),

³³⁷ *Id.* at 6-9 (quoting DNR's 1987 Permitting Decision at 12).

³³⁸ PacRim Coal Intervention Letter Exhibit 2.

³³⁹ Wildfish Habitat Initiative,
http://wildfish.montana.edu/Cases/browse_details.asp?ProjectID=61 .

³⁴⁰ <http://www.ared.net/index.htm> .

³⁴¹ Wildfish Habitat Initiative,
http://wildfish.montana.edu/Cases/browse_details.asp?ProjectID=73 .

the evidence is insufficient to cause me to designate, in my discretion, any part of the petition area as unsuitable for surface coal mining operations because of aquatic productivity, because the evidence does not support a conclusion that operations anywhere in the petition area would “affect aquifer recharge areas or other renewable resource land in which the operations could result in a substantial loss or reduction to the long-range productivity of water supply or food or fiber products.” Stated another way, there is insufficient evidence to support the allegation that there will be a substantial loss or reduction to the long-range productivity of aquatic productivity -- including fish habitat, fish, or other food supply -- based on the petition, even assuming that fish habitat is the confirmed postmining land use for the delineated petition area. And, as a practical matter, it must be recognized that concerns regarding a proposed project’s ability to achieve the applicable performance standards with regard to water quality, minimization of damage to fish and wildlife, and design of precise reclamation measures for proposed postmining land uses is dealt with on a site-specific basis during the permitting phase. Such concerns cannot be appropriately addressed in the context of a lands unsuitable petition if petitioners fail to assume -- as they do here -- that contemporary coal mining practices will be followed.

E. Petitioners’ allegation that surface coal mining in the petition area cannot be designed and operated to minimize changes in water quality and quantity and hydrology enough to ensure no adverse effects to fish and wildlife habitat.

167. Petitioners appear to assert that the Act mandates that a petition be granted if there are adverse impacts to fish and wildlife.³⁴² The proposition that no adverse impacts from surface coal mining operations is allowed is not consistent with the legislative expectation under either SMCRA or ASCMCRA. As noted in section B, above, adverse impacts during construction and operation are anticipated. The objective, though, is to minimize and avoid impacts, and to reclaim areas which are impacted.³⁴³

³⁴² Petition at 29-33.

³⁴³ For example, regarding fish and wildlife, a coal mining operation “shall, to the extent possible using the best technology currently available, minimize disturbances and adverse impacts on fish, wildlife, and related environmental values, and achieve enhancement of such resources where practical.” 11 AAC 90.423(a).

168. In making this allegation, the petitioners misconstrue 11 AAC 90.321(b) to be a performance standard requiring “avoidance of adverse effects to *pre-existing* land uses.”³⁴⁴ This is not a correct statement of the regulation, because, as discussed in detail above, the focus is on “postmining land use,” whatever that land use may be determined to be in accordance with applicable authorities and consultation with the landowner.

169. The petitioners and a number of commenters, including the Center for Science and Public Participation (CSP2),³⁴⁵ raised concerns that water discharges from coal mining operations -- specifically discharges from the proposed Chuitna Coal Project -- will not meet Alaska Water Quality Standards, even after reclamation. These comments parallel concerns that have been expressed by state and federal agencies in their initial evaluation of preliminary plans submitted by PacRim for the Chuitna Coal project, but these comments were made based on preliminary information relating to a specific project and are too speculative for determining reclamation is not technologically feasible. Moreover, if PacRim’s final proposal cannot comply with performance standards (including compliance with Alaska water quality standards) it will not be permitted. Thus, petitioners -- once again -- fail to assume (as they must) that performance standards will be followed. And, the type of issue that CSP2 raised and addressed in the previous paragraph must be addressed as part of a project-specific review.³⁴⁶

³⁴⁴ Petition at 33 (emphasis added).

³⁴⁵ CSP2’s January 18, 2011 letter in support of the petition.

³⁴⁶ The Alaska Department of Environmental Conservation echoed this view in reviewing CSP2’s comments in support of the petition:

....The agencies have not yet been provided all the data and plan information to determine the potential and degree of risk and suitable mitigation methods to address the multitude of issues concerning water quality and subsequent effects on habitat and fisheries. Once these issues have been identified on the basis of complete data and development plans, they will need to be reviewed and deliberated amongst the state and federal agencies for compatibility across the several permits that PacRim will need to obtain. Until such time as the agencies have been provided with complete permit applications with all the supporting data and documentation, it is pre-mature to determine if [CSP2’s] concerns directly apply to the Chuitna Coal Project.

170. Petitioners also cite EPA's statements in the 1990 FEIS that streamflow reduction from the Chuitna Coal Project could be as much as 17% in the Chuitna River near Lone Creek during low flow periods, and that there might be a reduction of streamflow of 25% for Lone Creek during low flow periods.³⁴⁷ However, neither citation presents EPA's complete statement regarding its analyses and conclusions on these potential reductions. For example, regarding the Chuitna River, EPA stated:

As indicated in Table 5-7, minimum flow in the Chuitna River immediately below the mouth of Lone Creek could be reduced by up to 17% during low flow periods in later years of mining. This reduction would represent an extreme worst case situation and would be unlikely during mining because of the addition of return water to the Chuitna drainage from the various mine area drainage systems.³⁴⁸

Regarding Lone Creek, EPA stated:

As indicated in Table 5-7, minimum flows could be reduced during low flow periods (late summer and later winter) by up to 25 percent within the portion of Lone Creek east of the mine. As flows increase downstream, impact would be proportionally less. The above calculations of flow reduction assume no transfer of pit drainage to Lone Creek. During the first 10 years of mining, Diamond Alaska plans to release much of its pit drainage into Lone Creek; therefore net flow would actually increase at least temporarily. The up to 25 percent reduction would still occur in the event of pump failure or in the event that pit water freezes and cannot be pumped.³⁴⁹

171. As stated throughout this decision, a petitioner must assume that any mine that might be permitted in the petition area will follow contemporary mining practices and that the applicable regulatory standards established by ASCMCRA, including compliance with Alaska Water Quality Standards, will be imposed and adhered to. Neither DEC, which regulates wastewater, nor DNR, which issues coal operating permits, will issue authorizations that would allow discharges to exceed Alaska's applicable statutory and regulatory requirements for water quality and quantity. The same is true for ADF&G, which will only issue Title 16 Habitat Permits if a mining proposal can show that statutory and regulatory requirements will be met.

DEC's May 26, 2011 analysis and response to CSP2's January 18, 2011 comment letter.

³⁴⁷ 2010 Petition at 31.

³⁴⁸ 1990 FEIS at 5-30.

³⁴⁹ *Id.*

172. In accordance with AS 27.21.260(c)(1), the evidence in the record is insufficient to require my determination that -- for water quality, quantity, and hydrology that may provide fish and wildlife habitat within the petition area -- reclamation in accordance with ASCMCRA is not technologically feasible. Moreover, the evidence is insufficient to support the petitioners' allegation that surface coal mining operations would irrevocably alter the hydrology and aquatic productivity of the petition area, or the Chuitna watershed.

F. Examples of Successful Stream and Wetlands Reclamation Projects

173. In addition to the information submitted by the petitioners, I am required to review relevant, competent and scientifically sound data and information in making a determination on a petition alleging that reclamation is not technologically feasible.³⁵⁰ I have reviewed stream and wetland restoration and reclamation projects in Alaska and other parts of North America. Many of the examples reviewed include areas disturbed by mining, including surface coal mining.

174. The Valdez Creek Mine, located south of the Alaska Range, is an example of mining-related successful stream reclamation. The mine operated as one of the largest gold producers in Alaska from 1984 to 1996 by the Valdez Creek Mining Company -- a consortium of Camindex Mines Ltd., Cambior Inc., and Barrick Resources Ltd.³⁵¹ The stream hosts populations of grayling and trout,³⁵² and during some period of the operations, fish were transported around the mine site during the spawning period. The work was done under contract from Cambior to Potterville Specialty Services and North Alaska Fisheries Services for several days each week for a period of about a month and a half in the spring.³⁵³ While there are no anadromous fish that are supported in the river, it is an important example of stream reclamation

³⁵⁰ AS 27.21.260(a)(2).

³⁵¹ Reger, R.D. and Bundtzen, 1990, Multiple glaciations and gold-placer formation, Valdez Creek valley, western Clearwater Mountains, Alaska: DGGs Prof. Paper 107, at 1-2; 30p.

³⁵² EPA, 1992, Site visit report: Valdez Creek mine Cambior Alaska Incorporated, at 3-8; 46p.; website, <http://www.epa.gov/osw/nonhaz/industrial/special/mining/techdocs/placer/placer3.pdf> .

