Exhibit List

Staff Exhibit 1 Affida	vit of Matthew Blevins (June 23, 2005)
Attachment A	Professional Qualifications of Matthew Blevins
Attachment B	Timeline of NRC Compliance with NHPA Section 106
Attachment C	Missing Attachment A to Intervenors' Exhibit K (Map of Project Area)
Attachment D	Missing Attachment B to Intervenors' Exhibit K (Notification of Section 106 Review)
Attachment E	Missing Attachment C to Intervenors' Exhibit K (Map of 5 year Project Area - Church Rock)
Attachment F	Missing Attachment D to Intervenors' Exhibit K (Map of 5 year Project Area - Unit 1)
Attachment G	Missing Attachment E to Intervenors' Exhibit K (Crownpoint CRMP)
Attachment H	Missing Attachment F to Intervenors' Exhibit K (Unit 1 CRMP)
Attachment I	Missing Attachment G to Intervenors' Exhibit K (Marshall Report - 1988)
Attachment J	Missing Attachment H to Intervenors' Exhibit K (Bibliography)
Attachment K	Excerpts of MNM Report (1997)
Attachment L	Letters from NRC Staff pertaining to MNM Report (June 18-19, 1997)
Attachment M	Concurrence Letter from NM SHPO to NRC Staff (November 20, 1997)
Attachment N	Church Rock Section 17 Consultation Letter from NRC Staff to NNHPD (May 20, 1998)
Attachment O	Letters from NRC Staff to Interested Tribes (May 20, 1998)
Attachment P	Concurrence Letter from NM SHPO to NRC Staff (June 3, 1998) for Church Rock Section 8 and Crownpoint Section 12
Attachment Q	Concurrence Letter from NNHPD to NRC Staff (June 24, 1998) for Church Rock Section 17

Exhibit List

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Attachment R Attachment S		Letter to HRI regarding conclusion of consultation for Church Rock Sections 8 and 17, and Crownpoint Section 12 (July 10, 1998)
		Consultation Letter from NRC Staff to NM SHPO (May 13, 1999) for Crownpoint Section 24
Attachme	nt T	Letter from NNHPD to NRC Staff asserting jurisdiction over Crownpoint Section 24 (June 7, 1999)
Attachment U Attachment V Attachment W		Concurrence of NM SHPO (June 17, 1999) for Crownpoint Section 24; see signed stamp on page 2 of letter.
		NRC Staff Response to NNHPD regarding jurisdiction over Crownpoint Section 24 (June 25, 1999)
		Letter to HRI regarding conclusion of consultation for Crownpoint Section 24 (July 8, 1999)
Staff Exhibit 2		Agreement between Navajo Nation and the U.S. Dept. of Interior ding NHPA responsibility over tribal lands.
Staff_Exhibit 3	Affida	vit of Robert Carlson (February 20, 1998)
Staff Exhibit 4 Affiday		vit of Susan Schexnayder (February 19, 1998)

UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

BEFORE THE PRESIDING OFFICER

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In the Matter of

HYDRO RESOURCES, INC. P.O. Box 777 Crownpoint, New Mexico 87313 Docket No. 040-08968-ML

AFFIDAVIT OF MATTHEW D. BLEVINS

I, Matthew D. Blevins, being duly sworn, declare as follows:

1. I am a Senior Project Manager in the Environmental Review Section in the Office of Nuclear Materials Safety and Safequards. I am familiar with the environmental and cultural resource issues pertaining to Hydro Resources, Inc. (HRI's) Crownpoint Uranium Project (CUP), under which HRI plans to conduct in situ leach (ISL) mining. I am competent to make this affidavit, and the factual statements herein are true and correct to the best of my knowledge, information, and belief. The opinions expressed herein are based on my best professional judgement. My affidavit will serve to present my views on the affidavit of Dr. Thomas King (King Affidavit), submitted on behalf of intervenors Grace Sam, Marilyn Morris, Eastern Navajo Diné Against Uranium Mining, and Southwest Research and Information Center (collectively, "Intervenors"), as part of their written presentation on cultural resource issues dated April 28, 2005. Additionally, I have reviewed "[HRI's] Response in Opposition to Intervenors' Written Presentation Regarding Historic and Cultural Resource Preservation" (HRI Response), and the year 2005 affidavits of Drs. Eric Blinman, Lorraine Heartfield and Leslie Wildensen attached as exhibits to the HRI Response. I am in general agreement with the statements, opinions, and conclusions set forth in these HRI affidavits.

2. In addition to the King Affidavit, and the above-referenced HRI affidavits, among the items I have reviewed in preparing this affidavit are the following:

A. 36 C.F.R. 800 - "Protection of Historic and Cultural Properties," (51 FR 31118, September 2, 1986); 36 C.F.R. 800 - "Protection of Historic Properties," (64 FR 27044, May 18, 1999); and 36 C.F.R. 800 - "Protection of Historic Properties," (69 FR 40544, July 6, 2004).

B. "Final Environmental Impact Statement to Construct and Operate the Crownpoint Uranium Solution Mining Project, Crownpoint, New Mexico," NUREG-1508, dated February 1997 (FEIS).

C. "Cultural Resources Inventory of Proposed Uranium Solution Extraction and Monitoring Facilities at the Church Rock Site and of Proposed Surface Irrigation Facilities North of the Crownpoint Site, McKinley County, New Mexico, published by the Museum of New Mexico, Office of Archaeological Studies" (MNM Report).

D. All the letters and reports listed in the time line set forth in Attachment B to this affidavit.

E. Prior Presiding Officer and Commission decisions in this proceeding relating to cultural resource issues.

Professional Qualifications

3. I am an employee of the U. S. Nuclear Regulatory Commission (NRC) in the Office of Nuclear Material Safety and Safeguards, Division of Waste Management and Environmental Protection, Environmental and Performance Assessment Directorate, Environmental Review Section. I have been employed by the NRC since 2000 in positions of increasing responsibility as an environmental review Project Manager and Senior Project Manager. In these positions I have written National Environmental Policy Act (NEPA) guidance for NRC environmental reviews and I have performed various environmental reviews for NRC licensing activities, all of which have included National Historic Preservation Act (NHPA) Section 106 reviews. I have taken various NHPA-related training courses including "Integrating Cultural Resources in NEPA Compliance"; and "American Indians and Cultural Resource Management: The Law and Practice Regarding Federal Lands." My resume, attached hereto as Attachment A, accurately describes my general background, training, and other qualifications to express the opinions stated herein.

Professional Opinion and Analysis

4. Below, and in the following paragraphs, I address some of the opinions stated in the King Affidavit. Dr. King provided testimony on issues related to the NRC's compliance with NHPA Section 106 and its implementing regulations (King Affidavit, ¶¶ 9-51) and the NRC's compliance with NEPA (King Affidavit, ¶¶ 52-59). It is my professional opinion that the NRC staff has fully complied with NHPA Section 106 consultation requirements, and further, that the Staff's FEIS and cultural resource analysis contained therein meets the requirements of both NEPA and the NRC's regulations implementing NEPA at 10 C.F.R. Part 51.

Compliance with NHPA's Requirements

5. Dr. King repeatedly expresses concern that the NRC staff has not complied with NHPA's requirements, and he particularly criticizes the staff for not consulting with affected Indian tribes (King Affidavit, ¶ 12, 17, 19); for not fully studying the project area (King Affidavit, ¶ 32); and for incomplete surveys (King Affidavit, ¶ 33). I have constructed a detailed time line (see Attachment B) which provides a complete overview of the staff's NHPA Section 106 consultation process. My Attachment B includes the important dates of various cultural resource surveys and information exchanges between the NRC staff, HRI, the New Mexico State Historic Preservation Officer (NM SHPO), the Navajo Nation Historic Preservation Department (NNHPD), and the various Indian Tribes which were identified as interested parties early in the consultation process. Below, I highlight important aspects of the NRC staff's NHPA consultation process.

6. In a letter dated October 2, 1996 (Exhibit K of the Intervenors' written presentation dated April 28, 2005), the NRC staff initiated formal consultation under the Section 106 procedures then in place. This initiation letter was sent to the NM SHPO. As reflected in FEIS Appendix C, copies of the letter were sent to the NNHPD, the Navajo Nation's Crownpoint Chapter and Church Rock Chapter, the Pueblo of Laguna, the All Pueblo Indian Council, the

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Pueblo of Acoma, the Hopi Cultural Preservation Office and the Pueblo of Zuni Heritage and Historic Preservation Office (collectively, the "Interested Tribes"), among others. In its initiation letter, the NRC staff clearly indicated that the Section 106 consultation would occur incrementally (at the preference of the NM SHPO). Additionally, the following attachments to the initiation letter provided detailed information about all lands potentially affected by HRI's CUP (hereafter referred to as the "undertaking"):

A. Attachment A (a copy of which is marked as Attachment C hereto) is a regional map showing the Church Rock, Unit 1, and Crownpoint ISL mining sites.

B. Attachment B (a copy of which is marked as Attachment D hereto) is a project information sheet that (1) identifies, by size and location, the areas that would be affected by the undertaking; and (2) describes the NRC's proposed action, including the alternatives under consideration.

C. Attachment C (a copy of which is marked as Attachment E hereto) depicts the initial five-year ISL mining area at the Church Rock site, and also shows the areas surveyed there for cultural resources.

D. Attachment D (a copy of which is marked as Attachment F hereto) similarly depicts the initial five year ISL mining areas at the Unit 1 and Crownpoint sites, and also shows the areas surveyed there for cultural resources.

E. Attachment E (a complete copy of which is marked as Attachment G hereto) is "A Cultural Resources-Environmental Assessment and Management Plan for the Proposed Hydro Resources, Inc. Crownpoint Lease in the Eastern Navajo District, New Mexico," dated September 15, 1992, prepared by Cibola Research Consultants for HRI. This report (excerpts of which make up Exhibit E of the Intervenors' written presentation dated April 28, 2005) served as the preliminary cultural resource evaluation and management plan for HRI's Crownpoint site. This report describes a policy of total avoidance (Attachment G, at 1). All "protection zones" in

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HRI's Crownpoint lease area would be avoided (Attachment G, at 8). The report analyzed potential indirect impacts of the undertaking there, and concluded that the undertaking should have no indirect impacts. (Attachment G, at 9). Also, the report discussed traditional cultural properties (TCPs), and why most of any potential TCPs would be "of probable Navajo affinity," because the Navajo are the only tribe exhibiting a current use of land in this area. (Attachment G, at 10). The report acknowledged the remote possibility of Pueblo Anasazi sites in HRI's lease area. (Attachment G, at 10). The report presents detailed information about cultural resources located in the Crownpoint lease area, including details of previously documented sites (Attachment G, at 15). The report presents an overview of the Kin Ya'a complex – an ancestral Chacoan Anasazi community - and describes the historical occupation of the region by the Navajo and their traditional and sacred sites (Attachment G, at 19-20). The report also describes the contemporary Navajo presence in the Crownpoint area (Attachment G, at 22). Based on the implementation of a cultural resource management plan establishing protection zones around all cultural resources, together with the flexible nature of ISL mining, the report concludes that impacts to cultural resources in the Crownpoint lease area would be negligible (Attachment G, at 27).

F. Attachment F (a complete copy of which is marked as Attachment H hereto) is "A Cultural Resources-Environmental Assessment and Management Plan for the Proposed Hydro Resources, Inc. Unit No. 1 Lease in the Crownpoint Area of the Eastern Navajo District, New Mexico," dated December 15, 1991, prepared by Cibola Research Consultants for HRI. This report (excerpts of which make up Exhibit G of the Intervenors' written presentation dated April 28, 2005) served as the preliminary cultural resource evaluation and management plan for HRI's Unit 1 site. This report also describes a policy of total avoidance (Attachment H, at 1). The report analyzed potential indirect impacts of the undertaking there, and concluded that the undertaking should have no indirect impacts. (Attachment H, at 7). The report discussed

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TCPs, and why most of any potential TCPs would be of probable Navajo affinity. (Attachment H, at 10-11). The report presents detailed information about the cultural resources located in the Unit 1 lease area, including details of previously documented sites (Attachment H, at 14-15). The report presents an overview of the Muddy Water complex (Attachment H, at 15, 17, and 19-20), and further describes the historical occupation of the region by the Navajo and their traditional and sacred sites (Attachment H, at 22-23). Similar to the findings for the Crownpoint lease area, the report concludes that impacts to cultural resources in the Unit 1 lease area would be negligible. (Attachment H, at 28).

G. Attachment G (a copy of which is marked as Attachment I hereto) is "The URI Archaeological Protection Program for the Church Rock Mine-Survey and Preservation of the Archaeological Antiquities," dated July 1988, prepared by Dan Hurley and Michael Marshall for HRI. This report documented the initial results of an archaeological program designed to protect cultural resources at the Church Rock lease area. This protection program systematically located and documented cultural resources, and placed protective fencing around the resources (Attachment I, at 1). A summary of the cultural resources is presented (Attachment I, at 1-2), followed by detailed descriptions (Attachment I, at 3-17).

H. Attachment H (a copy of which is marked as Attachment J hereto) is a bibliography of the several cultural and archeological surveys performed in the project area from 1976 to 1992.

7. Dr. King vaguely asserts that the area of potential effects for the undertaking has not been adequately identified. King Affidavit, ¶¶ 14 and 31. I disagree. As seen from the above description, the staff's initial NHPA consultation letter provided detailed information on all lands potentially affected by the undertaking. In Attachments C-F hereto, the staff identified HRI's undertaking – for NHPA consultation purposes – as covering (a) portions of Sections 8 and 17 at the Church Rock site; (b) portions of Sections 29, 19, 24, 25 and all of

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Section 12 at the Crownpoint site; and (c) portions of Sections 15, 16, 21, 22 and 23 at the Unit 1 site. In my opinion, the NRC staff adequately identified the sections of lands that would be potentially affected by HRI's undertaking.

8. The NNHPD responded to the staff's initial consultation letter on October 31, 1996 (a copy of the NNHPD's response letter is contained in FEIS Appendix C). The NNHPD agreed that incremental review of the undertaking for NHPA purposes was appropriate. NNHPD's response, at 1.

In April 1997 HRI forwarded to the staff a report prepared by the Museum of New 9. Mexico's Office of Archaeological Studies, and titled "Cultural Resources Inventory of Proposed Uranium Solution Extraction and Monitoring Facilities at the Church Rock Site and of Proposed Surface Irrigation Facilities North of the Crownpoint Site, McKinley County, New Mexico" (MNM Report) (excerpts of which are referenced below and grouped together as Attachment K to this affidavit). Four local areas sacred to the Navajo are described, but these areas are not within the land parcels which could be affected by the undertaking. Attachment K, at 13-14. While all groups would be expected to be concerned with the treatment of resources that reflect past uses, the MNM Report notes that only Navajos have demonstrated current traditional uses of lands in the vicinity of the undertaking. Attachment K, at 17. Details of the TCP investigation are set forth in Attachment K, at pages 17-22. The MNM Report also provided a summary of the TCP research results for Church Rock Sections 8 and 17 in Table 56 (Attachment K, at pages 122-23), while a summary of the TCP research results for Crownpoint Section 12 is provided in Table 75. Attachment K, at 154. The MNM Report was forwarded to the NM SHPO, the NNHPD, the Pueblo of Zuni Heritage and Historic Preservation Office, and the Hopi Cultural Preservation Office by letters dated June 19, 1997. Additionally, by letters dated June 18, 1997, the Pueblo of Laguna, the Pueblo of Acoma, and the All Pueblo Indian Council were offered copies of the MNM Report to review. Copies of these seven June 18-19, 1997

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letters are grouped together and marked as Attachment L to this affidavit.

10. The NM SHPO concurred on the MNM Report's findings by letter dated November 20, 1997 (a copy of which is attached hereto as Attachment M to this affidavit). The Intervenors and Dr. King have not identified any specific deficiency in the MNM Report. In my opinion, the MNM Report adequately and authoritatively documents the findings on Church Rock Sections 8 and 17, and on the Crownpoint Section 12 irrigation site, and fully satisfies all NHPA requirements for those sites.

11. On May 20, 1998, the staff sent a NHPA consultation letter to the NM SHPO (a copy of which is attached as Exhibit I to the Intervenors' written presentation dated April 28, 2005), with respect to Church Rock Section 8 and Crownpoint Section 12. Based on the MNM Report, the Staff found that the archaeological sites on Sections 8 and 12 qualified as historic properties, and that no TCPs had been identified on Sections 8 and 12. *See* Intervenors' Exhibit I, at 1. Based in part on HRI's agreement to fence off the archaeological sites on Sections 8 and 12, the Staff determined that any HRI undertakings there would have no effect on the archaeological sites, and sought the NM SHPO's concurrence pursuant to 36 C.F.R. § 800.5(b) (which was then in force). *See* Intervenors' Exhibit I, at 2-3. In this same letter, with respect to TCPs, the Staff further stated that its finding of no effect was based on the following:

As discussed in the [MNM] Report, adequate consultation with local traditional practitioners has occurred and no traditional cultural properties have been identified in or near Sections 8, 17, and 12.

Intervenors' Exhibit I, at 2 (bullet 4).

12. Also on May 20, 1998, the Staff sent a separate NHPA consultation letter to the NNHPD with respect to Church Rock Section 17. *See* Attachment N to this affidavit. Based on the MNM Report the Staff found that no historic properties are present on Section 17, and pursuant to 36 C.F.R. § 800.4 (d) (which was then in force) the Staff considered that NHPA's

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Section 106 process was concluded with respect to Section 17, and sought the NNHPD's approval of HRI's undertaking there. Attachment N, at 1.

13. By further letters dated May 20, 1998 (copies of which are grouped together as Attachment O to this affidavit), the staff forwarded copies of the above-described SHPO and NNHPD consultation letters to the Interested Tribes. The staff sought comment from the Interested Tribes on (a) the no-effect findings on Sections 8 and 12; (b) the finding that no historic properties are present on Section 17; and (c) the finding that no TCPs were present on Sections 8, 12 and 17. There is no record that the Interested Tribes, in response to the Attachment O letters, submitted any comments on the staff's proposed findings.

14. In response to the May 20 NHPA consultation letter (Exhibit I to the Intervenors' written presentation), the NM SHPO, by letter dated June 3, 1998 (a copy of which is attached as Attachment P to this affidavit), concurred with the staff's no-effect findings on Sections 8 and 12. Attachment P, at 2. Similarly, in response to its NHPA consultation letter (Attachment N to this affidavit), the NNHPD, by letter dated June 24, 1998 (a copy of which is attached as Attachment Q to this affidavit), provided its conditional concurrence with respect to Church Rock Section 17. Attachment Q, at 1.

15. In a letter dated May 13, 1999 (a copy of which is attached as Attachment S to this affidavit), the Staff sent another NHPA consultation letter to the NM SHPO (on which the NNHPD and others were copied) with respect to Crownpoint Section 24. The staff's 1999 consultation letter included a copy of an April 29, 1998 letter and two Figures which Dr. Eric Blinman (an HRI cultural resource contractor and the primary author of the 1997 MNM Report) had sent to HRI. As depicted in Dr. Blinman's Figure 2 (included as part of Attachment S), there are three fenced archaeological sites on Crownpoint Section 24. These sites are located outside the immediate area of HRI's Crownpoint processing facility. As indicated in Dr. Blinman's Figure 1, the processing facility is located within the southeast quarter of Crownpoint

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Section 24. Based on Dr. Blinman's report, the staff found that HRI's use of its processing facility to dry and package yellowcake would have no effect on the three fenced archaeological sites, and the staff sought the NM SHPO's concurrence pursuant to 36 C.F.R. § 800.5(b) (which was then in force). Attachment S (Staff's May 13, 1999 letter), at 1-2.

16. On June 17, 1999, the NM SHPO concurred with the staff's above finding of no effect. *See* Attachment U to this affidavit, at 2 (containing the NM SHPO's concurrence stamp on a copy of the Staff's May 13, 1999 consultation letter).

17. It is my opinion that the NRC staff made reasonable efforts to elicit input from the Interested Tribes. In addition to its letters sent to the Interested Tribes, the NRC staff knew of HRI's previous attempts to contact the Interested Tribes and obtain TCP information. For example, HRI sent requests to the Interested Tribes in letters dated February 22, 1996 (Exhibit L to the Intervenors' written presentation). The NRC staff was also aware of the attempts of HRI's cultural resource contractor (Dr. Lorraine Heartfield) to contact the Interested Tribes. *See* Exhibit N to the Intervenors' written presentation. Additionally, an NRC cultural resource contractor, Ms. Susan Schexnayder, made attempts to elicit TCP information from the Interested Tribes. In October 1995, Ms. Schexnayder met with tribal officials from the NNHPD, the Navajo Nation's Crownpoint, Church Rock, and Pinedale Chapters, the Pueblo of Acoma, the Pueblo of Hopi, and the Pueblo of Zuni. *See* Ms. Schexnayder's previously-filed February 19, 1998 affidavit (a copy of which is now being submitted as Staff Exhibit 4), at ¶ 9.C.

18. Dr. King repeatedly references the amended NHPA regulations, claiming that the staff has not complied with them. *See e.g.*, King Affidavit at ¶¶ 36-51. But the relevant NHPA regulations here are those which were in place prior to June 1999, and it is my opinion that the NRC staff fully complied with these regulations. The 1999 revised NHPA regulations were published one year after the staff made its NHPA findings for Church Rock Sections 8 and 17 and Crownpoint Section 12. The 1999 revised NHPA regulations also did not become effective

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until after the NRC staff made its findings of no effect on the three fenced archaeological sites located on Crownpoint Section 24. Attachment S (Staff's May 13, 1999 letter), at 1-2.

19. Dr. King asserts that the revised NHPA regulations require coordination with NEPA (King Affidavit, ¶ 9). I note that these revised regulations only "encourage" coordination with NEPA. *See* 36 C.F.R. § 800.8. Additionally, in 1996 when the NRC staff began its NHPA consultation process, the 1986 NHPA regulations did not reference coordination with NEPA.

20. Dr. King states that the Section 106 process has not been completed for the entire project (King Affidavit, ¶ 15) and that the entire project area has not been fully studied (King Affidavit, ¶ 32). I agree with these points, but the NRC staff has never indicated that the NHPA consultation process for the entire undertaking is complete. Moreover, HRI license condition 9.12 states that before "engaging in any construction activity not previously assessed" by the NRC staff in its NHPA Section 106 consultation process, HRI "shall conduct a cultural resource inventory." License condition 9.12 further states that all "disturbances associated with the proposed development" must be completed in compliance with NHPA and its implementing regulations. The NHPA consultation process remains to be completed (in a phased approach) for the Unit 1 and Crownpoint sites on which ISL mining may later occur, and in my opinion license condition 9.12 adequately ensures that full compliance with NHPA will occur.

21. Dr. King acknowledges that "an effort has been made" to identify TCPs, but claims there is "little evidence" that the Acoma, Hopi, Laguna, or Zuni were consulted about TCPs (King Affidavit, ¶ 17). See also King Affidavit, at ¶¶ 28, 40 and 46. I disagree with these claims of Dr. King's. As discussed above in ¶¶ 9, 13 and 17, the hearing record reflects several efforts to elicit TCP information from the Interested Tribes. In my view, Dr. King's opinions about the TCP consultation effort reflect his review of an incomplete record. See King Affidavit, at ¶¶ 7.a-i.

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22. Dr. King's incomplete review is further reflected in his statement that he found "no evidence" that the staff had made any findings on whether HRI's undertaking would have adverse effects on historic properties. King Affidavit, at ¶ 21. Dr. King has obviously not reviewed the staff's May 1998 and May 1999 letters which made findings of no effect with respect to the archaeological sites on Church Rock Section 8, and Sections 12 and 24 at Crownpoint.

23. While Dr. King states that he has reviewed the MNM Report (King Affidavit, at ¶ 7.c), he says nothing thereafter about this report's contents. In my opinion, the MNM Report provides an adequate and complete cultural resource survey for Church Rock Sections 8 and 17, and Crownpoint Section 12. Additionally, there are many earlier surveys (listed in Attachment B hereto) which Dr. King does not reference. It is my opinion that the NRC staff had adequate knowledge to make informed decisions on the NHPA Section 106 consultations thus far completed. It is my further opinion and that the staff appropriately applied the criteria of effect, and properly documented its findings, in accordance with the 1986 NHPA regulations (*i.e.*, 36 C.F.R. §§ 800.5(a) and 800.5(b)).

