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U.S. DISTRICT COURT
DISTRICT OF IDAHO
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CLERK, U.S. DISTRICT COURT
By _____ Deputy

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF IDAHO

STATE OF IDAHO, et al. Plaintiffs, v. THE M.A. HANNA COMPANY, et al. Defendants. AND RELATED CASES AND CLAIMS	CONSOLIDATED CASE NO. 83-4179 (R) CONSENT DECREE

TABLE OF CONTENTS

I. INTRODUCTION 1

II. JURISDICTION 3

III. PARTIES BOUND 3

IV. DEFINITIONS 3

V. GENERAL PROVISIONS 7

A. OBJECTIVES OF THE PARTIES 7

B. COMMITMENTS BY SETTLING DEFENDANTS 7

C. COMPLIANCE WITH APPLICABLE LAW 9

D. PERMITS 9

VI. PAYMENT OF GOVERNMENT COSTS 9

A. DAMAGE ASSESSMENT COSTS 9

B. TRUSTEE OVERSIGHT COSTS ASSOCIATED WITH THE BRCP 9

C. RESPONSE COSTS 10

D. PAYMENT 10

VII. HATCHERY OPERATION TRUST ACCOUNT 11

VIII. FAILURE TO MAKE TIMELY PAYMENTS 13

IX. SELECTION OF CONTRACTORS 14

X. BRCP DESIGN 14

XI. ADDITIONAL ACTIONS 15

XII. QUALITY ASSURANCE, SAMPLING, AND DATA ANALYSIS 16

XIII. ACCESS 17

XIV. REPORTING REQUIREMENTS 17

XV. SUBMISSIONS REQUIRING AGENCY APPROVAL 19

XVI. PROJECT COORDINATOR 19

XVII. ASSURANCE OF ABILITY TO COMPLETE WORK 20

XVIII. EMERGENCY RESPONSE 23
XIX. INDEMNIFICATION AND INSURANCE 23
XX. FORCE MAJEURE 25
XXI. DISPUTE RESOLUTION 27
A. INITIAL DISPUTE RESOLUTION PROCEDURE 27
B. JUDICIAL RESOLUTION 28
C. DISPUTES AMONG THE TRUSTEES 28
XXII. STIPULATED PENALTIES 29
XXIII. REOPENER PROVISIONS 31
XXIV. LIQUIDATED DAMAGES 31
XXV. GENERAL RESERVATIONS OF RIGHTS 32
XXVI. COVENANTS BY SETTLING DEFENDANTS 33
XXVII. EFFECT OF SETTLEMENT; CONTRIBUTION PROTECTION 33
XXVIII. ACCESS TO INFORMATION 35
XXIX. RETENTION OF RECORDS 35
XXX. NOTICES AND SUBMISSIONS 36
XXXI. APPENDICES 37
XXXII. MODIFICATION 37
XXXIII. LODGING AND OPPORTUNITY FOR PUBLIC COMMENT 38
XXXIV. SIGNATORIES/SERVICE 38
XXXV. EFFECTIVE DATE 39
XXXVI. CONTINUING JURISDICTION; TERMINATION 39
XXXVII. ATTORNEY'S FEES AND COSTS 39
XXXVIII. COUNTERPARTS 40

Appendix A General Reference Map of the Blackbird Mine Site and Vicinity
Appendix B Biological Restoration and Compensation Plan
Appendix C Plan for Sediment Removal and Bank Stabilization
Appendix D List of Affiliates, Subsidiaries and Parents

CONSENT DECREE

I. INTRODUCTION

WHEREAS, the United States of America (the "United States"), on behalf of the United States Forest Service ("Forest Service"), and the National Oceanic and Atmospheric Administration ("NOAA"), and the Administrator of the U.S. Environmental Protection Agency ("EPA"), has filed a complaint in this consolidated action alleging that the M.A. Hanna Company, Hanna Services Company (presently known as Rojet Enterprises, Inc.), Noranda Mining Inc., Noranda Exploration, Inc., Blackbird Mining Company Limited Partnership, Machinery Center, Inc., Alumet Corporation, Alumax, Inc., Pechiney Corporation and Union Carbide Corporation are liable, pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended ("CERCLA"), 42 U.S.C. § 9601, et seq., and alleging that the M.A. Hanna Company, Hanna Services Company, Noranda Mining Inc., Noranda Exploration, Inc. and the Blackbird Mining Company Limited Partnership are also liable pursuant to the Federal Water Pollution Control Act (Clean Water Act, or "CWA"), 33 U.S.C. § 1251 et seq., and the Endangered Species Act, 16 U.S.C. § 1531 et seq. ("ESA"), seeking inter alia, Response Costs resulting from releases or threatened releases of hazardous substances from the Blackbird Mine, and damages resulting from injury to, destruction of or loss of natural resources belonging to, managed by, held in trust by, controlled by or appertaining to the United States, as trustee for those resources, including the cost of assessing such injury or loss.

WHEREAS, the State of Idaho and the Governor of the State of Idaho on behalf of the citizens of Idaho have filed an action alleging that the Blackbird Mining Company, Noranda Mining Inc., Noranda Exploration, Inc. and the M.A. Hanna Company are liable -- under CERCLA, as well as the Idaho Environmental Protection and Health Act (EPHA), Idaho Code § 39-101 et seq., and the common law doctrine of nuisance -- for injunctive relief, costs and damages recoverable under such statutory authority and the common law, including costs

opportunity to review, comment and concur on the selected remedy for the Blackbird Mine Site, EPA's final remedy will be embodied in a Record of Decision (ROD). Settling Defendants agree in this Consent Decree to implement the final remedy and other potential Response Actions selected by EPA through separate consent decree(s) or administrative order(s) not covered by this Consent Decree. Nothing in this Consent Decree is intended to predetermine or limit EPA's authority to select any Response Actions, including clean-up standards pursuant to Section 121 of CERCLA, 42 U.S.C. § 9621, related to the Site.

WHEREAS, the parties believe, and the Court finds, that this Consent Decree has been negotiated by the Parties in good faith, is fair, reasonable, and in the public interest, and that implementation of this Consent Decree will expedite restoration of the injured natural resources, and will avoid prolonged, difficult, expensive and complicated litigation.

NOW, THEREFORE, it is hereby Ordered, Adjudged, and Decreed:

II. JURISDICTION

1. This Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§ 1331 and 2201, 42 U.S.C. §§ 9613(b), 33 U.S.C. § 1321(e) and (n) and 16 U.S.C. § 1540(c). This Court also has personal jurisdiction over the Settling Defendants. Settling Defendants will not challenge the terms of this Consent Decree or this Court's jurisdiction to enter and enforce this Consent Decree.

III. PARTIES BOUND

2. This Decree shall inure to the benefit of and be binding upon the United States and the State of Idaho and upon the Settling Defendants and their successors; assigns; and affiliates, subsidiaries and parents as listed in Appendix D. Any change in ownership or corporate status of a Settling Defendant including, but not limited to, any transfer of assets or real or personal property shall in no way alter such Settling Defendant's responsibilities under this Consent Decree.

IV. DEFINITIONS

3. Unless otherwise expressly provided herein, terms used in this Decree

incurred in responding to the release or threat of release of hazardous substances, and for damages for injury to, destruction of or loss of natural resources belonging to, managed by, held in trust by, controlled by or appertaining to the State of Idaho, as trustee for those resources, including the cost of assessing such injury or loss at the Blackbird Mine, and the defendants have filed third-party complaints against, inter alia, the United States, U.S. Geological Survey, U.S. Bureau of Mines, U.S. Forest Service, U.S. Department of Agriculture, U.S. General Services Administration, Office of Mineral Exploration, Defense Minerals Administration, Defense Materials Procurement Agency, and U.S. Department of Interior.

WHEREAS, the United States and the State of Idaho and Settling Defendants (collectively "Parties") stipulate and agree to the making and entry of this Consent Decree ("Decree") to accomplish clean up of the Blackbird Mine Site and restoration of all natural resources injured by the release of hazardous substances from the Blackbird Mine in settlement of the CERCLA and CWA natural resource damage claims, of the Endangered Species Act claim, of the EPHA claim, and of the nuisance claim, without adjudication of any issue of fact or law, and without any admission of liability or fault as to any allegation or matter arising out of the pleadings or otherwise.

WHEREAS, Settling Defendants intend to implement the Biological Restoration and Compensation Plan (BRCP) described in Section X (BRCP Design) and attached to this Consent Decree as Appendix B, and all Work Plans, and other requirements of the BRCP.

WHEREAS, the parties intend that the water quality standards required by this Consent Decree will be met for up to three consecutive years in order that chinook salmon pre-smolts can be reintroduced into Panther Creek no later than 2005, and sufficiently maintained thereafter to sustain all life stages of salmonids.

WHEREAS, the parties enter into this Consent Decree with the intention that, in addition to the restoration activities set forth herein, Response Actions will be required by EPA at the Site. After consultation with the Trustees, and after the State has had an

which are defined in CERCLA and the CWA, and in regulations promulgated pursuant to CERCLA and the CWA, shall have the meaning assigned to them in the Statutes or regulations.

a. The "Blackbird Mine Site" or "the Site" shall mean, for purposes of this Decree and the BRCP only, all private land, land subject to unpatented mining claims, and federal lands where waste rock, tailings, and other contaminants generated from the Blackbird Mine have come to be located. The Site includes the beds and banks of Blackbird, West Fork of Blackbird, Meadow, Bucktail, South Fork of Big Deer, Big Deer and Panther Creeks, in those portions of the Creeks where hazardous substances released from the Mine have come to be located.

b. The "Biological Restoration and Compensation Plan" ("BRCP") shall mean the plan, attached as Appendix B, to restore natural resources and/or the services they provide and to compensate the public for interim losses resulting from injury to or destruction of natural resources until the completion of restoration. The BRCP will include Work Plans, performance standards and monitoring requirements for the completion of that work.

c. "CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. § 9601 et seq.

d. "CWA" shall mean the Federal Water Pollution Control Act, 33 U.S.C. § 1251 et seq..

e. "Completion Report" shall mean any report or submittal required by the BRCP that documents the completion of a discrete element of the BRCP, or any report or submittal required by orders or decrees related to Response Actions that documents the completion of a Response Action.

f. "Consent Decree" shall mean this Decree and all appendices attached hereto.

g. "Damage Assessment Costs" shall mean the costs of those studies and activities performed as part of the Natural Resource Damage Assessment for the Blackbird

Mine Site.

h. "EPA" shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.

i. "ESA" shall mean the Endangered Species Act, 16 U.S.C. § 1531 et seq..

j. "Forest Service" shall mean the United States Forest Service, an agency of the United States Department of Agriculture.

k. "Future Response Costs" shall mean all Response Costs incurred by the State, NOAA and the Forest Service on or after April 1, 1995 and all Response Costs incurred by EPA on or after June 1, 1994.

l. "Hazardous Substance" shall mean (1) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); (2) any pollutant or contaminant under Section 101(33), 42 U.S.C. § 9601(33); and (3) any "hazardous waste" under Idaho Code § 39-4403(8).

m. "Natural Resources" shall mean land, resident and anadromous fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources, belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States or the State of Idaho.

n. "Natural Resource Damage Assessment" shall mean those studies and activities performed to determine injury to or loss of natural resources, to quantify the injury to or loss of natural resources, and to develop a plan for restoration of injured or lost resources, including compensation for interim losses.

o. "Natural Resource Damages" shall mean monies to restore, replace, or acquire the equivalent of natural resources that have been injured, destroyed or lost as a result of releases of hazardous substances from the Blackbird Mine Site, including compensation to the public for the loss of such natural resources, and Damage Assessment Costs.

p. "NOAA" shall mean the National Oceanic and Atmospheric Administration.

q. "Parties" shall mean the United States, the State of Idaho and the Settling Defendants.

r. "Past Response Costs" shall mean the following Response Costs incurred by the United States: Response Costs incurred by EPA prior to June 1, 1994 and Response Costs incurred by the Forest Service and NOAA prior to April 1, 1995.

s. "Plaintiffs" shall mean the United States and the State of Idaho.

t. "Record of Decision" or "ROD" shall mean the EPA Administrative Record of Decision relating to the Site and all attachments thereto.

u. "Response Action" shall mean any removal or remedial action, including any enforcement activities related thereto.

v. "Response Costs" shall mean all past and future costs, to the extent authorized by law, including, but not limited to, direct and indirect costs, incurred or to be incurred by the United States and the State relating to Response Actions at the Site. These costs, include, but are not limited to, costs incurred in reviewing or developing plans, reports and other items pursuant to consent decrees and orders for Response Actions at the Site, or otherwise implementing, overseeing, or enforcing such consent decrees and orders, including, but not limited to, payroll costs, contractor costs, travel costs, laboratory costs, and other costs incurred or to be incurred, including, but not limited to, attorneys fees to the extent authorized by law and the amount of just compensation to the extent authorized by law for Response Actions. Response Costs shall not include Damage Assessment Costs or response costs already paid to EPA, NOAA, the Forest Service and the State or subject to a release or covenant not to sue under separate agreements or orders.

w. "Settling Defendants" shall mean the M.A. Hanna Company, Hanna Services Company, Noranda Mining Inc., Noranda Exploration, Inc., Blackbird Mining Company Limited Partnership, Alumet Corporation and their successors and assigns.

x. "State" shall mean the State of Idaho.

y. "Trustees" shall mean the State of Idaho, NOAA, and the Forest Service.

z. "Work" shall mean all activities Settling Defendants are required to perform under this Consent Decree relating to the BRCP.

aa. "Work Plan(s)" shall mean the detailed description of work to be performed for implementation of the Biological Restoration and Compensation Plan, including all applicable performance standards, and schedules as set forth in Appendix B, and any modifications made in accordance with this Consent Decree.

V. GENERAL PROVISIONS

A. Objectives of the Parties

4. The objectives of the Parties in entering into this Consent Decree are to restore the injured or destroyed natural resources and compensate the public for interim losses resulting from injury to or destruction of natural resources through implementation of the BRCP, and for Settling Defendants to perform Response Actions related to the Site and to reimburse the United States and the State for Response Costs, Damage Assessment Costs, and oversight costs associated with the BRCP.

B. Commitments by Settling Defendants

5. a. Settling Defendants shall finance, implement and perform the BRCP, as set forth in Appendix B, and in Section X (BRCP Design) of this Consent Decree. Settling Defendants shall also reimburse the United States and the State for Past and Future Response Costs, Damage Assessment Costs, and oversight costs associated with the BRCP as set forth in Section VI (Payment of Government Costs).

b. Settling Defendants shall perform Response Actions related to the Site, and conduct operation and maintenance of the final remedial action in accordance with the ROD to be issued by EPA, in consultation with the Trustees. Obligations under this Subparagraph will be carried out in accordance with separate administrative orders or consent

decrees not covered by this Consent Decree.

c. Settling Defendants shall achieve and ensure that the Ambient Water Quality Criteria for dissolved copper established by EPA pursuant to Section 304(a)(1) of the Clean Water Act, 33 U.S.C. § 1314(a)(1), and set forth in the BRCP are maintained as set forth in the BRCP for three consecutive years prior to January 1, 2005, or for a shorter period as determined by the Trustees, and maintained thereafter for the duration of the entire BRCP monitoring program, as set forth in Appendix B. If, after completing its administrative remedy selection process, EPA selects a standard for water quality at the Site different from the standard set forth in this Subparagraph, and the Trustees agree, in their discretion, that the standard selected by EPA will achieve a level of water quality in Panther Creek and Big Deer Creek sufficient to sustain salmonids through all life stages, this Subparagraph will be modified through Section XXXII (Modification) to reflect the standard of water quality selected by EPA. Upon request by Settling Defendants, the Trustees and the Settling Defendants may establish a site-specific water quality standard for dissolved copper by developing and applying a water effects ratio for Panther Creek and laboratory waters to the foregoing Ambient Water Quality Criteria for dissolved copper. Compliance with the requirements of this Subparagraph shall be determined in accordance with the procedures set forth in the BRCP.

d. Settling Defendants shall implement the plan for sediment removal and bank stabilization as specified in Appendix C.

e. Prior to initiation or reinitiation of the Hatchery Operation Component of the BRCP, Settling Defendants shall ensure that water quality conditions set forth in Subparagraph 5(c) are achieved for three consecutive years, or for a shorter period as determined by the Trustees.

f. All obligations of Settling Defendants under this Consent Decree are joint and several. In the event of the insolvency or other failure of any one or more Settling Defendants, the remaining Settling Defendants shall complete all such obligations.

C. Compliance With Applicable Law

6. All activities undertaken by Settling Defendants pursuant to this Consent Decree and any associated Work Plans shall be performed in accordance with the requirements of applicable federal and state laws and regulations.

D. Permits

7. a. Where any permit or approval is needed, Settling Defendants, with cooperation of the Trustees, shall submit timely and complete applications and take all other actions necessary to obtain all such permits or approvals.

b. Settling Defendants may seek relief under the provisions of Section XX (Force Majeure) of this Consent Decree for any delay in the performance of the Work resulting from a failure to obtain, or a delay in obtaining, any permit or approval required for the Work.

VI. PAYMENT OF GOVERNMENT COSTS

A. Damage Assessment Costs

8. Within thirty (30) days after entry of this Decree, Settling Defendants shall pay 4.7 million dollars ($4,700,000) to the Trustees for reimbursement of Damage Assessment Costs.

B. Trustee Oversight Costs Associated with the BRCP

9. a. Within thirty (30) days after entry of this Decree, Settling Defendants shall pay to the Trustees oversight costs associated with the BRCP in the amount of one million dollars ($1,000,000). All oversight costs paid under this Subparagraph shall be deposited into the Registry Account in accordance with the terms set forth in Paragraph 12.

b. In addition to the payments set forth in Subparagraph 9(a) and subject to the dispute resolution provisions of this Consent Decree, Settling Defendants shall pay to the Trustees contingent oversight costs associated with the BRCP in an amount not to exceed one million dollars ($1,000,000) in accordance with Subparagraphs 9(c) and 9(d).

c. The Trustees will submit to the Settling Defendants written notice

for the reimbursement of contingent oversight costs associated with the BRCP. Such notices shall include the amount of the request, and a description of the activity to which the requested contingent oversight payment was applied. Within (30) thirty days of receipt of such notices, Settling Defendants will either pay the requested amount or invoke Dispute Resolution procedures set forth in Section XXI. Payments of contingent oversight costs shall be made in accordance with instructions provided by the Trustees.

d. The Trustees shall not seek contingent oversight costs until the oversight costs paid pursuant to Subparagraph 9(a) have been exhausted on oversight activities consistent with the BRCP.

e. Settling Defendants shall have no further obligation to pay the Trustees oversight costs associated with the BRCP other than those set forth in this Paragraph.