³⁵³ EPA, 1992, Site visit report: Valdez Creek mine Cambior Alaska Incorporated, at 3-37; 46p.; website, <http://www.epa.gov/osw/nonhaz/industrial/special/mining/techdocs/placer/placer3.pdf> .

after substantial disturbance to the hydrologic balance by a relatively deep surface mining operation. The postmining stream on this site was constructed on reclaimed mine spoils that were replaced after mining in the same general configuration as the premining stratigraphy, including substantial thicknesses of glacialfluvial material overlying Tertiary fluvial deposits and deeply incised paleochannels.³⁵⁴ This work resulted in the 1995 Governor's Award for Reclamation, presented to Cambior Alaska, Inc.³⁵⁵ The selective handling of the spoil material is very similar to spoil handling plan for the Diamond Shamrock permit application.³⁵⁶

175. Nome Creek, located in the White Mountains in Interior Alaska, is another example of successful postmining stream reclamation. The creek was mined from 1900³⁵⁷ up to the 1980s³⁵⁸ by sluicing, and a gold dredge operated on a large scale in the 1920s and 1930s; an area is still set aside for recreational gold mining.³⁵⁹ Approximately seven to eight miles of the stream and riparian areas were destroyed as part of the historic mining operations. In the late 1980s, the Department of Interior's Bureau of Land Management (BLM) initiated a water resource monitoring and inventory on Nome Creek and reclamation efforts were started in earnest by 1991. As of 2006, six miles of stream, riparian areas, and 300 acres of floodplain restoration had been completed.³⁶⁰ This stream historically had a resident Arctic grayling population. Monitoring has shown grayling present in lower and upper Nome

³⁵⁴ Reger, R.D. and Bundtzen, 1990, Multiple glaciations and gold-placer formation, Valdez Creek valley, western Clearwater Mountains, Alaska: DGGs Prof. Paper 107, at 6; 30p.

³⁵⁵ DNR, 1997, Mining reclamation in Alaska: State of Alaska, Department of Natural Resources, Division of Mining and Water Management, November 1997, 37p.

³⁵⁶ DNR 1987 Permitting Decision at 402; 404p.

³⁵⁷ McGown, Sarah, 2011, History of gold mining on Nome Creek: BLM Alaska website http://www.blm.gov/ak/st/en/prog/nlcs/white_mtns/summer_recreation/nome_creek_mining.html (updated 1-15-11).

³⁵⁸ Fleming, D.F., and McSweeney, Ingrid, 2001, Stock assessment of arctic grayling in Beaver and Nome Creeks: Alaska Department of Fish and Game, Division of Sport Fish, Fisher Data Series 01-28, at 1; 38 p.

³⁵⁹ BLM, 2001, Gold Panning at Nome Creek: BLM Alaska website, http://www.blm.gov/ak/st/en/prog/nlcs/white_mtns/summer_recreation/gold_panning.html

³⁶⁰ Kostohrys, Jon, 2007, Water resources and riparian reclamation of Nome Creek, White Mountains National Recreation Area, Alaska: Bureau of Land Management, Alaska Open File Report 113, 47p.

Creek.³⁶¹ This restoration effort has been a national showcase for riparian reclamation projects,³⁶² and BLM hopes that techniques developed at Nome Creek will be useful in other placer mine reclamation efforts.³⁶³

176. Another pertinent example of stream reclamation related to coal mining is that of Moose Creek, in the Wishbone Hill area near Palmer and Sutton, Alaska. Prior to disturbance, the creek supported sockeye, coho, Chinook, pink, and chum salmon.³⁶⁴ From 1916 through 1983, sporadic coal mining occurred along Moose Creek. Early underground mining, followed by adjoining strip mining operations, severely altered more than seven miles of Moose Creek.³⁶⁵ In 1923, a railroad spur was constructed up Moose Creek, from the railroad junction at the creek's mouth to the foothills.³⁶⁶ When the rail line was upgraded to a standard-gauge rail, Moose Creek was re-routed, straightened and channelized, separating it from its floodplain, creating artificial waterfalls, and impacting more than seven miles of creek.³⁶⁷ Such stream alterations resulted in degraded fish rearing and spawning habitat on the creek, as well as degraded adjacent wildlife riparian habitat for species such as bears and eagles. The stream alterations resulted in three distinct waterfalls, which prevented salmon from accessing over five miles of stream and wetland complex.

The goal of the Moose Creek Fish Passage Restoration Project was to restore wild salmon spawning habitat and runs to the upper Moose Creek watershed and improve the quality and quantity of aquatic and riparian habitat available to fish and

³⁶¹ Flemming and McSweeney (2001).

³⁶² Kostohrys, Jon and Koss, Lee, 2006, Nome Creek restoration of place[r] mined gravels [abs]: Alaska Section of the American Water Resources Association 2006 Annual Meeting, Proceedings Abstracts.

³⁶³ Kostohrys, 2007.

³⁶⁴ Matanuska-Susitna Borough, 2011, Moose Creek Soapstone Community Council comprehensive draft plan May 16, 2011: Matanuska-Susitna Borough, at 13; 80p.

³⁶⁵ Moose Creek Fish Passage Restoration Project, 2007, Wildfish Habitat Initiative (USFWS and Montana Watershed Council): website updated 2/16/2007, http://wildfish.montana.edu/Cases/browse_details.asp?ProjectID=73 .

³⁶⁶ Moose Creek Restoration Project, 2011, Chickaloon Village Traditional Council website: website, http://www.chickaloon.org/index.php?option=com_content&view=article&id=145&Itemid=160.

³⁶⁷ U.S. Fish and Wildlife Service, 2005, Environmental assessment, Moose Creek fish passage project: Anchorage USFWS Office, Anchorage, AK, prepared for the Chickaloon Village Traditional Tribal Council.

wildlife species.³⁶⁸ The work was a cooperative effort by the Chickaloon Village Environmental Protection Program, the U.S. Fish and Wildlife Service, NOAA, the University of Alaska at Anchorage's Environment and Natural Resources Institute, the EPA, and others, receiving a Five-Star Restoration Grant in 2004.³⁶⁹

Work was done in two phases -- Phase I in 2005, and Phase II in 2006. In late July 2005, after Phase I restoration construction was complete, over 200 adult Chinook salmon were observed above the previously impassable waterfall barrier. Chinook salmon were spawning in the newly created restoration channel. In late September and early October 2005, several adult coho salmon were seen migrating through the restoration project toward upstream spawning habitats. In early September, after Phase II restoration was complete, coho salmon were observed above the previously impassable barrier.³⁷⁰ It is reported that "within days of project completion, Chinook salmon were observed spawning within the new channel, and were also seen as far as four miles upstream of the old waterfall site."³⁷¹ Phase II was completed in July 2006, relocating portions of the stream to its original location and bypassing three partial-barriers to fish passage. The stream restoration work largely survived a major flood later in the late summer of 2006, and the stream allows continuous fish passage.³⁷²

177. Resurrection Creek, home to Alaska's first gold rush in 1896, is another relevant stream restoration project. Hydraulic and power shovel mining within the watershed reduced the quality and quantity of fish and wildlife habitat within the watershed. The most severe impacts from mining were located in the lower 6.2 miles

³⁶⁸ Roach, Chris, 2004, Summary – Moose Creek conceptual reclamation plan [abs.]: Alaska Section of the American Water Resources Association 2004 Annual Meeting, Proceedings Abstracts; Moose Creek Fish Passage Restoration Project, 2007, Wildfish Habitat Initiative (USFWS and Montana Watershed Council): website updated 2/16/2007, http://wildfish.montana.edu/Cases/browse_details.asp?ProjectID=73 .

³⁶⁹ EPA, 2010, Five-Star Restoration Program: EPA website updated 3-5-2010, <http://www.epa.gov/owow/wetlands/restore/5star/> .

³⁷⁰ Moose Creek Fish Passage Restoration Project, 2007, Wildfish Habitat Initiative (USFWS and Montana Watershed Council): website updated 2/16/2007, http://wildfish.montana.edu/Cases/browse_details.asp?ProjectID=73 .

³⁷¹ Cooperative Conservation, 2011, Moose Creek fish passage restoration project: website, <http://www.cooperativeconservationamerica.org/viewproject.asp?pid=712> .