24. Dr. King notes that the NRC staff did not contact the Advisory Council on Historic Preservation, and did not complete a Memorandum of Agreement (King Affidavit, ¶ 22-23). But neither the revised NHPA regulations nor the ones established in 1986 required either of these steps to be taken for properly documented findings of "no effect."

25. Dr. King asserts that the NRC "appears to treat Section 106 review as a sort of mitigation measure that it promises to undertake after issuing the license for the undertaking" (King Affidavit, ¶24). The NRC staff has repeatedly stated its intention to comply with Section 106 in a phased approach. The NRC staff was fully aware of the ongoing Section 106 process when it issued HRI's license, as evidenced by License Condition 9.12. Moreover, HRI had long been aware of the need to comply with NHPA requirements, as evidenced by its preliminary

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cultural resource management plans (dated July 1988, December 15, 1991 and September 15,

1992). See Attachments I, H, and G, respectively, to this affidavit.

26. Dr. King claims there are problems with NRC's Section 106 compliance which "are compounded by its focus on the first five years of HRI's license term," which Dr. King goes on to describe as NRC's "curious approach to Section 106 compliance only with reference to lands subject to disturbance in the first five years." King Affidavit, ¶ 30. I note that Dr. King later presents a somewhat contradictory view:

This is not to say that it is impossible or invariably inappropriate to address Section 106 compliance in some sort of "phased" or incremental manner. Indeed, on large and complex projects, where there are many uncertainties about long-term effects, some sort of phased approach to compliance is often necessary.

King Affidavit, ¶ 34. In my opinion, Dr. King accurately describes here HRI's undertaking, which

I think may fairly be viewed as a large and complex project. I therefore disagree that the initial

NHPA focus on lands subject to disturbance in the first five years of HRI's ISL mining

operations created any Section 106 compliance problems.

General NHPA Conclusion

27. I conclude that Dr. King's NHPA-related criticisms lack merit, because he has not addressed most of the Staff's NHPA actions taken to date.

Compliance with the National Environmental Policy Act

28. In my professional view, the NEPA analysis presented in the FEIS presents a thorough analysis with respect to cultural resources for HRI's proposed mining activities at all potentially affected areas (i.e., Church Rock, Unit 1, and Crownpoint).

29. The FEIS, prepared by the NRC Staff and its contractor, meets both the requirements and spirit of NEPA. For example, the FEIS presents a thorough and well-balanced description of alternatives (FEIS at 2-1 through 2-32). This is an important part of a NEPA document because the consideration of a full range of alternatives is necessary in order

to fully inform the decision maker. From this range of alternatives, the FEIS describes a framework for the impact analysis (FEIS at 3-65 through 3-68). In this framework the FEIS presents definitions of culture, significance, and archaeological historic and traditional property. I note that the staff used Dr. King's definitions and guidance (King Affidavit, ¶ 3) in preparation of the FEIS. Following this framework for analysis, the FEIS presents a thorough history of the region (FEIS at 3-68 through 3-73) and then presents a thorough summary of the ongoing Section 106 consultation process (FEIS at 3-73) and surveys. Additionally, the FEIS (at 3-74, 3-76, and 3-77) presents an overview of the completed cultural resource surveys for each area within the scope of HRI's undertaking.

30. The completed surveys discussed in the FEIS (at 3-74 through 3-77) along with HRI's plan for total avoidance (FEIS 4-111, 4-112) formed the baseline against which potential impacts were measured. The cultural resource impacts are described for each alternative (FEIS 4-109 through 4-112). In my professional opinion, the preliminary archaeological and traditional cultural resource surveys presented in the FEIS for the Crownpoint, Unit 1, and Church Rock sites satisfy NEPA's hard look requirement.

31. A series of preliminary cultural resource management plans (CRMPs) were prepared and submitted to the NRC as described in the FEIS (4-112). These CRMPs (¶¶ 6.E, 6.F, and 6.G, above), outline HRI's policy of total avoidance for all cultural resources. Further, the staff recommended, and HRI accepted (FEIS Appendix B) that a final cultural resource management plan for all mineral operating lease areas and other land affected by licensed activities would be implemented in accordance with NHPA Section 106 review and consultation processes. The CRMPs call for inventory of all project areas for cultural resources, site demarcation, and development of specific avoidance procedures (e.g., protection zones where human activity is prohibited). Further, archeological testing will precede any construction or drilling activity requiring subsurface disturbance, and an archeological monitor will be present

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during construction and reclamation activities. Based on the information contained in the FEIS, including the results of the archeological and traditional cultural resource surveys as well as HRI's commitment to implement the cultural resource management plan, I agree with the FEIS conclusion (*see* 4-112) that the project has minimal potential to result in significant impacts on cultural resources.

32. In my professional opinion, the Staff has performed the tasks that Dr. King (King Affidavit, ¶ 52-59) says they should. Dr. King fails to reference the NRC's NEPA regulations at 10 C.F.R. Part 51 and, instead, simply restates the requirements of NEPA. Further, Dr. King does not discuss how the Staff failed to satisfy the NRC regulations (or even the CEQ regulations he references), nor does he conclude that the Staff's treatment of cultural resources in the FEIS is inadequate.

33. I also disagree with Dr. King's assertion that the prescribed way of addressing impacts on historic properties under NEPA is by review under NHPA Section 106 (King Affidavit, ¶ 56) and, therefore, must be documented in the FEIS. There is no requirement under NEPA, nor in the NRC's NEPA implementing regulations (10 CFR Part 51), to address cultural resource impacts by performing a NHPA Section 106 review. In fact, as described above (¶ 19), the amended NHPA regulations on which Dr. King relies encourage, rather than require, coordination with NEPA.

General NEPA Conclusion

34. It is my professional opinion that the Staff's FEIS and cultural resource analysis contained therein meets the requirements and spirit of both NEPA and the NRC's regulations implementing NEPA at 10 CFR Part 51.

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35. The statements expressed above are true and correct to the best of my knowledge, information, and belief, and are based on my best professional judgement.

Matthew D. Blevins

Subscribed and sworn to before me this 23rd day of June, 2005

Notary Public

SFIN My commission expires: March 1, 200

> CIRCE E, MARTIN NOTARY PUBLIC STATE OF MARYLAND My Commission Expires March 1, 2007

M. Blevins' Affidavit

NAME: Mr. Matthew D. Blevins

Attachment A

EDUCATION:

Clemson University, Clemson, SC, M.S. Environmental Systems Engineering, 1995 West Virginia University, Morgantown, WV, B.S. Chemistry, 1993

WORK HISTORY:

U.S. Nuclear Regulatory Commission Washington, D.C.

Senior Project Manager: August 2004 - present Environmental and Performance Assessment Directorate, Division of Waste Management and Environmental Protection, Office of Nuclear Materials Safety and Safeguards

Ongoing responsibility for the preparation of an environmental impact statement for the proposed American Centrifuge Plant, including cultural resource reviews under Section 106 of the National Historic Preservation Act (NHPA).

Provide ongoing NMSS NEPA training at the NRC's Professional Development Center.

Responsible for completion of the Mixed Oxide Fuel Fabrication Facility Environmental Impact Statement (NUREG-1767).

Project Manager - January 2000 - August 2004 Environmental and Performance Assessment Branch, Division of Waste Management, Office of Nuclear Materials Safety and Safeguards

Responsible for preparation and completion of the "Idaho Spent Fuel Facility Environmental Impact Statement" (NUREG-1773), including cultural resources review under Section 106 of the NHPA.

Provided environmental review assistance in completion of the "National Enrichment Facility Environmental Impact Statement" (NUREG-1790) including cultural resources review under Section 106 of the NHPA.

Responsible for overall completion of "NMSS NEPA Guidance" (NUREG-1748) which serves as NMSS staff guidance for completing environmental reviews. Also, completed NHPA Section 106 procedures for NMSS staff which is incorporated in NUREG-1748.

Provided environmental review assistance in the review of various environmental impact statements, including a Department of Energy Draft Supplement EIS for Yucca Mountain and Disposition of Highly Enriched Uranium for adequacy and applicability to NRC licensing actions.

Provided environmental review assistance in completion of the "Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities" (NUREG-0586, Supplement 1).

Developed and reviewed the preparation of numerous environmental assessments related to NMSS licensing activities such as operating and decommissioning fuel cycle facilities, research and development activities, rulemaking activities, and decommissioning nuclear power reactors.

Developed and provided "NMSS NEPA Training" to the NRC's Regional Offices, the Spent Fuel Project Office in NMSS, the Rulemaking and Guidance Branch in NMSS, and to NMSS Development Program participants.

Marine Corps Air Station Cherry Point Cherry Point, NC

Environmental Engineer - March 1999 - January 2000 Environmental Compliance Division, Environmental Affairs Department, Facilities Directorate

Responsible for compliance with the Safe Drinking Water Act and North Carolina implementing regulations.

Responsible for compliance with North Carolina regulations for solid waste disposal.relating to an inert debris landfill, municipal solid waste transfer station, and disposal and recycle of coal ash from the Air Station power plant.

Responsible for providing quarterly Air Station Environmental Awareness training for all incoming Marines in the topical areas of chemical compatibility and hazardous waste identification.

Assigned to the Cherry Point Open Water Spill Response Team with responsibilities in implementing Oil Pollution Act of 1990 requirements

Dames & Moore Orchard Park, NY

Project Engineer - October 1996 - March 1999

Provided technical assistance to the West Valley Demonstration Project (WVDP) in the characterization and classification of 500 containers of miscellaneous low-level and hazardous waste including roofing material, asphalt, ion-exchange resin, floor sweepings, and assorted solid waste.

Assisted in the development of a contaminated soil management program at the WVDP which provided a basis for future management of contaminated soil. Provided technical assistance in the characterization and classification of 1,500 containers of contaminated soil.

Provided health physics/chemistry field support and RCRA waste categorization for the glass holes and chemical/animal pits remediation at Brookhaven National Laboratory. Authored various sections of the Site Safety and Health Plan and reviewed various work plans.

Provided various industrial hygiene tasks for multiple private sector clients. Successfully completed Core CIH examination in October 1998 and certified as an Industrial Hygienist in Training (IHIT).

* Provided radiochemistry support to foreign client in site closure/disposition. Provided radiochemistry/engineering support to domestic client in CERCLA/FUSRAP litigation.

U.S. Army Ordnance Center and School Aberdeen Proving Ground, MD

Environmental Engineer - January 1996 - October 1996

Responsible for a RCRA remedial action at the Ordnance Center and School Museum. Prepared the health and safety plan, environmental assessment, and worked closely with the installation's historical preservation staff and the Maryland Historical Trust to remediate and restore several hundred armored tanks, personnel carriers, and unique weapons.

Assisted with the development and delivery of an Army pollution prevention education course and associated training materials.

Reviewed environmental assessments and categorical exclusion determinations for all school projects.

RELEVANT JOB-RELATED TRAINING COURSES:

<u>2005</u>

National Preservation Institute: Integrating Cultural Resources in NEPA Compliance

<u>2004</u>

University of Idaho: Wetland Restoration (3 credits) University of Idaho: Restoration Ecology (3 credits) GoldSim Modeling (16 hours)

<u>2003</u>

University of Idaho: Fundamentals of Ecology (3 credits) George Mason University: Special Uses Management on Federal Land (3 credits) USDA Graduate School: Introduction to Meteorology (3 credits)

2002

George Mason University: Foundations of Federal Land Management (1 credit) University of Maryland: General Forestry (3 credits) Probability and Statistics for PRA (60 hours)

<u>2001</u>

National Park Service: American Indians and Cultural and Natural Resource Management: The Law and Practice Regarding Public Lands (36 hours)

Applied Statistics (36 hours) Media Training Workshop (8 hours) Risk Communication (8 hours)

2000

Environmental Impact Assessment of Projects (36 hours) Natural and Cultural Resources Management (16 hours) NEPA and Cumulative Effects Assessment (24 hours) Communicating with the Public (4 hours) Conducting Public Meetings (16 hours) Mutli-Agency Radiation Survey and Site Investigation Manual Training (24 hours)

<u>1999</u> .

National Environmental Policy Act: Department of Defense Implementation Course (36 hours) Oil Pollution Act Regulatory Review (16 hours)

<u>1998</u>

Data Quality Objectives Facilitator Training (16 hours) Statistics for Environmental Sampling (24 hours) NRC Waste Classification (8 hours)

<u>1997</u>

DOE Radiological Worker II Training (16 hours)

<u>1996</u>

Army Environmental Managers Introduction to the National Environmental Policy Act (8 hours) RCRA/CERCLA Project Management (16 hours) Site Supervisor Training (8 hours) Hazardous Material Technician Training (24 hours) Maryland Certified Visual Air Emissions Observer (16 hours) EPA Level I Air Pollution Inspector Training (80 hours) RCRA Compliance Auditing (16 hours) Complying with EPA's RCRA Waste Minimization Requirements (8 hours)

M. Blevins' Affidavit

Attachment B

Time line of NRC Compliance with Section 106 of the National Historic Preservation Act

Date	Addressee	Subject	Blevins' Affidavit Attachment
June 1977		Intensive Archaeological Clearance Survey included Church Rock Sections 8 and 17 (Ford and Dehoff)	
June 26, 1979		Archeological Survey of SE1/4 Section 24 (Klager and Harlan))	
July 1988		Archeological Protection Program for Church Rock SE 1/4 Section 8 (Hurley and Marshall)	
June 28, 1989		Crownpoint Cultural Resource Survey for SW 1/4 Section 24 (Cibola Research Report #38)	
December 15, 1991		CRMP for Unit 1 Lease in parts of Sections 14, 15, 21, 22, 23, and 24 (Cibola Research Report #52)	
January 27, 1992	To: HRI From: NNHPD	CRMP #52 meets the needs of Navajo Nation	
September 15, 1992		CRMP for Crownpoint Lease in W ½ of Section 29, S ½ of Section 19, and NE 1/4 of Section 25 (Cibola Research Report #57)	
February 14, 1996	To: HRI From: Becenti	Report on Sacred and Traditional Places for Hydro Resources Inc.	
February 20, 1996	To: NRC From: HRI	Partial Cultural Resource RAI responses	

February 22, 1996	To: Indian tribes From: HRI	Request for TCP information at Churchrock, Crownpoint, and Unit 1	
February 28, 1996	To: Indian tribes From: HRI	Clarified February 22, 1996 request for TCP information at Churchrock, Crownpoint, and Unit 1	
March 28, 1996	To: HRI From: Zuni	Requesting funding to perform NHPA investigation	
April 25, 1996	To: HRI From: Hopi	Request for more information	
April 30, 1996	To: HRI From: Dr. Lorraine Heartfield	Responses to NRC request for additional information and documentation of communications with various Indian tribes.	
May 3, 1996	To: NRC From: HRI	Transmitted April 30, 1996, report (see above)	
May 16, 1996	To: Hopi From: HRI	Provided CRMP for Crownpoint area	
October 2, 1996	To: NM SHPO From: NRC	Initiation of formal NHPA Section 106 consultation (cover letter is Intervenor Exhibit K)	C-J (originally marked as Attachments A-H)
October 2, 1996	To: Indian tribes From: NRC	Request for information	
October 31, 1996	To: NRC From: NNHPD	NNHPD agrees to incremental review of the undertaking	
December 20, 1996	To: HRI From: NRC	Proposed Requirements and Recommendations for HRI's proposed CUP	
December 28, 1996	To: NRC From: HRI	Acceptance of December 20, 1996 Requirements and Recommendations	

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January 31, 1997	To: NNHPD From: NRC	Acknowledgment that NNHPD may assume SHPO role on tribal lands	
February 1997		Crownpoint FEIS distributed	
March 1997		Formal agreement between Navajo Nation and National Park Service concerning Tribe's assumption of NHPA responsibilities	Staff Exhibit 2
April 1997		Museum of New Mexico (MNM) Report on Churchrock Site (Sections 8, 17, and 12)	Attachment K (excerpts)
Junc 18-19, 1997	To: NM SHPO and Indian tribes From: NRC	Forwards the MNM report	Attachment L
October 17, 1997	To: NM SHPO From: NRC	Enclosing map showing location of uranium ore	
November 20, 1997	To: NRC From: NM SHPO	SHPO agreeing with MNM report "eligibility" listing	Attachment M
January 1998		NRC issued license to HRI with conditions to protect cultural resources	Intervenor Exhibit A
February 1998		Affidavit of Robert Carlson of NRC staff regarding cultural resource issues	Staff Exhibit 3
February 1998		Affidavit of Susan Schexnayder of ORNL staff regarding cultural resource issues	Staff Exhibit 4
April 29, 1998	To: HRI From: Eric Blinman	Letter report regarding archaeological sites on Crownpoint Section 24	Part of Attachment S

May 20, 1998	To: NM SHPO; and NNHPD From: NRC	Findings for Churchrock Sections 8 and 17, and Crownpoint Section 12 irrigation site	Attachment N (letter to NM SHPO is Intervenor Exhibit I)
May 20, 1998	To: Indian tribes From: NRC	Forwarding copies of NM SHPO and NNHPD consultation letters	Attachment O
June 1998	To: NRC From: BLM	BLM agrees with "no effect" finding	
June 3, 1998	To: NRC From: NM SHPO	NM SHPO concurs with "no effect" finding for Churchrock Section 8 and Crownpoint Section 12	Attachment P
June 24, 1998	To: NRC From: NNHPD	NNHPD concurs with Churchrock Section 17 findings	Attachment Q
July 10, 1998	To: HRI From: NRC	Informs HRI that consultation processes concluded for Church Rock Sections 8 and 17, and Crownpoint Section 12	Attachment R
May 13, 1999	To: NM SHPO From: NRC	Determination of "no effect" for Crownpoint Section 24 archaeological sites	Attachment S
June 7, 1999	To: NRC From: NNHPD	NNHPD objects on jurisdictional grounds that it should have been consulted in lieu of NM SHPO for Crownpoint Section 24	Attachment T
June 17, 1999	To: NRC From: NM SHPO	NM SHPO concurs on no effect finding for Crownpoint Section 24 sites	Attachment U
June 25, 1999	To: NNHPD From: NRC	NRC response to NNHPD June 7 letter	Attachment V
July 8, 1999	To: HRI From: NRC	Informs HRI that consultation process concluded for Crownpoint Section 24	Attachment W

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February 1996



Figure 1.1. Regional index map of west-central New Mexico and the project site locations.

M. Blevins' Affidavit

Attachment C

Attachment A

Crownpoint Final DOPAA and Annotated Outline

Internal Review Draft

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M. Blevins' Affidavit

Attachment D

Attachment B

Notification of Project for NHPA Section 106 Review

Submitted By: U.S. Nuclear Regulatory Commission Uranium Recovery Branch Division of Waste Management Office of Nuclear Material Safety and Safeguards

Project

Project Name: Construction and Operation of the Crownpoint Uranium In Situ Leach Mining Project, Crownpoint, New Mexico

Location: Three sites in the vicinity of Crownpoint, New Mexico - two of which are in the Crownpoint Chapter of the Navajo Nation, and one in the Churchrock Chapter (see Attachments A and H). The Church Rock site occupies parts of Sections 8 and 17 of T16N R16W. The Crownpoint site occupies part of Section 29 of T17N R12W, parts of Sections 19, 24, and 25 of T17N R13W, and all of Section 12 T17N R13W. The Unit 1 site occupies parts of Sections 15, 16, 21, 22, and 23 of T17N R13W.

Project Proponent

Name: Hydro Resources, Inc. (HRI)

Address: 12750 Merit Drive Suite 1020, LB 12 Dallas, Texas 75251

or

P.O. Box 777 Crownpoint, New Mexico 87313

Federal Agency

Agency Name: U.S. Nuclear Regulatory Commission (NRC)

License Type: Source material license to commercially produce uranium using *in situ* leach (ISL) mining

Project Description

<u>Proposed Action</u> - The action proposed by the NRC is to issue HRI a license to construct and operate facilities for *in situ* leach uranium mining and processing at the Church Rock, Unit 1, and Crownpoint sites. The *in situ*

leach uranium recovery process, as proposed, involves two primary operations. The first occurs in the well fields, where barren mining solution would be injected through wells into an ore zone, and pregnant lixiviant (solution containing uranium ore) would be withdrawn from projection wells. The second operation occurs at the processing plants where uranium would be extracted from the pregnant lixiviant.

Injection and production wells would be drilled and constructed using standard mud-rotary drilling techniques for deep water wells. The location of the well fields, each of which will have five to seven wells, is somewhat flexible, and with some distance limitations, slant drilling practices can provide access to subsurface areas that are beneath sensitive surface features.

Church Rock and Unit 1 facilities would operate as satellite processing facilities, producing precipitated uranium slurry (also known as yellowcake slurry) for shipment by truck to the Crownpoint site. The Crownpoint facility would operate as the central processing facility for the project, producing yellowcake slurry, as well as drying and packaging the slurry from all three sites for final shipment. Mining of some part of each of the three sites is proposed for the first five years of the license term. Additionally, each site would have a wastewater irrigation area.

Ground disturbance is expected at the drilling locations, at two processing facilities to be constructed (Crownpoint's processing facility already exists), and at wastewater irrigation areas and evaporation ponds at each site. Additionally, Section 12 of T17N R13W is proposed for use as a receiving site for sediment from the Crownpoint processing facility ponds and for wastewater irrigation. A pipeline laid along existing road easements would deliver the wastewater from the Crownpoint site to Section 12.

<u>Alternative Actions</u> - Two alternatives to the proposed action are being considered. One is the no action alternative in which NRC would not issue a license to HRI. Under this alternative, no development would occur. The second alternative is a modified project that would allow development at only one or two of the three proposed sites and/or might include a site other than the Crownpoint facility for yellowcake drying. Sites in New Mexico being considered are the proposed processing facility sites at Unit 1 and Church Rock. In summary, these alternative actions would not include any New Mexico land in addition to that already considered in the proposed action.

Provision for New Construction

Two new processing facilities, one each at Unit 1 and Church Rock; development of well fields, waste-water irrigation areas, evaporation ponds at all three sites, and access roads to each of these areas; development of a waste-water irrigation area at Section 12 of T17N R13W.

Prior Knowledge of Historic or Archaeological Properties

As identified in previous surveys (see Attachments C, D, and H), and the cultural resource management plans (Attachments E, F, and G).

Project Acreage

Unit 1 is 1280 acres; Crownpoint is 912 acres; Churchrock is 360 acres; and Section 12 is 640 acres for a total of 3192 acres. The approximate acreage to be developed in the five-year plan is about 1550 acres, which includes almost all of the Churchrock site, approximately 325 acres at Unit 1, 220 acres at Crownpoint, and all of Section 12.





M. Blevins' Affidavit

Attachment G

A CULTURAL RESOURCES-ENVIRONMENTAL ASSESSMENT AND MANAGEMENT PLAN FOR THE PROPOSED HYDRO RESOURCES, INC., CROWNPOINT LEASE IN THE EASTERN NAVAJO DISTRICT, NEW MEXICO



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CIBOLA RESEARCH CONSULTANTS

Archeology • Ethnohistory • Exhibits

A REPORT PREPARED BY CIBOLA RESEARCH CONSULTANTS FOR HRI, INC., A SUBSIDIARY OF URANIUM RESOURCES, INC.

BY MICHAEL P. MARSHALL DIRECTOR OF ARCHAEOLOGICAL PROJECTS CIBOLA RESEARCH CONSULTANTS

SEPTEMBER 15, 1992

CIBOLA RESEARCH CULTURAL RESOURCE REPORT NO. 57

Submitted to Mark Pelizza Environmental Planner, Hydro Resources, Inc.