C. Response Costs

10. Settling Defendants shall reimburse the United States and the State for all Future Response Costs not inconsistent with the National Oil and Hazardous Substance Pollution Contingency Plan incurred by the United States and the State associated with Response Actions, excluding costs for oversight of the BRCP. The terms and conditions for such payment will be set forth in separate consent decree(s) or administrative order(s) for CERCLA removal or remedial action(s).

11. Within thirty (30) days after entry of this Consent Decree, Settling Defendants shall pay the United States $328,742 for reimbursement of Past Response Costs, to be allocated as follows:

EPA $ 291,591

Forest Service $15,175

NOAA $ 21,976

D. Payment

12. Unless otherwise provided herein, payments under this Section shall be made by certified or bank check payable to "Clerk, United States District Court." All checks

shall be accompanied by a cover letter identifying the purpose of the check and shall include on its face a statement that it is a payment in settlement of claims in Consolidated Case No. 83-4179 and shall be sent to:

Office of the Clerk
United States District Court for the
District of Idaho
550 West Fort Street
Boise, Idaho 83720

a. The Registry of Court shall administer all amounts paid under this Paragraph in an interest-bearing account ("Registry Account") as provided in the Order Directing the Deposit Into the Registry of the Court ("Deposit Order") issued by this Court pursuant to Rule 67.1 of the Federal Rules of Civil Procedure, 28 U.S.C. § 2041, and Rule 67.2 of the Local Rules for the U.S. District Court for the District of Idaho. The Deposit Order shall be attached to this Decree.

b. All funds and all interest accrued in the Registry Account shall be held in the name of the "Clerk, United States District Court," for the benefit of the United States and the State. Upon joint application by the United States Department of Justice, on behalf of EPA, NOAA and the Forest Service, and by the Office of the Attorney General on behalf of the State, monies in the Registry account shall be disbursed at the discretion of the United States and the State pursuant to this Consent Decree and in accordance with law. A copy of each joint application shall be sent to counsel for Settling Defendants.

c. All disbursements from the Registry Account shall be made by order of the Court in accordance with the provisions of 28 U.S.C. § 2042 and Rule 67.3 of the Local Rules for the U.S. District Court for the District of Idaho.

VII. HATCHERY OPERATION TRUST ACCOUNT

13. Within thirty (30) days after entry of this Decree, defendants shall deposit into an interest bearing trust account ("Hatchery Operation Trust Account") in a

federally insured bank in the State of Idaho the total sum of $2,500,000 which represents the present value of the estimated cost of the Hatchery Operation Component of the BRCP, calculated as follows: $ 1,076,419 for costs of modifications and operation of the hatchery facility; $ 856,906 for design, construction and operation of the adult fish trap; and $ 566,675 for construction and maintenance of two acclimation ponds. A description of the Hatchery Operation Component of the BRCP is set forth in Appendix B.

14. The amount deposited in the Hatchery Operation Trust Account shall be adjusted following the costing of the final design, including operation and maintenance, for the adult fish trap and acclimation ponds by a contractor, selected by Settling Defendants and approved by the Trustees, and an independent verification by the Trustees of these costs. Settling Defendants shall complete costing of the final design as described in this Consent Decree no later than 30 days after entry of the Decree. The Trustees will then secure independent verification of the costs developed by Settling Defendants. Within thirty days of Trustee verification of these costs, Settling Defendants shall either be entitled to receive a refund of amounts deposited or shall be obligated to increase the amount in the Trust Account to reflect the adjustment.

15. The Trustees shall notify Settling Defendants in writing whether Settling Defendants shall be required to implement the Hatchery Operation Component of the BRCP, set forth in Appendix B. If Settling Defendants are required to implement the Hatchery Operation Component of the BRCP, upon receipt of such notification, Settling Defendants shall be entitled to withdraw the portion of the Hatchery Operation Trust Account which represents the principal, plus all accumulated interest, for the design, construction, and operation of the adult fish trap, and construction and maintenance of two acclimation ponds. The State, in consultation with the other Trustees, shall use all remaining funds in the Hatchery Operation Trust Account for the design, construction, and operation of hatchery facilities to produce Spring/Summer Chinook Salmon for release in Panther Creek in accordance with the BRCP.

16. In the event that the Trustees elect to proceed with the Hatchery Operation Component of the BRCP, and the number of seed adults consists of fewer than 50 fish, Settling Defendants shall be entitled to a refund of that portion of the Hatchery Operation Trust Account, plus interest, that represents the difference between the actual number of seed adults used and 50 seed adults, as reflected in the Hatchery Operation Costs Summary set forth in the BRCP.

17. If subsequent to entry of this Decree, the Trustees unanimously determine that any part of the Hatchery Operation Component of the BRCP is infeasible, impractical, or otherwise not in the public interest, the Trustees shall use all of the money placed in the Hatchery Operation Trust Account for any other restoration or compensation project to restore, replace and/or acquire the equivalent of natural resources injured by releases of hazardous substances from the Blackbird Mine in accordance with CERCLA and the CWA, including projects to replace interim losses. In selecting alternative restoration or compensation projects under this Paragraph, the Trustees shall give priority to restoration projects in the Salmon River drainage area. In the event the Trustees exercise the election authorized by this Paragraph, Settling Defendants shall be released from all further obligations to implement the Hatchery Operation Component of the BRCP, or to perform additional or alternative work to replace the Hatchery Operation Component.

VIII. FAILURE TO MAKE TIMELY PAYMENTS

18. If Settling Defendants do not timely pay the amounts specified in Sections VI (Payment of Government Costs) and VII (Hatchery Operation Trust Account), this Consent Decree shall be considered an enforceable judgment for purposes of post judgment collection under Federal Rule of Civil Procedure 69 and other applicable statutory authority without further order of this Court.

19. In the event that Settling Defendants fail to make timely payment of the amounts specified above, interest shall be assessed at the annual rate established pursuant to 31 U.S.C. § 3717 on the overdue amount from the due date set forth in this Consent Decree

through the date of payment. Settling Defendants shall also pay a penalty of 6% per annum on any principal amounts not paid within 90 days of the due date (the "penalty date"), which penalty will be charged for the period from the penalty date to the date of payment. Settling Defendants shall also reimburse the United States and the State for costs and reasonable attorney fees incurred by them in enforcing Settling Defendants' obligation to make the payments required by this Decree.

IX. SELECTION OF CONTRACTORS

20. All components of the Work to be performed by Settling Defendants pursuant to this Consent Decree shall be under the direction and supervision of a contractor, the selection of which shall be subject to approval by the Trustees. Within the time schedules set forth for each component of the BRCP, Settling Defendants shall notify the Trustees in writing of the name, title, and qualifications of any proposed contractor, and of any changes in the selection of a contractor during the time this Consent Decree remains in effect. The Trustees will notify Settling Defendants of the approval or disapproval of a proposed contractor.

X. BRCP DESIGN

21. Within 30 days after entry of this Decree, Settling Defendants shall submit a plan for the implementation of the BRCP as set forth in Appendix B. The plan shall provide a design for each of the components of the BRCP and schedules for completion.

22. Settling Defendants agree to implement the BRCP, including the Work Plans approved by the Trustees after an appropriate period for public comment, as set forth in Appendix B. If any component identified in the BRCP is implemented as part of an EPA Response Action, and upon written approval by the Trustees that implementation of such component is consistent with the BRCP, Settling Defendants will not be required to implement such component as part of the BRCP. If implementation of a BRCP component as part of an EPA Response Action is partial or otherwise incomplete as determined by the Trustees, Settling Defendants agree to complete implementation of such component.

23. Should the Trustees and Settling Defendants agree that implementation of any of the BRCP components, other than the Hatchery Operation Component, are not feasible, the Trustees and Settling Defendants shall identify substitute projects at comparable cost which provide substantially equivalent benefits to natural resources as those which would have been provided by the BRCP components deemed infeasible. Settling Defendants agree to implement the substitute projects pursuant to any revised schedules and conditions.

24. Settling Defendants agree to evaluate and monitor environmental parameters in Panther Creek and Big Deer Creek in accordance with the BRCP monitoring program as set forth in Appendix B.

25. During performance of the BRCP monitoring program, Settling Defendants shall notify the Trustees and EPA not less than fourteen (14) days in advance of any sample collection activity. In addition, the Trustees and EPA shall have the right to take any additional samples that they deem necessary. Upon request, the Settling Defendants shall provide split or duplicate samples to the Trustees or EPA.

XI. ADDITIONAL ACTIONS

26. For the duration of the entire BRCP monitoring program set forth in Appendix B, at any time after January 1, 2002 that water quality exceeds the levels set forth in Subparagraph 5(c), in addition to complying with the liquidated damages provision of this Consent Decree, Settling Defendants must take actions, with the prior approval of the Trustees, in consultation with EPA, to prevent further exceedances unless Settling Defendants can demonstrate to the Trustees either: (1) that such exceedances do not cause injury to biological resources or (2) that actions required by EPA under separate agreements or orders will achieve the water quality levels set forth in Subparagraph 5(c). Settling Defendants shall not be required to take additional actions under this Paragraph if they can demonstrate to the Trustees that attainment of the water quality levels set forth in Subparagraph 5(c) is not technically feasible.

27. At any time after January 1, 2002 that the water quality levels set forth

in Subparagraph 5(c) of this Consent Decree are exceeded, where such exceedance causes interruption or delay of the hatchery operations, Settling Defendants shall conduct water quality monitoring for three consecutive years, or for a shorter period as determined by the Trustees, prior to reinitiation of the hatchery operations.

28. The requirements of Paragraphs 26 and 27 shall not apply where Settling Defendants can demonstrate to the Trustees that any such exceedance is due to concentrations of hazardous substances from Panther Creek upstream from Blackbird Creek, or from releases of hazardous substances in tributaries to Panther Creek unrelated to the Blackbird Mine.

XII. QUALITY ASSURANCE, SAMPLING, and DATA ANALYSIS

29. Settling Defendants shall use quality assurance, quality control, and chain of custody procedures for all samples in accordance with EPA, "Interim Guidelines and Specifications For Preparing Quality Assurance Project Plans," December 1980, (QAMS-005/80); "Data Quality Objective Guidance," (EPA, 540/G87/003 and 004); "EPA, NEIC Policies and Procedures Manual," May 1978, revised November 1984, (EPA, 330/9-78-001-R); and subsequent amendments to such guidelines. Prior to the commencement of any portion of the BRCP monitoring program as set forth in Appendix B, Settling Defendants shall submit to the Trustees, for approval, in consultation with EPA, a Quality Assurance Project Plan ("QAPP") that is consistent with the BRCP, individual Work Plans and applicable guidance documents. The QAPP shall include reporting formats and requirements as specified by the Trustees. Where applicable, Trustees and Settling Defendants shall rely on the Quality Assurance Project Plan[s] for EPA Response Actions at the Site. Settling Defendants shall ensure that Trustee and EPA personnel and their authorized representatives are allowed access at reasonable times to all laboratories utilized by Settling Defendants in implementing this Consent Decree. In addition, Settling Defendants shall ensure that such laboratories shall analyze all samples submitted by the Trustees and EPA pursuant to the QAPP for quality assurance monitoring. Settling Defendants shall ensure that the laboratories they utilize for the analysis of samples taken pursuant to this Decree perform all analyses according to accepted

methods as determined by the Trustees. Settling Defendants shall ensure that all laboratories used for analysis of samples taken pursuant to this Consent Decree participate in an equivalent QA/QC program.

30. Settling Defendants shall submit to the Trustees and EPA two copies each of the results of all sampling and/or tests or other data, including all quality control data, obtained or generated by or on behalf of Settling Defendants with respect to the restoration or remediation of the Site and/or the implementation of this Consent Decree.

XIII. ACCESS

31. Commencing upon the date of lodging of this Consent Decree, the owner Settling Defendants agree to provide the Trustees, EPA and their contractors access at all reasonable times to the Site and any other property to which access is required for the implementation of this Consent Decree including, but not limited to:

a. Monitoring the Work;

b. Verifying any data or information submitted;

c. Conducting investigations relating to contamination at or near the Site;

d. Obtaining samples;

e. Assessing the need for, planning, or implementing additional Response Actions or natural resource damage assessment at or near the Site;

f. Inspecting and copying records, operating logs, contracts, or other documents maintained at the Site or generated by Settling Defendants or their agents;

g. Assessing Settling Defendants' compliance with this Consent Decree.

XIV. REPORTING REQUIREMENTS

32. In addition to any other requirement of this Consent Decree, Settling Defendants shall submit to the Trustees and EPA two copies each of written progress reports as provided in schedules set forth in the BRCP, which: (a) describe the actions which have

been taken toward achieving compliance with this Consent Decree during the reporting period; (b) include a summary of all results of sampling and tests and all other data received or generated by Settling Defendants or their contractors or agents during the reporting period; (c) identify all Work Plans, plans and other deliverables required by this Consent Decree completed and submitted during reporting period; (d) describe all actions, including, but not limited to, data collection and implementation of Work Plans, and provide other information relating to the progress of construction, including, but not limited to, critical path diagrams; (e) include information regarding percentage of completion, unresolved delays encountered or anticipated that may affect the future schedule for implementation of the Work, and a description of efforts made to mitigate those delays or anticipated delays; (f) include any modifications to the Work Plans or other schedules that Settling Defendants have proposed to the Trustees or that have been approved by the Trustees.

33. Settling Defendants shall submit these progress reports to the Trustees and EPA in accordance with the schedules set forth in the BRCP following the entry of this Consent Decree until notified by the Trustees that the reports are no longer necessary. If requested by the Trustees, Settling Defendants shall also provide briefings to discuss the progress of the Work.

34. Settling Defendants shall notify the Trustees of any change in the schedules set forth in the BRCP for the performance of any activity, including, but not limited to, data collection and implementation of Work Plans, no later than 15 days prior to the performance of the activity.

35. Settling Defendants shall submit to the Trustees and EPA two copies each of all Work Plans, reports, and data required by the BRCP, or any other approved plans in accordance with the schedules set forth in such plans.

36. All reports and other documents submitted by Settling Defendants to the Trustees (other than the progress reports referred to above) which purport to document Settling Defendants' compliance with the terms of this Consent Decree shall be signed by an

authorized representative of Settling Defendants.

XV. SUBMISSIONS REQUIRING AGENCY APPROVAL

37. After review of any plan, report or other item which is required to be submitted for approval pursuant to this Consent Decree, the Trustees, after reasonable opportunity for review and comment, shall, consistent with the objectives of this Consent Decree: (a) approve, in whole or in part, the submission; (b) approve the submission upon specified conditions; (c) modify the submission to cure the deficiencies; (d) disapprove, in whole or in part, the submission, directing that the Settling Defendants modify the submission; or (e) any combination of the above.

38. Upon receipt of a notice of disapproval pursuant to Paragraph 37, Settling Defendants shall, within 14 days or such other reasonable time as specified by the Trustees in such notice, correct the deficiencies and resubmit the plan, report, or other item for approval. Stipulated penalties shall not accrue until after Settling Defendants have had the opportunity to revise the submission in accordance with the Trustees' written comments.

XVI. PROJECT COORDINATOR

39. Within 20 days of the lodging of this Consent Decree, Settling Defendants and the Trustees will notify each other, in writing, of the name, address and telephone number of their respective designated project coordinator(s) and alternate project coordinator(s). If a project coordinator or alternate project coordinator initially designated is changed, the identity of the successor will be given to the other parties at least 5 working days before the change occurs, unless impracticable, but in no event later than the actual day the change is made. The Settling Defendants' project coordinator shall be subject to disapproval by the Trustees and shall have sufficient technical expertise to adequately oversee all aspects of the Work which he is to coordinate.

40. For the duration of each project, the Trustees' project coordinator(s) and the Settling Defendants' project coordinator(s) will confer, at a minimum, on a monthly basis, unless otherwise agreed by the Parties.

XVII. ASSURANCE OF ABILITY TO COMPLETE WORK

41. The following requirements under this Section are intended to ensure that Settling Defendants maintain sufficient financial security to finance implementation of the BRCP. Although the requirements set forth below are also intended to be sufficient to provide financial security for Settling Defendants' current estimated costs for early Response Actions at the Site, the United States may, in its discretion, require additional financial security in agreements or orders relating to those actions if the estimated costs of the early Response Actions exceed twenty (20) million dollars. The following requirements are not intended to be the sole source for providing financial security for implementation of the ROD. If the United States decides, in its discretion, that financial security for implementation of the ROD is needed in excess of that provided herein, such financial security shall be provided by Settling Defendants pursuant to the consent decree or administrative order implementing the ROD.

42. Within 30 days after entry of this Consent Decree, Settling Defendants shall establish and maintain financial security in the total amount of $ 37 million, calculated as $20 million for early Response Actions and $17 million for performance of the BRCP, in one of the following forms:

(a) A surety bond guaranteeing performance of the requirements of this Consent Decree;

(b) One or more irrevocable letters of credit equaling the total estimated cost of the requirements of this Consent Decree;

(c) A trust fund;

(d) A guarantee to perform the requirements of this Consent Decree by one or more parent corporations or subsidiaries, or by one or more unrelated corporations that have a substantial business relationship with at least one of the Settling Defendants; or

(e) A demonstration that one or more of the Settling Defendants satisfy the requirements of 40 C.F.R. Part 264.143(f).

43. If the Settling Defendants seek to demonstrate the ability to complete the

requirements of this Consent Decree through a guarantee by a third party as set forth in Subparagraph 42(d) of this Consent Decree, Settling Defendants shall demonstrate that the guarantor satisfies the requirements of 40 C.F.R. Part 264.143(f) for the amount necessary to secure the performance of early Response Actions. If Settling Defendants seek to demonstrate their ability to complete the requirements of this Consent Decree by means of the financial test or the corporate guarantee as set forth in Subparagraph 42(d) or (e), they shall resubmit sworn statements conveying the information required by 40 C.F.R. Part 264.143(f) annually, on the anniversary of the effective date of this Consent Decree. In the event that EPA determines at any time that the financial assurances provided pursuant to this Section are inadequate to meet the requirements of 40 C.F.R. Part 264.143(f), Settling Defendants shall, within 30 days of receipt of notice of EPA's determination, obtain and present to EPA for approval one of the other forms of financial assurance listed in Paragraph 42 of this Consent Decree. Settling Defendants' inability to demonstrate financial ability to complete the requirements of this Consent Decree shall not excuse performance of any activities required under this Consent Decree.

44. Upon filing of Completion Reports under this Consent Decree for implementation of the BRCP, as well as under other consent decrees or administrative orders for Response Actions related to the Site, Settling Defendants may request, in writing, a reduction in the amount of financial security required by Paragraph 42 above. Requests relating to completion of elements of the BRCP shall be made to the Trustees; requests relating to completion of Response Actions shall be made to EPA. Any request for reductions in the amount of financial security will be reviewed by the Trustees and EPA, and a response to the request will be provided to the Settling Defendants within sixty (60) days from the date of receipt of the request. If a request is granted, the financial security required by Paragraph 42 will be reduced by an amount that the Trustees and EPA determine, in their discretion, to be equal to the proportion that the completed work bears to the current total estimated costs for the BRCP plus the current total estimated cost of Response Actions. Any dispute involving

requests related to elements of the BRCP shall be resolved in accordance with Section XXI (Dispute Resolution) of this Consent Decree. Any dispute involving requests related to a Response Action shall be resolved in accordance with dispute resolution procedures established under the administrative order or consent decree governing implementation of that Response Action.