³⁷² Moose Creek Restoration Project, 2011, Chickaloon Village Traditional Council website: http://www.chickaloon.org/index.php?option=com_content&view=article&id=145&Itemid=160.

of river. The lower reaches within this area were identified as critical spawning and rearing habitat for coho, chum, pink and Chinook salmon. Placer tailings piles up to 25 feet high confined and straightened the stream³⁷³ and covered 54% of the floodplain.³⁷⁴

Investigations began in 2002 by the U.S. Forest Service Wind River Restoration Team from Carson, Washington, that assisted the Chugach National Forest by surveying and analyzing stream channel conditions and developing a stream channel restoration strategy, rehabilitation alternatives, and recommendations.³⁷⁵ Restoration design and implementation templates for Resurrection Creek included channel geometry equations, stream flow patterns, and relic and disturbed analog reaches for reference reaches of stream. Restoration actions included mechanically manipulating mine tailings to recover floodplain width and elevations; reconstructing meander pattern, channel profile, pools and spawning habitat; developing multiple relief channels and off-channel ponds within the floodplain; extracting beetle killed spruce trees in high risk fire hazard areas to utilize as a source of in-stream and terrestrial woody material; augmenting soils in reclaimed riparian areas to provide soil/landform and drainage conditions which can support native plant communities; thinning existing overstocked riparian sapling spruce and cottonwood stands; allowing natural revegetation where seed source and site conditions were favorable; and using native plant species in revegetation projects when natural revegetation conditions were not favorable.³⁷⁶

The U.S. Forest Service produced a draft of the EIS in April 2004, completed the FEIS in November 2004, and in 2005 had finished channel, side channel, logjam, and floodplain reconstruction for most of the lower 0.7 miles of the project. These newly created channel segments were quickly utilized by spawning salmon almost

³⁷³ Wild Fish Initiative, 2007, Resurrection Creek: (USFWS and Montana Watershed Council) website, http://wildfish.montana.edu/Cases/browse_details.asp?ProjectID=61.

³⁷⁴ Bair, Brian, Blanchet, Dave, and Olegario, Anthony, 2003, Planning a resurrection: Resurrection Creek, Alaska: Streamline -- Watershed Management Bulletin a publication of FORREX, the Forest Research Extension Partnership, vol.7, no. 2, at 1; 4p.

³⁷⁵ Bair, Brian, Powers, Paul, and Olegario, Anthony, 2002, Resurrection Creek stream channel and riparian restoration analysis, river kilometer 8.0-9.3: U.S. Forest Service Wind River Watershed Restoration Team, October 1, 2002, at 4; 61p.

³⁷⁶ Wild Fish Initiative, 2007, Resurrection Creek: (USFWS and Montana Watershed Council) website, http://wildfish.montana.edu/Cases/browse_details.asp?ProjectID=61.

immediately following construction.³⁷⁷ With channel restoration nearly complete for about 75 percent of the length of the one-mile project reach, many of the morphologic objectives of the project have been accomplished or nearly accomplished in the reach restored in 2005. Spawning gravel at the pool tails was increased substantially from pre-project conditions. Although the majority of the fish were pink salmon, all five species of Pacific salmon have been observed in the restored reach (pink, coho, Chinook, chum and sockeye).³⁷⁸ The U.S. Forest Service is now nearly complete with planning for Phase II of the project that would reclaim an additional two miles of the creek below the Phase I work.³⁷⁹

178. Outside of Alaska, there have been many examples of reclaiming fish-bearing streams, including salmon streams, after mining activity. Clear Creek near Shasta, California is an example where historic hydraulic and dredge mining, as well as recent gravel mining, significantly disturbed the flood plain and stream including the complete removal of all of the riparian and upland vegetation. Mining left a complex of large pits and ponds along the lower reaches that became isolated when water levels dropped stranding adult and juvenile salmon and steelhead.³⁸⁰ Gravel mining in the 1950s through the 1980s completely disrupted channel form and confinement, interrupting fish migration.³⁸¹ Historically, Clear Creek supported populations of Chinook salmon that were adversely affected by these activities. The U.S. Fish and Wildlife Service has monitored the occurrence of juvenile salmonids

³⁷⁷ U.S. Forest Service, 2006, Resurrection Creek stream channel and riparian restoration project: USFS Alaska Region Briefing Paper, April 2006, at 2, 4p.; U.S. Forest Service, 2004, DEIS, Resurrection Creek stream and riparian restoration project, Seward ranger district, Chugach National Forest: USDA Forest Service, April 2004, R10-MB-505, 201p.

³⁷⁸ Wild Fish Initiative, 2007, Resurrection Creek: (USFWS and Montana Watershed Council) website, http://wildfish.montana.edu/Cases/browse_details.asp?ProjectID=61 .

³⁷⁹ USFS DEIS Resurrection Creek Phase II Stream Riparian Restoration (8-04-10).

³⁸⁰ Wild Fish Habitat Initiative, 2006, Clear Creek Photo Gallery: website updated 6-20-2006, <http://wildfish.montana.edu/cases/gallery1.asp?ProjectID=74> .

³⁸¹ Tompkins MR, Kondolf GM (2003) Integrating geomorphic process approach in riparian and stream restoration: past experience and future opportunities. In: Faber PM (ed) California riparian systems: processes and floodplain management, ecology and restoration. Proceedings of the Riparian Habitat and Floodplains Conference (Sacramento, 2001), Sacramento, California, at 234; 230-238.

since 1998 when restoration began.³⁸² Recent restoration activities of the stream and riparian areas have led to a fivefold increase in Chinook spawning escapements over the disturbed configuration.³⁸³ Restoration activities are ongoing.³⁸⁴

179. Near Butte Montana, stream restoration efforts of portions of Silver Bow Creek, as part of a Superfund cleanup of mining tailings that began in 1999, have returned trout to portions of reclaimed streams that have been barren of trout for generations.³⁸⁵ By 2005, slimy sculpin and long-nosed suckers returned to the creek,³⁸⁶ and by 2007, trout were found in Silver Bow Creek. In 2010, an 18.5 inch cutthroat trout was caught by a young sports fisherman and mink, which prey on fish, were observed along the creek.³⁸⁷ This project included the removal of nearly a century's worth of mine tailings and the complete reconstruction of 10 miles of trout streams and their associated riparian areas. As part of the project's achievements for this restoration project, the Montana Department of Environmental Quality cites improved ground and surface water quality, and reconstructed stream channels that are functioning and providing increased habitat diversity and an increase in biological diversity especially in aquatic species susceptible to metals leaching from spoils.³⁸⁸

180. Several stream restoration projects associated with large coal mines have been completed in Illinois. Consol Energy's Burning Star 4 mine reclaimed eight miles

³⁸² Earley, J.T., Colby, D.J., and Brown, M.R., 2010, Juvenile salmonid monitoring in Clear Creek, California, from October 2008 through September 2009: USFWS, Red Bluff Fish and Wildlife Office, California (September 2010), at 1; 53p.

³⁸³ WildFish Habitat Initiative, http://wildfish.montana.edu/Cases/browse_details.asp?ProjectID=74 .

³⁸⁴ Destaso, J. and Brown, M.R., 2011, Clear Creek Restoration Program Annual Work Plan for Fiscal Year 2011: CVPIA program document, website: [http://www.usbr.gov/mp/cvpia/docs_reports/awp/2011/3406\(b\)\(12\)%20Clear%20Creek_AWP_FY2011.pdf](http://www.usbr.gov/mp/cvpia/docs_reports/awp/2011/3406(b)(12)%20Clear%20Creek_AWP_FY2011.pdf)

³⁸⁵ Montana Department of Environmental Quality, 2009, Silver Bow Creek update, winter 2009: Montana DEQ website, http://www.cfwep.org/cfinfo/agency_updates/SBC-030209.pdf

³⁸⁶ Tracy, Jim, 2005, *Greenway district wins environmental award, poisoned Silver Bow Creek showing signs of life: Anaconda Leader*, April 18, 2005.

³⁸⁷ Montana Department of Environmental Quality, 2008, *Trout make splash in Silver Bow Creek for second straight year*, Montana DEQ press release (Oct. 7, 2008).

³⁸⁸ Montana Department of Environmental Quality, 2009, Silver Bow Creek update, winter 2009: Montana DEQ website, http://www.cfwep.org/cfinfo/agency_updates/SBC-030209.pdf

of stream, including associated riparian areas, that had been impacted by dragline placed mine spoil. This project has been recognized by OSM for its outstanding reclamation efforts and has received a national award for its innovative reclamation practices.³⁸⁹ The Pipestone Creek Restoration Project is another project in Illinois that restored 4.6 miles of Pipestone Creek on reclaimed mine spoils. This project noted that aquatic species returned to the restored portions on the creek in a short period after work was complete. The restored creek along with the conservation easement has been added to Pyramid State Park.³⁹⁰

181. While some of the above examples involved reclamation projects that commenced long after an area was subject to some form of mining and had been abandoned, the projects nonetheless reflect that reclamation is technologically feasible. Successful reclamation for surface coal mining operations, not only within the petition area but other areas of the state, will be even more likely for present-day reclamation where statutory and regulatory authorities require detailed planning, multi-agency State and federal regulatory review, and reclamation efforts to be actively pursued before, during, and after coal mining ceases.