A CULTURAL RESOURCES-ENVIRONMENTAL ASSESSMENT AND MANAGEMENT PLAN FOR THE PROPOSED HYDRO RESOURCES, INC., CROWNPOINT LEASE IN THE EASTERN NAVAJO DISTRICT, NEW MEXICO

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BY MICHAEL P. MARSHALL DIRECTOR OF ARCHAEOLOGICAL PROJECTS CIBOLA RESEARCH CONSULTANTS

SEPTEMBER 15, 1992

CIBOLA RESEARCH CULTURAL RESOURCE REPORT NO. 57

Submitted to Mark Pelizza Environmental Planner, Hydro Resources, Inc.

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ABSTRACT

This report presents a preliminary cultural resource evaluation and management plan for the proposed Hydro Resources, Inc., Crownpoint mining lease on Navajo Trust lands in the Crownpoint Chapter of the Eastern Navajo Agency, McKinley County, New Mexico. The lease encompasses 800 acres located in the immediate area of Crownpoint. New Mexico. The lease area consists of the W 1/2 of Section (29) and the S 1/2 of Section (19) in Township 17 North, Range 12 West, and the NE 1/4 of Section (25) in Township 17 North, Range 13 West.

The proposed development of an in situ solution uranium mine would involve the construction of a series of injection-extraction wells and a pipeline gathering system. The cultural resourcesenvironmental assessment presented in this report includes an evaluation of the cultural resources known to exist in the lease area and outlines a management plan designed to prevent adverse impact to the cultural resources during project development. This report is a preliminary planning document for cultural resource management in the lease area. It is not a request for clearance. It is probable that the mine would be developed at intervals over a period of years. Following the completion of a Class III archaeological survey and a traditional sites inventory, specific management plans for each development phase would be formulated and submitted for review to the required agencies.

INTRODUCTION

This report provides a cultural resources-environmental assessment for the proposed HRI Crownpoint mining lease. The lease is located in the immediate area of Crownpoint, New Mexico. The objective of this report is to evaluate the nature of the archaeological, historical, and traditional cultural properties within the lease area and to develop a preliminary management plan that ensures resource preservation.

The HRI Crownpoint lease is an 800-acre tract located in three parcels within and adjacent to Crownpoint, New Mexico (Figures 1 and 2). The proposed in situ solution uranium mine would involve the development of injection-extraction wells, access roads, and a pipeline gathering system. The pipeline system would transport the material to a processing facility at the existing HRI plant west of Crownpoint. The placement of the various wells, roads, and pipelines within the Crownpoint lease area is very flexible, and the system can be planned in such a manner to avoid adverse impact, both direct and indirect, to the cultural resources of the area.

The information presented in this report includes a description of the known cultural resources in the Crownpoint lease area and an outline of a cultural resource management plan for the project. Information regarding the culture history and potential research considerations is also presented. A management plan describing the proposed HRI mining project in terms of potential impact on the cultural resources is also discussed. The management section of the report includes. discussion of the proposed Class III cultural resource inventory, information on the archaeo-logical and traditional site protection plan, and considerations of indirect impact. Information concerning Kin Ya'a, the State and National Register protection site located adjacent to the lease, is also included. In addition, statements are made regarding the proposed treatment of sacred and traditional sites and praves.

It is the purpose of this report to serve as a preliminary planning document for cultural resource and traditional site m. magement in the HRI Crownpoint lease area. It is probable that the proposed mine would be developed at intervals over a period of years. Specific management plans that define precise site boundaries and avoidance procedures will be developed for each proposed mining project. This inventory will be completed at a later date as part of an environmental clearance document which will be submitted to the Navajo Nation Historic Preservation Department, the Bureau of Indian Affairs, and other concerned agencies prior to any work in the lease area.



Figure 1 Location of the HRI Crownpoint Lease



A cultural resource management plan for the HRI Crownpoint lease is outlined in the following text. This outline describes the procedures that will be taken to ensure the preservation of the important cultural antiquities, historical properties, and sacred-traditional sites within the lease area. A policy of total avoidance of all significant cultural manifestations is to be followed during the project development. It is the objective of the HRI cultural resource management plan to complete the development of the well field, access network, and gathering-processing system without adverse impact to the cultural resources. This objective is possible given the locational flexibility of the proposed mining development.

All cultural resources identified during the Class III archaeological and sacred-traditional site inventory will be recognized as protection areas. The boundaries of each resource area will be recognized as exclusion zones from the mining development. All well pads, access roads, pipelines and other construction facilities will be developed outside the exclusion areas. Any subsurface disturbance will be preceded by archaeological testing, and an archaeological monitor will be present during construction and reclamation activities.

Only the procedural outlines for the cultural resource management plan are defined in this assessment. Specific management plans will be developed following the Class III inventory, and these plans will be submitted for review to the Bureau of Indian Affairs and the Navajo Nation Historic Preservation Department. These plans will identify all cultural resources in the lease area, designate protection areas, and outline the specific avoidance procedures.

Information regarding the cultural resource management plan presented in this assessment includes a description of the mining project in terms of its potential impact on the cultural resources, an outline of the site protection plan, considerations of indirect impact, the relationship of the project to the adjacent Kin Ya'a - National Park Service property, and statements regarding the treatment of sacred sites, traditional cultural properties, and human burials and gravesites.

Description of the Proposed HRI In Situ Mining Project

The purpose of this assessment is to outline the procedures for cultural resource management and preservation within the Hydro Resources Incorporated Crownpoint lease area near Crownpoint. New Mexico. A cultural resource management plan that is carefully coordinated with the project development is proposed in order to prevent adverse impact. The principal objective of the management plan is to avoid all cultural resources. Given the nature of the project and its locational flexibility, this objective is feasible.

In situ mining involves the removal of uranium oxide in solution and is accomplished by the construction of a series of injection-extraction and monitoring wells. This type of mining involves the development of wells and a pipeline gathering system which has a limited impact to the land surface. The types of subsurface disturbance that are related to the project include well pad drilling activities and the excavation of well mud pits (located at about 30 to 50 m intervals), road access development, and the construction of a pipeline gathering system. The placement of all these facilities is very flexible, and each can be located in a manner that avoids all known cultural resources.

Access to the well pad sites in the open environment of the Crownpoint lease area can in many instances be made without substantial subsurface road construction. All access roads will be located in order to avoid the cultural resources. All areas along access roads that require road

work resulting in subsurface disturbance will receive archaeological testing and monitoring before and during construction. The leveling of well pads (approximately 30 by 30 m) and the excavation of well mud pits (5 by 10 m) will also involve archaeological monitoring and testing to ensure that there is no adverse impact to buried cultural resources.

The flexibility of the location of the pipeline gathering system means that all known cultural resources can be avoided. Most of the pipeline gathering system will probably be built aboveground, and subsurface lines will appear in only limited areas, such as road crossings. Since buried cultural resources may occur in the area, any subsurface lines will be archaeologically tested prior to development and monitored during construction.

The boundaries and location of all well pads, access roads, and pipelines will be inspected by the archaeological monitor prior to development and will be flagged during development and use. All construction and use activity will be confined within flagged boundaries. All access roads are to be flagged. White flagging will be used to promote nighttime visibility. No construction personnel will be allowed on site until they have received a briefing regarding the archaeological protection procedures.

The Class III Cultural Resource Inventory

A systematic Class III archaeological survey and study of sacred-traditional cultural properties in the HRI Crownpoint lease area will be completed prior to any use or development. A comprehensive cultural resources report, which describes the cultural properties present in the study area and which includes specific recommendations for the management and preservation of the resources, will be submitted to the Navajo Nation Historic Preservation Department, and other agencies as required, for evaluation and comment prior to the development phase.

Archaeological survey and report preparations will follow the standards outlined in the "Interim Fieldwork and Report Standards and Guidelines of the Navajo Nation Historic Preservation Department" (August 1, 1991). The entire Crownpoint lease area will be surveyed, including the various tracts that have been the subject of previous documentation (Figures 3 and 4; Clifton 1980; Copeland 1989, 1990; Davis 1976; Hogan et al. 1981; Judges 1982; Skinner 1989; Strnad 1981). A Class III survey of the previously studied tracts is required to determine the precise site boundaries and current status of the documented sites. A re-evaluation of each previously documented site will also be made, and any additional information obtained will be appended to the site records.

Descriptions of the cultural resources will follow the format detailed in the Navajo Nation site survey and management form for sites and isolated occurrences. This description will include detailed information on site locations, boundaries, land status, and a complete description with maps and photographs. Each site will also be evaluated with respect to its significance in terms of the National Register (36 CFR 60.4), the Archeological Resources Protection Act (43 CFR 7.3), and the American Indian Religious Freedom Act (AIRFA). All sites will be recorded in the computerized data base of the New Mexico State Archeological Records Center and will receive "LA" site numbers. Survey methods will entail a pedestrian search of the study area with transects spaced 10 to 15 m apart. All site dimensions will be measured in metric with tape or survey instruments. No artifact collections will be made. All artifact samples will be documented in the field.

All cultural manifestations within the lease area are to be documented systematically. These manifestations include all historical and modern sites with the exception of locations presently occupied. All sites currently in use will be briefly described but will not be photographed, mapped, or recorded out of respect for the privacy of the occupants. An attempt will be made to





obtained information about historical sites in the area through interview with the local residents. These on-site interviews will also be made in order to evaluate register eligibility and significance under AIRFA.

All cultural properties encountered in the lease area will be specifically evaluated with respect to their integrity and qualification for nomination to the National Register (36 CFR 60.4) and with respect to the Archaeological Resources Protection Act (43 CFR 7.3). In addition, the cultural properties will be evaluated with respect to the Navajo Nation's Cultural Resource Protection Act (CMY-19-88). This evaluation will include both the Anasazi and Navajo sites and any sacred or traditional cultural properties.

Aerial photographic imagery will be used in the HRI cultural resources survey to evaluate various types of cultural features, such as Anasazi roads and Navajo comfields, and will be used as a photographic base map for the location of all sites. A complete set of aerial photographs for the Crownpoint area, including the Crownpoint lease area, have been collected (Flight DAS, June 20, 1979, at a scale of 1 inch to 600 feet) and will be used in the survey. Each cultural feature will be plotted on the aerial photographs, and these photos will be placed on file at the State Archeological Records center after the project is completed.

Examination of the Soil Conservation Service 1930s aerial imagery will also be made in an effort to define features that have been reduced or obscured over the past 50 years. The use of SCS imagery has proven to be especially useful with respect to the study of Chacoan roads and to the definition of historical Navajo field areas.

An attempt will also be made during the cultural resources study to obtain oblique, low-sunangle aerial photographs of the possible Muddy Water - Kin Ya'a road. Low-sun-angle photography has proven to be of considerable use in the recognition of very subtle roads and earthworks, which are often invisible in conventional vertical photography.

Archaeological and Traditional Site Protection Plan

A cultural resource management plan for archaeological and traditional sites will be developed following the Class III inventory of the lease area. All cultural resources identified in the lease area will be recognized as "protection zones" that will be avoided during the HRI project development. All drilling activities and movement of heavy equipment into the lease area will avoid these protection zones.

The precise boundaries of all cultural properties within the lease area will be defined during the archaeological survey and the traditional site inquiry. These boundaries will be marked in the field with iron fence posts. This system of site boundary definition, developed by Dan Hurley during the extensive drilling exploration of the Crownpoint area by Mobil Oil Corporation during the period from 1973 to 1980, has proven to be very effective. Many of these markers still remain in place today and there is little evidence of subsequent disturbance. There may, however, be certain sensitive archaeological sites or traditional-sacred sites that should not be permanently marked. These sites will be identified as "special or sensitive protection areas" near which no development activity is allowed.

The location and boundary definition of sites as cultural resource protection areas will result in the protection of most cultural resources in the lease area. Since buried or concealed cultural resources might exist in the proposed lease area, especially in areas of alluvial deposition, it is important that any project activity resulting in subsurface disturbance be preceded by archaeological testing. In most instances, protection can be accomplished by the presence of an archaeological monitor on the construction site or by the placement of backhoe test trenches in

the area of proposed disturbance. Areas of subsurface disturbance in the project area will be limited whenever possible. Activities in which subsurface disturbance is anticipated include the construction of well pads and mud pits and the development of occasional areas along access roads. Any subsurface disturbance caused by the development of the pipeline gathering system will also require archaeological testing and monitoring. It is also recognized that any cultural resources encountered during construction will require mitigative actions, under consultation with the Navajo Nation Historic Preservation Department, before construction can continue.

Considerations of Indirect Impact

The HRI cultural management plan is designed to maximize avoidance of all cultural resources and sacred-traditional properties within the lease area. Avoidance will be accomplished by a systematic Class III cultural resource inventory and by the demarcation of all site boundaries as protection areas. Archaeological testing of all areas of proposed subsurface disturbance and a monitoring program during the project development will also prevent any adverse impact to the cultural resources.

Since the lease is located adjacent to the Kin Ya'a National Park Service and National Register site, consideration of potential indirect impact to the cultural resources is also incorporated in the HRI management plan. In order to avoid possible indirect impact to the cultural resources, a series of actions are planned.

All transportation corridors within the lease area will be located in conjunction with the project archaeologist. Any transportation activities adjacent to the lease will be confined to established roads. The boundaties of the entire lease area will be determined by cadastral survey and will be specially marked, if existing fence lines are not present. Given these precautions, the proposed HRI development should have no adverse indirect impact on the cultural resources adjacent to the lease.

Looting of cultural antiquities in the Crownpoint area is very limited and seems to be confined to limited disturbance near the ruin of Kin Ya'a. The infrequency of looting in the Crownpoint area is clearly due to the protection afforded by Navajo residents of the area. The Navajo do not intentionally disturb archaeological sites, and their presence in the lease area has prevented looting by pothunters. All evidence of looting observed during the proposed Class III survey of the lease area will be noted, and any special problems will be identified in the HRI cultural resource management plan.

The Kin Ya'a Complex: Chaco Culture National Historical Park and State and National Register Site

The Chacoan outlier community of Kin Ya'a is located adjacent to and east of the HRI Crownpoint lease (Figure 2). A portion of the community complex is part of Chaco Culture National Historical Park and is administered and protected by the National Park Service. This same property is recognized as a component of New Mexico State Cultural Property No. 57 and is also included on the National Register of Historic Places. Most of the Kin Ya'a community is located outside the park boundaries, however, and is administered by the Navajo Tribe and the Bureau of Land Management.

The proposed HRI Crownpoint lease development will have no adverse impact on the cultural resources of the park or adjacent properties. Owing to the sensitive nature of the park and related sites, the HRI cultural resource assessment addresses various considerations of indirect impact.

The Great House pueblo of Kin Ya'a was first described by S. J. Holsinger 1901 as part of an investigation by the General Land Office to evaluate Chacoan ruins for possible government acquisition and preservation. Following the Antiquities Act of 1906, various Chacoan sites were recognized as part of the Chaco Canyon National Monument, established by President Theodore Roosevelt on March 11, 1907. Kin Ya'a, together with Kin Klizhin and Kin Bineola, were designated as outlying sections of the monument.

Because an early survey description of the Kin Ya'a parcel, designed to include the Kin Ya'a great house, was erroneous, the quarter-section of land directly south of the ruins (the SE 1/4 of Section 28) was set aside for inclusion in the monument. On May 31, 1919, both the NE and SE quarters of Section 28 were included under an Indian Tribal Patent (IA-1000 and IA-1002), but the SE 1/4 was returned to monument status on July 17, 1930. The Kin Ya'a great house, which is actually located in the NE 1/4, is on Indian Tribal Patent lands. Nonetheless, the National Park Service has continued to manage the Kin Ya'a great house site since its recognition as part of the original Chaco monument. The site was stabilized in 1956 (Richert 1956), and in 1972 the National Park Service completed an archaeological survey of the eastern half of Section 28.

In 1980 federal legislation associated with the reorganization of Chaco National Monument as Chaco Culture National Historical Park apparently recommended the recognition of the Kin Ya'a parcel. The NE 1/4 of Section 28 was included in a withdrawal order of December 19, 1980, associated with Public Law 96-550. This withdrawal order reclassified the NE 1/4 of Section 28 and closed it to mineral development, right-of-way access, and oil and gas leases. A portion of land in the eastern half of the SE 1/4 of Section 28 was also returned to Bureau of Land Management status. Notification of the closure was given in the Federal Register on April 15, 1981.

A land status map published in 1982 by the National Park Service (Figure 5) illustrates that the park lands in this area are still confined to the SE 1/4 of Section 28, south of the great house ruins. This map also illustrates a provisional boundary extension into the NE 1/4 on lands owned by Edwin Martin. Recent consultation with Robert Muller of the National Park Service Land Office, however, indicates that the Kin Ya'a great house structure (in fact the entire NE 1/4 of Section 28) is still on Indian allotment lands held by the Edwin Martin family.

Statement Regarding the Treatment of Sacred Sites and Other Traditional Cultural Properties

Considerable attention will be given in the HRI cultural resource preservation project to the recognition and protection of Native American sacred sites and traditional cultural properties that might exist within the Crownpoint lease area. Traditional or sacred sites have not been recognized in previous studies of the lease area, but most of these earlier investigations did not address this issue directly, and there is a potential for these sites within the area.

All legislative mandates and Navajo Tribal policies regarding the protection and preservation of sacred sites and other traditional cultural properties will be explicitly followed throughout the proposed HRI development project. This action is in accord with the American Indian Religious Freedom Act of 1978 (Public Law 95-341) and will follow procedural directives described in the "Navajo Nation Policy to Protect Traditional Cultural Properties" (1990) and National Register Bulletin 38 (1990) entitled "Guidelines for Evaluating and Documenting Traditional Cultural Properties."

All of the sacred and traditional cultural sites that might be documented in the lease area are of probable Navajo affinity. Pueblo Anasazi sacred sites may once have existed in the area, but it is very unlikely that any of these sites are maintained by a living community. In the unlikely event that such places are still maintained by Pueblo populations, it is probable that Navajo residents of





the area will have knowledge of this use. Emphasis in the investigation of sacred and traditional sites will, therefore, be directed toward the Navajo people of the Crownpoint area. This investigation will involve the procedures for interview described in the Navajo Nation policy and completion of Navajo Nation HPD Sacred and Traditional Places Documentation Forms.

Preliminary review of existing literature regarding Navajo sacred places does not reveal any outstanding, tribally recognized locations within the lease area. The two most important sacred sites commonly known in the Crownpoint area are Ak'iilnastiani (The Mountain That Sits on Top of Another Mountain) and the ruin and nearby shrine of Kin Ya'a, known as the home of the Kii ya anii clan and associated with the Blessingway (hozhooji). These locations, however, are well outside the proposed HRI lease area. (See the discussion of traditional sites in the section on The Cultural Resources.)

Various local or regionally recognized sacred and traditional sites may exist in the lease area: for example, traditional gathering areas, sites associated with life-cycle rituals, prayer offering places, and structures associated with ceremonies, such as hogans and sweatlodges. It is also recognized that many sacred and traditional sites are elements of the natural landscape, such as trees, springs, rocks, and mountains, etc., for which there is no structural evidence.

The HRI cultural resources management project will involve a comprehensive consultation effort with local residents and other persons who have knowledge of sacred and traditional sites. Interviews with local residents on and adjacent to the lease will be conducted by a qualified ethnohistorian or ethnographer.

Statement Regarding the Treatment of Human Burials Graves, and Gravesites

Special attention will be given in the proposed HRI Crownpoint project to the recognition and protection of human graves and cemeteries. The Crownpoint cemetery, which is located in the NE 1/4 of the NE 1/4 of Section 25, T17N, R13W (Figure 6), will be avoided. No other gravesites have been previously recognized in the lease area, but other gravesites may be present. Anasazi gravesites usually occur in middens adjacent to unit pueblos and are normally protected as part of the archaeological site avoidance procedure. Navajo graves, on the other hand, are often isolated and may lack any obvious marker or structure. An effort will be made during the traditional site inventory and interview project to locate all gravesites in the area known to local Navajo residents. If any isolated historical graves are present, they will be designated as protection areas.

All legislative mandates regarding the protection of graves and gravesites will be followed throughout the proposed HRI development project. This protection includes procedures described in the Native American Graves Protection and Repatriation Act (Public Law 101-601 [H.R. 5237], 1990); the Navajo Nation Policies and Procedures Concerning the Protection of Cemeteries, Gravesites, and Human Remains (ACMA-39-86); and relevant gravesite protection measures as described in the American Indian Religious Freedom Act of 1978 (Public Law 95-341).

It is the intent of the proposed HRI development project to avoid any disturbance to human gravesites. Any grave identified in the study area will be recognized as a protection site and will be avoided. If any burial is inadvertently uncovered during the development project it will be reinterred following consultation with and recommendations of the Navajo Nation Historic Preservation Department.



The locations of gravesites will be determined through archaeological survey and according to interview procedures outlined by the Navajo Tribal Council Advisory Council in Resolution ACMA-39-86. Efforts to locate unmarked historical gravesites in the lease area will involve discrete consultation with local residents and with members of the Crownpoint Chapter House. Investigation of gravesite locations within the study area will be conducted in conjunction with the traditional cultural properties study. All gravesites identified in the lease area will be subject to documentation, and a Navajo Nation grave identification form will be completed for each location of Navajo affinity.

THE CULTURAL RESOURCES

An overview of the known cultural resources in the proposed HRI Crownpoint lease area and the context of these cultural manifestations are presented in the following discussion. The cultural landscape of the HRI Crownpoint lease is a complex pattern of prehistoric Chacoan Anasazi and historical to modern Navajo occupation and land use. Eight previous cultural resource studies have been conducted in the lease area, and numerous others have surveyed lands adjacent to the lease. Approximately 45% of the lease area has been the subject of intensive archaeological survey, which has resulted in the identification of 31 archaeological site components (Table 1; Figures 3 and 4, above).

Approximately 20 to 30 additional sites are estimated to be present in the lease. Important sacred and traditional sites exist in the Crownpoint vicinity, but none have been previously identified in the lease. With the exception of Hogan et al. 1981, however, previous research in the lease area has not addressed this issue, and it is possible that traditional cultural properties are present.

The HRI Crownpoint lease is located adjacent to the Chacoan Anasazi community of Kin Ya'a. A section of this community is a National Park Service property and is part of the Chaco Culture National Historical Park. It is listed on the New Mexico State Register of Cultural Properties and on the National Register of Historic Places. This ancestral Chacoan community was occupied for approximately 650 years, from about AD 500 to 1150. A total of 23 Anasazi components associated with the community have been documented in the lease area. The Crownpoint lease is located directly west of the center or nuclear area of the Kin Ya'a community. The community's public-ceremonial buildings include a tower-kiva great house complex and two great kivas. These buildings are located about one mile east of the lease (Marshall et al. 1979). Most of the Anasazi sites that have been found in the lease area appear to be habitation and special-function sites that are part of the central community complex. A possible Chacoan road crosses the lease area, linking Kin Ya'a to the Muddy Water complex.

Table 1. List of Previously Documented Sites within the HRI Crownpoint Lease

Section 19, South 1/2 (T17N, R12W)

LA 27659 (DCA-80-135) Clifto LA 32518 (OCA-SV-7) Hogar LA 36204 (NM-G-8-78) Strnat LA 74003 (NM-Q-23-25) Skinn LA 75651 (NM-Q-23-28) Copel LA 81609 (NM-Q-23-41) Yeatts

Clifton 1980 Hogan et al. 1981 Strnad 1981 Skinner 1988 Copeland 1989 Yeatts 1990 Section 29, West 1/2 (T17N, R12W)

LA 32521 - 32522 Hogan et al. 1981 (OCA-SV-10, 11) LA 59633 Judges 1982 (NM-G-8-11) LA 70578 - 70597 Davis 1976 (COD-29-1 - 29-20)

Su

So Sut Ni

Section 25, NE 1/4 (T17N, R13W)

No previously recorded sites

The Navajo people have occupied the Lobo Plateau region since at least AD 1700. Continued research will probably result in the discovery of still older occupations. Navajo settlement in the immediate lease area and on the grassland plain of the Chaco basin floor appears to be largely from the post-Bosque Redondo Reservation period, ca. 1868 to the present. Eight Navajo site components have been described in the lease area, and 10 to 20 others are probably present. Previous research indicates that the earliest Navajo occupation in the Crownpoint area predates the coming of the railroad in 1881 and consists of "big block" hogans with few or no Euro-american artifacts. The Navajo occupation of the lease area clearly intensified with the establishment of the Pueblo Bonito Eastern Navajo Agency and the Ohlin Trading Post at Crownpoint in 1910. Since that time, the lease area has been used rather intensively by Navajo residents for hunting and gathering, grazing, and agricultural purposes. The remnants of numerous hogans and house settlements, corrals, ramadas, ovens, trails and roads, and other features are present.

