

SECTION 19

ALLUVIAL VALLEY FLOORS

TABLE OF CONTENTS

SECTION	SECTION TITLE	PAGE NUMBER
SECTION 19	ALLUVIAL VALLEY FLOORS	1
19.1	Alluvial Valley Floor Determination.....	1
19.2	Alluvial Valley Floor Statutory Exclusion Determination	2
19.3	Essential Hydrologic Functions of Alluvial Valley Floors.....	2
19.4	Alluvial Valley Floor Information Collection and Analysis.....	2
	References	3

SECTION 19

ALLUVIAL VALLEY FLOORS

LIST OF APPENDICES

APPENDIX	
NUMBER	APPENDIX TITLE
19.A	Identification of Alluvial Valley Floors in Strippable Coal Areas of New Mexico, Love et al., October 1981
19.B	OSM Pinabete and Cottonwood Arroyo Alluvial Valley Floor Determination Letter Dated June 1992
19.C	OSM Brimhall and No Name Arroyo Alluvial Valley Floor Determination Letter Dated July 2008

SECTION 19

ALLUVIAL VALLEY FLOORS

LIST OF REVISIONS DURING PERMIT TERM

REV.		DATE
NUMBER	REVISION DESCRIPTION	APPROVED

SECTION 19 ALLUVIAL VALLEY FLOORS

19.1 Alluvial Valley Floor Determination

The major stream channels within and adjacent to the Navajo Transitional Energy Company's (NTEC) mining lease were examined as part of a study by the New Mexico Bureau of Mines and Mineral Resources entitled "Identification of Alluvial Valley Floors in Strippable Coal Areas of New Mexico" (Love et al. 1981) (Appendix 19.A). The goal of this study was to distinguish "possible alluvial valley floors" from "lands clearly not alluvial valley floors" using guidelines released by the Office of Surface Mining Reclamation and Enforcement (OSM) prior to the study. The river systems within and adjacent to the NTEC mining lease considered in the 1981 study include San Juan and Chaco river systems. The No Name permit area is located within the Navajo Coal Field Area of the Chaco River system, as described in Appendix 19.A. Specifically, the Navajo Coal Field Area includes the following U.S. Geologic Survey (USGS) 1:24,000 series quadrangles: The Hogback South, Kirtland Southwest, Newcomb Northeast, and The Pillar Northwest, corresponding to the permit area as described in Section 2 (Operation and Permit Description). The drainages analyzed within the NTEC mining lease area by the 1981 study include: Chaco River, Pinabete Arroyo, Cottonwood Wash, Brimhall Wash, Chinde Wash, and No Name Arroyo. The report concludes that although valley areas along the main stem of Chaco River meet the geologic criteria for an alluvial valley floor (AVF), there was inadequate water at that time to support agricultural activities. The report further concluded that watersheds within the Chaco River system, including those within the permit area were ephemeral and not able to provide adequate water for agricultural activities during the growing season. In addition, there was no evidence of successful current or historical flood irrigation practices in the area. Therefore, based on Love et al. (1981), the only "potential alluvial valley floors" on or adjacent to the permit area occurs along the San Juan River. The permit area is approximately 31.5 miles south of the San Juan River. The shortest watercourse from the permit area to the San Juan River, along the Pinabete Arroyo and Chaco River to its confluence with the San Juan River, is approximately 41.3 miles.

The potential for an AVF along the Chaco Wash tributaries, Cottonwood Wash, Pinabete Arroyo, and No Name Arroyo was examined by NTEC. They reviewed the available geologic, hydrologic, land use, soils, and vegetation data and analyses. NTEC determined that these watersheds do not contain alluvial valley floors and sought a negative alluvial valley floor determination from OSM in April 1992. The negative determination for Pinabete Arroyo and Cottonwood Arroyo was approved by OSM in June 1992. OSM's negative determination approval letter is included as Appendix 19.B.

In addition to the Cottonwood Arroyo and Pinabete Arroyo, Navajo Mine has sought to determine if there are other streams within or adjacent to its mining lease with the potential for AVF. In April 2008 in conjunction with a previously proposed project, Navajo Mine reviewed geologic, hydrologic, land use, soils, and vegetation resources of Area 4 South and Area 5 and submitted a request for an alluvial valley floor determination to OSM for the No Name Arroyo and Brimhall Wash. NTEC also sought a reconfirmation of

OSM's 1992 determination for the Pinabete Arroyo. OSM provided its determination that the Pinabete Arroyo, No Name Arroyo, and Brimhall Wash are not alluvial valley floors in its July 2008 determination (Appendix 19.C).

Results of the Love et.al. (1981) study, together with previous AVF determinations within the NTEC mining lease area by OSM, and the multidisciplinary investigations associated with the No Name SMCRA permit application package were utilized to determine the presence or absence of AVFs within and adjacent to the permit area. Both geomorphic/geologic and water availability criteria form the basis for an AVF determination. Terrace and floodplain landforms on unconsolidated stream-laid deposits can be found along portions of the Chaco River, Pinabete Arroyo, and Cottonwood Arroyo. Alluvial well drilling along Pinabete Arroyo, Cottonwood Arroyo, and No Name Arroyo, confirmed the occurrence of unconsolidated stream-laid deposits in association with these landform features adjacent to the permit area. However, the capability to flood irrigate within the Chaco River, Pinabete Arroyo, Cottonwood Arroyo, or No Name Arroyo, valley areas is precluded by the nature of stream flows, which occur infrequently, and as flash-flow events. In addition, there is no evidence of successful current flood irrigation from these ephemeral streams within the permit area. Finally, there was a negative finding for Prime Farmland within the permit area (Section 14, Soils, Appendix 14.C). Therefore, NTEC concludes there are no AVFs within the permit area. OSM has agreed with this negative determination, as stated in Appendix 19.B and Appendix 19.C.