182. Since the 1987 Permitting Decision on the Diamond Shamrock Chuitna Coal Project, regulatory authorities nationwide have recognized that reclamation of coal mine sites could be even better. Both state and federal regulatory authorities and the mining industry have combined resources to institute geomorphic reclamation techniques such as those pioneered by Horst Schor and documented in his book "Landforming: An Environmental Approach to Hillside Development, Mine Reclamation and Watershed Restoration" (Schor and Gray, 2007), as well as the works of Dave Rosgen³⁹¹ on stream restoration. These techniques are currently being applied to large surface coal mining operations throughout the United States.

183. This use of advanced reclamation strategies recognizes the need for both pre-development baseline studies of the streams and riparian areas proposed to be disturbed, and a detailed life of project monitoring and reclamation plan that are

³⁸⁹ 2011 OSM National Stream Design Workshop, Field Tour Descriptions.

³⁹⁰ PacRim Coal Intervention Letter Exhibit 3.

³⁹¹ Rosgen, Dave, & Silvey, Hilton Lee; *Watershed Assessment of River Stability and Sediment Supply*, at 589, 2006 and Rosgen, Dave, & Silvey, Hilton Lee; *Applied River Morphology*, Second Edition© 1996 184 pages.

designed to achieve reclamation in real world conditions. The EPA, in its recognition of river corridor and wetlands restoration, stresses the importance of planning and proper management: “When properly planned, executed and managed, restoration works; its success can be attributed to the hard work and dedication of practitioners, scientists and others...”³⁹² This progression to more advanced reclamation techniques in Alaska can be seen in the submittal by PacRim Coal of their “Draft Chuitna Coal Project Preliminary Design Report.” This report outlines the proposed designs for streams to be reclaimed at the proposed Chuitna Coal Project.

184. Unless a specific finding is made, the existing performance standard found at 11 AAC 90.353 imposes a 100-foot, “no-mining” buffer on all perennial or intermittent streams, including streams located within the Chuitna watershed. The buffer may only be waived if the Commissioner specifically finds that any surface coal mining operation, including all support facilities, will have no adverse impacts on water quality and quantity and that any adverse effect on fish and wildlife will be minimized. To make this finding, the Commissioner must have detailed baseline data and a complete operation and reclamation plan for any proposed project within the Chuitna watershed.

185. As discussed several times above, it must be recognized that concerns regarding a proposed project’s ability to achieve the applicable performance standards with regard to water quality, minimization of damage to fish and wildlife, and design precise reclamation measures for proposed postmining land uses is dealt with on a site-specific basis during the permitting phase. Such concerns cannot be appropriately addressed in the context of a lands unsuitable petition if petitioners fail to assume -- as they do here -- that contemporary coal mining practices will be followed.

186. While Congress intended the petition process “to be applied on an area basis, rather than a site-by-site determination, which presents issues more

³⁹² <http://www.epa.gov/owow/wetlands/restore/benefits.html>

appropriately addressed in the permit application process,”³⁹³ the petition process nonetheless contemplates that sufficient evidence to establish their allegations throughout the petition area. In this regard, there is insufficient evidence to support the claim that reclamation throughout the delineated petition area is not technologically feasible.

187. Congress emphasized that the petition process “does not require the designation of areas as unsuitable for surface mining other than where it is demonstrated that reclamation of an area is not physically or economically feasible under the standards of the act.”³⁹⁴ Based on all of the above -- in particular the prior state and federal permitting decisions and the many examples of successful reclamation -- and pursuant to the requirements of ASCMCRA, there is insufficient evidence in the administrative record for me to determine that reclamation of streambeds and riparian areas in the petition area is not technologically feasible.³⁹⁵

Petitioners’ Allegation II: Surface coal mining operations will affect fragile land and could result in significant damage to important cultural, scientific, and aesthetic values and natural systems

188. Petitioners also allege that, pursuant to AS 27.21.260(c)(2)(B), the petition area should be deemed unsuitable for surface coal mining operations on the basis that “such operations will affect fragile land and could result in significant damage to important cultural, scientific, and aesthetic values and natural systems.” In connection with this allegation, petitioners assert the following:

- The watershed contains fragile land within the meaning of the ASCMCRA regulations;
- Surface coal mining within the watershed would result in significant damage to important cultural, scientific, and aesthetic values and natural systems;

³⁹³ House Committee Report No. 95-218 (1977), at 630.

³⁹⁴ U.S. Code Cong. & Admin. News 1977, p.630, and quoted by the Fifth Circuit in *Prager*, 793 F.2d at 732-34 (holding that the Secretary of the Interior had thoroughly considered the petitioner’s allegation that reclamation would not be technologically or economically feasible, and the record supported the secretary’s decision that there was insufficient evidence to support the allegation).

³⁹⁵ AS 27.21.260(c)(1).

- Significant harm will result to subsistence, commercial and sport fishing, complex and poorly understood hydrologic systems, the Cook Inlet beluga whale population, and aesthetic values.³⁹⁶

189. Under AS 27.21.260(c)(2)(B), the Commissioner “may designate an area as unsuitable for all or certain” coal mining activities “if the commissioner determines that operations in the area will...affect fragile or historic land in which the operations could result in significant damage to important historic, cultural, scientific, and aesthetic values and natural systems.” This provision is considered discretionary, that is, the Commissioner may designate lands unsuitable at his or her discretion, but is not required to do so.

190. At the outset, the petitioners’ Allegation II is verbatim to the Allegation II that they raised in the 2007 petition.³⁹⁷ As with the 2007 Petition, the current petition contains only general assertions. With the exception of one new document,³⁹⁸ the petitioners do not submit any new evidence to support this allegation since it was originally made in the 2007 Petition.³⁹⁹

191. Former Commissioner Irwin rejected this same allegation in the 2007 Petition, stating the following:

It has been recognized that many of the lands within the petitioned area may hold some of the values that petitioners list. The petition also describes how many of those listed on the petition use the area and benefit from its resources. However, petitioners have provided no evidence to support allegations that surface coal mining operations -- if carried out in accordance with applicable, contemporary standards and regulations -- would result in significant damage to these values and natural systems, rendering the assertions speculative. Petitioners also fail to describe how the allegations are specific to petitioners’ interests, that is, it does not describe the specific coal mining activities that would occur and on which lands within the petitioned area that would adversely affect the petitioners’ interest. This correlation must be described in the petition to support the allegations. In addition, specific existing federal statutes address many of these issues, such as laws

³⁹⁶ Petition at 33-45.

³⁹⁷ See Allegation II of 2007 Petition, at 25-36.

³⁹⁸ MacDonald, Glen M., *et al.*, *Rapid Early Development of Circumarctic Peatlands and Atmosphere CH₄ and CO₂ Variations*, 312 Science 285 (2006).

³⁹⁹ For this reason, petitioners’ arguments are likely barred by *res judicata* and collateral estoppel.

governing protection of cultural resources and protection of marine mammals, and any authorized coal development must comply with these laws.⁴⁰⁰

Commissioner Irwin also noted that the petitioners alleged “harms from potential coal storage and transport activities at Ladd Landing, but the petitioned area does not include Ladd Landing, and the petition likewise fails to assume that contemporary mining standards and regulations would apply to activities at the site.”⁴⁰¹ Commissioner Irwin informed petitioners that they could submit a new petition providing evidence supporting their allegation, and that it would be considered.⁴⁰²

192. I concur with Commissioner Irwin’s earlier findings, and also find, as discussed below, that the petition fails to provide any new information to support an unsuitability designation.

A. Fragile Lands

193. The petitioners’ list of fragile lands for purposes of Allegation II includes streams and riparian areas, wetlands, and lands which support subsistence and commercial uses, as well as aesthetic values, and they consider these to meet the definition of “fragile lands.”⁴⁰³ Fragile lands are particular areas that could be damaged or destroyed by coal mining and reclamation.⁴⁰⁴ Under 11 AAC 90.911(40), “fragile lands” means:

...geographic areas containing natural, ecologic, scientific, or aesthetic resources that could be damaged or destroyed by surface coal mining and reclamation operations. Examples of fragile land includes, but is not limited to, uncommon geologic features, National Natural Landmark sites, groundwater recharge areas, valuable habitats for fish and wildlife, critical habitats for endangered species of animals and plants, critical wetlands, environmental corridors containing concentrations of ecologic and aesthetic features, areas of recreational value due to high environmental quality, buffer zones around areas where surface coal mining is prohibited; and important, unique, or highly productive soils or mineral resources.

⁴⁰⁰ July 16, 2007 Decision on 2007 Petition at 10.

⁴⁰¹ *Id.*

⁴⁰² *Id.*

⁴⁰³ Petition at 34.

⁴⁰⁴ See 11 AAC 90.911(40) and 30 C.F.R. 762.5.