Records Search

All previous documents concerning the cultural resources in the HRI Crownpoint lease area are summarized in this report. A total of 31 archaeological and historical sites have been previously documented within the lease area (Figure 3). Most of the existing records are the result of cultural resource clearance activities conducted during the 1976 Conoco uranium exploration (Davis 1976) and as a result of a variety of community development projects in Crownpoint from 1980 to 1990. The lease area comprises 1.25 square miles, and approximately 45% of this area has been the subject of comprehensive archaeological survey. Most of the cultural resources known in the area were documented in clearance surveys conducted by the Navajo Nation Cultural Resource Management Program (Copeland 1989, 1990; Davis 1976, Skinner 1989; Yeatts 1990). Other surveys have been completed in the lease area by the University of New Mexico (Hogan et al. 1981), the University of Northern Arizona (Judges 1982; Strnad 1981) and by the San Juan County Museum's Division of Conservation Archaeology (Clifton 1980). A number of additional surveys for waterline, housing, and related development projects in the SE 1/4 of Section 29 failed to reveal any evidence of cultural features.

Various archaeological investigations and cultural resource surveys have been completed in the Chacoan Anasazi Kin Ya'a community located east of the lease area (Figure 4). In 1972, the National Park Service conducted an archaeological survey in the east half of Section 28, T17N, R12W, which resulted in the documentation of 37 Anasazi sites (29Mc101 to 138). In 1978, San Juan College conducted an archaeological reconnaissance survey of 3.75 sections in the Kin Ya'a complex and documented 67 additional sites (Hooton, Andrae, and Naylor 1978).

The Chacoan outlier great house of Kin Ya'a, located one mile east of the lease, has been the subject of archaeological inquiry since the early investigations by Holsinger (1901) and Fewkes (1917). Tree-ring dates from the site indicate primary construction between AD 1101 and 1106 (Hawley 1933:204-205). Bannister (1964) presented a brief review of the site and the tree-ring dates. The first comprehensive description of the site was made in 1979 by Marshall, Stein, Loose, and Novotny.

Fewkes (1917) was the first to recognize the Chacoan roads that enter the Kin Ya'a complex. A series of remote sensing investigations conducted by the National Park Service in the 1970s resulted in the definition of the Kin Ya'a roads as part of the Great South Road complex (Lyons and Hitchcock 1977). Obenauf's (1980) remote sensing studies revealed not only the presence of alternate south road corridors entering Kin Ya'a but also a road extending southwest from Kin Ya'a and another possible road leading due west toward the Muddy Water Complex (Obenauf 1980:116-117). In 1978, Windes discovered that the Kin Ya'a southwest road led across Lobo

Mesa toward Hosta Butte. In 1987, the Bureau of Land Management published an overview investigation of Chacoan roads in the Kin Ya'a area (Nials, Stein and Roney 1987:32-39).

All existing site records for the HRI Crownpoint lease area will be re-evaluated during the HRI cultural resource survey. The cultural and temporal affinity of the known sites in the lease area are listed in Table 2. All of the cultural resources previously documented in the HRI Crownpoint lease have been entered in the ARMS (New Mexico State Archaeological Records Management System) files and have been located on the Crownpoint topographic base map and can be retrieved from the computerized data base. A brief reconnaissance of the lease area indicates that an additional 20 to 30 sites are present that have not been recorded. These sites will be documented during the HRI Crownpoint lease archaeological survey and will be entered into the ARMS system.

Site No.	Section	Period	Description
Navajo Sites	•	,	
LA 32518 (LC)	29 W 1/2	Late nineteenth to early twentieth century	3 hogan rings
LA 32521	29 W 1/2	Late nineteenth to early twentieth century	4 hogans, historical trash
LA 32522	29 W 1/2	Twentieth century	Oven, historical trash
LA 70586	29 W 1/2	Historical unknown	Hogan ring or temporary windbreak
LA 70591	29 W 1/2	Late nineteenth to early twentieth century	Hogan ring
LA 70593	29 W 1/2	Twentieth century	Hogan ring, oven, windbreak
LA 70594 (LC)	29 W 1/2	Unknown	Oven
LA 70597	29 W 1/2	Twentieth century	5 hogan rings
Chacoan Anasazi:	Basketmake	r III - Pueblo I Componer	nts (AD 500-700)
LA 70584	29 W 1/2	Basketmaker III or Pueblo I	Possible pithouse, ceramic scatter, burned sandstone
LA 70587	29 W 1/2	Pueblo I	Possible pithouse, stone circles, artifact scatter
LA 70588	29 W 1/2	Basketmaker III - Pueblo I	Possible pithouses, thin artifact scatter
Ä 70595	29 W 1/2	Pueblo I	12-16 rooms, some artifacts

Table 2. Cultural-Temporal Stratification of Previously Documented Cultural Resources within the HRI Crownpoint Lease

(continued)

Table 2. Cultural-Temporal Stratification of Previously Documented Cultural Resources (continued)				
Site No.	Section	Period	Description	
Chacoan Anasaz	zi: Pueblo I - I	I Components (AD 70	0-1100)	
LA 32518 (EC)	19 S 1/2	Pueblo I - II	Sherd scatter	
Chacoan Anasaz	i: Pueblo II C	omponents (AD 900-1	100)	
LA 36204	19 S 1/2	Pueblo II	Possible circular structure, ceramic	
LA 70578	29 W 1/2	Pueblo II	scatter 8- to 12-room house	
LA 70579	29 W 1/2	Late Pueblo II	Possible structure, ceramic scatter	
LA 74003	19 S 1/2	Pueblo II	Rubble mound, artifact scatter	
Chacoan Anasaz	i: Pueblo II - II	II Components (AD 90	0-1300)	
LA 59633	29 W 1/2	Pueblo II-III	Ceramic scatter	
LA 70581	29 W 1/2	Pueblo III (?)	Artifact scatter, sandstone blocks	
LA 75651	19 S 1/2	Pueblo II-III	Ceramic scatter	
Anasazi Unknow	n .			
A 27659	19 S 1/2	Unknown	2 ceramic scatters	
A 70580	29 W 1/2	Unknown	Artifact scatter, dressed sandstone blocks	
A 70582	29 W 1/2	Unknown	Unit house, sherd scatter	
A 70583	29 W 1/2	Unknown	Burial, associated ceramics	
.A 70585	29 W 1/2	Unknown	Probable unit house, cist, hearth, artifact scatter	
A 70589	29 W 1/2	Unknown	Possible pithouse or firepit, few sherds and bone fragments	
A 70590	29 W 1/2	Unknown	Possible jacal structure, minimal blocks and artifact debris	
A 70592	29 W 1/2	Unknown	2 roomblocks (structures), bone fragments	
A 70594 (EC)	29 W 1/2	Unknown	Fieldhouse, worked bone fragments unidentified grayware sherds	
A 70596	29 W 1/2	Unknown	Pithouse	
A 81609	19 S 1/2	Unknown	Slab-lined roasting pit	

EC = Early Component; LC = Late Component

The Kin Ya'a Complex: An Ancestral Chacoan Anasazi Community

The numerous archaeological surveys conducted in the Crownpoint East district and in the HRI Crownpoint lease area have revealed an extensive complex of Chacoan Anasazi sites. This impressive constellation of Anasazi sites is part of the Chacoan Kin Ya'a community. The Kin Ya'a complex is a Chacoan community of the "Ancestral Type" (defined by Marshall et al. 1982:1231) that probably originated in the Early Developmental era, ca. AD 400 to 500, and evolved into a major "Chacoan Outlier" in the Pueblo II period, ca. AD 1000-1125.

The center or nucleus of the Kin Ya'a complex, which contains examples of great house and great kiva architecture, is located in the NE 1/4 of Section 28, approximately one mile east of the HRI Crownpoint lease (Figure 2). The great house and nearby shrine are known to the local Navajo peoples as the origin place of the Kii ya annii clan (Wyman 1970). The central complex of the community includes the Kin Ya'a great house and two great kivas (Marshall et al. 1979). The Chaco South Road enters the great house area and is bordered by various earthworks and a possible road-areola. A southwest road toward Hosta Butte and a possible west road toward the Muddy Water community are also present.

Archaeological surveys completed near the community center indicate a very extensive halo of habitation sites extending about two miles around the nuclear area. Anasazi site density in the nuclear community area ranges from 50 to 100 sites per square mile and it is probable that the entire community complex comprises hundreds of sites. A total of 23 Anasazi site components have been identified in the HRI Crownpoint lease area, and it is estimated that an additional 20 Anasazi sites are present in the lease. Most of these sites were probably affiliated with the Kin Ya'a community; however, some of the sites in the western lease area may have been affiliated with the Muddy Water community (Marshall 1991).

The location of the HRI Crownpoint lease adjacent to the Kin Ya'a community means that considerable effort must be devoted to management and site protection during the project development. This management effort must recognize the structure and components of the Kin Ya'a site complex. It must also include evaluations of known and potential Chacoan roads and it must recognize that a great deal of the complex is buried in alluviated areas and hence concealed. The boundaries of all cultural resources within the lease area, as determined from Class III survey, will be redefined regardless of previous documentation. Aerial photographic imagery will be examined for evidence of prehistoric roads, and the possible Kin Ya'a - Muddy Water road will be the subject of a road corridor survey. Subsurface disturbance in the project area will be preceded by archaeological testing and accompanied by monitoring.

Chacoan Roads

Two Anasazi road systems have been identified in the Kin Ya'a community on the basis of alignments visible on aerial imagery (Obenauf 1980). One system, verified by considerable field investigation, is the southern extension of the Chaco Great South Road, which links Kin Ya'a to Chaco Canyon (Nials, Stein, and Roney 1987). The South Road bifurcates in the center of the community, linking the alternate from the early great kiva on the west with the alternate from the Kin Ya'a great house on the east (Figure 2). The alternate roads join about one mile southwest of the great house and extend across Lobo Mesa toward Hosta Butte (Windes 1978).

The other road system is a possible corridor linking Kin Ya'a to the Muddy Water community. This possible road extends due west from the Kin Ya'a great kivas across the HRI Crownpoint lease area in the NW 1/4 of Section 29. This road was first identified on aerial imagery by Obenauf (1980:116-117) on the basis of a series of alignments extending between the Muddy Water and Kin Ya'a communities. This road was reportedly verified (Hogan et al. 1981:14), although subsequent work on a segment near Kin Ya'a and on another near Muddy Water has failed to support Chacoan affinity and instead suggests historical use.

Survey investigations along one segment (No. 11) near Kin Ya'a, by the BLM roads project (Nials, Stein, and Roney 1987:34-35), and a pipeline cross-section made across another segment near Muddy Water (John Roney, personal communication) suggest that the alignments are a possible historical wagon road (Marshall 1991:19-20). Nevertheless, the BLM study suggests the possibility of historical reuse of prehistoric features and recommends that further study of this system be made. Investigation of this possible road, and its projected alignment through the Crownpoint lease area, is required. The HRI Crownpoint lease cultural resources study will include a detailed examination of the road alignment. This research will entail stereoscopic examination of all available aerial photography and systematic survey of all alignments within the lease.

Navajo Occupation of the Crownpoint Region

The earliest evidence of Navajo occupation in the Crownpoint district appears in the canyons and forested mesa tops of the adjacent Lobo Plateau. Little is known about the early Navajo occupation of the region, but there is evidence of early eighteenth century settlement throughout the plateau, and earlier occupations may also exist. The earliest known Navajo camps in the area consist of forked-stick hogans and occasional masonry pueblitos. Associated ceramic materials include Dinetah Plain and intrusive Acoma and Zuni pottery of Ako and Ashiwi Polychrome. Early Navajo forked-stick hogans have been found in the northern canyons of Lobo Mesa, and masonry pueblitos and early cribbed-log hogans have been found in canyons near Ram Mesa (Marshall 1992, in preparation). Fortified pueblitos are also documented at Toyee Rock (Marshall and Sofaer 1988) and in the Pinetree Canyon area (Joseph C. Winter, Office of Contract Archeology, personal communication 1992). An undocumented Navajo pueblito site is situated on the summit of an isolated mesa near Crownpoint. This site is located in the SW 1/4 of Section 28 in T17N, R13W, about three miles west of the HRI Crownpoint lease.

The early Navajo occupation of the Crownpoint region was primarily a Woodland adaptation. Few Navajo sites of this early occupation have been found in the grassland plains of the Chaco region and none have been documented in the HRI Crownpoint lease. Nevertheless, early Navajo sites probably do occur in the adjacent canyons and on the mesas near the study area.

The majority of the Navajo sites known in the Crownpoint area, and most of the eight components previously documented in the Crownpoint HRI lease (Table 2), are of latenineteenth and twentieth century affinity. The earliest historical records of Navajos in the Crownpoint area date to the late 1860s. Three Navajo chiefs and their associated bands were said to be residing at a place called "Slender Cottonwood Gap" (*tiistsooz nieeshgizh*), which was later called Crownpoint (York 1981:22). Navajos were also said to be living near Hosta Butte in the 1870s. Hastinn titsoi'tsosi (Mr. Slim Yellowman), also known as Mariano, moved his band to the west of Hosta Butte and dammed a sink now known as Mariano Lake (Van Valkenburgh 1974:93).

Traditional and Sacred Sites in the Crownpoint Area: Hosta Butte and Kin Ya'a

No sacred sites or other traditional cultural properties are presently known within the HRI Crownpoint lease area. Because previous cultural resource investigations in the area have not adequately addressed this issue, there is a potential that traditional cultural properties exist in the area. In order to determine if sacred or traditional sites are present in the lease area, the HRI cultural resources project will include a comprehensive consultation effort with local residents and other knowledgeable Navajo people.

A review of the existing literature regarding Native American sacred sites reveals the presence of two important locations in the Crownpoint area, near but outside of the HRI lease. These are the sacred mountain peak of Hosta Butte and the ruin and nearby shrine of Kin Ya'a, which are discussed in the following notes.

Hosta Butte

Hosta Butte, located 8 miles west of the Crownpoint lease area, is the most prominent and elevated landform in the Lobo Plateau. This butte, which rises to an elevation of 8600 ft, is one of the most conspicuous features on the southern horizon of the Chacoan Province. There is considerable evidence to indicate that Hosta Butte was a very important shrine during the Chacoan Anasazi occupation of the region. Indeed, the pinnacle is the destination of the Chaco South Road, which extends 34 miles to link the great pueblos of Chaco Canyon with Kin Ya'a and Hosta Butte. Reference to Hosta Butte has not been found in the ethnographic literature of contemporary Puebloan mythology, and like other sacred Anasazi sites, its significance may have been lost over the passing of the centuries.

Hosta Butte is, however, a very important sacred site to the Navajo people, and it is often visited as an offering place. The Navajo people refer to Hosta Butte as Ak'i dah nast'ani (The Mountain That Sits on Top of Another Mountain). This name is an apt description for the towering truncated pinnacle. which extends 700 ft above the forested summit of the Lobo Plateau. The name Hosta Butte dates back to 1877 when it was given to the mountain by W. J. Jackson in honor of a Jemez Indian who guided Col. John Washington's expedition in 1849.

Hosta Butte is one of the seven principal sacred mountains in the Navajo origin myth and was recognized as one of the southern markers for the area traditional occupied by the Navajo and called the Tinetxa or the "Old Navajo Country." It is also mentioned in various versions of the Blessingway (Wyman 1970:561, 575) and Nightway (Van Valkenburgh 1941:75) ceremonies. It is said to have been created by First Man and First Woman and the supernaturals Black Body and Blue Body when they decided to decorate this world (Matthews 1897:79).

And finally they fastened Ak'i dah nast'ani to the firmament with a sacred mirage stone (quartz crystal). It they decorated with many plants, and with the black clouds that bring male rain. On its summit they placed Nahachagii, the Grasshopper, whose descendants are abundant to this day. And there they also placed Tse hadahoniye'ashkii the Mirage Stone Boy and Yoo'lichi'i at'eed the Carnelian Girl to dwell there forever as gods (Zolbrod 1984:89).

Numerous shrine sites are located on the summit of Hosta Butte, and many contain offerings of modern materials (Marshall and Sofaer 1988; Windes 1978). It is clear that Hosta Butte is an important sacred site and offering area, especially to the Navajo people. It is unknown, however, if the butte is visited by Pueblo people.

Kin Ya'a and the Kii ya anii Shrine

The Chacoan ruin of Kin Ya'a (Tall House; Marshall et al. 1979:201-206) and a nearby shrine are important Navajo sacred places. "The mythology of the Blessingway connects the Navajo place name for Kin Ya'a ruin (Kii Yaa'a) with one of the four original clans" (Fransted 1979:40-

41; Wyman 1970:331-458). According to the Franciscan Fathers (1910:356, 424), "the Kii ya anii and three other clans were created from parts of Changing Woman's body and are said to have been the first earth people" (York 1981:21-22). Kin Ya'a is also given as the home of Rainboy's parents in the origin legend of the Hail Way (Reichard 1944:153), and it appears in the legend of the Excess Way (Kluckhohn 1967:159).

Contemporary Occupation of the HRI Crownpoint Lease

Crownpoint Village

Crownpoint village was first established as the center of the Pueblo Bonito Agency by Superintendent Samuel Stacher on May 10, 1910. The village today is the center of the Eastern Agency of Navajo Tribal Government. Located within the village are various administrative offices for the Navajo tribe and Bureau of Indian Affairs. Also present in the village are various schools, a day care center, recreational center, senior citizen center, hospital, fire and police stations, post office, shopping center and various housing subdivisions and lots. The population of Crownpoint village was 3200 in 1980 (York 1981:33).

A portion of the HRI Crownpoint lease, in the SE 1/4 of Section 19 and in the NE 1/4 of the SW 1/4 of Section 19, is located within the urbanized area of Crownpoint village. Most of the modern construction in this area consists of housing in the Sunnyside and Midway and Mutual developments. Also present in the south one-half of Section 19 is the Crownpoint Institute of Technology, the pre-school, the Children's Development Center, the Crownpoint Chapter House, and the Tribal Water Development facility. It is estimated that 80 acres of the lease is urbanized and developed. Approximately 40 acres of the urbanized section has been the subject of previous cultural resource clearances (Clifton 1980; Copeland 1989; Hogan et al. 1981; Strnad 1981; Yeatts 1990) and it is unlikely that significant cultural resources will be encountered in these areas.

None of the buildings associated with the early Indian Agency administration in Crownpoint are located in the lease area. The center of old Crownpoint, including the early government buildings and trading posts, are all to the south of the lease in the north one-half of Section 30. Therefore, the HRI cultural resource study need not involve Historic American Buildings Survey work.

Outlying Homesites

Six outlying homesites are located within the HRI Crownpoint lease. All of these contemporary settlements are located in the western one-half of Section 29 (Figure 4). No homesites are presently located in the NE 1/4 of Section 25 or within the western half of SW 1/4 of Section 19. Four of the six homestead settlements in the western one-half of Section 29 were identified as contemporary cultural manifestations and given "CCM" site numbers in the Hogan et al. 1981 survey (CCM 9, 10, 11, and 14). Two additional settlements (one a housing start and another a single residence) have been established in the area since 1981. Families known to be resident in the western one-half of Section 29 are the Martin family, the Sadie Kee Begay family, and the Hardy Nogale family.

The Crownpoint Cemetery

The Crownpoint village cemetery is located in the NE 1/4 of the NE 1/4 of Section 25. This cemetery was first established by Superintendent Samuel Stacher soon after the 1910 establishment of the Pueblo Bonito Agency at Crownpoint. The cemetery is still in use today.

The boundaries of the cemetery, as illustrated in Figure 6, are marked by a post and wire fence. Most of the graves are located in the eastern part of the fenced area. However, there are various outlying graves, many of which are unmarked. The Crownpoint cemetery is recognized as an exclusion area within the HRI lease. No mining activities will be conducted in the area of the cemetery. All wells placed in the adjacent NW 1/4 of Section 25 are to be monitoring stations.

Land Use

Much of the open land in the lease area is used for grazing, and most of the families resident in the western one half of Section 29 maintain livestock. The Section 29 portion of the lease lies within the Little Water Grazing Community, and the Section 19 and Section 25 parcels are within the Becenti Lake grazing area.

Small gardens and cornfields were probably once maintained in various areas of the lease: however, no known agricultural fields or garden areas are maintained in the lease area today. Land use in the immediate area of Crownpoint is becoming more and more oriented toward recreational use by the local residents. There is considerable evidence of off-road vehicle traffic (dirt bikes) in the SW 1/4 of Section 19.

RESEARCH CONSIDERATIONS

The proposed HRI Crownpoint cultural resources study promises to provide a major contribution to the data base regarding archaeological, historical, and traditional sites in the Crownpoint District. Previous archaeological investigations in the Crownpoint lease and in adjacent areas have revealed an extensive Navajo occupation of late nineteenth and twentieth century affinity and a major ancestral Chacoan Anasazi community known as the Kin Ya'a site complex. Most of the previous research conducted in the Crownpoint area was completed during the period from 1973 to 1981 and was limited to archaeological clearance activities. No attempt has been made to provide an overview of the existing data base for the area. Historical, archival, and oral history studies are likewise limited to the work of Hogan et al. (1981). The eight cultural resource studies that have been completed in the HRI Crownpoint lease area have resulted in the documentation of 31 archaeological-historical sites. No investigation of traditional cultural properties has been completed, to date, in the lease area.

The proposed HRI cultural resources study will address many of the issues that were neglected in the previous work. The HRI research will concentrate on a definition of Chacoan community structure, as it is reflected in the Kin Ya'a complex, and recent Navajo history and oral history in the Crownpoint area. This study will involve a comprehensive definition of the cultural resources in the lease area, a review of historical documents regarding the Crownpoint Navajo, and an oral history study designed to outline Navajo secular and sacred land use in the area.

A brief discussion of the Anasazi and Navajo research considerations to be addressed by the HRI project is provided in the following text.

Chacoan Community Structure

The HRI Crownpoint lease is located within the Chacoan Anasazi community known to the local Navajo people as Kii ya'a or Kin ya'a (Standing Up House or Tall House). The name refers to a tall masonry remnant of the tower kiva, which is a prominent feature on the local landscape.

The investigation of cultural resources in the HRI Crownpoint lease promises to yield considerable information on the nature of Anasazi culture and the evolutionary development of Chacoan community structure. The Kin Ya'a site complex is an example of an "ancestral community" in that it was established in the early Formative period of Chacoan Anasazi development, about AD 500, and was occupied for an incredible period of 650 years until its demise about AD 1150. Ancestral communities have considerable time depth and thus exhibit a series of evolutionary developments from the Formative Basketmaker II-III period into the Classic Bonito/Pueblo II era (Marshall et al. 1982:1231). Ancestral communities, like Kin Ya'a, are located in areas with favorable agricultural conditions. They appear to have developed from the late Archaic period substratum as small constellations of habitation sites scattered about a single kiva or great enclosure. These communities eventually developed into large constellations of habitation sites grouped around Bonito-style great houses and great kivas. Other public works, such as ceremonial roadways and platforms, and irrigation works, were also built during the Pueblo I and Pueblo II periods.

The central or nuclear area of the Kin Ya'a site complex (Hooton et al. 1978; Marshall et al. 1979) is located in Section 28, directly east of the HRI Crownpoint lease. The community center contains two great kivas, one large multistoried great house, various roads and earthworks, and an elaborate complex of unit house habitation structures. The concentration of masonry buildings, many with associated kivas and middens, is phenomenal, and during its occupation the village must have resembled a massive masonry complex extending out in a great arc of houses and streets from the great house.