45. While the M.A. Hanna Company and Hanna Services Company remain jointly and severally obligated pursuant to Subparagraph 5(f), Noranda Mining Inc., as General Partner of the Blackbird Mining Company Limited Partnership, assumes and guarantees the obligations, if any, of the M.A. Hanna Company and Hanna Services Company to perform Response Actions relating to the Blackbird Mine Site, to be implemented through separate consent decrees or administrative orders, and to pay Response Costs. Noranda Mining Inc. shall provide financial assurance for the M.A. Hanna Company's and Hanna Services Company's shares of Response Actions, agreed between Noranda and Hanna to be in the initial amount of 6 2/3 million dollars, which amount shall be subject to adjustments in accordance with this Section, Paragraphs 41 and 44.

46. In the event that Noranda Mining Inc. becomes insolvent or otherwise fails to perform or pay for whatever obligations the M.A. Hanna Company or Hanna Services Company may have to perform or pay for Response Actions, the M.A. Company and Hanna Services Company shall assume such obligations and become a party to any administrative order or consent decree implementing such Response Actions. In any event, nothing in this Paragraph shall be construed to limit EPA's authority to require any Settling Defendant, including the M.A. Hanna Company and Hanna Services Company, to perform any Response Action related to the Blackbird Mine Site.

47. The claims asserted by the United States against Defendant Pechiney Corporation ("Pechiney") and against Defendant Alumax, Inc. ("Alumax") were based on their respective corporate relationships with Defendant Alumet Corporation ("Alumet"), which is a wholly owned subsidiary of Alumax. Pechiney has agreed to indemnify Alumax for liabilities

relating to the Blackbird Mine, including the liabilities of Alumet. By separate agreement with the United States, Pechiney has also guaranteed the obligations of Alumet relating to the Blackbird Mine Site.

XVIII. EMERGENCY RESPONSE

48. In the event of any action or occurrence during the performance of the Work which causes or threatens a release of Hazardous Substances from the Site that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, Settling Defendants shall immediately take all appropriate action to prevent, abate, or minimize such release or threat of release, and shall immediately notify the Trustees' and EPA's project coordinator(s) or alternate project coordinator(s). Such actions by Settling Defendants shall not limit any authority of the United States or the State to respond to emergency situations or situations that may present an immediate threat to public health or welfare or the environment.

XIX. INDEMNIFICATION AND INSURANCE

49. The United States and the State do not assume any liability by entering into this agreement or by virtue of any activities to be performed by Settling Defendants under this Consent Decree. Settling Defendants shall indemnify, save and hold harmless the United States, the State, and their officials, agents, employees, contractors, subcontractors, or representatives for or from any and all claims or causes of action arising from, or on account of, acts or omissions of Settling Defendants, their officers, directors, employees, agents, contractors, subcontractors, and any persons acting on their behalf or under their control, in carrying out activities pursuant to this Consent Decree. Further, Settling Defendants agree to pay the United States and the State all costs incurred including, but not limited to, attorneys' fees and other expenses of litigation and settlement arising from, or on account of, claims made against the United States or the State based on acts or omissions of Settling Defendants, their officers, directors, employees, agents, contractors, subcontractors, and any persons acting on their behalf or under their control, in carrying out activities pursuant to this Consent

Decree. Neither the United States nor the State shall be a party to any contract entered into by or on behalf of Settling Defendants in carrying out activities pursuant to this Consent Decree. Neither Settling Defendants nor any contractor hired by them shall be considered an agent of the United States or the State.

50. Settling Defendants shall not be a party to any contract entered into by or on behalf of the United States or the State in carrying out activities performed or funded pursuant to this Consent Decree. Neither the United States nor the State nor any contractor hired by them shall be considered an agent of the Settling Defendants.

51. Except as provided in Paragraph 78 of this Decree, Settling Defendants waive all claims against the United States and the State for damages or reimbursement or for set-off of any payments made or to be made to the United States or the State arising from or on account of any contract, agreement, or arrangement between any one or more of Settling Defendants and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays. In addition, Settling Defendants shall indemnify and hold harmless the United States and the State with respect to any and all claims for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between any one or more of Settling Defendants and any person for performance of the requirements of this Consent Decree on or relating to the Site, including, but not limited to, claims on account of construction delays.

52. No later than 15 days before commencing any Work required by this Consent Decree, Settling Defendants shall secure and shall maintain comprehensive general liability insurance and automobile insurance with limits of at least one million dollars, combined single limit, naming as additional insureds the United States and the State. In addition, for the duration of this Consent Decree, Settling Defendants shall satisfy, or shall ensure that their contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing the requirements of this Consent Decree on behalf of Settling Defendants in furtherance of this

Consent Decree. Prior to commencement of Work required by this Consent Decree, Settling Defendants shall provide to the Trustees certificates of such insurance and a copy of each insurance policy. Settling Defendants shall resubmit such certificates and copies of policies each year on the anniversary of the effective date of this Consent Decree. If Settling Defendants demonstrate by evidence satisfactory to the Trustees that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering the same risks but in a lesser amount, then, with respect to that contractor or subcontractor, Settling Defendants need provide only that portion of the insurance described above which is not maintained by the contractor or subcontractor.

XX. FORCE MAJEURE

53. "Force majeure," for purposes of this Consent Decree, is defined as any event arising from causes beyond the control of the Settling Defendants or of any entity controlled by Settling Defendants, including, but not limited to, their contractors and subcontractors, that delays or prevents the performance of any obligation under this Consent Decree despite Settling Defendants' best efforts to fulfill the obligation. The requirement that the Settling Defendants exercise "best efforts to fulfill the obligation" includes using best efforts to anticipate any potential force majeure event and best efforts to address the effects of any potential force majeure event (1) as it is occurring and (2) following the potential force majeure event, such that the delay is minimized to the greatest extent possible. "Force Majeure" does not include financial inability to complete the Work.

54. If any event occurs or has occurred that may delay the performance of any obligation under this Consent Decree, whether or not caused by a force majeure event, the Settling Defendants shall notify the Trustees' project coordinator within four days of when Settling Defendants first knew or should have known that the event might cause a delay. Within ten days thereafter, Settling Defendants shall provide a written explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any

measures to be taken to prevent or mitigate the delay or the effect of the delay; and the rationale for attributing such delay to a force majeure event, if Settling Defendants intend to assert such a claim. The Settling Defendants shall include with any notice all available documentation supporting their claim that the delay was attributable to a force majeure event. Failure to comply with the above requirements shall preclude Settling Defendants from asserting any claim of force majeure for that event. Settling Defendants shall be deemed to have notice of any circumstance of which their contractors or subcontractors had or should have had notice.

55. If the Trustees agree that the delay or anticipated delay is attributable to a force majeure event, the time for performance of the obligations under this Consent Decree that are affected by the force majeure event will be extended by the Trustees for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the force majeure event shall not, of itself, extend the time for performance of any other obligation. If the Trustees do not agree that the delay or anticipated delay has been or will be caused by a force majeure event, the Trustees will notify the Settling Defendants in writing of its decision.

56. If the Settling Defendants elect to invoke the dispute resolution procedures set forth in Section XXI (Dispute Resolution), they shall do so no later than 15 days after receipt of the Trustees' notice. In any such proceeding, Settling Defendants shall have the burden of demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or will be caused by a force majeure event, that the duration of the delay or the extension sought was or will be warranted under the circumstances, that best efforts were exercised to avoid and mitigate the effects of the delay, and that Settling Defendants complied with the requirements of Paragraphs 53 and 54, above. If Settling Defendants carry this burden, the delay at issue shall be deemed not to be a violation by Settling Defendants of the affected obligation of this Consent Decree.

XXI. DISPUTE RESOLUTION

57. Unless otherwise expressly provided for in this Consent Decree, the dispute resolution procedures of this Section shall be the exclusive mechanism to resolve disputes between the United States and the State and the Settling Defendants arising under or with respect to this Consent Decree. Disputes between the Government(s) and Settling Defendants related to Response Actions implemented through separate consent decrees or administrative orders will be resolved by the parties to those decrees or orders in accordance with dispute resolution procedures established therein.

58. The invocation of dispute resolution procedures under this Section shall not extend, postpone or affect in any way any obligation of the Settling Defendants under this Consent Decree not directly in dispute, unless the United States and the State or the Court agrees otherwise.

A. Initial Dispute Resolution Procedure

59. The Parties to this Consent Decree shall attempt to resolve expeditiously and informally any disagreements concerning implementation of this Consent Decree or any Work required herein. If the disagreement cannot be resolved promptly, then any member of the Settling Defendants may file a notice of dispute with the United States and the State and the other Settling Defendants. A period of informal negotiations shall extend for not more than twenty (20) working days following receipt of such notice by the United States and the State unless the United States and the State determine that a longer period is appropriate. During the informal negotiation period, the Parties may also agree to utilize appropriate Alternative Dispute Resolution ("ADR") mechanisms. At the expiration of the informal negotiation period, the United States and the State shall issue a written Final Statement of Position on the matter in dispute.

60. An administrative record of any dispute shall be maintained by the United States and the State. The record shall include the written notification of such dispute, any relevant documents generated by any of the Parties or their contractors or agents, any

other relevant documents submitted by any of the Parties and any other materials relied upon by the United States and the State. To ensure that the administrative record is complete, the Parties shall, within ten (10) working days of the beginning of the informal negotiation period, confer to discuss the documents proposed for inclusion in the administrative record.

61. In the event that a petition relating to the dispute is not filed as set forth in Paragraph 62, the dispute shall be deemed resolved in accordance with the Final Statement of Position issued as set forth in Paragraph 59 and such position shall be deemed effective 15 days following the receipt by the Party that filed the notice of dispute of such Final Statement of Position; provided, however, such effective date may be extended by the United States and the State for good cause shown.

B. Judicial Resolution

62. In the event that any Settling Defendant seeks judicial resolution of the dispute, it shall, within fifteen (15) days of the effective date of the Final Statement of Position described in Paragraph 59, file a petition with the Court which shall describe the nature of the dispute and include a proposal for its resolution. All other Parties shall have fourteen (14) days to respond to the petition.

63. In the event that any Settling Defendant seeks judicial resolution of the dispute, the petitioning Settling Defendant shall have the burden of proof. Any Final Statement of Position reflecting a decision by the United Stateas and the State on the extent or adequacy of the restoration actions will be reviewed by the Court on the basis of the administrative record and will be upheld by the Court unless it is arbitrary and capricious or otherwise not in accordance with the law. Any decision by the Court under this Section is subject to appeal.

C. Disputes Among the Trustees

64. If the Trustees disagree regarding the manner of compliance with this Consent Decree or concerning any issue which is required by the Consent Decree to be a joint decision of the Trustees, the Trustees shall attempt to resolve any disagreement expeditiously

and informally.

65. If the dispute among the Trustees relates to the manner of performance of the Work, the Settling Defendants may suspend performance of the affected portion of the Work until the dispute is resolved. Any delay in performance of the Work caused by or attributable to a dispute among the Trustees shall constitute force majeure, and shall not be the basis for stipulated penalties, liquidated damages or exercise of the reopener provisions.

XXII. STIPULATED PENALTIES

66. Subject to the dispute resolution and force majeure provisions of this Consent Decree, Settling Defendants shall pay stipulated penalties for each day they fail to complete a deliverable or fail to produce a deliverable of acceptable quality in accordance with this Section. Penalties begin to accrue on the day the deliverable or performance is due, and extend through the period of correction. Payment shall be due within 30 days of receipt of a demand letter from the Trustees. For violations not based on timeliness, stipulated penalties shall not begin to accrue until Settling Defendants receive written notice from the Trustees of the failure to perform in accordance with the requirements of this Decree. Settling Defendants shall pay interest on the unpaid balance which shall begin to accrue at the end of the 30-day period when payment is due, at the rate established by the Department of Treasury pursuant to 30 U.S.C. § 3717. Settling Defendants shall pay half of any penalty accrued under this Section to the United States and half of the penalty to the State of Idaho. Settling Defendants shall make such payments by forwarding a check payable to the United States Treasury to the Assistant Attorney General, Environment and Natural Resources Division, and by forwarding a check payable to the State of Idaho Office of the Attorney General to the Chief, Natural Resources Division, Idaho Office of the Attorney General.

67. For the following major deliverables or events, stipulated penalties shall accrue in the amount of $2,500 per day per violation or noncompliance, for the first seven days; for the 8th through 14th days, $5,000 per day per violation or noncompliance; and $10,000 a day per violation or noncompliance for each day after the 14th day until the period

of correction:

a. Completion of channel realignment as set forth in the BRCP.

b. Completion of cattle exclusion measures as set forth in the BRCP.

c. Completion of off-channel rearing ponds as set forth in the BRCP.

d. Performance of the BRCP monitoring program.

e. Completion of the plan for sediment removal and bank stabilization as set forth in Appendix C.

f. Completion of the adult fish trap, as set forth in the BRCP, should the Trustees elect to implement the Hatchery Operation Component of the BRCP.

g. Completion of the acclimation ponds, as set forth in the BRCP, should the Trustees elect to implement the Hatchery Operation Component of the BRCP.

68. For the delivery of Work Plans or technical reports required to be submitted under this Consent Decree or under the BRCP, stipulated penalties shall accrue in the amount of $1,000 per day per violation or noncompliance for the first seven days of violation or noncompliance; $2,000 per day per violation or noncompliance for the 8th through 14th days; and $3,000 per day per violation for each day after the 14th day until the time of correction.

69. Settling Defendants may dispute the Governments' right to assessed penalties by invoking the dispute resolution procedures of Section XXI. Penalties shall accrue but need not be paid during the dispute resolution period. Penalties, if any, shall be paid to the Governments within 30 days of resolution of the dispute.

70. The stipulated penalties established in this Consent Decree shall be in lieu of the statutory penalties established under CERCLA, CWA, ESA, and the Idaho Environmental Protection and Health Act.

XXIII. REOPENER PROVISIONS

71. Notwithstanding any other provision of this Consent Decree, including the dispute resolution provisions, the United States and the State of Idaho, reserve, and this Consent Decree is without prejudice to, the right to initiate proceedings in this action or a new action, seeking recovery of additional Response Costs and/or Natural Resource Damages, if any of the following commitments by the Settling Defendants are not met:

a. Under separate agreement or order not covered by this Consent Decree, Settling Defendants shall perform Response Actions related to the Site, and conduct operation and maintenance of the final remedy in accordance with the Administrative Record of Decision ("ROD") to be issued by the EPA, in consultation with the Trustees, as set forth in Subparagraph 5(b).

b. By January 1, 2005, the water quality levels in Panther Creek and Big Deer Creek shall be capable of sustaining salmonids through all life stages as set forth in Subparagraph 5(c).

72. All obligations imposed on Settling Defendants under this Consent Decree shall automatically terminate upon the United States' or the State's initiation of proceedings to exercise the reopener provisions set forth in Paragraph 71.

XXIV. LIQUIDATED DAMAGES

73. For each month that the Hatchery Operation Component of the BRCP is delayed or interrupted due to failure to meet the water quality requirement set forth in Subparagraph 5(c) for Panther Creek, Settling Defendants shall pay liquidated damages in the amount of $25,000 per month, as compensation for interim loss damages for chinook salmon. Any payments made pursuant to this Paragraph shall be deposited into an interest bearing trust account in a federally insured bank in the State of Idaho. Settling Defendants shall not be obligated to pay liquidated damages if they can demonstrate to the Trustees that they have implemented the BRCP, with the exception of the Hatchery Operation Component, and that they have met the requirements of Section XI (Additional Actions).

74. In the event that the United States and the State elect to exercise the reopener rights outlined above, they shall not be entitled to seek interim loss damages for chinook salmon for any time period for which liquidated damages have been paid.

XXV. GENERAL RESERVATIONS OF RIGHTS

75. Notwithstanding any other provision of this Consent Decree, the United States and the State reserve, and this Consent Decree is without prejudice to, all rights against Settling Defendants with respect to all other matters not addressed in this Decree, including but not limited to, the following:

a. claims to seek specific performance and other remedies based on a failure by Settling Defendants to meet a requirement of this Consent Decree;

b. liability arising from the past, present, or future disposal, release, or threat of release of Hazardous Substances unrelated to the Site;

c. liability for Response Actions related to the Site;

d. criminal liability;

e. liability for violations of federal or state law which occur during or after implementation of the BRCP; and

f. liability for the releases of Hazardous Substances from new activities at the Blackbird Mine which occur after the BRCP monitoring program as set forth in Appendix B has been completed.

76. In the event the Trustees determine that Settling Defendants have failed to implement any provisions of the BRCP, including the Work Plans, in an adequate or timely manner, the Trustees reserve the right to perform any and all portions of the BRCP determined necessary, and Settling Defendants shall reimburse the Trustees for the costs of such performance.

77. Notwithstanding any other provision of this Consent Decree, the United States and the State retain all access, information-gathering and inspection authorities and reserve all rights to take any and all Response Actions authorized by law.

78. Settling Defendants expressly reserve all claims they have asserted against the United States, Machinery Center, Inc., Union Carbide Corporation or against each other in the litigation before the United States District Court for the District of Idaho, State of Idaho, et al. v. M.A. Hanna Company, et al., Civ. No. 83-4179 (D. Idaho), and United States v. Blackbird Mining Company Limited Partnership, et al., Case No. CV 93-235-E-HLR (D. Idaho), or as a result of any separate agreements, awards or judgments between or among the Settling Defendants. In the event that Plaintiffs initiate proceedings against Settling Defendants pursuant to Section XXIII (Reopener Provisions) of this Decree, this reservation of claims shall be applicable to the extent that those claims relate to the subject matter of the new or reopened proceedings.

79. Nothing set forth in this Consent Decree is intended to or be construed to supersede any administrative orders issued by EPA related to the Blackbird Mine Site.

XXVI. COVENANTS BY SETTLING DEFENDANTS

80. Except as provided in Paragraph 78 above, Settling Defendants hereby covenant not to sue and agree not to assert any claims or causes of action against the United States or the State or any of their agents or contractors with respect to any activities at the Site or any provisions of this Consent Decree.

XXVII. EFFECT OF SETTLEMENT; CONTRIBUTION PROTECTION

81. The Parties have agreed that implementation of this Consent Decree constitutes appropriate actions necessary to restore all Natural Resources injured by the release of hazardous substances from the Blackbird Mine Site and to compensate the Trustees for the injuries to Natural Resources and the services they provide .