194. In reviewing this allegation, DNR has also relied on OSM's clarification in the COALEX Report of the term "fragile land." OSM stated that the definition "is meant to provide guidance on what general types of resources can be considered fragile lands, not a list of areas which can or should *automatically* be designated suitable."⁴⁰⁵

195. OSM has stated in the COALEX Report that "[a]n interruption of certain activities or a diminution of particular values *during* mining is not sufficient to classify the land as fragile if the activities or values can be restored."⁴⁰⁶ Thus, even though there is a potential for surface coal mining to affect the lands and values that petitioners reference, those factors alone do not justify an automatic finding that lands are "fragile" because petitioners need to show with specificity that *after* mining and reclamation the geographic area has been destroyed or damaged by the mining operations.

196. Moreover, even if the evidence demonstrates that fragile lands would be destroyed or damaged such a finding would not dictate that lands should be designated unsuitable for surface coal mining operations because when reviewing the petition, I must consider competent and scientifically sound data and information, as well as an array of statutory and regulatory factors. For example, I must strike a balance between protection of the environment and the need for coal as an essential source of energy, recognize that responsible extraction of coal is an essential and beneficial economic activity, take into account how contemporary coal mining practices (including performance standards) will minimize or avoid damage to an area, and consider the positions expressed about coal mining in this area in area plans and by the landowners.

197. Based on the area plans cited and described earlier in this decision, coal development in the Chuitna watershed has long been recognized as an important goal for and appropriate use of the area's lands. As described earlier under Allegation I, there is substantial evidence supporting that reclamation of the petition lands is technologically feasible. With the goals of these area plans in mind, and in light of OSM's guidance above regarding fragile lands, I find that -- assuming contemporary

⁴⁰⁵ COALEX State Inquiry Report – 156 (emphasis added).

⁴⁰⁶ *Id.* (emphasis added). The OSM COALEX Report – 156 provides additional guidance for making a decision under AS 27.21.260(c)(2)(B).

coal mining practices are followed -- the petition and the administrative record do not present any evidence that lands within the petition area are fragile or that impacts in the petition area and associated values that petitioners claim for the area, would be significantly damaged.

B. Aesthetic Values

198. The petitioners raise concerns about potential impacts to aesthetic values from surface coal mining operations in the petition area. Activities that already affect the aesthetic values in the petition area and the greater Chuitna watershed include oil and gas exploration and development, exploration activities for coal, and commercial flight-seeing and guide services. Moreover, for much of the watershed, the land is privately owned, and petitioners' ability to gain access without authorization is questionable. Also, the visibility or noise associated with any specific project that might be permitted would depend on the watershed in which the project is located (*e.g.*, the project operation may be inaccessible or the landscape situation may obstruct visibility of the activity), as well as the conditions placed on operations to minimize and avoid audio and visual impacts.

199. Because of the nature of surface coal mining operations, impacts to aesthetic values are anticipated. The 2000 Kenai Area Plan, Kenai Borough Plan, and various owners of large parcels of land in the watershed have all expressed their intent to propose coal development projects. While some impacts may be visible in localized areas where actual mining activities occur, because reclamation is conducted concurrent with mining on a rolling basis, and because reclamation must be completed before site closure is approved, impacts to aesthetic values will be substantially minimized. Impacts from noise, light pollution, or vehicle traffic associated with mining operations can also be mitigated as part of the mine plan or by stipulations during the permitting process. For instance, DNR previously dealt with noise and light issues with respect to development of the True North/Fort Knox mine near Fairbanks. Under ASCMCRA, the same or similar mitigation measures, as appropriate, can be accomplished through technical amendments pursuant to 11 AAC 90.127(2) and during the mine permitting process itself. Thus, potential impacts from surface coal mining operations in the petition area, if they occur, can likely be

minimized and avoided, or are unlikely to cause significant impacts to aesthetic values to warrant an unsuitability designation.⁴⁰⁷

C. Beluga Whales

200. The petitioners raise concerns that Cook Inlet beluga whales may be adversely impacted by surface coal mining in the petition area. On October 22, 2008, NMFS listed the Cook Inlet stock of beluga whales as endangered under the ESA.⁴⁰⁸ This stock of beluga whale had also previously been listed by NMFS as depleted under the MMPA. Following the ESA listing,⁴⁰⁹ NMFS delineated critical habitat within Cook Inlet for the beluga whale, and this habitat is adjacent to the petition area.⁴¹⁰

201. There is no evidence in the administrative record that coal mining activities within the petition area, properly regulated in accordance with applicable performance standards (including those relating to protection of water quality), would have any down-stream significant, much less measureable, impact on beluga whales and their designated critical habitat. Outside the petition area and in the marine waters of Cook Inlet, impacts to belugas associated with surface coal mining operations involving shore-side bulk freighting activities would also likely be minimal, but would, in any event, be pointedly addressed on a project-specific basis in a multi-agency State and federal review, including consideration of potential impacts pursuant to NEPA, as well as federal review under the MMPA⁴¹¹ and ESA⁴¹². For example, 11 AAC 90.423, dealing with protection of fish and wildlife, requires that any proposed project within the watershed that might pose a threat to threatened or endangered species and their critical habit would require consultation with State and federal fish and wildlife agencies to determine whether a specifically proposed project may proceed.

⁴⁰⁷ AS 27.260(c)(2)(B).

⁴⁰⁸ More information is provided at the following link:
<http://www.nmfs.noaa.gov/pr/species/mammals/cetaceans/belugawhale.htm>

⁴⁰⁹ The State of Alaska has filed a court action challenging this listing. *State of Alaska v. Lubchenko*, Case No. 10-0927 (D.C. D. 2010).

⁴¹⁰ *Id.*

⁴¹¹ 16 U.S.C. § 1361, *et seq.*

⁴¹² 16 U.S.C. § 1531, *et seq.*

202. Regarding the significant adverse impacts that petitioners allege for both fish and beluga whales, petitioners fail to assume that contemporary coal mining practices, including performance standards, will apply. Within a project area, impacts would have to be minimized using the best available technology,⁴¹³ in addition to acquiring Title 16 Habitat Permits from ADF&G that require mitigation of lost fish productivity due to mining in streams and riparian areas.⁴¹⁴ These permitting requirements would also address the petitioners' concerns raised about potential impacts to subsistence, commercial and sport fisheries. If a proposed project could not comply with these performance standards and others that will be required by state and federal regulatory authorities, then the project would not be permitted.

D. Natural Systems -- Global Warming/Greenhouse Gases

203. Petitioners contend that coal extracted from the Chuitna watershed, not just from within the confines of the requested petition area, would result in adverse effects to "another natural system -- the climate."⁴¹⁵ Petitioners claim that extraction activities in peatland in the watershed will release trapped methane gas. The petitioners also assert that the burning of coal by customers of coal extracted from the greater Chuitna watershed would also add CO₂ into the atmosphere, furthering global warming.

204. Petitioners appear to expect that because coal extraction and burning relating to coal extracted from the petition area may contribute to greenhouse gases, this potential contribution warrants designation of the area as unsuitable for coal mining activities. Followed to its logical conclusion this argument would dictate that all coal fields in the United States would need to be designated as unsuitable. Clearly, this was not what the U.S. Congress or Alaska Legislature had in mind. Indeed, the U.S. Congress and the Alaska Legislature expressed that there needs to be a balancing between coal use and environmental protection, especially when coal is recognized by both legislative bodies as an essential source of energy.⁴¹⁶

⁴¹³ See Section D of this decision on Allegation I.

⁴¹⁴ ADF&G's May 26, 2011 letter at 2.

⁴¹⁵ Petition at 44.

⁴¹⁶ 30 U.S.C. § 1202(f); AS 27.21.010(b)(7).

205. Consideration of these issues are subject to my discretionary review.⁴¹⁷ I do not find that petitioners' arguments justify a lands unsuitable designation. Methane and CO₂ that might be released during mining and the burning of coal (wherever that might occur) are just a few of many contributors to greenhouse gasses generated by human activity. Naturally occurring conditions also contribute to greenhouse gases. The contribution to greenhouse gases of coal extracted from the petition area would be minimal -- even when aggregated with greenhouse gases on a global basis -- and do not lead me to the conclusion that these would result in significant harm to natural systems.

206. For example, compared to the total production of coal in the United States, the one currently proposed project in the watershed (PacRim's proposed Chuitna Coal project) would, at maximum production, produce roughly one percent of the U.S. coal supply per year, and less than 0.2 percent of the world's annual production.⁴¹⁸ A rough calculation shows that this would correspond to approximately 0.04 percent of the world's greenhouse gas emissions. Moreover, the coal found in the Chuitna watershed is low sulfur, one of the cleaner burning fuels that could be burned to support basic power needs, in particular electricity.