Archaeological surveys conducted in the HRI Crownpoint lease area have revealed a considerable number of Anasazi unit houses and special-function areas, spanning the Basketmaker III to late Pueblo II occupation. A total of 23 Anasazi components have been identified in the lease area and an additional 15 to 20 may be present. These sites appear to be outlying components of the Kin Ya'a and perhaps Muddy Water communities. The sites are not as large, nor as frequent, as those found in the nuclear core of the adjacent communities. It is probable that the sites are part of a halo of extensive Anasazi use and habitation that surrounds the adjacent village centers. One possible Anasazi road, connecting the Kin Ya'a and Muddy Water communities, crosses the lease area. Agricultural fields and various resource-gathering locations associated with the communities also undoubtedly appear in the lease area.

One of the major objectives of the planned HRI research is the study of Chacoan community structure and its evolutionary development as it is represented in the outlying halo of the central site complex. This analysis will involve a detailed examination of the cultural resources in the lease area and will include comparative study with the cultural properties documented in the adjacent areas. The stratification of site types according to seven major ceramic-temporal horizons will enable us to view the development of community structure over a period of approximately 650 years.

A study of Anasazi agricultural land use in the Kin Ya'a community is also an important research topic. Information concerning Anasazi agricultural areas may be obtained by environmental study, by the identification of irrigation and water diversion works, and by the study of field-related sites (ovens, artifact scatters, fieldhouses, etc.). Information regarding trade and regional interaction may be obtained by the analysis of intrusive and indigenous ceramic wares and lithic material types, and by the presence of other exotic trade goods.

Another important research problem involves the function and destination of Chacoan roads in the Crownpoint area. Information obtained from the HRI study on the possible Kin Ya'a-Muddy Water road may contribute data significant to the interpretation of Anasazi road systems.

Navajo Studies: Recent History of the Crownpoint Navajo

All of the historical sites that have been documented in the HRI Crownpoint lease are Navajo cultural properties of late nineteenth and twentieth century affinity (Table 2). All of the sites date to the period after the Navajo incarceration at Bosque Redondo from 1863 to 1868. Earlier Navajo occupations of the Lobo Plateau region, during the eighteenth and early nineteenth centuries, are known, but none have been found in the lowlands of the lease. Navajo occupation of the Crownpoint lease was rather sparse during the late nineteenth century, but the area became a center of Navajo settlement after the establishment of the Eastern Navajo Pueblo Bonito Agency and the Ohlin Trading Post at Crownpoint in 1910 and the Crownpoint Indian School in 1912 (York 1981:26-27).

An attempt to reconstruct the recent history of the Navajo people in the Crownpoint area, with specific reference to the HRI Crownpoint lease, will be made in the cultural resources project. All historical sites found in the lease area will be systematically documented following the "Guidelines for the Treatment of Historic, Modern, and Contemporary Abandoned Sites" outlined by the Navajo Nation Historic Preservation Department. This process will include archaeological survey documentation, archival research, and interviews with local residents. This documentation will yield considerable information on recent Navajo history in the Crownpoint area.

A chronological sequence for the Navajo cultural properties found in the lease area will be developed using a combination of artifact analyses, historical records, and oral histories. The development of this sequence will assist in the demographic analysis of Navajo occupation in the region. The "big block" hogan sites that have been documented in the Crownpoint area probably date to the period immediately after Bosque Redondo but before the railroad, ca. 1868-1881. Later sites occupied after the railroad and during the early Pueblo Bonito Agency and trading post days should exhibit considerable numbers of Euroamerican artifacts.

The demographic analysis of the Navajo occupation in the lease area should reveal a rather dramatic population increase following the establishment of the Pueblo Bonito Agency and the Crownpoint trading posts. A report in 1911 from the Pueblo Bonito (Crownpoint) Agency, however, indicates that the Navajo in the area had been forced to move to Mariano Lake and the Chaco Wash to get water for their stock (Stacher 1940). This problem was rectified by the development of a series of wells in the area after 1915.

Research regarding the recent and contemporary Navajo occupation in the lease area will also be a part of the proposed cultural resources study. This activity will include the identification and a brief description of all occupied settlements in the lease area and the collection of information regarding contemporary land use and recent history as related by the residents interviewed. This research will also be instrumental in the definition and protection of sacred and traditional sites in the area.

CONCLUSION

The cultural resources-environmental assessment conducted for the HRI Crownpoint lease indicates that it is located within a cultural district of considerable significance. Indeed, the proposed lease is within the Kin Ya'a community complex and is placed in direct proximity to the Kin Ya'a - Chaco Culture National Historical Park and State Cultural Properties Register Site No. 57. The lease area is also the location of a rather extensive historical period Navajo occupation, and it has the potential to contain properties of sacred or traditional value. Numerous cultural properties that qualify for nomination to the National Register are probably present in the lease area. Other sites that qualify for preservation under the American Indian Religious Freedom Act and the Navajo Nation Policy to Protect Traditional Cultural Properties are also likely to be present.

Any plans for mining activity within the lease area must be extremely sensitive to the cultural properties within the area. A management plan for the proposed lease area can, however, effect total avoidance of the cultural resources. This avoidance plan is possible given the flexible nature of the proposed in situ mining project. Following a systematic Class III cultural inventory and traditional site inquiry, all significant cultural properties within the lease area would be recognized as protection zones and the boundaries marked. A specific cultural resource management plan would then be developed and submitted to the Bureau of Indian Affairs and Navajo Nation Historic Preservation Department for approval. The limited subsurface disturbance in the area would be preceded by archaeological test excavations in case buried or concealed cultural remains are present, and all construction projects would be archaeologically monitored.

Given the implementation of the culture resource management plan outlined in this report, adverse impact to the cultural resources of the lease area would be negligible. Furthermore, the proposed study of cultural resources in the lease area would significantly contribute to our knowledge of the Chacoan community structure and recent Navajo history. Bannister, Bryant

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APPENDIX A

PROCEDURAL SEQUENCE FOR THE HYDRO RESOURCES, INC.,

CROWNPOINT CULTURAL RESOURCE MANAGEMENT PLAN

- I. Complete a cultural resources environmental assessment and proposed culture resource management plan (this document).
- II. Submit assessment and cultural resource management plan to the Bureau of Indian Affairs and Navajo Nation Historic Preservation Department.
- III. Respond to comments by BIA and Navajo Nation Historic Preservation Department and revise Management Plan, if required.
- IV. Request permit to conduct cultural resources inventory and sacred-traditional site inquiry.
- V. Complete Class III cultural resources inventory and sacred-traditional site inquiry for the Crownpoint lease area. Document all cultural resources in the area and establish specific resource boundaries.
- VI. Prepare a cultural resources survey report following"Interim Fieldwork and Report Standards and Guidelines" of the Navajo Nation Historic Preservation Department.

Evaluate all cultural resources with respect to National Register Significance (36 CFR 60.4), the Archeological Resources Protection Act (43 CFR 7.3), and the American Indian Religious Freedom Act (P.L. 95-341). Also follow Navajo Nation Policy for the Protection of Traditional Cultural Properties (1990) and the National Register Bulletin No. 38 (1990) entitled "Guidelines for Evaluating and Documenting Traditional Cultural Properties."

Develop specific treatment for the management-avoidance plan.

- VII. Submit cultural resources report and management recommendations to the BIA-Navajo Nation for review and request permit for project clearance-approval to begin construction. Respond to comments or requests for revision.
- VIII. Following Navajo Nation and Bureau of Indian Affairs approval, survey boundaries of lease, well pads, access roads, and pipelines and verify via archaeological survey that these areas are outside all protection zones. Complete archaeological testing in all areas of proposed subsurface disturbance to determine if buried or concealed cultural resources are present. If buried resources are found, avoid or develop mitigation plan, under consultation with the Navajo Nation Historic Preservation Department.
- IX. Brief all construction personnel and workers in the HRI lease area regarding the cultural resource protection plan and avoidance areas. Monitor, at intervals, all construction and development within the lease area. Compile a report on the monitoring program after the major development phase and submit to Navajo Nation Historic Preservation Department.
- X. Develop cultural resource management plans for continued maintenance and occasional development and submit to Navajo Nation Historic Preservation Department for clearance. Monitor, at intervals, all reclamation activities.

APPENDIX B

DESCRIPTION OF THE KIN YA'A GREAT HOUSE AND ASSOCIATED FEATURES

(from Marshall et al. 1979)

LA NO. 8778

NPS NO. 29Mc-108

NAVAJO NAME

"kii ya'a or kin ya'a (standing up house, also translated tall house, or towering house) and an alternate term: Anasazi bieezh (ancient enemy's land). Van Valkenberg lists a varient 1 have not actually heard: kin yaa'ahi, 'towered house' (1975:13). Kii yaa'a is given as the house of Rainboy's parents in the origin legend of the Hail Way (Reichard 1944:153). "Tall House" is in the legend of Excess Way (Kluckhohn 1967:159). Logically, this place is considered the home of the kiiya'anii, one of the original four clans in most versions of the Navajo origin legend" (Fransted 1979:40-41).

CULTURAL AFFINITY Chacoan

TEMPORAL AFFINITY

The dates obtained from Kin Ya's range from A.D. 1101 to 1106 and cluster at A.D. 1106. "The dates from the room east of the tower kiva are: 1038-1111vv, 1068p-1106r, 1061p-1106r, and 1079p-1106c. Dates from the tower kiva are 1061p-1104vv, and 1039p-1106rl" (Bannister et al. 1970:25).

LOCATION

On file, Historic Preservation Bureau, Santa Fe, NM.

LAND STATUS Navajo

ELEVATION 6,780 feet

DRAINAGE

Southwest tributary of Kim-me-ni-oli Wash, to the Chaco Wash, to the San Juan River

PHYSIOGRAPHIC SITUATION

Kin Ya'a is situated in open terrain approximately 1,5 km northeast of Lobo Mesa. The pueblo is on the western margin of a broad alluvial floodplain below the mouth of a narrow sandstone canyon.

VEGETATION

Kin Ya'a is surrounded by a sparse shrub grassland consisting of snakeweed and scattered stands of sand dropseed and Indian ricegrass. On the site itself, the vegetation is mainly annual plants, including mustard, heliotrope, and small forbs, with a few perennial plants such as saltbush and wolfberry. Scattered juniper can be found 1 km to the southwest.

SITE CONDITION

The Kin Ya'a ruin is mostly reduced. Extensive stabilization efforts have slowed the attrition of the spire-like tower remnant which marks the home of the Kiiya'anii clan, and from which the site derives its name.

S. J. Holsinger, who visited the ruin around the turn of the century, noted that treasure hunters had tunneled into the ruin only to find a "... solid mass of detritus" (Holsinger 1901:54). A photograph accompanying Holsinger's report shows a large hole in the base of the tower kiva (Holsinger



Kin Ya's LA No. 8778 view to the southeast.



KIN YA 'A LA NO. 8778 APRIL 1978

1901:53). This wall is now restored. He also reported evidence for extensive looting within the Kin Ya'a community. "Skulls, femurs, and other bones are strewn promiscuously over the ground, with many large fragments of pottery" (Holsinger 1901:55). Scars left by looters are still evident within the Kin Ya'a community.

The area immediately around Kin Ya's has recently been the focus of extensive drilling operations associated with uranium.

PHYSIOGRAPHIC SITUATION

The site is on a broad bench on the north side of the Red Mess Valley, Cliff-forming sandstone units flank the site on the north and south sides.

VEGETATION

The vegetative community is an open juniper grassland with some scattered shrubs.

SITE CONDITION

Reduction is normal and the site is stable.

SITE DESCRIPTION

The placement of the house and the terraced structure orient the building toward the winter sun. The building contains an estimated twenty-six ground floor rooms, three enclosed surface kivas, nine second-story rooms, an undetermined number of possible third-story rooms, and a tower kiva extending to a four story elevation.

n

8m

The lower single-story terrace consists of a row of three enclosed kives flanked by narrow rectangular rooms. This lower terrace, which houses the surface kives, served as a broad elevated platform (approximately 12 m x 40 m) to provide access to the second terrace and four-story tower.

The second terrace encloses the tower kiva. The tower kiva is centered in the rear of the pueblo, flanked on two sides by second and possibly third-story rooms.

PLAZA

"On the south side, remnants of a court or enclosure surrounded by a low wall can still be detected " [Fewkes

1917:13). There is no evidence of such a structure today.

KIN YA'A STRUCTURAL DIMENSIONS

HOUSE DIMENSIONS

Maximum N-S	35.5 m
Minimum N-S	18.7 m
Maximum E-W	45.5 m
Minimum E-W	18.7 m

The Kin Ya'a structure covers approximately 999 square meters.

TOWER KIVA

The Kin Ya's tower originally stood a full four stories to an estimated elevation of 12 m. The lower chamber and much of the second floor remain intact, while only a rectangular column of the northeast corner extends through the third and into the fourth story. This ragged remnant has a present elevation of 10.25 m.



KIN YA 'A TOWER KIVA CROSS-SECTION LA NO. 8778 APRIL 1978
The walls of the tower kiva have a massive foundation base 1.5 m in width, which is composed of the largest masonry elements $(1.20 \text{ m} \times 20 \text{ cm})$ in the structure. The walls taper by means of bench insets to a width of 60 cm in the fourth chamber. The northern outside wall of the tower is essentially vertical with bench insets 10 to 20 cm in width just above each viga level. These outside benches apparently served not only to facilitate the wall taper, but as working platforms for the masons. The inside walls of each kiva chamber slope inward from the floor bench to the root (i.e., the next floor bench). Thus, there is a slight conical form to each chamber, with the floor diameter exceeding the roof diameter by approximately 20 cm in each case. This may have helped to distribute the structural weight load equitably to the lower levels.

The circular chambers of the Kin Ya's tower range from 4.4 m to 5.0 m in interior diameter, depending on the location of measurements with reference to the bench structures. The cylinders are housed within a massive rectangular structure 6.4 m E-W x 6.2 m N-S. The cylinders are set such that the southern interior wall includes 1.5 m of the east-west exterior wall of the enclosure.

A narrow bench, or ladge, 15 to 25 cm in width, exists on the interior, directly above the exterior viga levels. These ledges are situated near the floor level of each chamber and appear to represent the platform upon which the floor beams were set. The ledges of the second and third-floor levels are separated by a 2.8 m vertical distance. On the second story there is a partial bench structure which exists only in the north quadrant for a distance of 1.50 m, and which is 15 cm in width and 25 cm in elevation above the floor ledge. There are no viga molds visible in the interior chamber walls.

On the exterior face of the north wall, there are vigas housed within rectangular masonry molds which define the story elevations. These vigas are located at 2.8 m, 5.7 m, 8.6 m, and a projected 11.5 m above the ground surface. Directly above each viga level, there is a narrow ledge 15 to 20 cm in width. Each exterior viga level is located directly opposite and just below the floor bench in the cylinder interior (see cross-section). These vigas do not, however, appear to extend into the room interior, unless perhaps the molds have been filled during stabilization. It is rather peculiar that the vigas do not extend into the room interior, It is possible that these exterior vigas served as support for scaffolding to aid in the interior ledges served as the roof support structures.

Within the north wall of the tower, there are window vents on the lower and second floors. It is quite probable that similar vents also existed on the third and fourth floors, although this section of wall is absent. The window of the first floor is located directly below the center of the upper window. The window of the lower floor is of rectangular form, 40 cm x 35 cm in size. This window is located 2.2 m above the ground floor. The window of the second floor is a "T" shaped structure 39 cm wide and 10 cm high on the top and 27 cm wide and 15 cm high on the bottom.

The tower chambers of Kin Ya'a are burned. There is no avidence of fire in the remainder of the house. The interior wall surfaces of the tower are brick-red, and the adobe mortar is fire-hardened. This may have contributed to the dursbility of the structure.

The tower kivs is a rare feature in Chacoan structures. The functions of this type of kivs are not known, but Fewkes (1917:15) ventured a guess, "It must be remembered that the ceremonial room or kiva, in modern mythology, represents the underworld out of which ... the serily races of men emerged." The tower kivs at Kin Ya's "... may have been four kivas, one above another, to represent the underworldsin which the ancestors of the human race lived in succession before emerging into that in which we now dwell."

MASONRY

The walls of Kin Ya'a are massive, core-veneer masonry constructions 50 to 60 cm in thickness. The masonry materials consist of dense buff to dark brown sandstone slabs ranging from chinking spalls to large blocks 1.20 m in length \times 20 cm in thickness. The average element size is 10 cm x 30 cm. Elements in the interior of the tower kiva are somewhat smaller, averaging 3 cm x 10 cm. Most of the masonry facing is evenly coursed but unbanded; however, areas of irregular wide banding also occur. The larger elements occur at the base of the tower in bands, acbarently acting as foundation stones.

"In the west wall, there is a course of uniform size, measuring $6" \times 48"$ on the face of the wall. These were the largest stones employed in the construction of any of the Chaco buildings. The style of masonry was, as a rule, plain, with one exception being noted in the third story, where there were alternating bands of small and large stones" (Holsinger 1901).

ENTRYWAYS

No entryways are visible. The tower kiva was apparently entered from the roof or perhaps from the lower chamber which is concealed by the rubble mound.

MIDDENS

There are four extensive midden areas which occur in proximity to the house. Midden 2, however, appears to be associated with House Mound A-111, which is located 50 m northeast of Kin Ya's. The three midden areas (1, 3, and 4) which have direct association with Kin Ya'a contain an estimated 1,200 cubic meters of trash fill. Midden 1 (i.e,-A-109) is located 30 m southeast of the house. This midden measures 45 m x 22 m, with a mean elevation of 1 m. Midden 2 (i.e., A-110) is located 60 m northeast of the house in the northeast part of the fenced area. This midden measures 40 m x 20 m, with a mean elevation of 1 m. Midden 3 (i.e., A-112) is located 35 m north of the pueblo. It is 16 m x 13 m in size and has a mean elevation of 50 cm. Midden 4 is located adjacent to and southwest of Midden 1 near the south boundary fence. This formation measures 17 m x 12 m with a mean elevation of 50 cm.

ADJACENT OUTLYING FEATURES

House A-111

Located approximately 50 m northeast of Kin Ya'a, there is a "complex-linear." house block 34 m in length with an orientation similar to that of Kin Ya'a. This house is estimated to contain approximately lifteen rooms. There is a kiva depression 8 m in diameter adjacent to, and southeast of, the house. The rubble mound elevation is 1 m. The masonry is compound, with walls 30 to 40 cm thick. Midden 2 appears to be associated with this house. This house is similar to the 100 or so unit pueblos which occur in the Kin Ya'a nuclear community area.

Depressions

There are three depressions in close proximity to Kin Ya'a which may represent outlying kivas. One is located in the prehistoric roadway between the pueblo and Midden 1. This is 8 m in diameter. Another, which is 10 m in diameter, is situated directly northwest of Midden 4, southeast of the roadway. There is another swale-depression between Middens 1 and 2, which may be structural in nature.

Great Kiva

An isolated great kiva (29Mc-117) is present in the Kin Ya'a

settlement on a low hill approximately 200 m northwest of the Kin Ya'a ruin. The ceramic sample obtained adjacent to this kiva, although somewhat contaminated from later components in the area, appears to predate Kin Ya'a. It is possible that this kiva served as the community religous center prior to the construction of Kin Ya'a itself.

The kive has an interior diameter of approximately 13.5 m. The maximum depth of the depression is now 1.25 m. Four masonry alcove rooms are attached to the outside perimeter of the kive. The kive appears to have been primarily subterrenean.

The wall of the kive structure is entirely covered except for a "pothole" inside of the south well. This excevation has revealed a section of mesonry well approximately 2 m long and 70 cm in height. The interior surface of this exposed section of wall is burned and fire-reddened. Additional scattered oxidized mesonry elements indicate that the entire room had burned. All mesonry elements used in the structure are of soft, light brown tabular sendstone. The interior face of the kive well is uniform and nonbanded. Elements range from 25 to 35 cm in length and 5 cm in width. Small chinking spalls are also present and occur with random placement. The total well thickness and construction mode is undetermined.

Four well defined coursed masonry alcove rooms exist around the kiva margin. These alcoves have a regular placement opposite one another. The north, west, and south

Ceramics

alcoves are single rooms with an approximate interior size of 3.5 m parallel to the kiva x 2.5 m perpendicular to the kiva wall. The east alcove, however, is a double room of somewhat larger size. The interior room is 5 m x 2.5 m and the outside room is of similar size, but appears to be oben on the east. Partial wall alignments visible in the various alcoves reveal compound masonry 40 cm in thickness. The alcoves represent surface structures with mound elevations of 50 cm.

Estimated Dimension of Kiva Structures

Kiva	interior diameter	inside N-S	size of enclosure E-W
1	5.5 m	8.5 m	8.0 m
2	5.0 m	7,0 m	8.0 m
3	6.0 m	7.5 m	. 7.0 m
tower kivs	4.45-5.0 m	6.4 m	6.2 m

Five meters southwest of the southwest kive alcove, there is a well defined pit room or kive depression 50 cm in depth and about 5 m in diameter. No masonry elements are visible. The association of this structure with the great kive is unknown.

A rubble mound $4 m \times 4 m$ in size and 50 cm in elevation exists 5 m north of the northwest alcove. This appears to

	Kin Ya'a		great kiva
<u>.</u>	Midden 1 grab sample	Midden 2 grab sample	grab sample Midden 4
Cibola Gray Ware			32
Plain	28	· 11	5
Banded-Smoothed	1	. 2	1
Banded-Incised		47	21
Corrugated-Indented	88	43	
Corrugered-Incised	٦	•	
Cibols White Ware			
White Mound B/W			
Red Mesa B/W		1	5
Solid Style B/W	7	5	7
Gallup B/W	.6	5	1 1
Unidentified Style B/W	28 ·	38	
Chuska Gray Ware		•	
Corrugated-Incised	· 1		
Mesa Verde White Ware		•	
McElmo B/W		. 1	
White Mt. Red Ware	•		}
Puerco B/R	1	•	1
Wingste B/R	•	2	1
Unidentified Style	1	*	
Socorro White Ware		1	}
Socorro B/W		ł	
San Juan Red Ware			2
Unidentified Style			
TOTAL	162	110	

represent a single matorry room. Many other room blocks occur in the vicinity, particularly toward the west, but documentation of these sites is beyond the scope of this study.

Extensive midden formations exist in the proximity of the kive. Midden 1 is located approximately 12 m northeast of the kive and is 15 m x 30 m in size and 50 cm in elevation. Midden 2 occurs immediately north of the kive and is 18 m x 12 m in size and 25 cm in elevation. Midden 3 is located 8 m west of the kive and is 8 m x 6 m in size and 25 cm in elevation. Midden 4 is an extensive but shallow formation which is adjacent to the kive on the eastern side. This midden measures approximately 70 m E-W x 12 m N-S and is 25 cm in elevation. The total quantity of midden which exists in proximity to the kive is estimated to be 451 cubic meters.

A location, 29Mc-122, has been recorded as an additional great kive, some 600 m NE of Kin Ya's. This feature was inspected, but it sopears to be a swale between a house mound and a midden area.

COMMUNITY DISCUSSION

In 1972, the National Park Service conducted an archeological survey of the east half of Section 28 T17N, R12W which resulted in the definition of thirty-seven Anasazi sites (Sites 29Mc-101-138).

In 1978, the New Mexico State University, San Juan Branch, Cultural Resource Management Program (Hooten, Andrae, and Navior 1978) conducted an archeological survey of 3.75 sections (Section 20 NE%, Section 21 W%, Section 22 S%, Section 26 W%, Section 27, Section 35 NW%, and Section 28 NW, NE, and SW%). This survey resulted in the definition of supproximately sixty-even additional Anasazi sites.

The archeological survey in four square miles around Kin Ya'a has defined approximately 104 sites. These range from sherd acatters and hearths to large fifty-room pueblos with multiple kivas. The site density is clearly highest in Section 28 around the western slopes above Kin Ya'a. Most of the sites span the late PI into the early PIII period cs. A.D. 950-1100. Only traces of BMIII or early PI materials are noted.

The survey work which has been conducted adjacent to Kin Ya'a has resulted in an inventory oriented toward the spatial definition of the sites for clearance purposes. The records, although substantial, do not allow for consistent definition of specific temporal affinity, estimated number of rooms, or midden sizes. The sites have therefore not been summarized in this study.