82. Nothing in this Consent Decree shall be construed to create any rights in, or grant any cause of action to, any person not a party to this Consent Decree. Each of the Parties expressly reserves any and all rights, defenses, claims, demands, and causes of action which each party may have with respect to any matter, transaction, or occurrence relating in any way to the Site against any person not a party hereto.

83. With regard to claims for contribution for matters addressed in this Consent Decree, the Settling Defendants are entitled to such protection from contribution actions or claims brought by parties not signatories to this Consent Decree as is provided by CERCLA Section 113(f)(2), 42 U.S.C. § 9613(f)(2).

84. In any subsequent administrative or judicial proceeding initiated by the United States or the State for enforcement of the terms of this Consent Decree, injunctive relief, recovery of Response Costs, or other appropriate relief relating to the Site, Settling Defendants shall not assert, and may not maintain, any defense or claim based upon any contention that the claims raised by the United States or the State in the subsequent proceeding were or should have been brought in the instant case, including, but not limited to, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, and claim-splitting, provided however, that nothing in this Paragraph affects the enforceability of the Covenants Not to Sue set forth in Paragraph 85. Settling Defendants expressly reserve all other potential defenses to any subsequent administrative or judicial proceeding. Settling Defendants shall reimburse the United States and the State for costs and reasonable attorneys fees, if the Governments prevail, incurred in any such administrative or judicial proceeding to the extent authorized by law.

85. Except as otherwise provided herein, within 60 days of entry of this Consent Decree, the United States and the State of Idaho release and covenant not to file any civil claim against the M.A. Hanna Company, Hanna Services Company, Noranda Mining Inc., Noranda Exploration, Inc., Blackbird Mining Company Limited Partnership, Alumax, Inc. Alumet Corporation, and Pechiney Corporation and their respective employees, officers, directors, acting in those capacities; successors; assigns; and subsidiaries, affiliates, or parents as designated in Appendix D for the matters raised in the United States First Amended Complaint and the State of Idaho's Second Amended Complaint, Civ. Action No. 83-4179 (consolidated), which actions against Settling Defendants will be dismissed with prejudice, subject to the Reopener Provisions of Section XXIII.

XXVIII. ACCESS TO INFORMATION

86. Settling Defendants shall provide to EPA and to the Trustees upon request, copies of all documents and information within their possession or control or that of their contractors or agents relating to Response Actions at the Site or to the implementation of this Consent Decree, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information related to the Work. Settling Defendants shall also make available to the Trustees and EPA, for purposes of investigation, information gathering, or testimony, their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

87. Settling Defendants may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal or State law. If the Settling Defendants assert such a privilege in lieu of providing documents, they shall provide the Plaintiffs with the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of the author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the contents of the document, record, or information; and (6) the privilege asserted by Settling Defendants. However, no documents, reports or other information created or generated pursuant to the requirements of this Consent Decree shall be withheld on the grounds that they are privileged.

88. No claim of confidentiality shall be made with respect to any data, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, or engineering data, or any other documents or information evidencing conditions at or around the Site with respect to remediation or restoration of the Site and/or implementation of this Consent Decree.

XXIX. RETENTION OF RECORDS

89. Settling Defendants shall preserve and retain all records and documents

now in their possession or control or which come into their possession or control that relate in any manner to the performance of the Work to be conducted at the Site for a period of seven years, regardless of any corporate retention policy to the contrary. Settling Defendants' shall also instruct their contractors and agents to preserve all documents, records, and information of whatever kind, nature or description relating to the performance of the Work.

90. At the conclusion of this document retention period, Settling Defendants shall notify the United States and the State at least 90 days prior to the destruction of any such records or documents, and, upon request by the United States or the State, Settling Defendants shall deliver any such records or documents to EPA and the Trustees. No documents, reports or other information created or generated pursuant to the requirements of the Consent Decree shall be withheld on the grounds that they are privileged.

XXX. NOTICES AND SUBMISSIONS

91. Whenever, under the terms of this Consent Decree, written notice is required to be given or a report or other document is required to be sent by one party to another, it shall be directed to the project coordinator(s) and alternate project coordinator(s) designated pursuant to Paragraph 39 and to the individuals at the addresses specified below, unless those individuals or their successors give notice of a change to the other parties in writing. All notices and submissions shall be considered effective upon receipt, unless otherwise provided. Written notice as specified herein shall constitute complete satisfaction of any written notice requirement of the Consent Decree with respect to the United States, the State, and the Settling Defendants, respectively.

Assistant Attorney General
Environment & Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Ben Franklin Stateion
Washington, D.C. 20044

Chief, Natural Resources Division
Idaho Office of the Attorney General
P.O. Box 83720
Boise, ID 83720-0010

Theodore Garrett
Covington & Burling
1201 Pennsylvania Avenue, N.W.
Post Office Box 7566
Washington, D.C. 20044

Joseph A. Scheuering
General Manager - Development
Noranda Minerals Corp.
2501 Catlin, Suite 201
Missoula, MT 59801

Don A. Olowinski
Hawley Troxell Ennis & Hawley
877 West Main Street
P.O. Box 1617
Boise, ID 83701

XXXI. APPENDICES

92. The following appendices are attached to and incorporated into this Consent Decree:

"Appendix A" is a General Reference Map of the Blackbird Mine Site and Vicinity.

"Appendix B" is the Biological Restoration and Compensation Plan.

"Appendix C" is the plan for sediment removal and bank stabilization to be performed as set forth in Subparagraph 5(d).

"Appendix D" is the list of affiliates, subsidiaries and parents to be bound and released by this Decree.

XXXII. MODIFICATION

93. Schedules specified in this Consent Decree for completion of the Work may be modified by agreement of the Trustees and the Settling Defendants. All such modifications shall be made in writing.

94. No material modifications shall be made to the BRCP without written notification to and written approval of the State, the United States, and Settling Defendants and with the approval of the Court.

95. Nothing in this Decree shall be deemed to alter the Court's power to enforce, supervise or approve modifications to this Consent Decree.

XXXIII. LODGING AND OPPORTUNITY FOR PUBLIC COMMENT

96. This Consent Decree shall be lodged with the Court for a period of not less than thirty (30) days for public notice and comment consistent with the policy of Section 122(d)(2) of CERCLA, 42 U.S.C. § 9622(d)(2), and 28 C.F.R. § 50.7. The United States and the State each reserves the right to withdraw or withhold its consent if the comments regarding the Consent Decree disclose facts or considerations which indicate that the Consent Decree is inappropriate, improper, or inadequate. Settling Defendants consent to the entry of this Consent Decree without further notice.

97. If for any reason the Court should decline to approve this Consent Decree in the form presented, this agreement is voidable at the sole discretion of any signatory and the terms of the agreement may not be used as evidence in any litigation between the signatories to this Decree.

XXXIV. SIGNATORIES/SERVICE

98. Each Settling Defendant hereby agrees not to oppose entry of this Consent Decree by this Court or to challenge any provision of this Consent Decree unless the United States or the State has notified the Settling Defendants in writing that it no longer supports entry of the Consent Decree.

99. Each Settling Defendant shall identify, on the attached signature page, the name, address and telephone number of an agent who is authorized to accept service of process by mail on behalf of that party with respect to all matters arising under or relating to this Consent Decree. Settling Defendants hereby agree to accept service by mail and to waive the formal service requirements set forth in Rule 4 of the Federal Rules of Civil Procedure and any applicable local rules of this Court, including, but not limited to, service of a summons.

On behalf of Alumet Corporation:

Theodore Garrett
Covington & Burling
1201 Pennsylvania Avenue, NW
P.O. Box 7566
Washington D.C. 20044
(202) 662-6000

On Behalf of M.A. Hanna Company and Rojet Enterprises, Inc.:

Don Olowinski
Hawley Troxell Ennis & Hawley
P.O. Box 1617
877 West Main Street
Boise, ID 83701
(208) 344-6000

On behalf of Noranda Mining Inc., Noranda Exploration, Inc. and Blackbird Mining Company

Anthony O. Garvin
Drobeck, Phleger, Harrison
Spear Street Tower, 23rd Floor
One Market Plaza
San Francisco, CA 94105
(415) 442-0900

XXXV. EFFECTIVE DATE

100. This Consent Decree shall become effective upon entry by this Court, following compliance with the public notice and opportunity for comment provisions of Paragraph 96.

XXXVI. CONTINUING JURISDICTION; TERMINATION

101. The Court shall retain jurisdiction over the subject matter of this Consent Decree and over Settling Defendants for the duration of the performance of the terms and provisions of this Consent Decree. Upon notification to the Court by the United States and the State that the requirements of this Consent Decree have been fully met, this Court shall terminate the Decree as to all signatories. Such termination and dismissal shall not affect the continuing obligations set forth in Sections XXIII, XXV, XXVI, XXVII (Reopener Provisions; General Reservation of Rights; Covenants by Settling Defendants; and Effect of Settlement; Contribution Protection), which shall remain in effect.

XXXVII. ATTORNEY'S FEES AND COSTS

102. All parties agree to bear their own attorney's fees and costs of litigation

insofar as they are not specifically reimbursed herein.

XXXVIII. COUNTERPARTS

103. This Decree may be executed in any number of counterparts, each of which shall be deemed an original, but all of which taken together shall constitute one and the same instrument.

For THE M.A. HANNA COMPANY
ROJET ENTERPRISES, INC.

DATE: 28 April 1995

John S. Pyke Jr.
JOHN S. PYKE, JR.
Vice President, Secretary and General Counsel
M.A. Hanna Company

For THE STATE OF IDAHO

DATE: 4-27-95

PHILIP E. BATT
Governor
State of Idaho

For THE UNITED STATES OF AMERICA

DATE: April 25, 1995

LOIS J. SCHIFFER
Assistant Attorney General
Environment and Natural Resources Division

For ALUMET CORPORATION

DATE: April 26, 1995

R.P. WOLF
Vice President
Alumet Corporation

FROM COUINGTON & BURLING 04.26.1995 19:45 P.06
[RECEIVED 04/26 18:15 1995 AT 6626291 PAGE 2 (PRINTED PAGE 2)]
APR 26'95 18:18 FR ALUMAX LAW DEPT 404 246 5560 TO 9120266262912 P.02/02

For NORANDA MINING INC.
NORANDA EXPLORATION, INC.
BLACKBIRD MINING COMPANY

DATE: 4/28/95

ROB G. METKA
Vice President
Noranda Mining and Exploration Inc.

APPENDIX B
BLACKBIRD MINE
BIOLOGICAL RESTORATION AND COMPENSATION PLAN

INTRODUCTION

This Biological Restoration and Compensation Plan is Appendix B to the "Blackbird Mine Site" Consent Decree (see Section X). This plan contains three main components I) Hatchery Operations Plan, II) Smolt Survival Plan, and III) Performance Monitoring Plan.

This Plan is based on a 100 year project life, but at the request of the Settling Defendants, the Trustees may approve a fifty year option. A fifty year option was discussed in detail during the process of agreeing on this Biological Restoration Plan. The only difference between the two options is that the 50 year option requires an additional 3 miles of out-of-basin cattle exclusion within the livestock exclusion element (see Smolt Survival Plan). The 50 year option will be available until such time that the areas for livestock exclusion are determined.

I. HATCHERY OPERATIONS PLAN

The Hatchery Operation Plan has three elements: 1) a hatchery facility, 2) an adult fish barrier and trap, and 3) acclimation ponds.

ELEMENT 1 -- HATCHERY FACILITY

Element Description

This element is based on the use of an existing hatchery off-site to produce salmon smolts for reintroduction into Panther Creek. At this time, the proposed hatchery is the Sawtooth Hatchery. This element includes funding of capital costs to modify (if necessary) the existing facility, provide water used in incubation and rearing, and provide for discharge of that water (if necessary). The hatchery will begin using appropriate donor stock as approved by the Trustees. Additional brood stock will be collected from Panther Creek as chinook salmon populations increase. It is anticipated that hatchery operation and maintenance will be done by the State of Idaho. Table B-1 provides a summary of those costs as estimated by Idaho Department of Fish and Game.

Operation and Maintenance Summary

- Operation and maintenance will last for up to 30 years.

TABLE 6-1 HATCHERY OPERATION COSTS SUMMARY

Item Description	Capital Costs	PDV O&M Costs[1] (10 Seed Adult, 30 yrs of operation)	PDV O&M Costs (30 Seed Adult, 20 yrs of operation)	PDV O&M Costs (50 Seed Adult, 16 yrs of operation)
Expansion of existing hatchery	$ 161,234			
Permitting, Engineering, Design & Administration @ 15%	$ 24,185			
Contingency @ 30%	$ 55,626			
Sub - Total	$ 241,045	$ 688,302	$ 771,078	$ 835,374
Total Costs		$ 929,347	$1,012,123	$1,076,419

[1] Annual hatchery O&M includes:
- $2,775 adult transportation cost [(6 trips X 350 mi round trip X $0.75/mi) + (6 days labor X $200/day);
- monitoring based on $150/1000 smolt tagging cost + $7,500 evaluation;
- hatchery production cost based on $12.50/lb X (# smolts/20 per lb);
- smolt transportation cost based on [(juvenile production / 6,000 juveniles per trip) X 350 mi round trip X $0.75/mi] + [(juvenile production / 6000 juveniles per trip) X $200 labor];
- 30% contingency.
- discount rate of 3.63%

- Operation and maintenance will include production costs, adult and juvenile transportation costs, and tagging and evaluation of returns.

- The fate of hatchery fish will be monitored by implanting coded wires in all juvenile fish prior to release from the hatchery. Information will be used to provide an annual index of anadromous and resident fish populations and compare habitat quality or habitat change to changes in fish production or survival.

ELEMENT 2 -- ADULT TRAP FACILITY ON PANTHER CREEK

Element Description

The following element description is presented according to each major component of the adult trap facility. General criteria to be designed into the facility are as follows.

- The facility will be located within a maximum of 5 miles upstream of the mouth of Panther Creek to prevent directing adults into Clear Creek.

- The facility will be designed to withstand a 100-yr. flood event during the trapping season.

- The design will allow placement and removal of weir sections and trash removal during trapping operations under normal operational conditions during mid-May through mid-September.

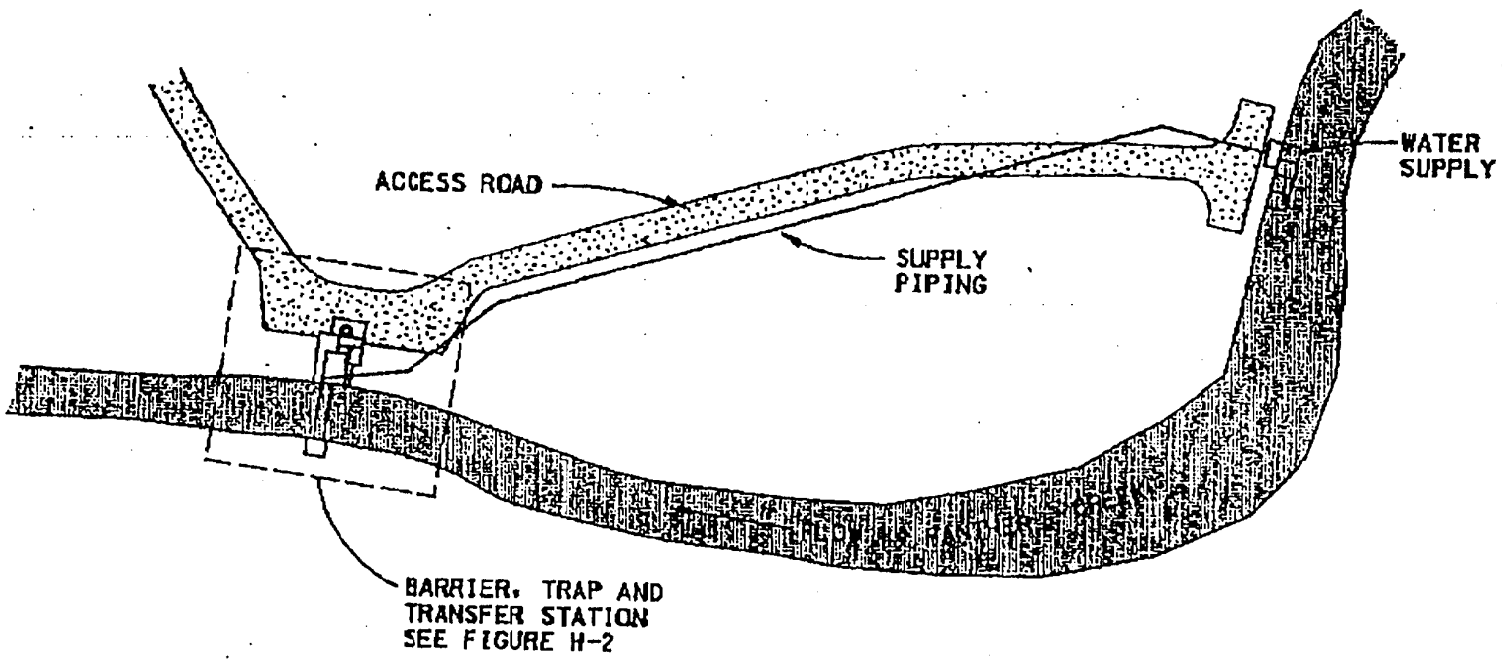
- The facility will allow collection of broodstock that represents the spectrum of the chinook salmon run in terms of run timing and population demographics.

- The facility will minimize turn-backs, rejection by fish, and injury to fish.

- The facility will provide safe transfer of fish from trap to vehicle for transport to the hatchery.