207. While greenhouse gasses and their link to climate change is an important issue to both the State and the nation, addressing broad policy concerns regarding coal as a fuel source and global warming are outside the scope of the lands unsuitable petition process, and are handled at the national government level and through international agreements.⁴¹⁹

⁴¹⁷ AS 27.21.260(c)(2)(B).

⁴¹⁸ Coal Statistics – World Coal Association website, <http://www.worldcoal.org/resources/coal-statistics> .

⁴¹⁹ The impact of climate change to arctic and subarctic regions is an important issue to the State of Alaska. Former Governor Sarah Palin, by Administrative order number 238, established the Alaska Climate Change Sub-Cabinet to advise the Office of the Governor on the implementation of Alaska's climate change strategy. Members of the sub-cabinet include the commissioners of the Departments of Environmental Conservation, Natural Resources, Fish and Game, Transportation, and Community and Economic Development, as well as the Vice Chancellor of Research for the University of Alaska Fairbanks. The purpose of this group is to develop strategies to mitigate the impacts of climate change while protecting Alaska's economic growth. This Sub-cabinet is developing recommendations for Alaska communities that will be impacted as a result of climate change.

208. Based on the above and the administrative record, I decline to use my discretionary authority under AS 27.21.260(c)(2)(B) to designate any of the petition area as unsuitable for surface coal mining operations.

Petitioners' Allegation III: Surface coal mining operations will affect renewable resource lands in which the operations could result in a substantial loss or reduction of long-range productivity of water supply or food or fiber products

209. Petitioners further assert that, under AS 27.21.260(c)(2)(C), the petition area should be deemed unsuitable for mining because surface coal mining operations “will affect renewable resource lands in which the operations could result in a substantial loss or reduction of long-range productivity of water supply or food or fiber products.”⁴²⁰ Petitioners allege that mining could impact productivity in the Chuitna watershed. Petitioners cite the potential for impacts to aquifer recharge and for increased sedimentation, which they say would harm salmon productivity, which they say in turn will harm subsistence, commercial, and sports fishing. They also claim that activities in the petition area will result in a substantial loss or reduction to moose populations in the area.⁴²¹ Finally, while citing no information to support the allegation, petitioners refer back to information they discuss in Allegations I and II of the petition.

210. Under AS 27.21.260(c)(2)(D), the Commissioner “may designate an area as unsuitable for all or certain” coal mining activities “if the commissioner determines that operations in the area will . . . affect aquifer recharge areas or other renewable resource land in which the operations could result in a substantial loss or reduction of long-range productivity of water supply or food or fiber products.”⁴²² This provision is considered discretionary, that is, the Commissioner may designate lands unsuitable in his or her discretion, but is not required to do so.

211. The petitioners' Allegation III is verbatim to the Allegation III that they raised in the 2007 Petition.⁴²³ As with the 2007 Petition, the current petition contains only general assertions, and petitioners fail to provide evidence to support this

⁴²⁰ Petition at 45-46.

⁴²¹ *Id.*

⁴²² Emphasis added.

⁴²³ See Allegation III of 2007 Petition, at 36-37.

allegation. Nor do petitioners submit any new evidence to support this allegation since the 2007 Petition.

212. Former Commissioner Irwin rejected this same allegation in the 2007 petition, stating the following:

Petitioners fail to allege how lands throughout the petitioned area, in connection with any type of surface coal mining activity would suffer substantial loss or reduction of long-range productivity of aquifers and their recharge areas, or for food or timber products, including salmon and moose that petitioners specifically name. While they mention pumping operations and potential deposition of sedimentation relating to coal operations, these statements, of themselves, do not constitute significant facts to frame the allegation. Nor do the petitioners present any evidence to suggest that current surface coal mining practices, properly regulated, will not guard against the alleged harms.⁴²⁴

213. As with the first two allegations in the petition, petitioners fail with respect to Allegation III to assume that contemporary coal mining practices will be followed, including performance standards. While it would be reasonable to expect that surface coal mining operations would have some adverse impact on the aquifer within the actual mining area, there is insufficient evidence to demonstrate a substantial loss or reduction of productivity to the water supply, or food or fiber products. To the extent there might be an effect, there are performance standards created to minimize any effect. Under 11 AAC 90.329, an operator must (among other things) use the best technology currently available to minimize and avoid, for example, additional contributions of sediment to stream flow or to runoff outside the permit area. Likewise, under 11 AAC 90.423, an operator must (among other things) use best technology currently available to minimize disturbances and adverse impacts to, for example, fish and moose. Estimation of more specific impacts to aquatic productivity would also be addressed on a project-specific basis. Within a project area, impacts would also be addressed through a Title 16 habitat permit issued by ADF&G, which likewise would contain requirements to mitigate impacts to fish productivity due to mining in streams and riparian areas.⁴²⁵

⁴²⁴ July 16, 2007 Decision on 2007 Petition, at 10-11. Because this issue has been adjudicated and the matter was dismissed with prejudice by the Superior Court, this claim is likely barred by res judicata and collateral estoppel.

⁴²⁵ ADF&G May 26, 2011 letter at 2.

214. Based on the above and the administrative record, I decline to use my discretionary authority under AS 27.21.260(c)(2)(C) to designate any of the petition area as lands unsuitable for surface coal mining operations.

Petitioners' Allegation IV: Surface coal mining operations will affect areas of unstable geology and other natural hazards in which the operations could substantially endanger life and property

215. Petitioners allege that, pursuant to AS 27.21.260(c)(2)(D), the petition area should be deemed unsuitable for surface coal mining operations on the basis that those operations will affect areas of unstable geology and other natural hazards which could substantially endanger life and property.⁴²⁶

216. Under AS 27.21.260(c)(2)(D), the Commissioner "may designate an area as unsuitable for all or certain" coal mining activities "if the commissioner determines that operations in the area will...affect areas subject to frequent flooding and areas of unstable geology, or other natural hazard land in which the operations could substantially endanger life and property." This provision is considered discretionary, that is, the Commissioner may designate lands unsuitable in his or her discretion, but is not required to do so.

217. Petitioners' Allegation IV is verbatim to the Allegation IV that they raised in the 2007 Petition.⁴²⁷ As with the 2007 Petition, the current petition contains only general assertions, and petitioners fail to provide evidence to support this allegation. Nor do petitioners submit any new evidence to support this allegation since the 2007 Petition.

A. Earthquakes

218. Like Commissioner Irwin, I find that many of the conditions petitioners describe, *e.g.*, earthquakes, high winds, landslides, and severe winter ice conditions⁴²⁸ occur in areas where surface coal mining activities have long been carried out under regulation without substantially endangering life and property. For example, the Usibelli Coal Mine near Healy, Alaska is located within the area impacted by the magnitude 7.9 earthquake on the Denali Fault in November 2002. Little or no damage

⁴²⁶ 2010 Petition at 46-48.

⁴²⁷ See Allegation IV of 2007 Petition, at 37-39.

⁴²⁸ 2010 Petition at 46-48.

was sustained within active or reclaimed surface coal mining areas. Only minor slump features, occurring within both disturbed and undisturbed areas, were noted. Petitioners fail to provide supporting evidence that the situation would be any different for any of the streambeds or riparian areas they delineate in the current petition.

219. The petitioners maintain that seismic hazards in the Chuitna watershed are extreme and would cause an increased ground failure hazard if the ground were disturbed by mining activities.⁴²⁹ There are two strike slip faults that occur in the petition area -- the Bruin Bay Fault and the Castle Mountain Fault. According to the Division of Geological and Geophysical Surveys, these two faults have not shown signs of movement within the Holocene period (approximately the last 11,000 years) and therefore would not be characterized as "active."⁴³⁰ In addition to their lack of recent movement, and due to the geology and character of the faults, they would be unlikely to generate a seismic event on the scale of the 9.2 magnitude Good Friday earthquake in 1964. Seismic Risk Zone 4 includes virtually all of the Southcentral Alaska region, including the Chuitna watershed. The region contains roads, pipelines, railroads, oil and gas platforms, power plants, oil and gas refineries, and buildings up to 20 stories in height, all designed to withstand seismic events in this risk zone.

220. There is no evidence in the administrative record to support the allegation that surface coal mining operations, if properly regulated, would nonetheless adversely affect renewable resource lands in an earthquake event.

B. Volcanic Hazards

221. With respect to any volcanic hazards, the petitioners claim there are four volcanoes on the west side of Cook Inlet that create a volcanic risk.⁴³¹ These volcanoes include: Augustine, Iliamna, Redoubt, and Mount Spurr. Direct impacts from volcanic hazards with the Chuitna watershed would most likely be associated with Mount Spurr, the closest volcano.

⁴²⁹ Petition at 47.