REMARKS

Evidence of Water Control

Structural evidence of water control devices in the floodplain adjacent to Kin Ya'a has been defined in two locations by the National Park Service's 1972 Survey. These locations have not been tested or otherwise reexamined.

Site 29Mc-105, located in the SW% of the NW% of the SE% of Section 28 (Beardsley 1972), is an apparent irrigation ditch 90 m long NESE and 2.5 m in width. The ditch is evidenced by a low linear swale 50 cm in present depth. There is a "masonry dam" 1.25 m in length and 25 cm in exposed elevation across the swale.

An additional location, Site 29Mc-135 in the NW% of the SW% of NE% of Section 28 (Beardsley 1972) consists of a "... partially exposed check dam 30 m long and 75 cm in width and a possible irrigation ditch."

These apparent irrigation features warrant further examination and testing. Indeed, a specific study of water control in the Kin'Va'a floodplain is in order.

Roadway

There is a roadway evidenced by a pronounced swale which approaches Kin Ya'a from the northeast. The roadway makes an angle change and leaves the pueblo on a southwest orientation. The roadway is defined by a linear swale 6 to 9 m in width and 1 m deep.

In 1901, Halsinger mistook this roadway entering Kin Ya'a for an irrigation feature: "The vestige of two large reservoirs and a huge canal, now 20 feet wide, on the bottom passes within a few yards of the ruins."

In 1917, Fewkes recognized the swale as a well used trail. "The trail was at first mistaken for an irrigation ditch, but an examination of its course shows that it runs up a steep hill, which precludes such a theory."

Today the prehistoric roadway which passes through Kin Ya'a is known as the "Great South Road." There are, in fact, two roadways which enter Kin Ya'a from the northeast. One avenue leads NNE toward Bee Burrow, and north to the South Gap of Chaco Canyon; the other leads NE, toward Pueblo Pintado. A roadway through the South Gap of Chaco Canyon is "... traceable some thirty miles to the south. At Kin Ya'a, the roadway from the north passes through the site and continues toward the southwest. Another branch ran northeast, apparently toward Pueblo Pintado" (Lyons and Hitchcock 1977:128).

The southwestern sour leads to the edge of the mountains approximately 2 km distant. This may represent an evenue to the rock quarries and wood sources. Such quarry roads are also known at Aztec (Morris 1915:666) and Pueblo Pintado. It should also be noted that in 1954, Neil Judd reported that Hosteen Beyal recognized a roadway from Kin Bineola to Kin Ya'a. This roadway has not yet been defined and documented by archeologists.

Estimated Interior Room Sizes (See Illustration)

room no.	E-W size	N-S size
1	3.5 m	5.0 m
2	4.5 m .	5.0 m
3	5.0 m	5.0 m
3	3.5 m	5.0 m
5 '	4.5 m	5.0 m
· 6	3.5 m	5.0 m
7	4.5 m	5.0 m
8	. 3.5 m	3.5 m
9	4.75 m	5.0 m
10	4.75 m	2.5 m
11	- 3.5 m	4,0 m
12	3.5 m	6.5 m
13	4.0 m	3,0 m
14	4.0 m	3.0 m
15	5.0 m	3.0 m
16	7.0 m	3.0 m
17	7.5 m	3.0 m
18	4.5 m	3.0 m
19	4.5 m	3.0 m
20	4.5 m	3.0 m
21	4.5 m	2.5 m
22	4.5 m	3.0 m
23	4.0 m	6.0 m
24	4.0 m	4.5 m
25		d 1 or 2 rooms ?
26 lisolated un		3.D m

M. Blevins' Affidavit

Attachment H

A CULTURAL RESOURCES-ENVIRONMENTAL ASSESSMENT AND MANAGEMENT PLAN FOR THE PROPOSED HYDRO RESOURCES, INC. UNIT NO. I LEASE IN THE CROWNPOINT AREA OF THE EASTERN NAVAJO DISTRICT, NEW MEXICO



A REPORT PREPARED BY CIBOLA RESEARCH CONSULTANTS FOR HRI, INC., A SUBSIDIARY OF URANIUM RESOURCES, INC.

BY MICHAEL P. MARSHALL DIRICTOR OF ARCHAEOLOGICAL PROJECTS CIBOLA RESEARCH CONSULTANTS

DECEMBER 15, 1991

CIBOLA RESEARCH CULTURAL RESOURCE REPORT NO. 52

Submitted to Mark Pelizza Environmental Planner, Hydro Resources, Inc.

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ABSTRACT

A cultural resource evaluation and management plan is presented in this report for the proposed Hydro Resources, Inc. (HRI), Unit No. 1 mining lease on Navajo allotment lands in the Crownpoint Chapter of the Eastern Navajo Agency, McKinley County, New Mexico. The lease consists of an approximately 1307-acre tract located west of Crownpoint in parts of Sections 14, 15, 21, 22, 23, and 24 of T17N, R13W. The proposed project concerns the development of an in situ solution uranium mine, which involves the construction of a series of injection-extraction wells and a pipeline gathering system. The cultural resources-environmental assessment presented in this report includes an evaluation of the cultural resources known to exist in the lease area and outlines a management plan designed to prevent adverse impact to the cultural resources during the project development.

INTRODUCTION

This report provides a cultural resources-environmental assessment for the proposed HRI Unit No. 1 lease area near Crownpoint, New Mexico. The objective of this report is to evaluate the nature of the archaeological, historical, and traditional cultural properties within the proposed lease area and to develop a preliminary management plan that ensures resource preservation. The proposed HRI Unit No. 1 lease area is a 1307-acre tract located near Crownpoint, New Mexico (Figures 1 and 2). The proposed in situ solution uranium mine would involve the development of injection-extraction wells, access roads, a pipeline gathering system, and a processing facility. The location of this facility within the lease is very flexible and can be planned in such a manner to avoid adverse impact, both direct and indirect, to the cultural resources of the area. A preliminary cultural resource management plan for the proposed lease area is presented in this report. Specific management plans that define precise site boundaries and avoidance procedures will be developed following a Class III cultural resources survey. This survey will be completed after the lease acquisition and will be part of the environmental clearance document to be submitted to the Navajo Nation and the Bureau of Indian Affairs prior to the project development.

The information presented in this report includes a description of the known cultural resources in the proposed lease area, details of a cultural resource management plan, and information regarding culture history and potential research considerations for the area. A management plan describing the proposed HRI mining project in terms of potential impact on the cultural resources is also presented. This section of the report includes discussion of the proposed Class III cultural resource inventory, information on the archaeological and traditional site protection plan, and considerations of indirect impact. A discussion of the Muddy Water Chaco Protection Site and State Register district, located adjacent to the lease, is also included. In addition, statements are made regarding the proposed treatment of sacred and other traditional sites and human burials and graves.

Information regarding the cultural resources of the proposed lease area and the surrounding district are also presented in this report. This discussion includes a records search and a summary definition of all previously documented sites in the proposed lease area. It also includes discussions of the Chacoan Muddy Water community, the Navajo occupation of the area, and information regarding known traditional and sacred sites near Crownpoint.

This report also includes additional information on Chacoan Anasazi and Navajo culture history and considers research topics that might be addressed as a result of the proposed cultural resource investigations. Other information presented in this report includes a copy of National Park Service information regarding the Muddy Water Protection Site and a copy of Public Law 96-550, Title V, known as the Chaco Culture Archeological Protection Act.

It is the purpose of this report to serve as a preliminary planning document for cultural resource management in the proposed HRI Unit No. 1 lease area. It is probable that the proposed mine would be developed at intervals over a period of years. Following the completion of a Class III inventory, specific management plans for each development phase would be formulated.

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THE CULTURAL RESOURCE MANAGEMENT PLAN

Introduction

A cultural resource management plan for the proposed HRI Unit No. 1 lease is outlined in the following text. This outline describes the procedures that will be taken to ensure the preservation of the important cultural antiquities, historical properties, and sacred-traditional sites within the lease area. A policy of total avoidance of all significant cultural manifestations is to be followed during the project development. It is the objective of the HRI cultural resource management plan to complete the development of the well field, access network, and gathering-processing system without adverse impact to the cultural resources. This objective is possible given the locational flexibility of the proposed mining development.

All cultural resources encountered in a Class III archaeological and sacred-traditional site inventory will be recognized as protection areas. The boundaries of each resource area will be recognized as exclusion zones from the mining development. All well pads, access roads, pipelines and other construction facilities will be developed outside the exclusion areas. Any subsurface disturbance will be preceded by archaeological testing, and an archaeological monitor will be present during construction and reclamation activities.

Only the procedural outlines for the cultural resource management plan are defined in this assessment. Specific management plans will be developed following the Class III inventory, and these plans will be submitted for review to the Bureau of Indian Affairs and the Navajo Nation Historic Preservation Department. These plans will identify all cultural resources in the lease area, designate protection areas, and outline the specific avoidance procedures.

Information regarding the cultural resource management plan presented in this assessment includes a description c⁺ the mining project in terms of its potential impact on the cultural resources, an outline of the site protection plan, considerations of indirect impact, the relationship of the project to the adjacent Muddy Water Chaco Protection Site, and statements regarding the treatment of sacred sites, traditional cultural properties, and human burials and gravesites.

Description of the Proposed HRI In Situ Mining Project

The purpose of this assessment is to outline the procedures for cultural resource management and preservation within the proposed Hydro Resources Incorporated Unit No. 1 lease area near Crownpoint, New Mexico. A cultural resource management plan that is carefully coordinated with the project development is proposed in order to prevent adverse impact. The principal objective of the management plan is to avoid all cultural resources. Given the nature of the project and its locational flexibility, this objective is feasible.

In situ mining involves the removal of uranium oxide in solution and is accomplished by the construction of a series of injection-extraction and monitoring wells. This type of mining involves the development of wells and a pipeline gathering system which has a limited impact to the land surface. The types of subsurface disturbance that are related to the project include well pad drilling activities and the excavation of well mud pits (located at about 30 to 50 m intervals), road access development, and the construction of a pipeline gathering system and a 5-acre processing facility. The placement of all these facilities is very flexible, and each can be located in a manner that avoids all known cultural resources.

Access to the well pad sites in the open environment of the Unit No. 1 lease area can in many instances be made without substantial subsurface road construction. All access roads will be

located in order to avoid the cultural resources. All areas along access roads that require road work resulting in subsurface disturbance, such as arroyo crossings, will receive archaeological testing and monitoring before and during construction. The leveling of well pads (approximately 30 by 30 m) and the excavation of well mud pits (5 by 10 m) will also involve archaeological monitoring and testing to ensure that there is no adverse impact to buried cultural resources.

The flexibility of the location of the pipeline gathering system means that all known cultural resources can be avoided. Most of the pipeline gathering system will probably be built aboveground, and subsurface lines will appear in only limited areas, such as road crossings. Since buried cultural resources may occur in the area, any subsurface lines will be archaeologically tested prior to development and monitored during construction.

The pipeline gathering system will lead to a processing facility that will cover approximately 5 acres. The placement of this facility is also flexible and can be located to avoid impact to the cultural resources. The facility will include three 1-acre holding ponds and a 2-acre plant and processing facility. The entire 5 acres for this plant will be systematically tested for subsurface cultural antiquities prior to development. If concealed cultural resources are found, they will be subject to mitigative action.

The boundaries and location of all well pads, access roads, and pipelines are to be inspected by the archaeological monitor prior to development and are to be flagged during development and use. All construction and use activity will be confined within flagged boundaries. All access roads are to be flagged. White flagging will be used to promote nighttime visibility. No construction personnel will be allowed on site until they have received a briefing regarding the archaeological protection procedures.

The Class III Cultural Resource Inventory

A systematic Class III archaeological survey and study of sacred-traditional cultural properties in the proposed HRI Unit No. 1 lease area will be completed prior to any use or development. A comprehensive cultural resources report, which describes the cultural properties present in the study area and which includes specific recommendations for the management and preservation of the resources, will be submitted to the Navajo Nation Historic Preservation Department, and other agencies as required, for evaluation and comment prior to the development phase.

Archaeological survey and report preparations will follow the standards outlined in the "Interim Fieldwork and Report Standards and Guidelines of the Navajo Nation Historic Preservation Department" (August 1, 1991). The entire Unit No. 1 lease area will be surveyed, including the various tracts that have been the subject of previous documentation (Burton 1980; Charles 1975; Ford 1980a, 1980b, 1980c). A Class III survey of the previously studied tracts is required to determine the precise site boundaries and current status of the documented sites. A re-evaluation of each previously documented site will also be made, and any additional information obtained will be appended to the site records.

Descriptions of the cultural resources will follow the format detailed in the Navajo Nation site survey and management form for sites and isolated occurrences. This description will include detailed information on site locations, boundaries, land status, and a complete description with maps and photographs. Each site will also be evaluated with respect to its significance in terms of National Register (36 CFR 60.4), the Archaeological Resources Protection Act (43 CFR 7.3), and the American Indian Religious Freedom Act (AIRFA). All sites will be recorded in the computerized data base of the New Mexico State Archeological Records Center and will receive "LA" site numbers. Survey methods will entail a pedestrian search of the study area with transects spaced 10 to 15 m apart. All site dimensions will be measured in metric with tape or survey instruments. No artifact collections will be made. All artifact samples will be documented in the field.

All cultural manifestations within the lease area are to be documented systematically. These manifestations include all historical and modern sites with the exception of locations presently occupied. All sites currently in use will be briefly described but will not be photographed, mapped, or recorded out of respect for the privacy of the occupants. An attempt will be made to obtained information about historical sites in the area through interview with the local residents. These on-site interviews will also be made in order to evaluate register eligibility and significance under AIRFA.

All cultural properties encountered in the lease area will be specifically evaluated with respect to their integrity and qualification for nomination to the National Register (36 CFR 60.4) and with respect to the Archaeological Resources Protection Act (43 CFR 7.3). In addition, the cultural properties will be evaluated with respect to the Navajo Nation's Cultural Resource Protection Act (CMY-19-88). This evaluation will include both the Anasazi and Navajo sites and any sacred or traditional cultural properties.

Aerial photographic imagery will be used in the HRI Unit No. 1 cultural resources survey to evaluate various types of cultural features, such as Anasazi roads and Navajo cornfields, and will be used as a photographic base map for the location of all sites. A complete set of aerial photographs for the Crownpoint area, including the proposed Unit No. 1 lease area, have been collected (Flight DAS, June 20, 1979, at a scale of 1 inch to 600 feet) and will be used in the survey. Each cultural feature will be plotted on the aerial photographs, and these photos will be placed on file at the State Archeological Records center after the project is completed.

Examination of the Soil Conservation Service 1930s aerial imagery will also be made in an effort to define features that have been reduced or obscured over the past 50 years. The use of SCS imagery has proven to be especially useful with respect to the study of Chacoan roads and to the definition of historical Navajo field areas.

An attempt will also be made during the cultural resources study to obtain oblique, low-sunangle aerial photographs of the Muddy Water complex, including the great house and road structures. Low-sun-angle photography has proven to be of considerable use in the recognition of very subtle roads and earthworks, which are often invisible in conventional vertical photography.

Archaeological and Traditional Site Protection Plan

A cultural resource management plan for archaeological and traditional sites will be developed following the Class III inventory of the lease area. All cultural resources identified in the lease area will be recognized as "protection zones" that will be avoided during the HRI project development. All drilling activities and movement of heavy equipment into the lease area will avoid these protection zones.

The precise boundaries of all cultural properties within the lease area will be defined during the archaeological survey and the traditional site inquiry. These boundaries will be marked in the field with iron fence posts, where appropriate. This system of site boundary definition, developed by Dan Hurley during the extensive drilling exploration of the area by Mobil Oil Corporation during the period from 1973 to 1980, has proven to be very effective. Many of these markers still remain in place today and there is little evidence of subsequent disturbance. There may, however, be certain sensitive archaeological sites or traditional-sacred sites that should not be permanently marked. These sites will be identified as "special or sensitive protection areas" near which no development activity is allowed.

The location and boundary definition of sites as cultural resource protection areas will result in the protection of most cultural resources in the lease area. Since buried or concealed cultural resources probably exist in the proposed lease area, especially in areas of alluvial deposition, it is important that any project activity resulting in subsurface disturbance be preceded by archaeological testing. In most instances, protection can be accomplished by the presence of an archaeological monitor on the construction site or by the placement of backhoe test trenches in the area of proposed disturbance. Areas of subsurface disturbance in the project area will be limited whenever possible. Activities in which subsurface disturbance is anticipated include the construction of well pads and mud pits and the development of occasional areas along access roads. Any subsurface disturbance caused by the development of the pipeline gathering system will also require archaeological testing and monitoring. It is also recognized that any cultural resources encountered during construction will require mitigative actions, under consultation with the Navajo Nation Historic Preservation Department, before construction can continue.

Considerations of Indirect Impact

The HRI cultural management plan is designed to maximize avoidance of all cultural resources and sacred-traditional properties within the lease area. Avoidance will be accomplished by a systematic Class III cultural resource inventory and by the demarcation of all site boundaries as protection areas. Archaeological testing of all areas of proposed subsurface disturbance and a monitoring program during the project development will also prevent any adverse impact to the cultural resources.

Since the lease is located within the Chacoan Muddy Water community and is adjacent to the Muddy Water Protection Site, consideration of potential indirect impact to the cultural resources is also incorporated in the HRI management plan. In order to avoid possible indirect impact to the cultural resources, a series of actions are planned.

All transportation corridors within the lease area will be located in conjunction with the project archaeologist. Any transportation activities adjacent to the lease, in the Muddy Water protection zone, will be confined to established roads. The boundaries of the entire lease area will be determined by cadastral survey. The location of those boundaries that join with the Muddy Water Protection Site will be specially marked, if existing fence lines are not present. Given these precautions, the proposed HRI development should have no adverse indirect impact on the cultural resources adjacent to the lease.

Looting of cultural antiquities in the Crownpoint area is very limited and seems to be confined to limited disturbance near the ruin of Kin Ya'a. The infrequency of looting in the Crownpoint area is clearly due to the protection afforded by Navajo residents of the area. The Navajo do not intentionally disturb archaeological sites, and their allotment ownership of the lease area has prevented looting by pothunters. There is no evidence to suggest that the intensive drilling activity conducted by Mobil Oil Corporation in 1973-1980 resulted in looting by construction workers. There is also no evidence to indicate that sites marked with fence posts (during the 1973 to 1980 drilling period) have since attracted the attention of looters. All evidence of looting observed during the proposed Class III survey of the lease area will be noted, and any special problems will be identified in the HRI cultural resource management plan.

The Muddy Water Complex: Chacoan Protection Site and State Register Nomination

The Muddy Water Chacoan Protection Site and State Register archaeological district is located in the direct proximity to the proposed HRI Unit No. 1 lease (Figure 2). The proposed lease development will have no impact on the archaeological protection site. The HRI cultural resource assessment, however, recognizes the sensitive nature of the protection area and has addressed various considerations of indirect impact.

The Chacoan Muddy Water community, which consisted of a 5600-acre tract, was proposed as a National Register District in 1979. This proposed district was rejected in 1981 by the Director of the Registry, Joy L. Bush, because the existing site documentation failed to substantiate the boundaries. A revised version of the district, which included a total of 1090 areas in two areas, was then defined in areas of documented high site density. This revised boundary was based on archaeological inventory surveys by Charles (1975), Davis (1976) and Marshall et al. (1979). This revised district was listed on the New Mexico State Register of Cultural Properties as Nomination 675 in 1979, but the nomination was never re-submitted to the National Register.

In December of 1980, the Muddy Water Community was included as part of the Chacoan Archaeological Protection Site System and was listed as one of 33 protection sites under Title V of Public Law 96-550 (Appendix A). The preliminary definition of the Muddy Water Protection District contained a 1210-acre tract (Figure 2 and Appendix B). The protection site therefore originally included 120 acres more than the State Register nomination; however, a subsequent recommendation by the Chaco Culture Interagency Management Group to delete these 120 acres (Figure 3, NPS Denver Office, May 1982, Map No. 310/80043, Chaco Culture Archaeological Protection Sites, Site Status Segment II) resulted in a boundary identical to that on the State Register.

Even though the boundaries defined by the State Historic Preservation Office and the Interagency Management Group (IMG) are identical and consist of a 1090-acre tract, Title V of P.L. 96-550, Section 501, states that "Additions to or deletions from such lists shall be made only by an Act of Congress." An amendment to the Chaco Protection Act that outlines various additions and deletions, including the changes in the Muddy Water boundaries, has been submitted to Congress. The bill has passed the floor of Senate, but no action has been taken as yet in the House. Since the recommendations made by the IMG are pending, the original 1210 acres are legally recognized.

Consultation with New Mexico State Historic Preservation Office regarding the Muddy Water State Registry Nomination, and its status with respect to the proposed HRI lease, was made on December 3, 1991. The Historic Preservation Officer, Mr. Tom Merlan, stated that specific determination of policies regarding the area should be made by the Bureau of Indian Affairs and the Navajo Tribe, since the lands under consideration are Navajo allotments. He did state, however, that as part of the Interagency Management Group the State of New Mexico's policy regarding Chaco Protection sites is to restrict all types of surface mineral development.

Public Law 96-550 called for the development of a Joint Management Plan (JMP) to be developed by those agencies that have jurisdiction over or interest in lands containing the protection sites. In response to that mandate, the Chaco Culture Interagency Management Group (IMG) was established in January of 1981. The agencies that comprise the IMG are the Navajo Tribe, the New Mexico Historic Preservation Division, the Bureau of Land Management, the National Park Service, and the Forest Service. A description of the Joint Management Plan published in December of 1982 states that "...a site management plan will be prepared for each of the designated protection sites, based on the concepts of the Joint Management Plan and the information contained in the reconnaissance study. The site management plan will indicate sitespecific p-oposals for administration, resource management (protection, stabilization, research, research, nergy development), visitor use and interpretation. These plans will be reviewed by the IMG t .fore the proposals are implemented."



A reconnaissance survey of the Muddy Water community was completed by the National Park Service (Robert Powers 1981, Appendix B). A specific management plan for the protection site district does not, however, appear to have been completed (Erick Van Hartesveldt, Navajo Historic Preservation Division; Lynne Sebastian, New Mexico Historic Preservation Division; and Robert Powers, National Park Service, personal communication, December 1991). Funds have been recently appropriated by Congress, under a request by the National Park Service, to assist in the planning effort for the Navajo Tribe Chacoan protection sites (Robert Powers, personal communication, December 1991). This program is in the early stage of development, and no action on the Muddy Water Management Plan has been taken to date.

Statement Regarding the Treatment of Sacred Sites and Other Traditional Cultural Properties

Considerable attention will be given in the HRI cultural resource preservation project to the recognition and protection of Native American sacred sites and traditional cultural properties that might exist within the proposed Unit No. 1 lease area. Traditional or sacred sites have not been recognized in previous studies of the lease area, but these earlier investigations did not address this issue directly, and there is a potential for these sites within the area.

All legislative mandates and Navajo Tribal policies regarding the protection and preservation of sacred sites and other traditional cultural properties will be explicitly followed throughout the proposed HRI development project. This action is in accord with the American Indian Religious Freedom Act of 1978 (Public Law 95-341) and will follow procedural directives described in the "Navajo Nation Policy to Protect Traditional Cultural Properties" (1990) and National Register Bulletin 38 (1990) entitled "Guidelines for Evaluating and Documenting Traditional Cultural Properties."

All of the sacred and traditional cultural sites that might be documented in the lease area are of probable Navajo affinity. Pueblo Anasazi sacred sites may once have existed in the area, but it is very unlikely that any of these sites are maintained by a living community. In the unlikely event that such places are still maintained by Pueblo populations, it is probable that Navajo residents of the area will have knowledge of this use. Emphasis in the investigation of sacred and traditional sites will, therefore, be directed toward the Navajo people of the Crownpoint area. This investigation will involve the procedures for interview described in the Navajo Nation policy and completion of Navajo Nation HPD Sacred and Traditional Places Documentation Forms.