Barrier

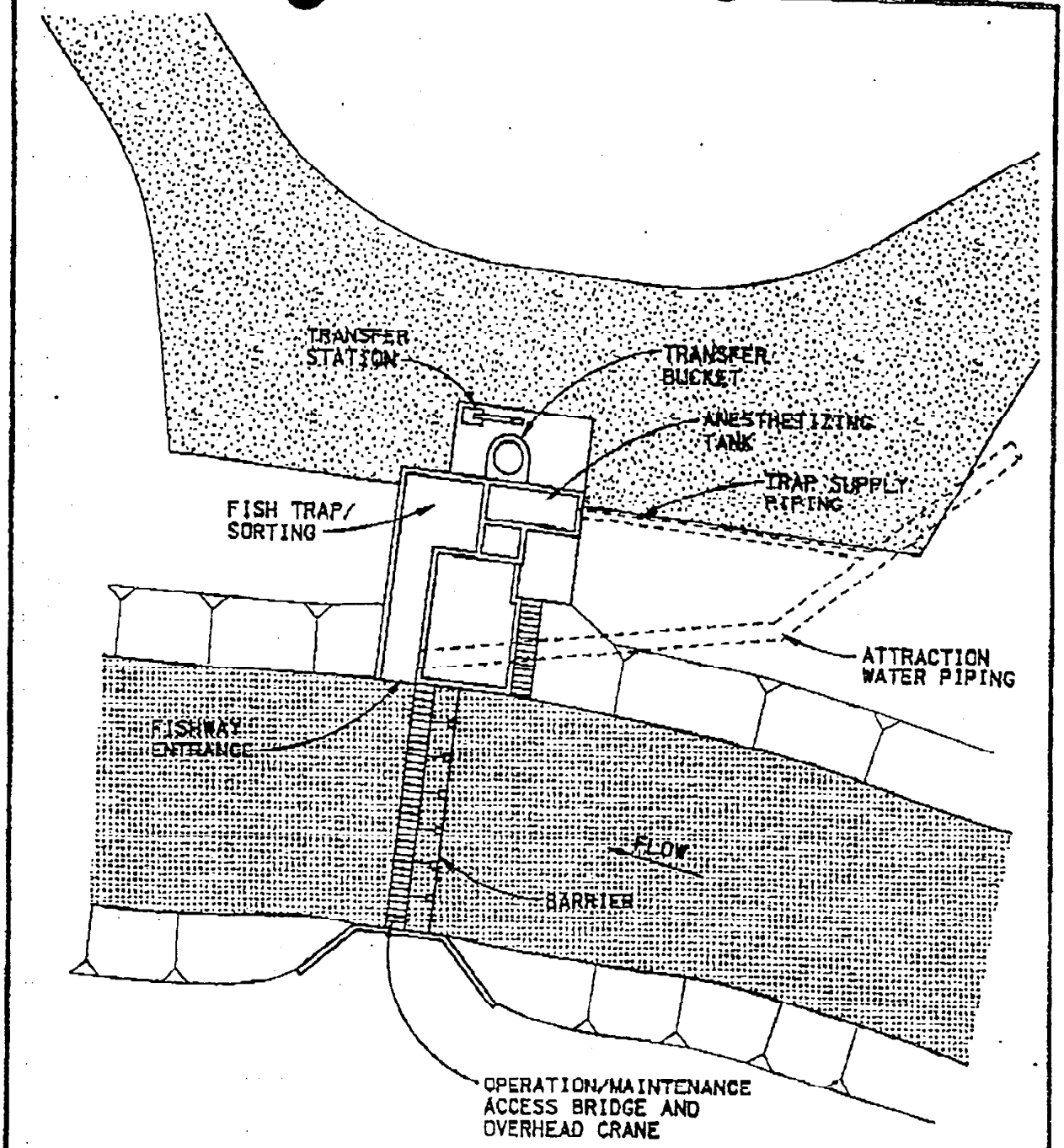
To direct the fish to the trapping and transfer facility, it will be necessary to construct an in-river barrier (see Figures B-1 and B-2). The barrier must pass water, but inhibit upstream migration of the fish targeted. If design river flows allow, a barrier similar to the Crooked River barrier will likely be used. The Crooked River barrier consists of an access bridge that



FISHPRO

PANTHER CREEK FISH TRAP

FIGURE 8-1



FISHPRO

PANTHER CREEK
FISH TRAP

FIGURE B-2

partially supports steel frames and steel screen panels. During flood events with high debris loads, the screens and supporting frames can be removed with an overhead crane.

Should design river flows prove to be more than can be accommodated by the Crooked River type barrier, alternative barrier designs will be considered:

1. Hydraulic/pneumatic operated picket barrier.
2. Pneumatic rubber dam supporting pickets.

Water Supply

The trap should be supplied with sufficient water to maintain fish health and provide proper flow-through velocity. Trap flow velocities above 1 to 2 cubic feet per second will begin to tire adult chinook salmon, leading to increased stress and eventual impingement on the trap screens.

The trap entrance will have sufficient flow to attract fish. Characteristically, around 3 to 5 percent of the river flow is required as attraction water. Typically, most of this water is provided at the trap entrance.

Should site conditions permit, the Panther Creek trap water supply will be similar in construction and operation to the Crooked River facility. The Crooked River facility utilizes an in-river flat screen to supply attraction and trap flow. The water supply intake should be located upstream to take advantage of the fall through the facility. Settling Defendants and the Trustees anticipate a reinforced concrete structure will be built to contain the screens and direct the flow to the trap. See Figure B-1 for a typical layout of a water supply structure. If there is insufficient fall to supply water to the trap and attraction, it may be necessary to pump flow from Panther Creek or an alternate supply.

Trap

Handling of fish by trap operators should be minimized. Fish to be transported off station would be directly transferred to a tanker truck, or to a holding area for future transport. Fish that are to be sent back to the river will be placed in a recovery tank and then may be loaded into a transfer pipe connected to the river upstream of the barrier.

The fish will be trapped and sorted in the same portion of the facility. The trap will likely consist of a standard fyke or a finger weir. The trap will be constructed of reinforced concrete walls and bottom, with a lockable grating or lockable timber lid (see Figure B-2).

Anesthetizing Tank

The fish are to be anesthetized prior to handling. An anesthetizing tank will be included in the design. Prior to transportation, the fish will be crowded into the anesthetizing tank, then anesthetized using carbon dioxide (see Figure B-2).

Transfer Station

After anesthetizing, the fish will be transported to a suitable transfer truck. Fish will be manually removed from the anesthetizing tank using "water-to-water" transfer. See Figure B - 2 for the location of the transfer station. Fish that are to be sent back to the river will be placed in a recovery tank and then may be loaded into a transfer pipe connected to the river upstream of the barrier.

Objective and Scope-of-Work

Objective: To place an adult salmon trap in the lower reach of Panther Creek capable of passing and intercepting broodstock that represent the run timing and stock demographics for the run. The trap should minimize fish rejection and fish injury, and survive a 100 year design flood.

The scope-of-work will consist of the following 4 tasks.

Task 1. Site Assessment

This task consists of a field trip in April of 1995 to assess site conditions and to ascertain probable locations for a barrier and trap that are mutually agreeable to the Trustees and Settling Defendants. This trip will consist of one day for investigating two potential sites. In addition, a visit to the Crooked River site should take place at this time. In addition, detailed hydrologic and hydraulic conditions particular to the chosen site will be studied to ascertain the design flow parameters.

Task 2. Conceptual Design

Working closely, the Settling Defendants and the Trustees will establish design parameters and define a mutually agreeable conceptual design and site location for the in-river barrier, water supply, trap, anesthetizing system and transfer station. Deliverable items for this task include preliminary drawings and a formal documentation of design criteria.

Task 3. Agency Meetings

It is anticipated that one meeting on site is required, and three additional meetings will involve the design process. Meetings will establish initial design criteria and provide a forum to comment on the design as the design progresses.

Task 4. Preliminary and Final Design

After review and Trustee approval of the conceptual design and site location, the Settling Defendants will begin the preliminary and final design process. The final design documents will consist of bid ready drawings, and technical specifications, stamped and signed by a professional engineer, registered in the state of Idaho. One interim submittal will be provided for review and approval by the Settling Defendants and Trustees (preliminary design). One set of final design documents will be provided for bid and construction purposes as ink on mylar drawings, and camera ready technical specifications.

Operation and Maintenance Summary

Adult Trap Facility

- Operation and maintenance will last for up to 28 years.

Barrier

- Maintenance of the barrier will consist of regular cleaning during the trapping season.
- Assuming the barrier is of the Crooked River type, cleaning will consist of raking trash and miscellaneous debris over the screens.
- After the fish run, when the trap will no longer be used, the barrier screens will be removed and stored off site.

Water Supply

- In-river screens for the trap water supply should require little maintenance during operation. The screens will require a periodic inspection to assure that debris has not lodged in the intakes and prohibited flow through the screens. If pumping is required, fish screens will be designed as appropriate to prevent entrainment or entrapment of juvenile fish.

- During operation, the trap will require daily maintenance to assure that all portions are operating properly. Operational maintenance will consist of visual inspection of fish trapping, holding and transfer areas to verify there are no obstructions to flow or other hindrances to fish health. When the trap is not operating, no periodic maintenance will be required.

Anesthetizing Tank

- Maintenance of the anesthetizing tank will consist of regular inspections of the carbon dioxide cylinders. No periodic maintenance of the anesthetizing tank is required when the trap is not in operation.

Transfer Station

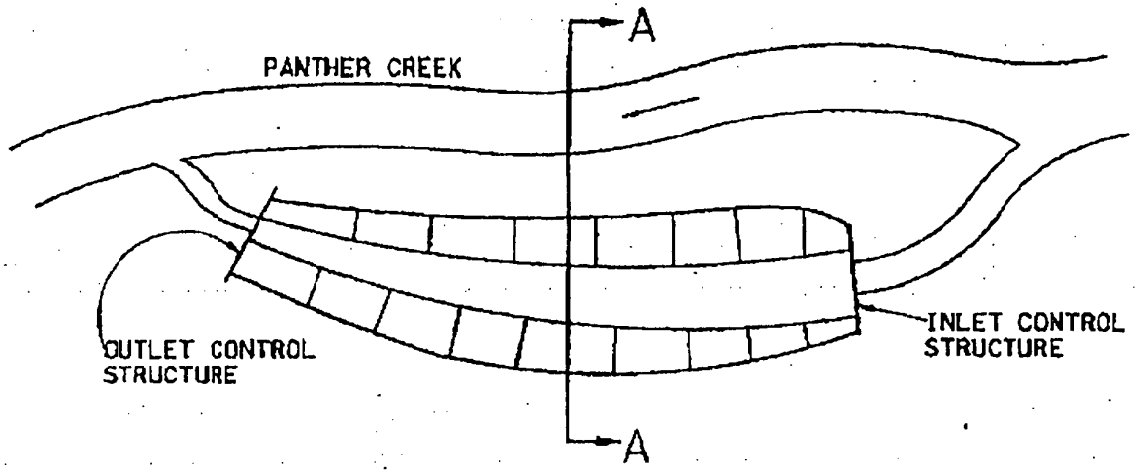
- The transfer station will require periodic maintenance. The operators may remove the entire transfer system for off site storage when the trap is not in operation.

ELEMENT 3 -- ACCLIMATION PONDS

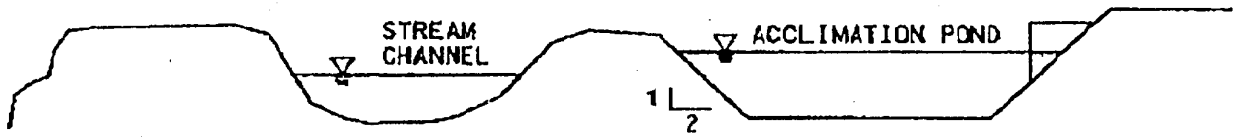
Element Description

Two ponds are planned, each with the capability to accommodate 60,000 smolts. One pond will be located high in the drainage basin (above Moyer Creek), and the other will be located low in the basin (possibly incorporated into the adult trapping facility). These ponds will be fed by water from the stream into which the fish will eventually be released, allowing the fish to become accustomed to the water in the release stream. A conceptual pond configuration is shown in Figure B-3. Preliminary calculations indicate an individual pond volume of approximately 5,300 cubic feet and a flow of approximately 670 gpm per pond. Natural rearing materials will be used in construction such as cobbles to line the bottom. An impervious liner may be required if the site soils do not adequately retain water.

The ponds will have a high length to width ratio to reduce the potential for stagnant areas with poor water quality within the pond. Horizontal wires will be provided to control predation. Each pond will include inlet and outlet channels with flow controls to manage water supplied from, and returned to, the stream. Inlet and outlet control structures will be constructed from timber, with removable stoplogs and braces (see Figure B-4).



ACCLIMATION POND
NO SCALE

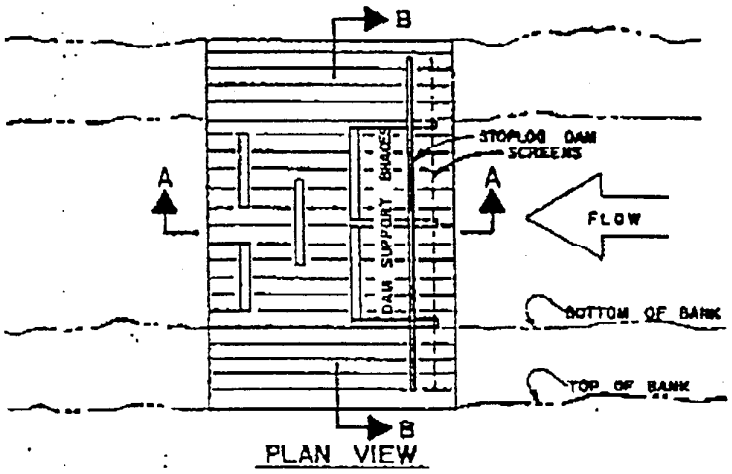


SECTION A-A
NO SCALE

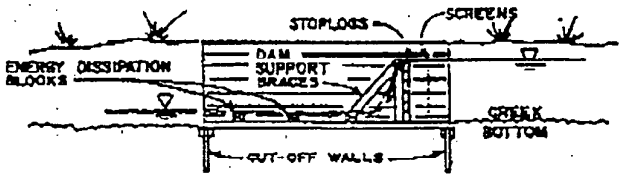
PANTHER CREEK
ACCLIMATION POND

FISHPRO

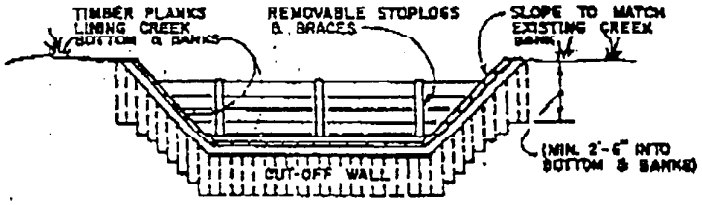
FIGURE B-3



PLAN VIEW



SECTION A-A



SECTION B-B

ACCLIMATION POND
CONTROL STRUCTURE

FISHPRO

FIGURE B-4

The pond level will be controlled by adding or removing stoplogs at the outlet structure. The flow of water into the pond will be controlled by adjusting valves in the inlet pipe lines. The quantity of flow will be estimated by measuring the depth of flow over the stoplogs at the outlet structure. Water may be allowed to flow freely through the pond when not in use by removing stoplogs at the inlet structure. Alternatively, water supply to the pond may be shut off completely when the pond is not in use. Drying the pond out during the summer will help control potential disease pathogens.

Objective and Scope-of-Work

Objective: Construct two ponds to acclimate the smolts to the water that they will return to as migrating adults.

The scope-of-work will consist of three tasks as described below.

Task 1. Site Assessment

This task consists of a field trip to assess site conditions and ascertain probable locations for the two ponds that are mutually agreeable to the Trustees and Settling Defendants. This will consist of one day for investigating potential pond sites.

Task 2. Conceptual Design

Working closely, the Settling Defendants and the Trustees will establish design parameters and define a mutually agreeable conceptual design and site locations . Deliverable items for this task include preliminary drawings and a formal documentation of the design criteria.

Task 3. Agency Meetings

It is anticipated that one meeting on site is required, and three additional meetings will involve the design process. Meetings will establish initial design criteria and provide a forum to comment on the design as the design progresses.

Task 4. Preliminary and Final Design

After review and Trustee approval of the conceptual design and site locations, the Settling Defendants will begin the preliminary and final design process. The final design documents will consist of bid ready drawings, and technical specifications, stamped and signed by a professional engineer, registered in the State of Idaho. One interim submittal will be provided for review and approval by the Settling Defendants and Trustees (preliminary design). One set

of final design documents will be provided for bid and construction purposes as ink on mylar drawings, and camera ready technical specifications.

Operation and Maintenance Summary

- Operation and maintenance will last for up to 30 years.
- The fish will be fed on the hatchery induced schedule upon placement into the ponds, and then intermittent and irregular feeding schedules will be implemented as much as possible in order to mimic natural conditions.
- Ongoing maintenance will consist of removing and replacing stoplogs, operating valves and removing accumulated debris and gravel as required during operation.
- The facility will require no maintenance after the acclimation season.
- Since transportation to the upstream acclimation pond will occur near the end of March and operation will extend into April, provisions will include access for at least a one ton truck during inclement weather (e.g. accumulations of snow).
- Since the acclimation ponds will likely be constructed and operated remotely from a power source, the water intake screens (located on Panther Creek) will be designed for easy debris removal.

II. SMOLT SURVIVAL PLAN

The Smolt Survival Plan has three elements: 1) channel re-alignment, 2) livestock exclusion from streamsides, and 3) off-channel rearing habitat.

ELEMENT 1 -- CHANNEL RE-ALIGNMENT

Element Description

The element involves reconstructing approximately 1.2 miles of the Panther Creek channel to approximate its natural sinuosity. The new channel should have approximately the same average width and depth as the old channel, with the thalweg following natural patterns (i.e., running along the outside third of stream bends).

Panther Creek is a sinuous point-bar type channel (Chang 1988) with alternating riffle pool sequences. The channel appears to be in a state of dynamic equilibrium geomorphologically, with active channel changes consistent with its stream power and sediment transport conditions. The sinuosity of the river is estimated to be 2.0 or less (channel length divided by valley length) based on a review of topographic maps for the creek. The valley slope is between 1.5 and 2 percent, the valley width ranges between 200 and 500 feet, and the bankfull channel width is estimated to range between 50 and 100 feet. Channel depths have not been estimated. The creek has a well developed point bar system, some braiding and relatively minor meander development due to the relatively steep channel and valley gradient. The bed and bank material has not been fully characterized but consists of sand/gravel and cobble. Information for the reaches, including the channelized sections, is based on topographic maps and detailed habitat mapping conducted in 1984 by Bechtel.

Objectives and Scope-of-Work

The goal of the restoration is to reconstruct a channel in the disturbed reaches that will approximate pre-disturbance channel conditions and reflect aquatic habitat similar to Panther Creek above and below the disturbed reaches. To accomplish the above goal, the following objectives will be met:

- Channel conditions will be similar to the pre-disturbance channel. They will be hydraulically and geomorphologically compatible with upstream and downstream reaches.

- Channel conditions to be restored include width, depth, sinuosity, meander pattern, riffle/pool and gravel bar characteristics.

- The channel will be capable of receiving and transporting sediment from upstream and will not aggrade or erode inconsistent with upstream and downstream reaches.

- The channel will be part of the natural channel dynamics of the creek.

- Channel banks and overbank areas will be capable of supporting riparian vegetation and will act as a floodplain for the creek similar to upstream and downstream areas.

Meeting the above objectives will be done by providing a compatible substrate and constructing an initial channel pattern that will allow the natural hydraulic and sediment transport characteristics of the creek to re-establish themselves in the disturbed sections. The

following engineering guidelines and tasks should be used to design and construct the channel sections.

- Review pre-disturbance aerial photographs of the reaches (if possible) to establish pre-disturbance channel characteristics (width, sinuosity, channel pattern, etc.), and identify old abandoned channel scars.

- Determine the upstream and downstream channel characteristics, and the channel bed and bank substrate materials in the field (to the extent necessary).

- Determine bed and bank substrate gradation (i.e. sand/gravel/cobble proportions) and use similar material as necessary for reconstruction.