⁴³⁰ DGGs, DNR Large Mine Coordinator Tom Crafford and DGGs Deputy Director Rob Cornbellick, July 12, 2007.

⁴³¹ Petition at 47.

222. A Preliminary Volcano-Hazard Assessment for Mount Spurr Volcano⁴³² indicates that within the Chuitna watershed there exist minimal volcanic hazards associated with an eruption. Only a small area of the southwestern edge of the watershed is within the zone of debris avalanche hazards. Volcanic ash hazards depend on the prevailing wind at the time of an eruption. They are predominantly a threat to aircraft operations and only apply to a much lesser extent to ground-based operations. Within the Chuitna watershed, a volcanic ash fall from Mount Spurr might necessitate a suspension of ground-based mining operations, but would be unlikely to constitute a significant danger to health or property, at least no more so than falling ash in the nearby communities of Tyonek or Beluga. Assuming that contemporary coal mining practices will be adhered to, the presence of mining activities in the petition area would not exacerbate an air quality situation that might result in combination with a volcanic eruption and there is no evidence in the record to support such a conclusion.

C. Winter Ice & High Wind Conditions

223. The petitioners raise concerns that winter ice conditions along with strong currents in Cook Inlet could substantially endanger life or property, either directly, or as a result of spills of fuel or coal, connected with a coal shore-side marine freight facility that may be permitted and built for transferring coal to transport ships.⁴³³ This allegation describes potential circumstances that would occur outside the petition area.

224. This allegation does not address why surface coal mining operations within the petition area itself is a hazard. The currently proposed Chuitna Coal Project proposes a freight transport facility located outside the delineated petition area.⁴³⁴ Thus, the allegation contains matters outside the scope of this decision.

225. Even if the petitioners had delineated a coal-bearing area that would encompass shore facilities, I would not find support for the allegation. Marine

⁴³² Preliminary Volcano-Hazard Assessment for Mount Spurr Volcano, Alaska, Open –File report 01-482, 2002.

⁴³³ Petition at 47.

⁴³⁴ Applicant's Proposed Project; April 2011, <http://www.chuitnaseis.com/documents/Current-Project-Description.pdf> , at 8.

shipping activities in Cook Inlet occur year-round for several ports in the Inlet, involving the transport of a variety of products (both raw resources and finished consumer products). Ice conditions/floes are issues that are commonly encountered and are successfully addressed by marine traffic in Cook Inlet during winter months. To assist with navigation and docking during ice conditions, the U.S. Coast Guard has developed operating procedures for different portions of Cook Inlet.⁴³⁵ These operating procedures are designed to set minimum transit and docking requirements to lessen the chance of shipping accidents. In addition, a port operator and the U.S. Coast Guard have the option of shutting down operations if they feel conditions warrant, as noted in the February 1999 closure of the Port of Nikiski due to heavy ice conditions.⁴³⁶ I find that reasonable and appropriate conditions could be imposed on any coal mining operations to minimize and avoid this particular concern, and that the allegation does not warrant designating an area that is, in the first instance, outside the petitioners' delineated petition area.

226. In the effort to support their allegation regarding high wind conditions, petitioners state that "[r]ecent events in Seward, Alaska" that involved high wind conditions, dry weather and fugitive coal dust emissions from coal stockpiled and handled at a vessel transport facility resulted in issuance of a citation by the Alaska Department of Environmental Conservation against the Alaska Railroad "for failing to control the fugitive emissions and for allowing pollution that is harmful to health and property."⁴³⁷ This allegation is verbatim to that raised in the 2007 Petition. I concur with former Commissioner Irwin's 2007 finding and conclusion⁴³⁸ that the referenced event simply does not support petitioners' allegation, inasmuch as the violation occurred as a consequence of the Alaska Railroad's failure to follow/comply with existing air quality standards and requirements.

⁴³⁵ 2008 Operating Procedures for Ice Conditions in Cook Inlet, U.S. Coast Guard (December 2008).

⁴³⁶ *Heavy ice in Cook Inlet halts marine traffic*, posted by the Associated Press, Tuesday, February 09, 1999.

⁴³⁷ Petition at 48.

⁴³⁸ July 16, 2007 Decision on 2007 Petition, at 12.

227. Based on the above and the administrative record, I decline to use my discretionary authority under AS 27.21.260(c)(2)(D) to designate any of the petition area as lands unsuitable for surface coal mining operations.

Petitioners' Allegation V: Lands Exempt from Designation under AS 27.21.260; Streambeds and Associated Riparian Areas Within Logical Mining Unit 1

228. Petitioners requested that streambeds and associated riparian areas that exist in the Chuitna watershed, including those that may traverse LMU-1, be included in my deliberations on the January 21, 2010, petition. PacRim asserts that lands delineated by the petition that may lie with LMU-1 are exempt from petition review.

229. As part of the settlement relating to a judicial proceeding involving an Alaska Civil Rule 601 administrative appeal of former Commissioner Irwin's decision on the 2007 petition, DNR agreed that lands within LMU-1 would not be held exempt - based on the 1980s Diamond Shamrock coal permitting process -- from a future petition proceeding.⁴³⁹ Thus, the petition lands contained within LMU-1, along with the greater petition area that meanders throughout the Chuitna watershed, have been considered in rendering this decision.

Statutory and Constitutional Obligations to Facilitate Responsible Development of Coal Resources

230. Other statutory and constitutional factors play a part in my determinations on this petition. As previously explained with the 2010 Petition, the petitioners have refined the area for which they seek an unsuitability designation, compared to what they sought under the 2007 Petition. Given the meandering nature and length of the petition area throughout the larger Chuitna watershed designation of the petition area, or any portion thereof, would have a significant fragmenting impact on the coal resources throughout the watershed and would affect a potential operator's ability to economically and efficiently access and extract the coal resource. In short, a designation would affect the feasibility of project-specific coal mining and deter coal resource development. Because of this, granting the requested designation would likely result in a de facto designation of the entire watershed as unsuitable for

⁴³⁹ No other aspect of Commissioner Irwin's decision on the 2007 petition was changed or withdrawn, and the associated Rule 601 administrative appeal was dismissed with prejudice.

coal mining. Such a result would undercut my ability to carry out other important ASCMCRA objectives, including:

- assuring “that the coal supply essential to the nation’s energy requirements and to its economic and social well-being is provided and to strike a balance between protection of the environment and other uses of the land and the need for coal as an essential source of energy;”⁴⁴⁰ and
- assuring “that reclamation of land on which surface coal mining takes place is accomplished as contemporaneously as practicable with the surface coal mining, recognizing that the responsible extraction of coal by responsible mining operators is an essential and beneficial economic activity.”⁴⁴¹

231. As DNR Commissioner, I also have responsibilities under the Alaska Constitution and AS 44.37.025(a) to encourage and allow responsible resource development.

232. While these obligations and the manner in which they are carried out greatly depend on the context and facts in which resource development questions -- such as this petition -- are raised, these obligations are nonetheless important factors in my decision. Notably, as set out in detail at the outset of this document, I recognize that the majority of landowners in the Chuitna watershed were motivated in great part to select their lands because of the presence of significant coal resources and the financial prosperity, employment opportunities, and enhanced social well-being that development of those lands would bring, not just to private industry, but to Native corporation shareholders and Mental Health Trust beneficiaries, as well as local residents and the public at large. Thus, to the extent that any landowner or lessee in the area may propose a surface coal mining project capable of demonstrating compliance with applicable state, federal, and local requirements, and that such operations therefore can be responsibly conducted, then such operations would further these important statutory and constitutional directives.

⁴⁴⁰ AS 27.21.010(b)(7).

⁴⁴¹ AS 27.21.010(b)(5).

DECISION

233. The information contained in the administrative record, including that provided with the petition, is insufficient to support Allegation I.

234. Regarding Allegation II there is insufficient evidence to support this allegation or that the petition area constitutes “fragile lands.” I therefore decline to use my discretionary authority under AS 27.21.260(c)(2)(B) to designate any of the petition area as fragile lands or as lands unsuitable for surface coal mining operations.

235. Regarding Allegation III there is insufficient evidence to support this allegation. I therefore decline to use my discretionary authority under AS 27.21.260(c)(2)(C) to designate any of the petition area as lands unsuitable for surface coal mining operations.

236. Regarding Allegation IV, there is insufficient evidence to support this allegations. I therefore decline to use my discretionary authority under AS 27.21.260(c)(2)(D) to designate any of the petition area as lands unsuitable for surface coal mining operations.

237. Regarding Allegation V, all of the streambeds and riparian areas delineated by the petition were included in my review of the petition, including those which meander through the Chuitna Coal Project LMU-1 area.