Preliminary review of existing literature regarding Navajo sacred places does not reveal any outstanding, tribally recognized locations within the lease area. The two most important sacred sites commonly known in the Crownpoint area are Ak'iilnastiani (The Mountain That Sits on Top of Another Mountain) and the ruin and nearby shrine of Kin Ya'a, known as the home of the Kii ya anii clan and associated with the Blessingway (hozhooji). These locations, however, are well outside the proposed HRI lease area. (See the discussion of traditional sites in the section on Background Research.)

Various local or regionally recognized sacred and traditional sites may exist in the lease area: for example, traditional gathering areas, sites associated with life-cycle rituals, prayer offering places, and structures associated with ceremonies, such as hogans and sweatlodges. It is also recognized that many sacred and traditional sites are elements of the natural landscape, such as trees, springs, rocks, and mountains, etc., for which there is no structural evidence.

The HRI cultural resources management project will involve a comprehensive consultation effort with local residents and other persons who have knowledge of sacred and traditional sites. Interviews with local residents on and adjacent to the lease will be conducted by ethnohistorian Michael Marshall with the assistance of translator and HRI employee Billy Johnson (who is also a member of the Crownpoint community). Any sacred or traditional cultural properties encountered in the lease area will be carefully researched, and recommendations regarding the sites, with regard to the HRI project, will be elicited from the various Navajo contacts. All of this information will be incorporated into the Cultural Resource Management Plan to be compiled by HRI for Navajo Nation Historic Preservation Division evaluation. All sacred and traditional sites encountered in the lease area will be avoided during the project development.

Statement Regarding Treatment of Human Burials, Graves, and Gravesites

Special attention will be given in the proposed HRI Unit No. 1 project to the recognition and protection of human graves and cemeteries, especially those of Navajo affinity. No gravesites have been previously recognized in the study area, but these sites are possibly present. Anasazi grave sites usually appear in midden areas adjacent to habitation sites and are normally protected as part of the archaeological site avoidance procedure. Navajo graves, on the other hand, are often isolated and may lack any obvious marker or structure.

All legislative mandates regarding the protection of graves and gravesites will be explicitly followed throughout the proposed HRI development project. This protection includes procedures described in the Native American Graves Protection and Repatriation Act (Public Law 101-601 [H.R. 5237], 1990); the Navajo Nation Policies and Procedures Concerning the Protection of Cemeteries, Gravesite's and Human Remains (ACMA-39-86); and relevant gravesite protection as described in the American Indian Religious Freedom Act of 1978 (P.L. 95-341).

It is the intent of the proposed HRI development project to avoid any disturbance to human gravesites in the proposed Unit No. 1 lease area, whatever the circumstances. ...ny grave identified in the study area will be recognized as a protective site and will be avoided. Any burial inadvertently discovered during the development project will be re-interred following consultation with and recommendations of the Navajo Nation Historic Preservation Department.

The locations of grave sites will be determined through archaeological survey and according to interview procedures outlined by the Tribal Council Advisory Committee in Resolution ACMA-39-86. Efforts to locate gravesites in the lease area will involve discrete consultation with local residents and with members of the Crownpoint Chapter House. Efforts will also be made to contact former residents of the area. Investigation of gravesite locations within the study area will be conducted in conjunction with the "Traditional Cultural Properties" study. All gravesites identified in the study area will be subject to cultural resource documentation, and a Navajo Nation grave identification form will be completed for each location of Navajo affinity.

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THE CULTURAL RESOURCES

Introduction

An overview of the cultural resources known to exist in the proposed HRI Unit No. 1 lease area and the context of these cultural manifestations in the Crownpoint, New Mexico, area are presented in the following discussion. The cultural landscape of the proposed Unit No. 1 lease is a complex pattern of prehistoric Chacoan Anasazi and historical to modern Navajo occupation and land use. Seven previous cultural resource studies have been conducted in the lease area, and numerous others have surveyed lands adjacent to the lease. Approximately half of the lease area has been subject to intensive archaeological survey, which has resulted in the identification of 37 archaeological sites (Figure 4). It is estimated that approximately 40 to 50 additional sites are present in the proposed lease area. Important sacred and traditional sites are known in the Crownpoint area, but none have been previously documented in the lease area. Previous work in the lease area has not addressed this issue, however, and it is possible that traditional cultural properties are present.

The proposed HRI lease area is located within the Chacoan Muddy Water community and adjacent to the Muddy Water Chacoan Protection Site (Figures 2 and 3). This ancestral Chacoan community was occupied for approximately 650 years, from about AD 500 to 1150. A total of 33 Anasazi components associated with the community have been documented in the lease area. The lease area is located directly south of the center or nuclear area of the community. The community's public-ceremonial buildings, including three great house pueblos and one great kiva, have been located about one-half mile north of the lease (Marshall et al. 1979). Most of the Anasazi sites found in the lease area appear to be habitation and special-function sites that are part of the central community halo. The Muddy Water-Lobo Plateau Chacoan road crosses the lease area, and another possible road linking Muddy Water to Kin Ya'a is also present.

The Navajo people have occupied the Lobo Plateau region since at least AD 1700, and continued research will probably result in the discovery of still older occupations. Navajo occupation in the immediate lease area and on the grassland plains of the basin floor appears to be largely from the post-Bosque Redondo Reservation period, ca. 1868 to the present. A total of 14 Navajo sites have been described in the lease area, and it is estimated that an additional 20 to 30 sites will be found. The records search indicates that the earliest occupations in the lease predate the coming of railroad in 1881 and consist of occasional "big block" hogans with few or no Euroamerican artifacts. The Navajo occupation of the lease area clearly intensified with the establishment of the Pueblo Bonito Eastern Navajo Agency and the Ohlin Trading Post at Crownpoint in 1910. Since that time the lease area has been rather intensively used by Navajo residents for grazing and agricultural purposes, and the remnants of numerous hogan and house settlements, corrals, sweatlodges, ramadas, ovens, and other features are present.

Records Search

All previous documents concerning the cultural resources of the proposed HRI Unit No. 1 lease area are summarized in this report. A total of 37 archaeological and historical sites have been previously documented within the lease area (Table 1). Most of the existing records are the result of cultural resource clearance activities conducted during the 1973 to 1980 uranium exploration work performed by Mobil Oil Corporation. The lease area comprises slightly more than two square miles, and nearly half of this area has been the subject of comprehensive archaeological survey. Most of the cultural resources known in the area were documented in clearance surveys conducted by the Navajo Nation Cultural Resource Management Program (Charles 1975), the Cultural Resource Management Program of the New Mexico State University-San Juan Campus



Table 1. List of Previously Documented Sites within the Proposed HRI Unit No. 1 Lease Area

Section 15, southwest 1/4

LA 21956	Burton 1980 (survey of 50 acres)
LA 21957	Burton 1980
LA 21958	Burton 1980
LA 21959	Burton 1980
LA 21960	Burton 1980
LA 21961	Burton 1980

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Section 16, south half of the southeast 1/4

No sites recorded in this area

Section 21, east half

LA 10960	Wells (Laboratory of Anthropology) 1972
LA 19985	Ford 1979
LA 19986	Ford 1979
LA 20890	Ford 1980a
LA 20891	Ford 1980a
LA 20892	Ford 1980a
LA 20893	Ford 1980a
LA 21131	Ford 1979
LA 21132	Ford 1979

Section 22, north half and southwest 1/4

LA 22168 LA 22169 LA 22170	Ford 1980b (160-acre tract, or SW 1/4) Ford 1980b Ford 1980b
LA 22171	Ford 1980b
LA 22172	Ford 1980b
LA 22173	Ford 1980b
LA 26791	Henderson 1980
LA 26809	Whitten 1980
LA 26810	Whitten 1980 (same as Charles 1975, NN# 17)
LA 31875	Hewett 1981 (DCA site form)
LA 34391	Whitten 1982
SJC-540	Ford 1980c
SJC-541	Ford 1980c
SJC-542	Ford 1980c
SJC-543	Ford 1980c
SJC-544	Ford 1980c
SJC-545	Ford 1980c
NN # 18	Ford 1980c
NN # 19	Ford 1980c

Projected Southwest Muddy Water Chacoan Road

Table 1 (continued)

Section 23, western two-thirds of the northwest 1/4

No recorded sites

Section 24, northwest 1/4

LA 27655	Clifton 1979
NN # 23	Charles 1975
NN # 24	Charles 1975

Possible Chaco Road Segments (Muddy Water to Kin Ya'a road)

(Burton 1980; Ford 1979, 1980a, 1980b, 1980c; Henderson 1980), and by the San Juan County Museum's Division of Conservation Archaeology (Clifton 1979, Whitten 1980, 1982).

A study of the central core of the Chacoan Anasazi Muddy Water complex, located directly adjacent to the lease area, resulted in the documentation of 50 Anasazi sites (Marshall et al. 1979:207-225). This study is a significant source of information for the proposed Unit No. 1 cultural resource assessment because the Anasazi sites in the proposed lease area are affiliated with the Muddy Water community. Preliminary studies of the Chacoan roads, two of which are reported in the lease area, have been completed by Marshall et al. (1979), Obenauf (1980), and Nials et al. (1987). Documentation regarding the Muddy Water community complex is also presented in the nomination to the New Mexico Register of Cultural Properties. This nomination reiterates the information found in Anasazi Communities of the San Juan Basin (Marshall et al. 1979) and includes a brief summary of the Section 16 survey (Davis 1976) and the survey of the Muddy Water complex (Charles 1975).

All existing site records for the HRI Unit No. 1 lease area will be re-evaluated during the cultural resource survey. The cultural-temporal affinity and summary description of known sites in the study area are listed in Table 2. Most of the cultural resources previously documented in the Unit No. 1 lease area have been entered into the ARMS (New Mexico State Archeological Records Management System) file and have been located on the Crownpoint quadrangle topographic base map and can be retrieved from the computerized data base. Two major surveys completed in and adjacent to the lease area have not been entered into the ARMS data base, however: the survey of 80 acres in the western half of the northwest quarter of Section 22 (Ford 1980c), which resulted in the identification of six sites (SJC-540 to SJC-545); and a survey of 24 sites (NN-1 through NN-24) by Charles (1975). Following re-evaluation during the HRI cultural resource survey, these sites will be assigned "LA" numbers and coded into the ARMS data base.

The Muddy Water Complex: An Ancestral Chacoan Anasazi Community

The numerous archaeological surveys conducted in the Crownpoint West district and in the proposed HRI Unit No. 1 lease area have revealed a very extensive complex of Chacoan Anasazi sites. This impressive constellation of Anasazi sites is composed of components of the Chacoan

Site No.	Section	Period	Description
Navajo Sites		•	
LA 21957(LC)	15	Unknown	Hearth
LA 20892(LC)	21	WWII-Pres.	Corral, wood chips, trash
LA 20893(LC)	21	Unknown	Historical trash
LA 21131	21	WWII-Pres.	Corral, historical trash
LA 21132	21	WWII-Pres.	
LA 22168(LC)	22	WWII-Pres.	Ranch complex, historical trash
LA 22170(LC)	22	Unknown	Corral, wood chips, trash
LA 22171	22	WWI-WWII	Historical trash, fillet sherd
LA 22172	22		Hogan, house foundation, sweatlodge
LA 22173	22	WWII-Pres.	Corral, wood chips, trash
LA 26810	22	Unknown	Hogan
LA 31875(LC)	.22	Unknown	Hogan
SJC-545	22	Unknown	Historical road -
530-545	22	WWII-Pres.	Corrals, brush shelter, trash
Historical Pueblo (probable Puel	blo ceramics on Na	avajo sites)
LA 22169(LC)	22	Historical	Ceramic scatter, Zuni or Acoma polychrome
Chacoan Anasazi:	ВМШ-РІ Сог	nponents (AD 500	9-700)
LA 19986(EC)	21	BMIII-PI	Bin, artifact scatter, five pithouses
LA 20893(EC)	21	BMII-III	Hearth and lithic scatter
LA 22169(EC)	22	BMIII-PI	Stone slab circles, jacal rooms, ceramic
		20111-11	scatter
LA 22170(EC)	22	BMIII-PI	8-12 jacal rooms, two masonry rooms,
	•		artifact scatter
LA 26809	22	BMIII	Ceramic-lithic scatter
SJC-541(EC)	22	BMIII-PI	Sandstone slab concentration, hearths, and artifact scatter
SJC-542	22	ВМШ	Hearths and artifact scatter
SJC-544	22	ВМШ	Sandstone slabs, hearths or slab structures
			and artifact scatter
NN #23	24	BMIII ?	Upright slabstwo pithouses
Chacoan Anasazi: 1	Pueblo I-II Co	omponents (AD 7(00-1100)
1 4 21050	15		
LA 21958	15	PI-II	Possible masonry structure, midden, scatter
LA 21959	15	PI-II	Possible masonry structure, midden, kiva
LA 19985	21	PI-II	Masonry roomblock, depression, scatter
LA 19986 (LC)	21	PI-II	Ceramic scatter
LA 22168 (EC)	22	PI-II	Ceramic scatter
LA 34391	22	PI-II	Hearth (tested)
SJC-540	22	PI-II	Roomblock, depression, slab feature, jacal structure and artifact scatter

Table 2.	Cultural-Temp	oral Stratification of Previously Documented Cultural Resources	
	within the Pro	posed HRI Crownpoint Unit 1 Lease Area	

Table 2 (continued)

Site No.	Section	Period	Description
Chacoan Anasazi: I	Pueblo II Cor	nponents (AD 90	0-1100)
LA 21957(EC) LA 21961 LA 20890	15 15 21	РП РП РП	Mound, artifact scatter Possible masonry structure, artifact scatter Two depressions, a masonry roomblock and artifact scatter
LA 20891 LA 20892 (EC) LA 26791 SJC-541(LC)	21 21 22 22	РП РП РП . РП .	Masonry roomblock, scatter Artifact scatter Isolated masonry room, artifact scatter Artifact scatter
Chacoan Anasazi: Pueblo II-III Components (AD 900-1300)*			
LA 21956 LA 21960 LA 10960 LA 22169 (MC) LA 27665	15 15 21 22 24	РП-Ш РП-Ш РП-Ш РП-Ш РП-Ш	Artifact scatter Possible masonry structure, midden, scatter Two-room fieldhouse, ceramic scatter Artifact scatter Artifact scatter
Anasazi Unknown (Probable PII; no ceramic data)			
NN #18 NN #19 NN #24	22 22 24	Anasazi Anasazi Anasazi	Mound, 1-2 rooms Artifact scatter Mound, 3-4 rooms
Unknown	·		, ,
LA 31875 (EC) SJC-543	22 22	Unknown Unknown	Ground stone, burned sandstone slabs Hearth

EC = Early Component MC = Middle Component LC = Late Component NN = Navajo Nation Field Number SJC = San Juan College Field Number

* These sites are probably PII and late PII, since the area was abandoned ca. AD 1150-1175

Muddy Water community. The Muddy Water complex is a Chacoan community of the "Ancestral Type" (defined by Marshall et al. 1982:1231) that probably originated in the Early Developmental Era, ca. AD 400 to 500, and evolved into a major "Chacoan Outlier" in the Pueblo II Period, ca. AD 1000-1125.

The center or nucleus of the Muddy Water complex, which contains examples of great house and great kiva architecture, is located within the northwest quarter of Section 14 adjacent to the proposed lease area (Figure 5, after Marshall et al. 1979). This area is known to the local Navajo



DOCUMENTED SITES OF THE MUDDY WATER NUCLEAR COMMUNITY AREA

people as Hashtl'ish biyi kits'iil or "Ruin in the Mud" (Fransted 1979:28). This central complex includes three great house buildings, one great kiva, a Chacoan road and earthwork platform, and approximately 50 masonry unit-house pueblos (Marshall et al. 1979:207-225). Archaeological surveys completed near this community center indicate a very extensive halo of habitation and special-function sites extending about two to three miles around the nuclear area. Anasazi site densities within this area range from 20 to 45 sites per square mile (Marshall 1989:8), and it is estimated that approximately 750 sites comprise the community complex. A total of 33 Anasazi components have been recorded in the proposed HRI Unit No. 1 lease area, and it is likely that an additional 40 components are present.

The location of the proposed HRI Unit No. 1 lease within the area of the Chacoan Muddy Water community means that considerable effort must be devoted to management and protection of the cultural resources during project development. This management effort must recognize the structure and components of the Muddy Water site complex. It must include evaluations of known and potential roadways and it must recognize that a great deal of the complex is buried in alluviated areas and hence concealed. The boundaries of all cultural resources within the area, as determined from Class III survey, will be defined regardless of previous documentation. Aerial photographic imagery will be examined for evidence of prehistoric roads, and road corridor surveys will be completed. Any subsurface disturbance in the area will be preceded by archaeological testing and accompanied by monitoring. Previous management efforts associated with extensive drilling by Mobil Oil Corporation (overseen by Dan Hurley in 1979-1980) were very successful, and if the management plan proposed in this assessment is followed, adverse impact to the cultural resources of the area will be negligible.

Chacoan Roads

Two prehistoric Anasazi roads have previously been reported in the area of the Muddy Water Chacoan community. Both of these roads have segments that extend into the proposed Unit No. 1 lease area. One of the roads, which enters the Muddy Water complex from the north, has a branch road that runs southwest across the lease area. The location of this road has been verified by archaeological survey (Marshall et al. 1979; Nials et al. 1987). The other road, identified on the basis of alignments visible on aerial photographs, extends between the Muddy Water and Kin Ya'a communities. Survey investigations of one segment near Kin Ya'a (Hogan et al. 1981) and a pipeline cross section across another near Muddy Water (John Roney, Bureau of Land Management, personal communication) indicate that the feature is probably historical and do not support the presence of a Chacoan road in this area. Further study of both the Muddy Water road and the possible Muddy Water-Kin Ya'a road are required. The proposed HRI Unit No. 1 cultural resources study will include a detailed examination of these roads. This research will entail detailed stereoscopic examination of all available aerial photography and a systematic road corridor survey of all alignments within and adjacent to the lease area.

The Muddy Water Road

A prehistoric Chacoan road enters the center of the Muddy Water community complex from the north (Marshall et al. 1979:208; Nials et al. 1987:137-139). A section of this road crosses the proposed HRI Unit No. 1 lease area in the northeast and southwest quarters of Section 22 (Figure 4). Survey of the Muddy Water road has documented road segments in the immediate area of the community, but the extent and destination of the road are not presently known. The road appears to enter the complex from the north, where it divides into two avenues. The east branch (Segment No. 201) extends south to the main Muddy Water great house pueblo (LA 10959) where it ends. The west branch (Segment Nos. 200 and 204) angles to the southwest, passing a large Chacoan earthwork, and continues southwest, across the proposed lease area, to the slopes

of Lobo Mesa (Figure 6). A possible parallel road identified by Marshall et al. (1979; Figure 5) was subsequently recognized as a historical feature during the Bureau of Land Management study (Nials et al. 1987).

The northern destination of the Muddy Water road is presently unknown. The road enters an alluvial bottomland, 700 m north of the Muddy Water great house, where it is obliterated. Aerial reconnaissance of the Muddy Water area conducted by Sofaer and Roney in 1989 revealed a possible continuation of the road about one mile to the north (John Roney, personal communication 1991). The studies suggest that the Muddy Water road is either a short distance directional avenue similar to other Anasazi north road corridors (Marshall 1991a) or that it is a possible trans-basin corridor leading toward Kin Bineola.

The southwest branch of the Muddy Water road resembles a similar branch road at nearby Kin Ya'a. Both branches begin in the central area of the community, adjacent to large earthwork mounds, and both lead southwest toward the top of Lobo Mesa. The Kin Ya'a branch is a southwestern extension of the Chaco South Road, which links the great pueblos of Chaco Canyon and Kin Ya'a Pueblo to the summit of Hosta Butte. The destination of the southwest Muddy Water branch road is unknown, but it is possible that after it ascends the mesa it turns southeast and links Muddy Water to Hosta Butte. Investigation of the southwest Muddy Water branch road during the BLM Phase II road project included survey of a segment of the road to the base of the mesa, 2 km southwest of the HRI lease area (Nials et al. 1987:140). A sherd scatter was found extending up the mesa slope. A brief inspection of the mesa top failed to locate a continuation of the road, but this area requires further investigation.

The section of the southwest Muddy Water branch road that extends across the proposed HRI Unit No. 1 lease area requires survey definition. The road (Segment No. 200) is well defined in the aerial imagery as it enters the southeast corner of Section 15, but it is not visible in the aerial imagery as it extends across Section 22 toward Segment No. 204. In order to determine the precise location and nature of the road, a corridor study utilizing transect survey and photointerpretative methods, devised by the BLM Roads Phase I project (Kincaid 1983), will be completed.

The Possible Muddy Water-Kin Ya'a Road

A possible Chacoan road, linking the great houses of the Muddy Water community and the Kin Ya'a community, was recognized in an inspection of aerial photographs (Obenauf 1980:116). A projected section of this possible road crosses the proposed Unit No. 1 lease area in the northwest quarter of Section 24 (Figure 4). This road was reportedly verified by Michael Bartlett (no report known) of the Navajo National Cultural Resources Management Program (Hogan et al. 1981:14), although subsequent work on selected segments near Kin Ya'a and Muddy Water have failed to support Chacoan affinity and suggest instead that the imaged alignments are segments of various historical roads.

A survey of the east end of the projected road near Kin Ya'a Pueblo identified as Segment No. 11 (Nials et al. 1987:34-35) suggests historical affinity, as does inspection of the 1930s SCS aerial imagery. Study of alignments west of this segment were not, however, completed during the BLM investigation.

A segment of an alignment was also investigated in the area of Muddy Water. This study involved the inspection of a water line trench cut across the alignment. Examination of the profile section suggested that it too was a historical road segment (John Roney, personal communication 1991).



Field investigations conducted at two locations indicate that the alignments identified by Obenauf (1980) are in fact historical features and hence are not a Chacoan road. A detailed investigation of the Muddy Water-Kin Ya'a alignments will, however, be conducted during the HRI investigations. This will involve inspection of SCS 1930s imagery and on-the-ground survey of all alignment segments identified inside and outside the proposed lease area.

Navajo Occupation of the Crownpoint Region.

The earliest evidence of Navajo occupation in the Crownpoint district appears in the canyons and forested mesa tops of the adjacent Lobo Plateau. Little is known about the early Navajo occupation of the region, but there is evidence of early eighteenth century settlement throughout the plateau, and seventeenth century occupations may also exist. The earliest known Navajo camps in the area consist of forked-stick hogans and occasional masonry rooms. Ceramic materials include Dinetah Plain and intrusive Acoma and Zuni pottery of Ako and Ashiwi Polychrome. Early Navajo forked-stick hogans have been found in the northern canyons of Lobo Mesa, and coursed masonry rooms, masonry-based hogans, and early cribbed-log hogans have been found in the Churchrock area (Marshall 1991b). Fortified pueblito and hogan sites are also documented at Toyee Rock (LA 51135; Marshall and Sofaer 1988:227-237), and one is known on an isolated mesa point near Crownpoint. This undocumented site is located in the southwest quarter of Section 8, approximately one mile south of the proposed HRI Unit No. 1 lease.

The early Navajo occupation of the Crownpoint region was primarily a woodland adaptation. Few Navajo sites of this early occupation have been found in the grassland plains of the Chaco region, and none have been found the HRI Unit No. 1 lease area. Nevertheless, early Navajo sites probably do occur in the adjacent canyons and mesas directly south of the study area. The earliest occupations of the grassland plains from Crownpoint north along the Chaco drainage system probably came during the early nineteenth century after the shift toward herding as the dominant subsistence mode (Hester 1962:84).

The majority of the Navajo sites known in the Crownpoint area, and most of 14 components previously documented in the Unit No. 1 lease area (Table 2), are of recent twentieth century affinity. There are, however, a few sites in the area that probably represent late nineteenth century occupation. These sites consist of "big block" hogans with little or no associated artifact material. Large masonry blocks form the base for a cribbed log upper wall and roof. Two sites of this type are presently documented in the lease area (LA 22173, LA 26810), and others have been found in adjacent surveys.