- Based on field inspection of the channelized reaches, determine where reconstruction of channelized portions is required, and where existing conditions are currently compatible with the objectives of the design.

- Use bio-degradable bank stabilization materials (e.g. jute matting and native LWD) as temporary measures to allow for establishment of riparian vegetation, armored bed and banks and thalweg development without creating a long term obstruction to natural channel migration.

The reconstruction will require diversion of Panther Creek to allow for the removal and excavation of previously disturbed channel sections followed by placement of new bed and bank substrate and channel alignment. Where possible, old abandoned channels will be re-established.

The following describes the locations for the rechannelization:

Panther Creek - Sections 9, 10 (Reach 1) and 3 (Reach 2); T19N, R18E.

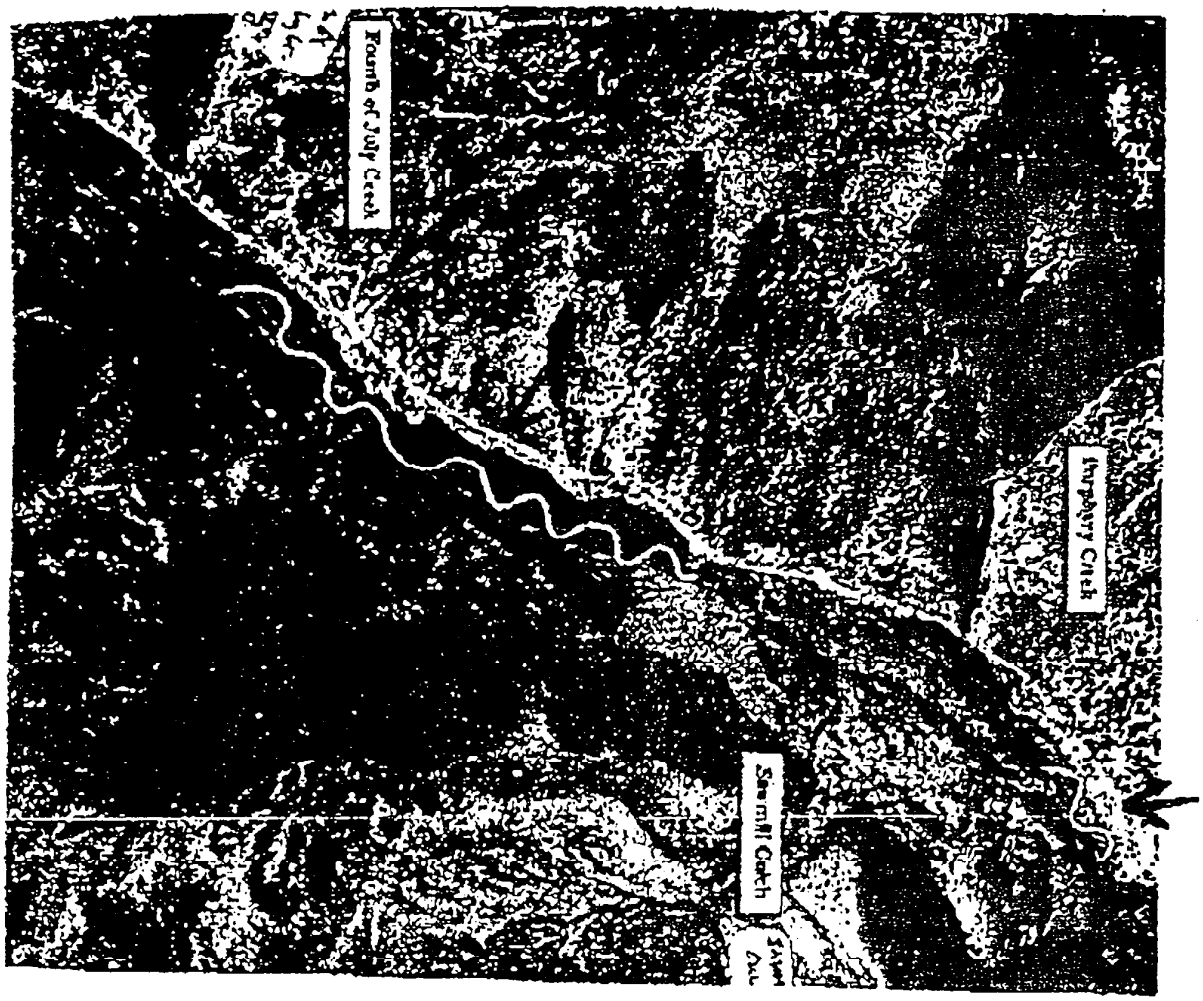
Reach 1

Reach 1 begins downstream of Fourth of July Creek and extends approximately 1 mile (almost to Sawmill Gulch) (Figures B-5 & B-6).

Reach 2

Reach 2 begins downstream of Porphyry Creek and extends approximately 0.2 mile (Figures B -5 & B-6).

FIGURE 3-5 AERIAL PHOTOGRAPH SHOWING THE TWO AREAS WHERE CHANNEL RE-ALIGNMENT WILL TAKE PLACE

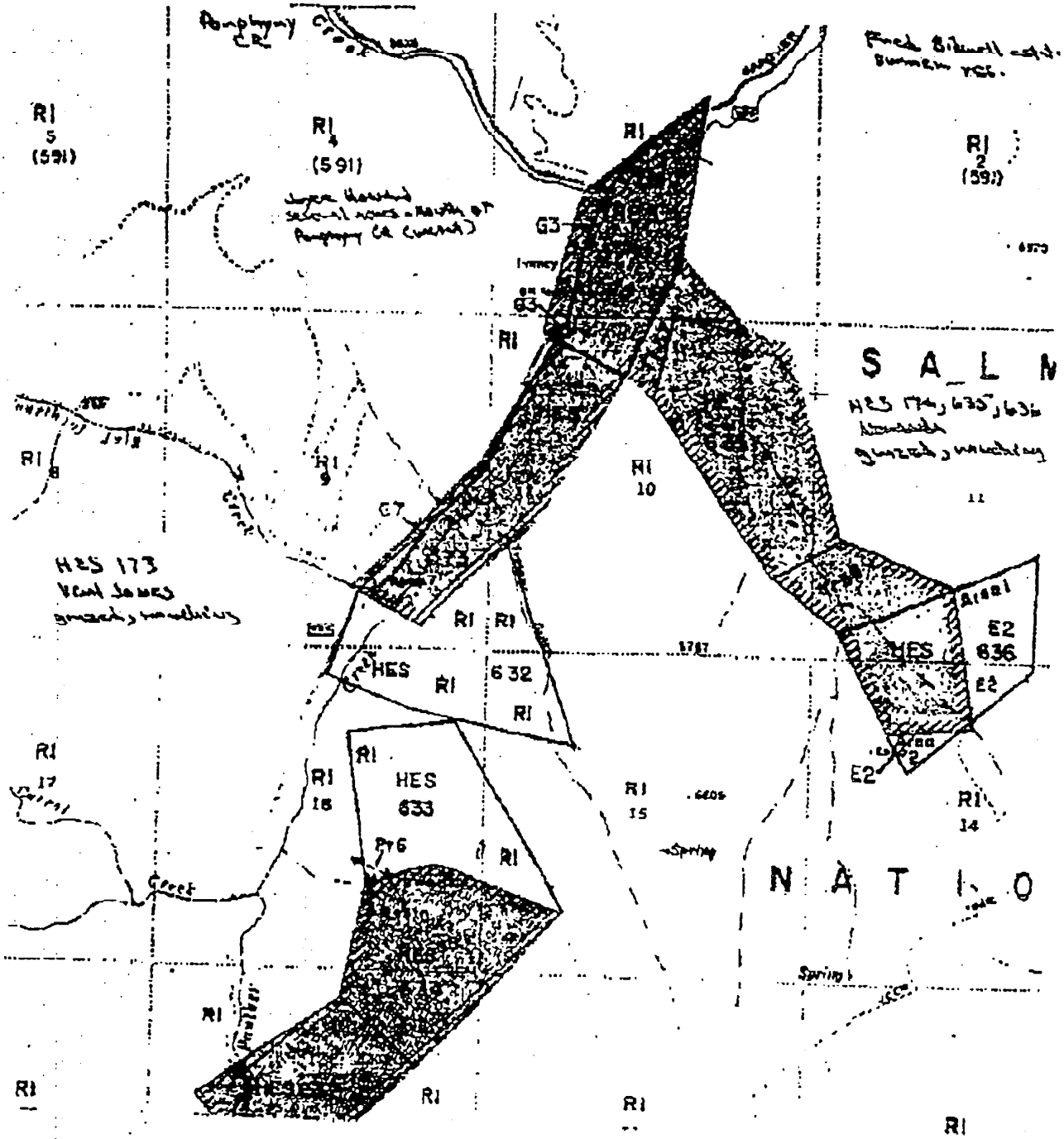


CUMBRANCE MAP

Lembi	Salmon
STATE	RANGER DIST
Idaho	Cobalt - I

n Diag 51 - 7-8-1966.

FIGURE B-6 PLAT SHOWING THE TWO AREAS WHERE CHANNEL RE-ALIGNMENT WILL TAKE PLACE



A temporary diversion will be placed on Panther Creek and a diversion channel excavated to bypass flows around the construction area. The diversion channel will be lined with sufficient gravel to minimize scour and sediment introduction into Panther Creek. Panther Creek water will be diverted into the diversion channel and the upstream and downstream ends of the section to be reconstructed will then be diked. All construction activities will be conducted in a manner to minimize turbidity and sediment introduction into Panther Creek.

There will be two stages of excavation in the new channel. The following describes expected channel reconstruction criteria. These data will require refinement and adjustment as part of the final design. The course of the channel will be excavated at a gross level, with a mean excavation depth approximately 4 feet below the flood plain elevation, bottom width about 50 feet, and 2H:1V side slopes. The second stage of excavation will be directed at developing a riffle/pool/channel-bend morphology. Pools will be located on the outside portion of each bend. Fill will be placed on the inside portion of each bend to provide raw material for point bar development. The outside portion of the bends will be excavated to approximately 1.5H:1V side slope; the inside to approximately a 3H:1V side slope. The channel sinuosity will be 1.5 following the centerline of the valley as a starting point between unexcavated reaches. Meander bends will be constructed at approximately 250 foot intervals, matching conditions upstream, downstream and in unexcavated sections.

Bank stabilization will entail a combination of jute matting, LWD placement, willow cuttings, and hydroseeding. Banks will be graded, seeded, and a hay cover placed prior to fabric placement. The matting on the outside bends will be keyed into the soil to a minimum depth of 18 inches at both the head and toe of the slope and staked. It will run down to the toe of the slope where it will be keyed into the soil and held down by a cobble/gravel mixture. This is expected to minimize erosion as the riparian vegetation becomes established. Rooted willow cuttings will be planted at appropriate intervals.

Waste material from the new channel will be used to fill the abandoned portions of the existing channelized reach. Remaining waste material will be spread in the project area in a manner that minimizes the potential for introduction of sediment into the stream. Upon completion of the new channel the diversion will be removed and the diversion ditch backfilled with its original material and seeded. All disturbed ground will be seeded with native grasses.

Operation and Maintenance Summary

- Annual monitoring and maintenance will be performed to assess the constructed channel for 10 years. Since the design will be based on site conditions, minimum maintenance is expected after the first 10 years of operation. Any

unexpected degradation in the habitat during the 100 year project (50 for the 50 year project) will be corrected.

- Monitoring, as part of the normal monitoring for the project, will assess whether the reconstructed channel is compatible with natural dynamics.

- Appropriate maintenance measures will be employed to ensure the constructed channel is protected and revegetation is adequate. Protection of the constructed channel will also include livestock exclusion for the life of the project (separate from the livestock exclusion element described below).

ELEMENT 2 -- LIVESTOCK EXCLUSION ON PRIVATE LANDS

Element Description

This measure is intended to exclude domestic livestock from the riparian corridor of selected reaches on private lands in cooperation with landowners. Livestock will be excluded from segments of streams containing chinook salmon habitat to re-establish a riparian vegetation community, maintain streambank structure, and develop and maintain channel form. Livestock will be excluded from 2 miles within the Panther Creek Basin and 5 miles outside the Panther Creek Basin at sites which are agreeable to both the Trustees and Settling Defendants. The miles outside of the Panther Creek basin would be increased to 8 miles if the 50 year option is chosen.

Definition of Area from which Livestock are to be Excluded

The riparian area which will be selected for exclusion management is site-dependent. The width and length of the potential exclusion zone is difficult to generalize; however, basic assumptions regarding these variables are presented. Recommendations for riparian width range from the edge of the 100-year floodplain to the extent of functioning woody species (willows). Recommendations for the length include the area where grazing has physically damaged the streambank and riparian area and a length that provides overall ecological benefit and prevents upstream and downstream incursions after closure of the damaged area.

In the spring of 1994, a multi-agency stream habitat review team evaluated streams in the Lemhi, Pahsimeroi and East Fork watersheds and judged that woody species generally occupied an area from 25-50 feet away from the streambank. For low gradient streams, an exclosure extending 50 feet from each streambank was suggested as a rule of thumb. This criteria is based on the perpendicular distance from the midpoint of the stream channel. However, in many instances it may be more efficient to include the meander width of the

channel with a minimum distance of 25 to 50 feet from the outer meander bend. This allows fencing to be placed in a straight line rather than following the channel meanders.

Although the width of the corridor will depend on site conditions, the Trustees have recommended that exclosures extend a minimum distance of 50 feet from the edge of the meander width. This will translate to 75 to 100 foot widths in most cases along the stream valley. If site-specific conditions indicate that the area in which woody vegetation will recover is narrower or wider, the distance may be adjusted. Adjustments to the enclosed areas will also consider active channel meandering and braiding characteristics so that channel shifting will remain within the excluded area.

Criteria for Site Selection

Basic criteria for site selection are: 1) private land; 2) the stream reach considered must contain chinook salmon spawning or rearing habitat; and 3) the ecological condition of the stream reach must be generally rated as containing poor or degraded conditions which can be improved by excluding livestock grazing. Stream habitats in the Lemhi, Pahsimeroi, and East Fork watersheds have been inventoried for the Model Watershed Fisheries Habitat Report. Private lands were included in this inventory and an analysis of this information should assist in selecting candidate areas for livestock exclusion. The following approach will serve as a starting point for developing a final agreed upon approach to selecting the reaches where cattle exclusion will be beneficial to the overall health of the aquatic habitat. The approach will be applied in a site specific manner so as to accommodate diverse geographic conditions.

One approach for selecting areas is based on ecological conditions. The reaches with highest priority for livestock exclusion would be those reaches that include sections rated "poor" with respect to ecological condition.

I. Ecological Condition

Ecological condition in a community reflects a combination of two components: 1) vegetation condition and 2) stream bank/channel condition. Ratings of poor, fair, and good ecological condition can be made using a combination of these two components.

A. Vegetation Condition

In Clary and Webster (1989), ecological status was defined as a measure of the degree of similarity between current vegetation and potential vegetation for a given riparian area. The comparison makes use of a "similarity index" which compares percentages of different species

in the current vegetation community to percentages of those species in a potential natural community (PNC) for that location. The resulting categories of similarity are:

1) 0-25% similar to PNC is termed "early seral;"
2) 26-50% similar to PNC is termed "mid seral;"
3) 51-75% similar to PNC is termed "late seral;"
4) 76-100% similar to PNC is termed "PNC."

B. Stream Bank/Channel Condition

Stream bank and channel features are also important aspects of stream and riparian function. The following key is used.

1) Stream Bank Sub-Rating

a. Meets or exceeds the expected bank stability (based on Riparian Capability Group, Figure B-7). (3 points).
b. Is below expected bank stability by 5% or less. (2 points).
c. Is below expected bank stability by more than 5%. (1 point).

NOTE: Where channel type information is lacking, the following stream bank sub-rating may be applied as an alternative.

a. Meets or exceeds PACFISH standards for bank stability and lower bank angle. (3 points)
b. Meets or exceeds PACFISH standards for bank stability or lower bank angle. (2 points)
c. Does not meet PACFISH standards for bank stability or lower bank angle. (1 point)

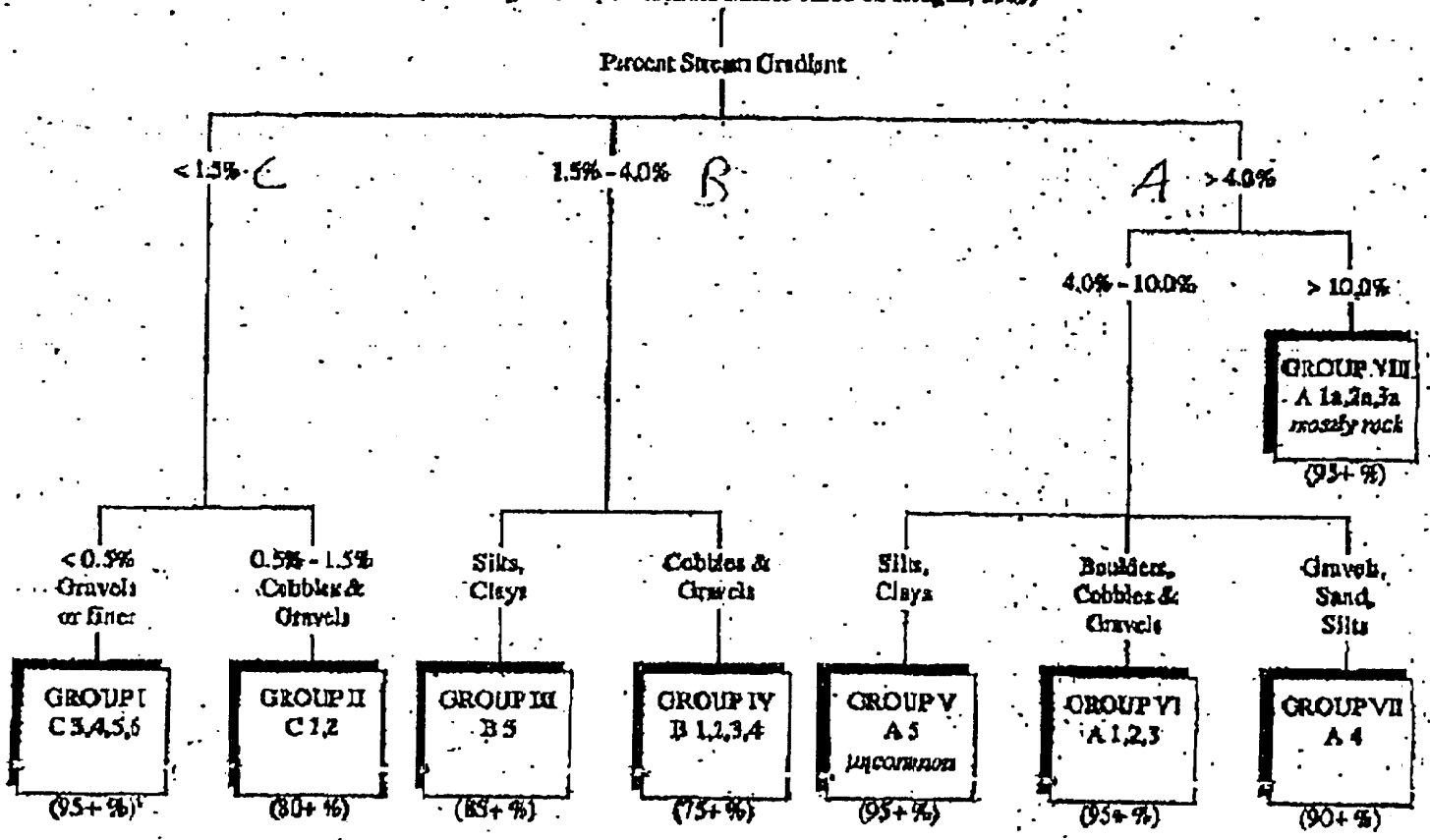
2) Stream Channel Sub-Rating:

a. Meets or exceeds PACFISH standards for temperature, pool frequency, and width/depth ratio (3 points)
b. Meets or exceeds PACFISH standards for temperature and pool frequency, or width/depth ratio. (2 points)
c. Does not meet PACFISH standards for temperature, pool frequency, or width/depth ratio. (1 point)

FIGURE B-7

KEY TO RIPARIAN CAPABILITY GROUPS (Winward, 1992)

(Percent gradient and substrate classes based on Rosgen, 1985)



[1]These values refer to percent of the streambank that should be stable when riparian areas fitting this capability group are in good health and functioning properly.