238. Commissioner Irwin agreed that lands within LMU-1 would not be held exempt under AS 27.21.260(g) from petition review based on the Diamond Shamrock coal permitting process. Commissioner Irwin did not, however, otherwise withdraw or change any aspect of his decision on the 2007 Petition, and the petitioners’ associated Rule 601 administrative appeal on the 2007 Petition decision was dismissed with prejudice by the Superior Court. A dismissal with prejudice, including a stipulation to dismiss with prejudice, “is treated as a dismissal on the merits and is, therefore, a final judgment on the merits ... operating as res judicata.” *Smith v. CSK Auto, Inc.*, 132 P.3d 818, 820 (Alaska 2006). Res judicata (claim preclusion) and collateral estoppel (issue preclusion) “bind the parties and their privies to factual findings, as well as legal conclusions, that have been the subject of prior litigation,” and “administrative agency decisions can have preclusive effect on later court proceedings, so that if a party participates in an administrative adjudication, ... the adjudication

may foreclose the possibility of a later lawsuit on the same factual issues.” *Alaska Public Interest Group v. State*, 167 P.3d 27, 44 (Alaska 2007). The Alaska Supreme Court has also stated that (1) “principles of finality may be applied to the decisions of administrative agencies if, after case-specific review, a court finds that the administrative decision resulted from a procedure that seems an adequate substitute for judicial procedure and that it would be fair to accord preclusive effect to the administrative decision” and that (2) the collateral estoppel doctrine “may be applied to an administrative decision if the decision is one ‘rendered pursuant to an exercise of primary jurisdiction.’” *Harrod v. State, Dep’t of Revenue*, 255 P.3d 991, 1000 (Alaska 2011) (citations omitted). In rendering my decision on the 2010 petition, I expressly preserve, and in no way hold contrary to, the final findings of Commissioner Irwin on the evidence and allegations that petitioners asserted in the 2007 petition and which petitioners now reassert nearly verbatim in the 2010 Petition. I also expressly preserve the defenses of res judicata and collateral estoppel for Commissioner’s Irwin’s final findings for purposes of any future litigation that may be brought on the 2010 Petition.

239. Any remaining allegations raised by petitioners that have not been specifically addressed by this decision are rejected.

240. While there is insufficient evidence to support any of the allegations, some of the petitioners’ allegations raise reasonable concerns regarding whether water quality, wetlands, the hydrologic balance of the larger Chuitna watershed, fish and wildlife habitat, and other resources can be adequately protected if surface coal mining occurs within the petition area. These concerns are, however, more effectively and appropriately addressed in the application of regulatory requirements, including the performance standards that are incorporated in ASCMCRA mine permits, if a proposed mine is ultimately approved anywhere within the Chuitna watershed. Moreover, the potential impacts from any proposed coal mining project will be addressed through multi-agency State and federal review, including under NEPA.

241. It is important to note that this decision to not designate the petition area as unsuitable for all or certain types of coal mining activities does not mean that surface coal mining will automatically be approved in this area. This decision simply denies petitioners’ request to preemptively shutdown the Chuitna watershed from the

possibility of surface coal mining operations. The designation process is independent of the permitting and mine planning processes that are subject to multi-agency regulatory reviews by several state, federal and local agencies, and these processes may prohibit or otherwise curtail coal mining activities on a project specific basis. A permit by DNR will not, however, be issued unless a coal mining proposal demonstrated the capacity to comply with all applicable requirements, including ASCMCRA performance standards.

242. A person affected by this decision may request reconsideration, in accordance with AS 44.37.011 and 11 AAC 02. Any reconsideration request must be received in writing within 20 calendar days after the "date of issuance" of this decision as defined by 11 AAC 02.040(c) and (d) and may be mailed or delivered to Daniel S. Sullivan, Commissioner, Department of Natural Resources, 550 W. 7th Avenue, Suite 1400, Anchorage, Alaska 99501; faxed to 1-907-269-8918, or sent by electronic mail to dnr.appeals@alaska.gov.

243. If reconsideration is not requested within the time allowed, this decision goes into effect as a final order and decision on the 31st day after issuance. Failure of the Commissioner to act on the request for reconsideration within 30 days after issuance of this decision is an automatic denial of reconsideration (AS 44.62.540(a)) and is a final administrative order and decision for purposes of an appeal to Superior Court (AS 44.37.011; 11 AAC 02.020(c)). The decision may then be appealed to Superior Court within a further 30 days in accordance with the rules of the court, and to the extent permitted by applicable law. An eligible person must first request reconsideration of this decision in accordance with 11 AAC 02 before appealing this decision to Superior Court (11 AAC 02.020). A copy of AS 44.37.011 and 11 AAC 02 may be obtained from any regional DNR information office.

DATED this 24th day, of October, 2011.

By: 

Commissioner Daniel S. Sullivan
Department of Natural Resources

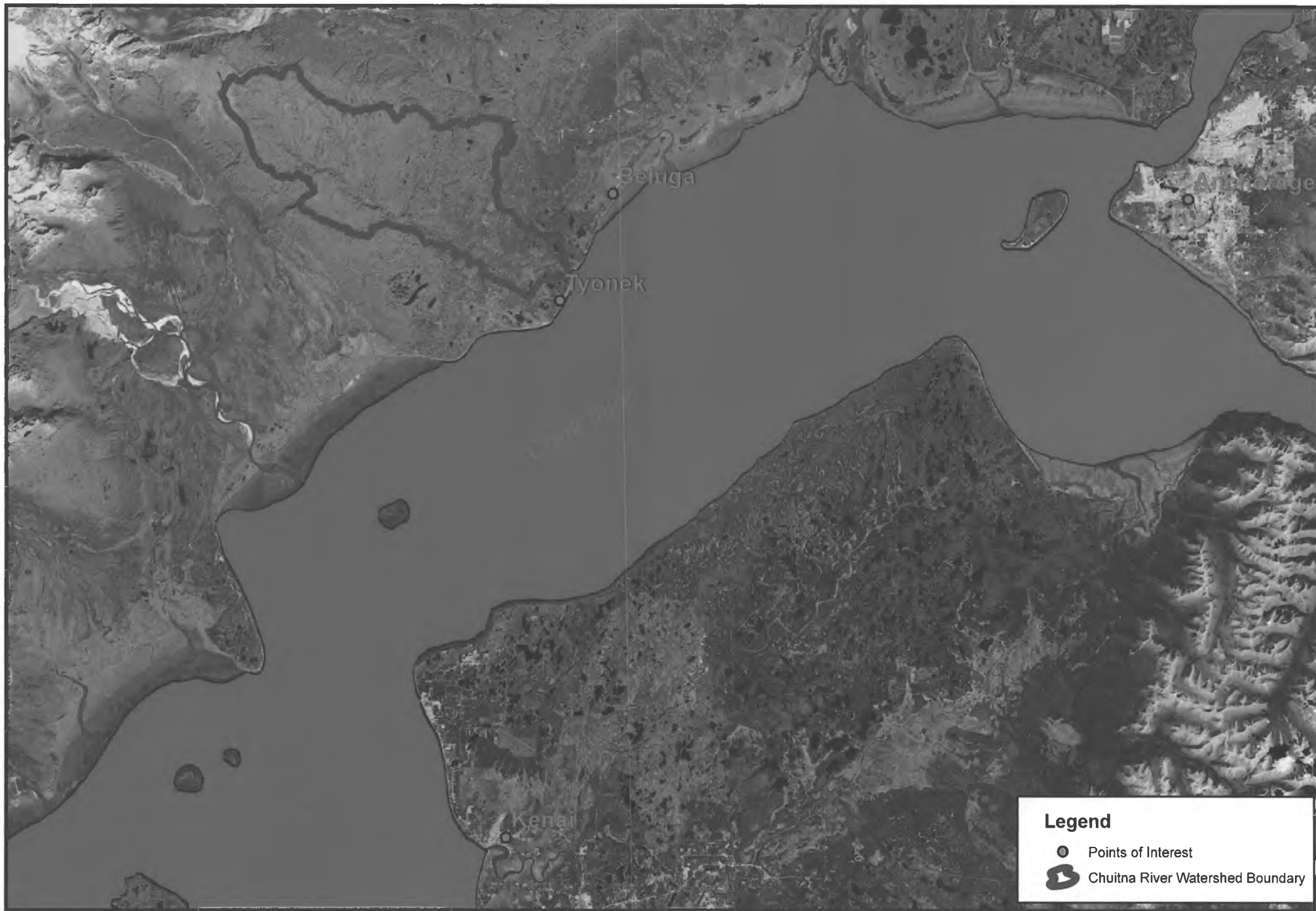


Figure 1: Location map showing locations of Anchorage, Kenai, Tyonek and Beluga in relation to the Chitna River Watershed.



0 2 4 8 12 16 Miles