19.2 Alluvial Valley Floor Statutory Exclusion Determination

There are no AVFs present within or adjacent to the permit area. Therefore, this section is not applicable to the permit area. The 1992 and 2008 negative AVF determinations are discussed above in Section 19.1 and are provided in Appendix 19.B and Appendix 19.C, respectively.

19.3 Essential Hydrologic Functions of Alluvial Valley Floors

A determination has been made that there are no AVFs or waters supplying an AVF within the permit area. Therefore, this section is not applicable to the permit area. The 1992 and 2008 negative AVF determinations are discussed above in Section 19.1 and are provided in Appendix 19.B and Appendix 19.C, respectively.

19.4 Alluvial Valley Floor Information Collection and Analysis

Information used to complete this section came from current and historical baseline studies conducted within and adjacent to the permit area. Surface water, groundwater, and soils information, as well as Prime Farmland determinations were provided to OSM for their review and consideration as part of the request for negative determination.

References

Love, D.W., J.W. Hawley, and T.C. Hobbs. 1981. Identification of Alluvial Valley Floors in Strippable Coal Areas of New Mexico. Prepared for Mining and Minerals Division, Energy and Minerals Department, Santa Fe, New Mexico.

Appendix 19.B

OSM Pinabete and Cottonwood Arroyo Alluvial Valley Floor
Determination Letter Dated June 1992



United States Department of the Interior

OFFICE OF SURFACE MINING
Reclamation and Enforcement

Brooks Towers
1020 15th Street
Denver, Colorado 80202

June 3, 1992

TAKE
PRIDE IN
AMERICA



Mr. David Porterfield
BHP-Utah International
Navajo Mine
P.O. Box 155
Fruitland, New Mexico 87416

Dear Mr. Porterfield:

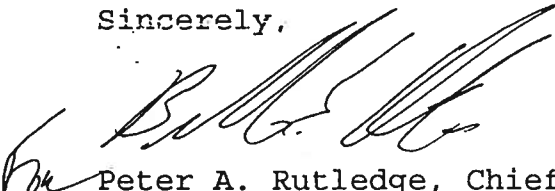
The Office of Surface Mining Reclamation and Enforcement, (OSM), has completed its review of BHP-Utah International Inc.'s, (BHP), April 14, 1992 submittal of a request for a minor revision and negative determination for an Alluvial Valley Floor concerning the Cottonwood Arroyo and Pinabete Wash for permit NM-0003B. This letter serves to notify you that your request has been granted as minor revision NM-0003-B-I-07.

BHP's submittal supporting a negative determination for an Alluvial Valley Floor concerning the Cottonwood Arroyo and Penabete Wash has been determined to be satisfactory.

By copy of this letter OSM requests other Federal and tribal agencies to insert pages, exhibits, etc., previously received concerning the above approved minor revision into the approved PAP.

If you have any questions or concerns, please contact Carl R. Johnston at (303) 844-5910.

Sincerely,


Peter A. Rutledge, Chief
Federal Programs Division

cc: Director, AFO
Navajo Nation - Zaman
BLM - Farmington District Office
BIA - Navajo Area Director
USF&WS, NM - Field Supervisor

Appendix 19.C

OSM Brimhall and No Name Arroyo Alluvial Valley Floor
Determination Letter Dated July 2008



United States Department of the Interior

OFFICE OF SURFACE MINING
Reclamation and Enforcement
P.O. Box 46667
Denver, Colorado 80201-6667

NM-0038

IN REPLY REFER TO:

July 17, 2008

Ms. Daphne Place
Navajo Mine Extension Project
BHP Billiton
300 W. Arrington, Suite 200
Farmington, New Mexico 87401

Certified Mail
Return Receipt Requested

RE: Request for Determination for Alluvial Valley Floor and Prime Farmland
OSM Project No. NM-0038-A-O-01

Dear Ms. Place:

The Office of Surface Mining Reclamation and Enforcement (OSM) has received BHP Billiton's (BHP's) submittal dated April 8, 2008 (OSM ID No. 08/07/11-06) requesting a determination for Alluvial Valley Floor (AVF) and Prime Farmland for the proposed Navajo Mine Extension Project (NMEP) permit area. In accordance with the regulations at 30 CFR 785.19(a) permit applicants who propose to conduct surface coal mining and reclamation operations within a valley holding a stream or in a location where the permit area or adjacent area includes any stream, in arid and semiarid regions of the United States, may request the regulatory authority to make an alluvial valley floor determination. Three ephemeral stream channels exist within or adjacent to the NMEP – Brimhall Wash, Pinabete Arroyo and No Name Arroyo. In 1992 OSM made a determination that Pinabete Arroyo was not an AVF. BHP's April 8, 2008 submittal requesting a determination for Brimhall Wash and No Name Arroyo has been reviewed and we have determined that Brimhall Wash and No Name Arroyo are not AVFs.

If you have any questions please call Brenda Steele at 303-293-5046.

Sincerely,

Richard A. Holbrook, Chief
Program Support Division

Enclosure

cc: OSM, Albuquerque Field Office
Navajo Minerals Department
BLM Farmington Resource Area
BIA Navajo Regional Office