TOTAL P.002

For the stream channel sub-ratings, temperature is considered only where livestock grazing is likely to be a contributing factor to maximize stream temperatures.

3) **Summary Stream Bank/Channel Ratings:**

≥ 5 = Functional
4 = Partially Functional
≤ 3 = Non-functional

C. Ecological Condition Ratings

The combination of vegetation and stream bank/channel criteria defines good, fair, and poor ecological condition for the purpose of implementing range management alternatives. Table B-2 reflects how the two factors may be combined to arrive at ecological condition ratings.

Table B-2. Ecological condition ratings based on vegetation condition and streambank/channel condition.

ECOLOGICAL CONDITION

	Streambank/Channel Condition		
Vegetation Condition	Functional	Partially Functional	Non-functional
late seral	Good	Fair	Poor
mid-seral	Fair	Fair	Poor
early seral	Poor	Poor	Poor

D. Exclusion Reaches

Once a stream reach or segment has been determined to be an appropriate candidate for exclusion, the appropriate stream length containing this reach will be determined. The stream length may include fair or even good habitat; however, by extending the length of the exclusion zone, long term ecological benefit to the stream will be achieved. As noted above, priority will be given to stream reaches that consist of poor ecological condition segments. A priority will also be given to segments that would minimize, to the extent possible, collateral degradation by livestock to adjacent stream reaches. If poor ecological conditions are not found in a particular drainage (e.g. Panther Creek), alternative reaches will be considered.

By excluding cattle over longer reach lengths, greater benefit is likely achieved compared to many smaller exclusion lengths because it prevents adjacent reaches from being used by cattle over the long term, and allows continuity in riparian habitat to develop without interruption. A desired length of exclusion may be on the order of 0.25 miles to 1 mile or more; however, a minimum length should be developed and agreed upon in order to obtain maximum benefit for lowest cost. Reach selection should then be made by including those areas that contain the largest number of shorter segments that are rated in poor condition.

Operation and Maintenance Summary

- Maintenance will be performed for 100 years (50 years for the 50 year option).
- Maintenance will include regularly scheduled visual observation to confirm effective cattle exclusion and fence repair on a regular basis. A brief annual report would be provided to the Trustees concerning the maintenance operations.

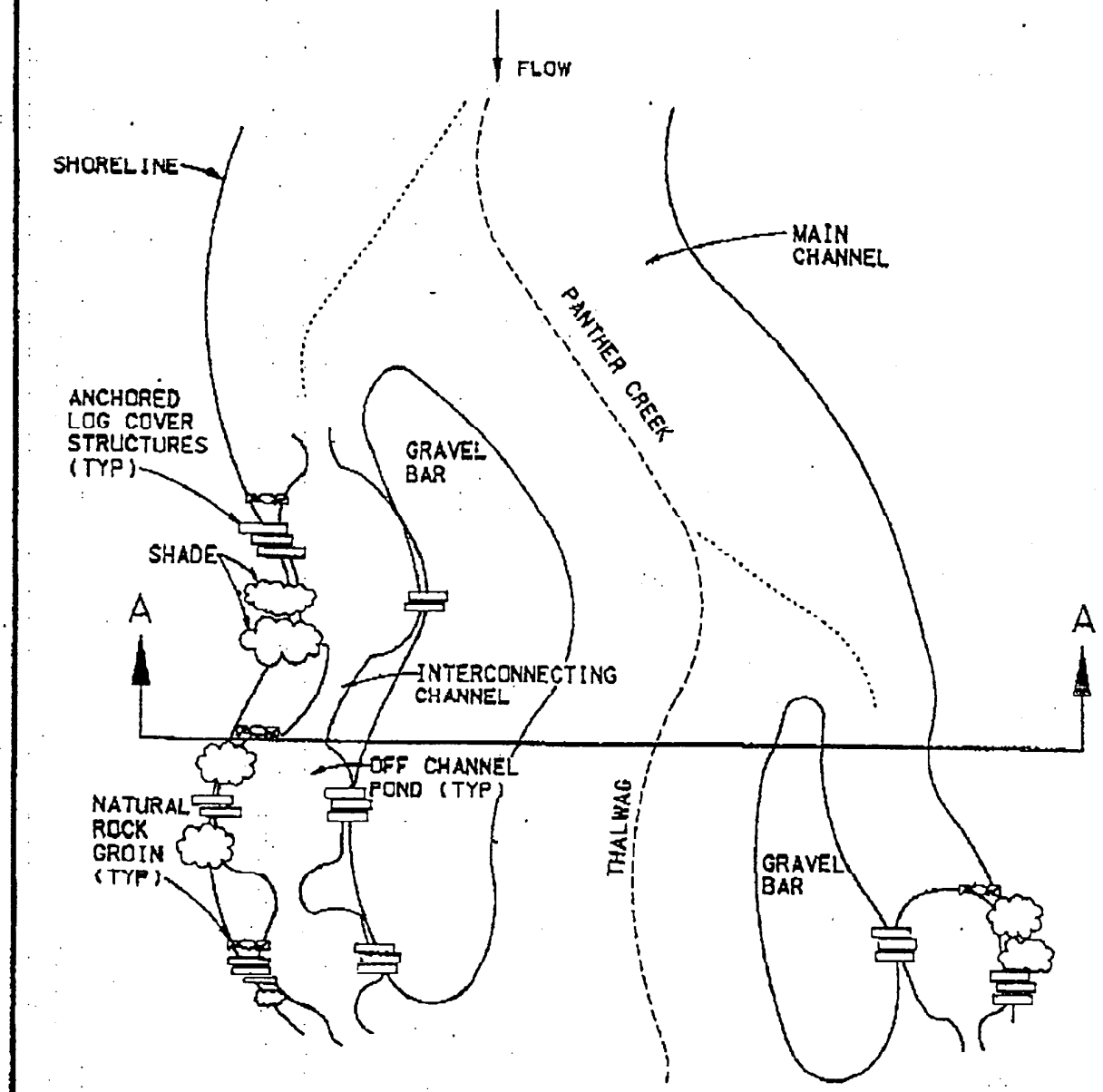
ELEMENT 3 -- OFF CHANNEL REARING PONDS

Element Description

This element includes the construction of ponds with a total surface area of approximately 1.0 acre that enhance the naturally occurring rearing habitat in the flood plain in a manner that mimics the setting in which they naturally occur. Variable depths are to be incorporated into the ponds to enhance over wintering protection. Side channels and appropriate naturally occurring braids may be developed into ponds that mimic the naturally occurring conditions. Shading and cover will be provided with natural material and plantings. Revegetation with proper brush and ground surface material will enhance the adjacent riparian habitat during fluctuating water surface elevations (see Figures B-8 and B-9).

Natural rock groins will be utilized to scour deeper areas within the ponds in a manner that reflects natural conditions and occurrences. The log type covering structure could also be configured to help maintain the described configurations.

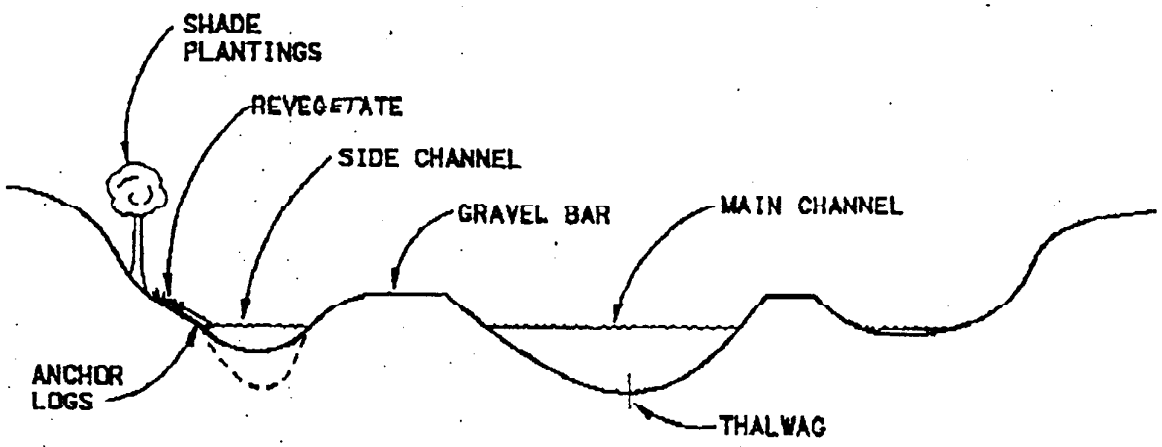
Bedload movement will be considered in the planning, along with debris movement and ice-out flow conditions. These considerations, along with peak floods, will require seasonal maintenance that will include resetting or relocating some of the control groins and shade structures.



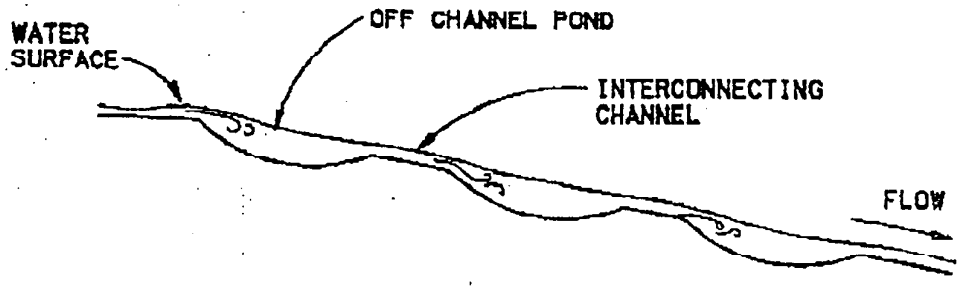
PANTHER CREEK
OFF CHANNEL PONDS

FISHPRO

FIGURE 3-8



OFF CHANNEL PONDS
TYPICAL SECTION A-A



OFF CHANNEL PONDS
TYPICAL PROFILE

FISHPRO

PANTHER CREEK
OFF CHANNEL PONDS

FIGURE B-9

Objective and Scope-of-Work

Objective:

- Construct ponds with a total surface area of approximately 1.0 acre that enhance the naturally occurring rearing habitat in the flood plain in a manner that mimics the setting in which they naturally occur. Variable depths are to be incorporated into the ponds to enhance over wintering protection.

The scope-of-work is described in the four tasks described below.

Task 1. Site Assessment

This task consists of a field trip to assess site conditions and ascertain possible locations for the rearing ponds that are mutually agreeable to the Trustees and Settling Defendants. This will consist of one day investigating potential sites. Hydrologic, hydraulic, channel morphology, plant and other habitat conditions particular to the chosen site will be studied to ascertain the design parameters. These site specific conditions will then be incorporated into habitat criteria and preferences for chinook salmon to design an appropriate rearing area.

Task 2. Conceptual Design

Working closely, the Settling Defendants and the Trustees will establish design parameters and define a mutually agreeable conceptual design and site location for off-channel rearing ponds. Deliverable items for this task include preliminary drawings and a formal documentation of design criteria.

Task 3. Agency Meetings

It is anticipated that one meeting on site is required, and three additional meetings will involve the design process. Meetings will establish initial design criteria and provide a forum to comment on the design as the design progresses.

Task 4. Preliminary and Final Design

After review and Trustee approval of the conceptual design and site location, the Settling Defendants will begin the preliminary and final design process. The final design documents will consist of bid ready drawings, and technical specifications, stamped and signed by a professional engineer, registered in the state of Idaho. One interim submittal will be provided for review and approval by the Settling Defendants and Trustees (preliminary design). One set

of final design documents will be provided as ink on mylar drawings, and camera ready technical specifications.

Operation and Maintenance Summary

- Maintenance will be performed for 100 years (50 years for the 50 year option).
- Annual monitoring and maintenance will be performed to assess the constructed rearing areas for 10 years. Since the design will be based on site conditions, minimum maintenance is expected after the first 10 years of operation. Any unexpected degradation in the habitat during the 100 year project (50 for the 50 year option) will be corrected.
- Monitoring, as part of the normal monitoring for the project, will assess whether the off-channel rearing areas are compatible with natural dynamics.
- Appropriate maintenance measures will be employed to ensure the constructed channel is protected and revegetation is adequate.

III. PLANNING AND MONITORING

ELEMENT 1 -- PERFORMANCE MONITORING PLAN

Introduction

This section describes the Performance Monitoring Plan for the Blackbird Mine Restoration Project. This plan includes water and sediment quality surveys, macroinvertebrate surveys and physical and biological observations. The intent of this plan is to provide information to determine if water quality will sustain the reintroduction and maintenance of salmonids through all life stages of both anadromous and resident species. Additional monitoring at a reduced level will be conducted after the release of chinook salmon to confirm continued suitability.

The Performance Monitoring plan is not intended to duplicate any monitoring conducted pursuant to other activities including monitoring that will be carried out during the remedial action process. If overlap or duplication occurs, portions of this plan can be eliminated after concurrence by the Trustees. Detailed information on the components of the Performance Monitoring Plan will be provided in a Sampling and Analysis Plan (SAP) and a Quality Assurance Project Plan (QAPP) under separate covers. The SAP and QAPP will be prepared in accordance with EPA protocol and submitted to the Trustees for review and approval at

least 90 days before beginning the first sampling effort under each of the four tasks. Settling Defendants will perform a regular review of the data and will submit any needed revisions to the SAP and QAPP to the Trustees for review and approval.

Objectives and Scope-of-Work

The following four tasks will serve as the basis for performance monitoring:

- Task 1: Water Quality Monitoring
- Task 2: Sediment Quality Monitoring
- Task 3: Macroinvertebrate Surveys
- Task 4: Physical and Biological Monitoring

The objective and work components for each task are described below.

TASK 1: WATER QUALITY MONITORING

Objective:

- Obtain data to confirm water quality after remediation and prior to re-introduction of salmonids. Water quality will continue to be monitored at a reduced level after reintroduction of salmonids to ensure continued suitability of the water quality.

Six sampling stations will be established for water quality monitoring and will include:

- Panther Creek upstream of Blackbird Creek
- Panther Creek downstream of the mouth of Blackbird Creek
- Panther Creek upstream of Big Deer Creek
- Panther Creek downstream of the mouth of Big Deer Creek
- Big Deer Creek upstream of South Fork of Big Deer Creek
- Big Deer Creek downstream of the mouth of South Fork of Big Deer Creek

The upstream or "background" and downstream stations that will be monitored during each sampling event are intended to provide a statistical basis for evaluating surface water quality upstream and downstream of influences from the Blackbird mine. The upstream stations will be used to characterize the naturally occurring concentrations of target constituents; the downstream stations, or points of compliance, will be used to characterize the influence of the Blackbird Mine Site on water quality after remediation.

The three points of compliance are: (1) Panther Creek downstream of the mouth of Blackbird Creek; (2) Panther Creek downstream of the mouth of Big Deer Creek; and (3) Big Deer Creek downstream of the mouth of South Fork of Big Deer. Each compliance point has a paired upstream station.

Sample Size Determination and Power Analysis

The sampling objectives are to: (1) Test for downstream increases in dissolved copper concentrations over a four-day sampling event -- representing an influence of the Blackbird Mine Site and (2) Determine whether the EPA chronic criterion for copper is exceeded by downstream dissolved copper concentrations over the four-day period.

The sampling program should allow these tests to be conducted using accepted statistical methods according to the following parameters: Type I Error level of 0.10 or better; and Type II Error level of 0.05 at an actual difference in dissolved copper concentrations of 2 ug/l.

A statistical power analysis will be performed prior to initiating the water quality monitoring program. The intent of the power analysis is to determine the number of samples required to meet the sampling and analysis objectives listed above. The power analysis will be based on water quality data from the paired upstream and downstream stations identified above that will be collected specifically for the purposes of performing a power analysis. In conducting the power analysis, consideration of statistical tests shall include, but not necessarily be limited to: tests using confidence limits about the mean; parametric tests such as t-tests for differences in two samples; and nonparametric tests including Wilcoxan and Quantile tests. The power analysis will consider the distribution of the data (normal versus other) and evaluate differences in variance between upstream and downstream stations. In addition, the power analysis will include an evaluation of the number of samples needed to adequately characterize the set of chronic criteria calculated from hardness data over a 4-day sampling event for the purpose of comparing the population of criteria to the set of dissolved copper measurements in the same samples. A Power Analysis Sampling Plan that specifies the statistical methods and sampling and analysis program will be submitted to the Trustees for review and approval at least 90 days prior to initiating the power analysis evaluation.

The number of upstream samples collected should be sufficient to accept or reject the null hypothesis with a previously determined and agreed upon likelihood of error. The null hypothesis for the water quality monitoring program assumes that the downstream concentrations do not exceed the upstream concentrations. In statistical hypothesis testing there are two types of error. Rejection of the null hypothesis when it is true is customarily called a Type I error. Failing to reject the null hypothesis when it is false is customarily called a Type II error. In customary notations, "α", denotes the probability that a Type I error will occur,

and "ß" denotes the probability that a Type II error will occur. Most statistical comparisons refer to "α" as the level of significance of the test. In the case where $\alpha = 0.10$, there is a 10% (i.e. 2 in 20) chance that the conclusion will be made that concentrations of contaminants are higher downstream than upstream when they actually are not.

Equally critical considerations in determining the number of samples to be collected for a given statistical procedure are ß and "power". The power of a statistical test has the value 1 - ß and is defined as the probability that a given statistical test will detect significant results. Power curves are a function of ß, sample size (i.e. the number of upstream and downstream samples) and the amount of variability in the data. Thus, if a maximum 5% likelihood of failing to detect a false null hypothesis is desired (i.e. ß = 0.05), the number of upstream samples can be calculated such that the power of the test is at least 0.95. Values of $\alpha = 0.10$ and ß = 0.05, for an actual concentration difference of +/- 2 ug/l, will be used as the basis for the power analysis.

The site-specific sampling program for the power analysis will include the collection of at least three water samples per day over four consecutive days at each of the paired designated upstream and downstream stations. The sampling schedules will be coordinated at respective points of compliance and upstream or background sampling sites for the collection of paired samples. The paired samples will approximate the same "parcel" of water as it moves downstream. The samples will be submitted for laboratory analysis of dissolved metals (cobalt, copper, calcium, and magnesium), dissolved carbon, dissolved sulfate and alkalinity. The detection limit for copper will be 1 ug/l using an appropriate analytical method.

Even if the power analysis indicates that less than twelve samples are required at each station, the collection of a minimum of three grab samples will still be required at randomly selected times on each of the four consecutive days for a total of twelve samples per station. A minimum number of three samples per day is necessary to calculate daily mean concentrations for evaluating compliance with the acute ambient water quality criteria for dissolved copper concentrations as described below.

If the power analysis indicates that a large number of samples is required per station that would require difficult logistics and substantially increase costs without additional added benefits, alternative(s) for selecting the sample size will be provided to the Trustees for review and approval.

A Sample Size and Power Analysis Report will be prepared and submitted to the Trustees within 45 days of the sampling event and will summarize the site-specific data collected and the results of the power analysis, present alternatives and recommend statistical tests for determining sample size, if necessary. The report will discuss how statistical applications will

address reported concentrations below the detection limit. Before development of the SAP for the water quality monitoring program, Trustee approval of the sample size and the recommendations in the report must be obtained.

Water Quality Monitoring Program

A SAP will be prepared and provided to the Trustees for review, comment, and concurrence prior to initiating the water quality monitoring program. The SAP will include, but not be limited to, identification of monitoring stations, sample size, sampling frequency, and statistical methods, underlying assumptions, and plans for testing if underlying assumptions are not met.

Surface water field measurements and grab samples will be collected four times annually from the six stations. Each sampling event will be conducted over a consecutive four-day period. The Trustees will consider flow conditions in establishing the schedule for sampling. Flow conditions will be determined based on the hydrograph for Panther Creek. Three sampling events will be conducted during high flow and one sampling event will be conducted during a low flow period. The specific schedule for the four sampling events per year will be determined by the Trustees with appropriate notice to Settling Defendants.

Four stream gauging stations will be established for the hydrograph for Panther Creek and for correlating stream flow with the chemical data. The gauging stations will include:

- Panther Creek upstream of Blackbird Creek
- Panther Creek downstream of Blackbird Creek
- Panther Creek downstream of Big Deer Creek
- Mouth of Panther Creek (reestablish USGS gauging station)

Panther Creek will be gauged during each sampling event at all the gauging locations.

The requisite number of samples for the water quality monitoring program will be determined as described above, but, in any case, a minimum of three grab samples will be collected at each station on each of four consecutive days. The sampling schedules will be coordinated at respective points of compliance and upstream or background sampling sites for the collection of paired samples. The paired samples will approximate the same "parcel" of water as it moves downstream. The samples will be submitted for laboratory analysis of dissolved metals (cobalt, copper, calcium, and magnesium), dissolved carbon, dissolved sulfate and alkalinity. The detection limit for copper will be 1 ug/l using an appropriate analytical method. This sampling and analysis regime will be used to evaluate both acute and chronic dissolved copper concentrations.

The chronic dissolved copper concentrations at upstream and downstream stations will be determined using samples collected over four consecutive days. The acute dissolved copper concentrations at upstream and downstream stations will be determined using samples collected on a daily basis.

Water Quality Data Evaluation

Evaluation of the water quality data will be performed for each sampling event using the statistical methods specified in the SAP to assess compliance with the chronic and acute water quality criteria. Statistical analysis will be performed on both upstream and downstream stations. In cases where the measured hardness is less than 25 mg/l expressed as $CaCO_3$, a hardness of 25 will be used to calculate the copper water quality criterion. Upon request by the Settling Defendants, the Trustees and Settling Defendants may establish a site-specific water quality standard for dissolved copper by developing and applying a water effects ratio for Panther Creek and laboratory waters to the foregoing Ambient Water Quality criteria for dissolved copper.

Testing for Chronic Water Quality Exceedance

Statistical analysis will be performed on the upstream and downstream data collected from each paired station as described in the SAP. The evaluation of compliance will be conducted using the following two step decision process to compare the data for each paired station.

1. Where:

   Downstream Concentration < or = Upstream Concentration

   then, further comparison of the downstream data to the Chronic Water Quality Criteria is not required.

2. Where:

   Downstream Concentration > Upstream Concentration

   then, the downstream concentration will be compared to the chronic water quality criteria for dissolved copper. The chronic water quality criteria for dissolved copper will be calculated using the following equation (40 CFR Part 131.36(b)(2)):

   Copper (ug/l) = WER exp{0.8545[ln(hardness)]-1.465}

where: Water Effects Ratio (WER) = 1.0; hardness = mg/l of $CaCO_3$

The chronic water quality criterion for copper will be determined for each sample taken at a point of compliance using the hardness calculated from calcium and magnesium concentrations (or 25 mg/l, whichever is greater) for that sample. The set of sampling results for chronic copper criteria calculated over the four-day sampling period will then be compared to the measured copper concentrations using an appropriate statistical test.

(i) Where:

Downstream Concentration < or = Chronic Water Quality Criteria

then, the downstream copper concentration will not be considered an exceedance.

(ii) Where:

Downstream Concentration > Chronic Water Quality Criteria

then, the downstream copper concentration will be considered an exceedance. This initial exceedance will not by itself constitute a violation of the water quality provisions of Subparagraph 5(c) of the Consent Decree. In the event that the monitoring program detects an exceedance at a point of compliance, if the results of each of the 4 regularly scheduled subsequent sampling events indicate that the water meets the water quality standards at that point of compliance, the initial exceedance shall not constitute a violation of the water quality provisions of Subparagraph 5(c) of the Consent Decree. If, however, the results of any of the 4 regularly scheduled subsequent sampling events indicate that the water quality does not meet the water quality standards at that point of compliance, the initial exceedance shall constitute a violation of the water quality provisions of Subparagraph 5(c) of the Consent Decree.

Testing for Acute Water Quality Exceedance

The evaluation of compliance will be conducted using the following two step decision process to compare the data for each paired station.

1. Where:

   Daily Numeric Mean Downstream Concentration < or = Daily Numeric Mean Upstream Concentration

   then, further comparison of the downstream data to the Acute Water Quality Criteria is not required.

2. Where:

   Daily Numeric Mean Downstream Concentration > Daily Numeric Mean Upstream Concentration

   then, the downstream concentration will be compared to the acute water quality criterion for dissolved copper. The acute water quality criterion for dissolved copper will be calculated using the following equation (40 CFR Part 131.36(b)(2)):

   Copper (ug/l) = WER exp{0.9422[ln(hardness)]-1.464}

   where: Water Effects Ratio (WER) = 1.0; hardness = mg/l of $CaCO_3$. The following conditions shall constitute an exceedance of the acute criterion: the arithmetic mean of dissolved copper concentrations for samples taken in any 24-hour period at a point of compliance exceeds by a factor of 2 or more the arithmetic mean of acute criteria calculated using the concurrent sample-specific hardness measurements for that point of compliance or 25 mg/l $CaCO_3$, whichever is greater. Direct numerical comparison of the arithmetic mean dissolved copper concentration with two times the arithmetic mean of the acute criteria for the same point of compliance will be used to determine which value is greater.

An exceedance of the acute criterion, as defined above, shall constitute a violation of the water quality provisions of Subparagraph 5(c) of the Consent Decree unless a determination can be made that the exceedance is not biologically significant or was caused by background copper concentrations, laboratory performance, or some other factor unrelated to the Blackbird Mine Site.

If an exceedance occurs, Settling Defendants shall include in the sampling report to the Trustees (within 45 days after the sampling date) an explanation as to whether the exceedance is caused by Blackbird Mine sources or other factors. The Trustees will accept or reject the Settling Defendants' determination based on the rationale and supporting data included in the report, and any other pertinent information. The Trustees' determination is subject to the dispute resolution procedures of the Consent Decree. If the exceedance constitutes a violation

of the acute criterion, the Settling Defendants shall proceed with reporting requirements for a violation as described above, but shall not be required to conduct any work to prevent future exceedances until any pending dispute resolution is resolved.

Quality Assurance

The QAPP will include a discussion of data quality objectives and how they influence the statistical testing. The detection limit for dissolved copper shall be 1 ug/l or less. The same laboratory shall analyze both upstream and downstream samples. Samples shall be numbered so that the laboratory cannot discern whether a sample is from an upstream site or point of compliance (downstream) site and so that samples are distributed among analyses without prejudice as to the site of collection. Laboratory data shall be reviewed and qualified by an independent and qualified expert.

Upon request, the Settling Defendants shall provide split or duplicate samples to the Trustees. Settling Defendants agree to fund up to one field audit and one laboratory audit per year, if requested by the Trustees.

Reporting

Within 45 days after each sampling event, a report will be provided to the Trustees on the results of the monitoring. These reports will contain a summary of all primary data including any data qualifiers assigned, distribution of data, power analysis assumptions, calculated hardness levels and water quality criteria, full descriptions of statistical tests, and conclusions.

If, for any sampling event, the Data Quality Objectives presented in the QAPP are not met, the Settling Defendants shall provide to the Trustees within 45 days of the sampling event an explanation for the failure and a description of actions that will be taken to prevent future data quality problems.

In the event that a water quality exceedance occurs, a second report will be submitted to the Trustees which describes the exceedance, explains probable causes, and provides a schedule for development of additional proposals to prevent future exceedances. The second report will be submitted to the Trustees within 75 days of the sampling event.

After three consecutive years of suitable water quality has been confirmed during the intensive sampling schedule discussed above, a reduced sampling frequency (two sampling events per year) will be performed for the rest of the project duration. Monitoring parameters may be reduced overtime based on concurrence by the Trustees.

TASK 2: SEDIMENT QUALITY MONITORING

Objective:

- Obtain data to determine whether contaminated sediments associated with the Blackbird Mine site have been stabilized and ensure that sediment-related impacts are addressed prior to reintroduction of chinook salmon.

Suspended sediment samples (spring) and depositional area samples (fall) will be collected in Panther Creek and Big Deer Creek to monitor the recovery of each stream and potential inputs of contaminated sediments from Blackbird and Bucktail drainages. Suspended sediment sampling stations will be established close to the water quality sampling points. Two suspended sediment sampling events will occur at different flow periods (at the beginning of the high flow period and at the end of the high flow period). Depositional area stations will be established in representative areas close to the areas sampled during high flow. One sampling event for deposit sampling will occur at low flow. A total of three samples will be taken at random spots at each sampling point in order to obtain a statistically valid picture of suspended and depositional sediment quality.

Physical and chemical (arsenic, cobalt, copper, and nickel) analysis of suspended and depositional samples will be performed. Sediment toxicity testing of deposit samples will be performed using site water to assess the potential for contaminant release.

A report will be issued to the Trustees within 45 days of receipt of the results of each sampling event summarizing the results of analyses, along with explanations of statistical analyses and conclusions.

TASK 3: MACROINVERTEBRATE SURVEYS

Objective:

- Obtain data to assist in monitoring the rate of overall system recovery and provide biological confirmation that toxic conditions in Panther Creek have been eliminated.

Benthic macroinvertebrate and periphyton samples will be collected at representative habitats in Panther Creek and Big Deer Creek to assist in characterizing the nature and magnitude of populations and to assess contamination. Sampling will be conducted once during the low flow period. Sampling locations will be selected that represent Panther Creek upstream and downstream of Blackbird Creek; upstream and downstream of Big Deer Creek; Panther Creek

near its mouth; Big Deer Creek upstream and downstream of South Fork of Big Deer Creek; and Big Deer Creek near its mouth.

Five replicate benthic macroinvertebrate samples will be collected at each station for population analysis (taxonomic identification, enumeration, and biomass measurement). Three replicate benthic macroinvertebrate and three replicate periphyton samples will be collected at each station for metals bioaccumulation analysis (arsenic, cobalt, and copper). Macroinvertebrate and periphyton will be analyzed for metals according to the U.S. Environmental Protection Agency's (EPA) or other approved methods appropriate for the measurement.

A summary report will be provided to the Trustees summarizing the results of the macroinvertebrate surveys after each survey is completed.

TASK 4. PHYSICAL AND BIOLOGICAL MONITORING

Objective:

- Obtain data for evaluation of the effectiveness of habitat improvements in Panther Creek. Obtain data to evaluate juvenile and returning adult salmonids.

Monitoring sections in Panther Creek and selected tributaries will be established, ensuring that segments where habitat modifications have occurred are included. Parr density and parr standing stock evaluations will be conducted. Carcass surveys will be conducted after completion of chinook salmon spawning.

During the initial survey, detailed measurements of physical habitat variables will be made of all monitoring sections. These variables will include % pool; run; riffle; pocket water and backwater; % substrate surface sand, gravel, rubble, boulder, and bedrock; section length, flow, average width and depth; gradient; channel type, bank condition, riparian cover, etc.. In following years, intensive physical measurement each year will be focused only on modified habitat areas and any upstream or downstream sections that may be influenced by the modifications. Less intensive measurements of physical variables will be conducted in other sections. A detailed survey of all sections will be done at least every 5 years to assess overall habitat conditions and changes. Snorkel surveys of sections will be conducted to identify and enumerate steelhead and chinook parr and resident fishes.

A report will be prepared documenting the results of the monitoring and provided to the Trustees for review.

TIMING AND DURATION

The water quality and sediment monitoring program described above will commence in approximately 2002 and continue yearly through 2010. Monitoring at a reduced level of effort (sampling at all six stations at high and low flow only) will be continued yearly thereafter for the remainder of the life of the project (30 years project life).

The macroinvertebrate monitoring program described will commence in 2002 and continue yearly through 2006. After 2006, macroinvertebrate monitoring will be conducted every three years for the remainder of the life of the project (30 year project life).

Physical habitat and biological monitoring will commence in 2002 and continue yearly for the remainder of the life of the project (30 year project life).

ELEMENT 2 -- ENVIRONMENTAL COMPLIANCE

Introduction

The environmental compliance element includes obtaining permits necessary to comply with all applicable laws pertaining to actions undertaken pursuant to the Biological Restoration and Compensation Plan. This will be done with cooperation from the Trustees.

Objectives and Scope-of-Work

The first task will be to determine the type and scope of the NEPA documentation that may be required. Formal scoping with the public and the involved agencies to develop the issues of concern may be needed. If so, an interdisciplinary team would be assembled to guide the technical studies and alternatives development for the NEPA document.

Following the scoping process, the purpose and need and proposed actions would be developed. A technical study of all of the alternatives would be conducted and an impact assessment completed. Mitigation planning would occur simultaneously with the impact assessment to determine how to reduce or eliminate significant impacts.

The Preliminary Environmental Assessment (EA) would then be completed for review by the involved agencies and the interdisciplinary team. Comments would be incorporated into the document. An EA draft would be subject to an informal review by the appropriate agencies. An EA would then be produced for review. A decision notice would be issued following the mandated review period. If the EA concluded that an Environmental Impact Statement (EIS) was necessary, the EIS would be prepared consistent with NEPA requirements.

In addition to NEPA compliance, permits for enhancement/propagation of endangered species may be needed. The exact number and types of permits are not known at this time. Appropriate applications for such permits will be timely submitted. Cooperation of Trustees in obtaining any necessary permits is expected and required.

REFERENCES

Clary, W.P. and B.F. Webster. 1989. Managing Grazing of Riparian Areas in the Intermountain Region. USDA Forest Service, Intermountain Research Station, General Technical Report INT-263.

Chang, Howard, 1988. Fluvial Processes in River Engineering, John Wiley and Sons, New York.

Bechtel 1986. Habitat Rehabilitation - Panther Creek, Idaho. Final Report. BPA contract no. DE-AC79-84BP1749; Project No. 84-29.

Conover, W.J. 1980. Practical Nonparametric Statistics. Second Edition.

EPA 1989. Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A), Interim Final, EPA/540/1-89/002.

EPA 1992. Methods for Evaluating The Attainment of Cleanup Standards, Volume 2: Ground Water, EPA 230-R-92-014, July.

APPENDIX C
PLAN FOR SEDIMENT REMOVAL AND BANK STABILIZATION

Appendix C

Plan For Sediment Removal and Bank Stabilization

1. The following plan sets forth a process to determine what, if any, sediment removal and bank stabilization is necessary in addition to Response Actions related to the Site. The objective of this plan is to address any contaminated sediments remaining after completion of Response Actions in the channel and overbank and to stabilize and revegetate those areas where sediment is removed in order that all life stages of salmonids can be sustained.

2. After implementation of the ROD, but by no later than March 1, 1999, Settling Defendants shall submit a draft sampling and analysis plan to the Trustees to evaluate the potential effects of sediments based on the following four factors: (1) effect of excessive sedimentation on salmonid spawning and rearing habitat; (2) water quality; (3) effect of toxicity on benthic invertebrates; and (4) stable channel morphology. This plan shall comply with the provisions of Section XII of the Consent Decree (Quality Assurance, Sampling, and Data Analysis).

3. Within three weeks of receiving the draft sampling and analysis plan, the Trustees shall provide Settling Defendants with a unified set of comments on the draft sampling and analysis plan.

4. Within three weeks of receiving the Trustees' comments, Settling Defendants shall submit a final plan which incorporates and responds to the Trustees' comments. Any unresolved disputes regarding comments or responses thereto shall be subject to the dispute resolution procedures of Section XXI of the Consent Decree.

5. Following approval of the final plan by the Trustees, Settling Defendants shall implement the sampling and analysis plan by no later than the fall field season of 1999.

6. Based on the information obtained from implementation of the sampling and analysis plan, Settling Defendants shall submit a report by March 1 of the year following

implementation of the sampling and analysis plan to the Trustees describing the effects of sediments based on the four factors set forth in Paragraph 1 of this Appendix. Among the four factors, primary consideration shall be given to water quality.

7. Within one month of receiving this report, and based on the information contained in the report and all other available information, the Trustees will determine what, if any, sediment removal and bank stabilization is necessary to meet the objective set forth in Paragraph 1 of this Appendix.

8. Subject to the dispute resolution procedures of Section XXI of the Consent Decree, and by no later than December 1, 2000, Settling Defendants shall perform what, if any, sediment removal and bank stabilization is necessary to meet the objective set forth in Paragraph 1 of this Appendix.