The earliest historical record of Navajos in the Crownpoint area is in late 1860s when three Navajo chiefs and their associated bands were said to be residing at a place called "Slender Cottonwood Gap" (*tiistsooz nieeshgizh*), which was later called Crownpoint (York 1981:22). Navajos were also said to be living near Hosta Butte in the 1870s. Hastinn titsoi'tsosi (Mr. Slim Yellowman), also known as Señor Mariano, moved his band west of Hosta Butte and dammed a sink now known as Mariano Lake (Van Valkenburgh 1974:93).

Traditional and Sacred Sites in the Crownpoint Area: Hosta Butte and Kin Ya'a

No sacred sites or other traditional cultural properties are presently known within the proposed HRI Unit No. 1 lease area. Previous cultural resource investigations in the area, however, have not adequately addressed this issue, and there is a potential that traditional cultural properties exist in the area. In order to determine if sacred or traditional sites are present in the lease area, the HRI cultural resources project will involve a comprehensive consultation effort with local residents and other knowledgeable Navajo people.

A review of the existing literature regarding Native American sacred sites reveals the presence of two important locations in the Crownpoint area, near but outside of the proposed HRI lease. These are the sacred mountain peak of Hosta Butte and the ruin and nearby shrine of Kin Ya'a, which are discussed in the following notes.

Hosta Butte

Hosta Butte, located 6 mi south of the proposed Unit No. 1 lease area, is the most prominent and elevated landform in the Lobo Plateau. This butte, which rises to an elevation of 8600 ft, is one of the most conspicuous features on the southern horizon of the Chacoan Province. There is considerable evidence to indicate that Hosta Butte was a very important shrine during the Chacoan Anasazi occupation of the region. Indeed, the pinnacle is the destination of the Chaco South Road, which extends 34 mi to link the great pueblos of Chaco Canyon with Kin Ya'a and Hosta Butte. Reference to Hosta Butte has not been found in the ethnographic literature of contemporary Puebloan mythology, and like other sacred Anasazi sites, its significance may have been lost over the passing of the centuries.

Hosta Butte is, however, a very important sacred site to the Navajo people, and it is often visited as an offering place. The Navajo people refer to Hosta Butte as Ak'i dah nast'ani (The Mountain That Sits on Top of Another Mountain). This name is an apt description for the towering truncated pinnacle, which extends 700 ft above the forested summit of the Lobo Plateau. The name Hosta Butte dates back to 1877 when it was given to the mountain by W. J. Jackson in honor of a Jemez Indian who guided Col. John Washington's expedition in 1849 (Marshall and Sofaer 1988).

Hosta Butte is one of the seven principal sacred mountains in the Navajo origin myth and was recognized as one of the southern markers for the area traditional occupied by the Navajo and called the Tinetxa or the "Old Navajo Country." It is also mentioned in various versions of the Blessingway (Wyman 1970:561, 575) and Nightway (Van Valkenburgh 1941:75) ceremonies. It is said to have been created by First Man and First Woman and the supernaturals Black Body and Blue Body when they decided to decorate this world (Matthews 1897:79).

And finally they fastened Ak'i dah nast'ani to the firmament with a sacred mirage stone (quartz crystal). It they decorated with many plants, and with the black clouds that bring male rain. On its summit they placed Nahachagii, the Grasshopper, whose descendants are abundant to this day. And there they also placed Tse hadahoniye'ashkii the Mirage Stone Boy and Yoo'lichi'i at'eed the Carnelian Girl to dwell there forever as gods (Zolbrod 1984:89).

Numerous shrine sites are located on the summit of Hosta Butte, and many contain offerings of modern materials (Marshall and Sofaer 1988). It is clear that Hosta Butte is an important sacred site and offering area, especially to the Navajo people. It is unknown, however, if the butte is visited by Pueblo people.

Kin Ya'a and the Kii ya anii Shrine

The Chacoan ruin of Kin Ya'a (Tall House; Marshall et al. 1979:201-206) and a nearby shrine are important Navajo sacred places. "The mythology of the Blessingway connects the Navajo place name for Kin Ya'a ruin (Kii Yaa'a) with one of the four original clans" (Fransted 1979:40-

41; Wyman 1970:331-458). According to the Franciscan Fathers (1910:356, 424), "the Kii ya anii and three other clans were created from parts of Changing Woman's body and are said to have been the first earth people" (York 1981:21-22). Kin Ya'a is also given as the home of Rainboy's parents in the origin legend of the Hail Way (Reichard 1944:153), and it appears in the legend of the Excess Way (Kluckhohn 1967:159).

RESEARCH CONSIDERATIONS

Introduction

The proposed HRI Unit No. 1 cultural resources study promises to provide a major contribution to the data base regarding archaeological, historical, and traditional sites in the Crownpoint District. Previous archaeological investigations within the Unit No. 1 lease and in adjacent areas have revealed an extensive Navajo occupation of late nineteenth and twentieth century affinity and a major ancestral Chacoan Anasazi community known as the Muddy Water complex. Most of the previous research been conducted in the Crownpoint area was completed during the period from 1973 to 1980 and was limited to archaeological clearance activities. No previous attempt (other than Marshall et al. 1979) has been made to provide an overview of the Anasazi occupation. Historical, archival, and oral history studies are likewise limited to the work of Hogan et al. (1981). The seven major cultural resource studies within the proposed HRI Unit No. 1 lease have documented 37 archaeological-historical sites. None of these studies, however, employed the use of historical or oral history research, nor did they evaluate the presence of sacred or traditional sites.

The proposed HRI Unit No. 1 cultural resources study will address many of the issues that were neglected in the previous work. The HRI research will concentrate on a definition of Chacoan community structure as it is reflected in the Muddy Water complex and on recent Navajo history in the Crownpoint area. This study will involve a comprehensive definition of cultural resources in the study area, a review of historical documents regarding the Crownpoint Navajo, and an oral history study designed to outline Navajo secular and sacred land use in the area.

A brief discussion concerning Anasazi and Navajo research considerations to be addressed by . the HRI project is provided in the following text.

Muddy Water Community Structure

The proposed HRI Unit No. 1 lease area is located within the Chacoan Anasazi community known to the local Navajo people as *Hashtl ish biyi kits' iil* (Ruin in the Mud) or Muddy Water. The name refers to extensive bottomlands in the area, which are often inundated by runoff from Lobo Mesa. It is this seasonal flooding of the valley floor and its consequent agricultural potential that supported the prehistoric community.

The investigation of cultural resources in the proposed HRI Unit No. 1 lease area promises to yield considerable information on the nature of Anasazi culture and the evolutionary development of Chacoan community structure. The Muddy Water complex is an example of an "ancestral community" in that it was established in the early Formative period of Chacoan Anasazi development about AD 500 and was occupied for an incredible period of 650 years until its abandonment about AD 1150. Ancestral communities have considerable time depth and thus exhibit a series of evolutionary developments from the Formative Basketmaker II-III period into the occupation of the Classic Bonito/Pueblo II era (Marshall et al. 1982:1231). Ancestral communities, like Muddy Water, are located in areas with favorable agricultural conditions. Ancestral communities appear to have developed from the late Archaic period substratum as small constellations of habitation sites scattered about a single kiva or great enclosure. These communities eventually developed into rather large constellations of habitation sites grouped around Bonito-style great houses and great kivas. Other public works, such as ceremonial roadways, earthworks and irrigation facilities, were also built during the late Pueblo I and Pueblo II periods.

A preliminary study of the Muddy Water complex (Marshall et al. 1979:207-225) has defined the core of the Classic period community in the northwest quarter of Section 14, directly adjacent to and north of the proposed HRI lease. This community center contains three multistoried buildings of Bonito-style great house construction, one great kiva, 50 masonry unit pueblos, and a Chacoan road and earthwork (Figure 5). The concentration of masonry buildings, many with associated kivas, is phenomenal, and during its occupation the village must have resembled a great stone apartment complex separated by irregular streets.

Archaeological surveys conducted in the proposed HRI Unit No. 1 lease area adjacent to this community center have revealed a considerable number of unit-pueblo habitation sites and special-function areas, indicating that a rather extensive halo or constellation of sites appears around the community core. Indeed, archaeological survey of about one-half of the lease area, which extends from one to two miles out from the community core, has revealed a total of 33 Anasazi components. This partial inventory indicates the possible presence of 60 to 75 components in the lease area. There are also areas within the lease that are crossed by Chacoan roads and areas that appear to have been major agricultural fields.

One of the major objectives of the proposed HRI research is the study of Chacoan community structure and its evolutionary development as it is represented in the Muddy Water complex. This analysis will involve a detailed examination of the cultural resources within the study area and include research concerned with known cultural properties adjacent to the lease. The location of the lease in a two square mile area extending across the southern core of the community will provide a cross-sectional view of the community and the central halo. The study area also provides examples of three major drainages and agricultural areas and four upland habitation zones. The stratification of site types according to seven major ceramic-temporal horizons will allow us to view the development of community structure over a period of 650 years.

A study of Anasazi agricultural land use in the Muddy Water community is also an important research topic. Information concerning Anasazi agriculture in the area may be obtained by environmental study, by the identification of irrigation or water diversion works, and by the study of field-related sites (ovens, artifact scatters, fieldhouses). Information regarding the trade network and regional interaction of the Muddy Water community residents will be obtained by the analysis of intrusive-indigenous ceramic wares and by a study of lithic material types.

Another important research problem involves the function and destination of the Chacoan roads in the Muddy Water community. Information obtained from the HRI study may contribute data significant to interpretation of Chacoan roads and their probable integrative and cosmological function.

Navajo Studies: Recent History of the Crownpoint Navajo

All of the historical sites documented in the HRI Unit No. 1 study area are Navajo cultural properties of late nineteenth and twentieth century affinity (Table 2). All of these properties date to the period after the Navajo incarceration at Bosque Redondo in 1863-1868. Earlier Navajo occupations of the Lobo Plateau region, during the eighteenth and early nineteenth centuries, are also known, but none have been found in the lowlands of the study area. Navajo occupation of the proposed HRI Unit No. 1 lease and the immediate Crownpoint area was rather sparse during the late nineteenth century, but the area became a center of Navajo occupation after the establishment of the Eastern Navajo Pueblo Bonito Agency and Ohlin Trading Post at Crownpoint in 1910 and the Crownpoint Indian School in 1912 (York 1981:26-27).

An attempt to reconstruct the recent history of the Navajo people in the Crownpoint area, as specifically seen from the HRI Unit No. 1 lease area, will be made in the cultural resource

project. All historical sites encountered in the lease area will be systematically documented following the "Guidelines for the Treatment of Historic, Modern, and Contemporary Abandoned Sites" outlined by the Navajo Nation Historic Preservation Department. This process will include archaeological survey documentation, historical archival research, and interviews with local residents. This documentation will undoubtedly yield considerable information on recent Navajo history in the Crownpoint area.

A chronological sequence for the Navajo cultural properties found in the lease area will be developed using a combination of archaeological artifact data, historical records, and oral histories. The development of this sequence will assist in the demographic analysis of Navajo occupation in the region. The "big block" hogan sites that have been documented in the lease area probably date to the period after Bosque Redondo but before the railroad, ca. 1868-1881. Later sites occupied after the railroad and during the early Pueblo Bonito Agency and trading post days should exhibit considerable numbers of Euroamerican artifacts.

The demographic analysis of Navajo occupation of the lease area should reveal a rather dramatic population increase following the establishment of the Pueblo Bonito Agency and the Crownpoint trading posts. A report in 1911 from the Pueblo Bonito (Crownpoint) Agency, however, indicates that the Navajo in the area had been forced to move to Mariano Lake and the Chaco Wash to get water for their stock (Stacher 1940). This problem was rectified by the development of a series of wells in the area after 1915.

The nature and development of Navajo agricultural land use in the study area is a research topic of considerable interest. Navajo agriculture in the area, like that of the earlier Anasazi, was quite extensive (rather than intensive). About 1915, a well and various reservoirs were built at the Agency Farm in Section 10, near the present rodeo grounds, just north of the proposed Unit No. 1 lease area. There was no doubt considerable agricultural use of the "Muddy Water drainage system" in the Unit No. 1 lease area during the period from 1915 to 1940. Agricultural use of the area appears to have significantly declined after 1960. An evaluation of the extent and location of farm sites in the lease area will be made using SCS 1930s aerial photographs and through interviews with elder residents.

Research regarding the recent and contemporary Navajo occupation of the lease area will also be a part of the proposed cultural resources study. This activity will include the location and description of all settlements and use areas within the lease and the collection of information regarding land use and recent history as related by the residents interviewed. This research will also be instrumental in the definition of sacred and traditional sites in the area.

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CONCLUSION

The cultural resources-environmental assessment conducted for the proposed HRI Unit No. 1 lease area indicates that it is located within a cultural district of considerable significance. Indeed, the proposed lease is within the Chacoan Muddy Water community complex and is placed in direct proximity to the Muddy Water Chacoan Protection Site and State Cultural Properties Register District. The lease area is also the location of a rather extensive historical period Navajo occupation, and it has the potential to contain properties of sacred or traditional value. Numerous cultural properties that qualify for nomination to the National Register are clearly present in the lease area. Other sites that qualify for preservation under the American Indian Religious Freedom Act and the Navajo Nation Policy to Protect Traditional Cultural Properties are also likely to be present.

Any plans for mining activity within the lease area must be extremely sensitive to the cultural properties within the area. A management plan for the proposed lease area can, however, effect total avoidance of the cultural resources. This avoidance plan is possible given the flexible nature of the proposed in situ mining project. Following a systematic Class III cultural inventory and traditional site inquiry, all significant cultural properties within the lease area would be recognized as protection zones and the boundaries marked. A specific cultural resource management plan would then be developed and submitted to the Bureau of Indian Affairs and Navajo Nation Historic Preservation Department for approval. The limited subsurface disturbance in the area would be preceded by archaeological test excavations in case buried or concealed cultural remains are present, and all construction projects would be carchaeologically monitored.

Mobil Oil conducted previous systematic drilling in and adjacent to the lease area, and the cultural resource avoidance project conducted by Dan Hurley from 1973 to 1980 was extremely successful. Given the implementation of the culture resource management plan outlined in this report, adverse impact to the cultural resources of the lease area would be negligible. Furthermore, the proposed study of cultural resources in the lease area would significantly contribute to our knowledge of the Chacoan community structure and recent Navajo history.
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APPENDIX A

PUBLIC LAW 96-550, TITLE V

CHACO CULTURE NATIONAL HISTORIC PARK AND THE CHACO CULTURE ARCHEOLOGICAL PROTECTION SITES

THE 96TH CONGRESS OF THE UNITED STATES DECEMBER 19, 1980 PUBLIC LAW 96-550-DEC. 19, 1980

94 STAT. 3221

Public Law 96-550 96th Congress

An Act

To designate certain National Forest System lands in the State of New Mexico for inclusion in the National Wilderness Preservation System, and for other Dec. 19, 1980 [H.R. 8253] purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

National Forest System lands, New Mex. Designation.

TITLE V-CHACO CULTURE NATIONAL HISTORICAL PARK

SEC. 501. (a) The Congress finds that— (1) archeological research in the San Juan Basin conducted over the past several years has greatly increased public knowledge of the scope of the prehistoric culture referred to as Chacoan Anasazi:

(2) the discoveries and the increased general interest in the Chaco phenomenon have come at a time when the San Juan Basin is experiencing extensive exploration and development for a wide variety of energy-related resources, including coal, uranium, oil, and natural gas;

(3) development of the San Juan Basin's important natural resources and the valid existing rights of private property owners will not be adversely affected by the preservation of the archeo-

logical integrity of the area; and (4) in light of the national significance of the Chacoan sites and the urgent need to protect them, continued cooperation between Federal agencies and private corporations is necessary to provide for development in the San Juan Basin in a manner compatible with preservation and archeological research.

(b) It is the purpose of this title to recognize the unique archeological resources associated with the prehistoric Chacoan culture in the San Juan Basin; to provide for the preservation and interpretation of these resources; and to facilitate research activities associated with these resources

SEC. 502. (a) There is hereby established in the State of New Mexico, Establishment. the Chaco Culture National Historical Park comprising approxi- 16 USC 410ii-1. mately thirty three thousand nine hundred and eighty nine acres as generally depicted on the map entitled "Chaco Culture National Historical Park", numbered 310/80,032-A and dated August 1979. The Chaco Canyon National Monument is hereby abolished, as such, Abolishment. and any funds available for the purpose of the monument shall be 16 USC 431 note.

16 USC 410ii.

available for the purpose of the Chaco Culture National Historical Park.

(b) Thirty three outlying sites generally depicted on a map entitled "Chaco Culture Archeological Protection Sites", numbered 310/ 80,033-A and dated August 1980, are hereby designated as "Chaco Culture Archeological Protection Sites". The thirty three archeological protection sites totaling approximately eight thousand seven hundred and seventy one acres are identified as follows:

ame:	A
Allentown	
Andrews Ranch	
Bee Burrow	
Bisa'ani	
Casa del Rio	
Coolidge	
Dalton Pass	
Great Bend	
Greenlee Ruin	
Grey Hill Spring	
Halfway House	
Haystack	
Hogback	
Indian Creek	
Jacques	
Kin Nizhoni	
Lake Valley	
Las Ventanas	
Morris 41	
Muddy Water	
Newcomb	
Peach Springs	S
Pierre's Site	
Raton Well	
San Mateo	
Sanostee	
Section 8	
Skunk Springs/Crumbled House	
Standing Rock	
Twin Angels	
Toh·la·kai	
Upper Kin Klizhin	
Squaw Springa	

List additions or deletions, submittal to Congress. 16 USC 410ii-2. Supra.

Lands, waters, and interests, acquisition. 16 USC 410ii-3. SEC. 503. The Secretary of the Interior shall continue to search for additional evidences of Chacoan sites and submit to Congress within two years of date of enactment of this Act and thereafter as needed, his recommendations for additions to, or deletions from, the list of archeological protection sites in section 502(b) of this title. Additions to or deletions from such list shall be made only by an Act of Congress.

SEC. 504. (a) The Secretary is authorized to acquire lands, waters, and interests therein within the boundaries of the Chaco Culture National Historical Park (hereinafter referred to as the "park") and the archeological protection sites as identified in section 502 of this title by donation, purchase with donated or appropriated funds, or exchange. Property owned by the State of New Mexico or any political subdivision thereof, may be acquired by exchange or donation only. Property held in trust for the benefit of any Indian tribe or for the benefit of any individual member thereof may be acquired only with the consent of such owner or beneficial owner as the case may be.

(b) The respective tribal authorities are authorized to convey by exchange, purchase, on donation the beneficial interest in any lands designated by section 502 of this Act and held in trust by the United States for the respective tribes, to the Secretary, subject to such terms and conditions as the tribal authority deems necessary and which the Secretary deems are consistent with the purposes of this title.

(c)(1) The Secretary shall attempt to acquire private lands or interests therein by exchange prior to acquiring lands by any other method authorized pursuant to section 504 of this Act.

(2) The Secretary shall attempt to enter into cooperative agreements pursuant to section 505 of this Act with owners of private property for those archeological protection sites described in section 502(b) of this Act. The Secretary shall acquire fee title to any such private property only if it is necessary to prevent direct and material damage to, or destruction of, Chaco cultural resources and no cooperative agreement with the owner of the private property interest can be effected.

(dX1) For purposes of completing an exchange pursuant to subsections (a) and (b), the Secretary shall designate a pool of at least three times the private acreage described in subsections (a) and (b), comprised of Federal property interests of a similar resource character to property to be exchanged. Federal property shall, whenever possible, be designated in blocks of at least one section in size, but in no event shall the blocks designated be less than one-quarter of a section in size.

(2) The Secretary may include within the pool any Federal property under his jurisdiction except units of the National Park System, National Forest System, or the National Wildlife Refuge System that are nominated by the owner of the private property to be exchanged. Exchanges shall be on the basis of equal value, and either party to the exchange may pay or accept cash in order to equalize the value of the property exchange, except that if the parties agree to an exchange and the Secretary determines it is in the public interest, such exchange may be made for other than equal values.

(e) All Federal lands, waters, and interests therein excluded from the boundaries of Chaco Canyon National Monument by this title may be exchanged for non-Federal property to be acquired pursuant to this title. Any lands so excluded shall be managed by the Secretary under the provisions of the Federal Land Policy and Management Act of 1976. Transfer of administration of such lands to the Bureau of Land Management shall not be considered a withdrawal as that term is defined in section 103(j) of the Federal Land Policy and Management Act of 1976.

SEC. 505. The Secretary shall seek to enter into cooperative agreements with the owners, including the beneficial owners, of the properties located in whole or in part within the park or the archeological protection sites. The purposes of such agreements shall be to protect, preserve, maintain, and administer the archeological resources and associated site regardless of whether title to the property or site is vested in the United States. Any such agreement shall contain provisions to assure that (1) the Secretary, or his representative, shall have a right of access at all reasonable times to appropriate portions of the property for the purpose of cultural resource protection and conducting research, and (2) no changes or alterations shall be permitted with respect to the cultural resources without the written consent of the Secretary. Nothing in this title shall be deemed to prevent the continuation of traditional Native American religious uses of properties which are the subject of cooperative agreements.

SEC. 506. (a) The Secretary shall administer the park in accordance with the provisions of this title and the provisions of law generally applicable to the administration of units of the National Park Private lands or interests, acquisition.

Private property owners, cooperative agreements.

Pool, acreage designation.

Federal lands exchanged for non-Federal property.

43 USC 1701 note.

43 USC 1702. 16 USC 410ii-4.

Administration. 16 USC 410ii-5. System, including the Act of August 25, 1916 (39 Stat. 535; 16 U.S.C. 1, 2-4), and the Act of August 21, 1935 (49 Stat. 666; 16 U.S.C. 461-7).

(b) The Secretary shall protect, preserve, maintain, and administer the Chaco Culture Archeological Protection Sites, in a manner that will preserve the Chaco cultural resource and provide for its interpretation and research. Such sites shall be managed by the Secretary in accordance with the provisions of this title and the provisions of law generally applicable to public lands as defined in section 103(e) of the Federal Land Policy and Management Act of 1976: *Provided, however*, That lands held in trust by the Secretary for an Indian tribe or any individual member thereof, or held in restricted fee status shall continue to be so managed or held by the Secretary. (c) No activities shall be permitted upon the upper surface of the

(c) No activities shall be permitted upon the upper surface of the archeological protection sites which shall endanger their cultural values. For the purposes of this title, upper surface shall be considered to extend to a depth of twenty meters below ground level. Nothing in this title shall be deemed to prevent exploration and development of subsurface oil and gas, mineral, and coal resources from without the sites which does not infringe upon the upper surface of the sites.

(d) Nothing in this title shall be deemed to prevent the continuation of livestock grazing on properties which are the subject of cooperative agreements.

(e) Within three complete fiscal years from the date of enactment, the Secretary shall transmit to the Committee on Interior and Insular Affairs of the United States House of Representatives and the Committee on Energy and Natural Resources of the United States Senate, a general management plan for the identification, research, and protection of the park, pursuant to the provisions of subsection (12%) of the Act of August 18, 1970, to be developed by the Director, National Park Service, in consultation with the Directors, Bureau of Land Management and Bureau of Indian Affairs and the Governor, State of New Mexico, and a joint management plan for the identification, research, and protection of the archeological protection sites, to be developed by the Director, National Park Service, in consultation and concurrence with the Directors, Bureau of Land Management and Bureau of Indian Affairs, and the Governor, State of New Mexico.

SEC. 507. (a) Consistent with and in furtherance of the purposes of the Division of Cultural Research of the Southwest Cultural Resources Center, operated by the National Park Service, the Secretary shall continue such research and data gathering activities as may be appropriate to further the purposes of this title and knowledge of the Chaco culture. The Secretary shall submit in writing within six months of the effective date of this section, to the Committee on Interior and Insular Affairs of the United States House of Representatives and the Committee on Energy and Natural Resources of the United States Senate, a plan for the continued operational program of the Division. The Secretary is authorized and encouraged to establish a committee composed of professional archeologists and others with related professional expertise including the designee of the Governor of the State of New Mexico to advise the Secretary in matters related to the surveying, excavation, curation, interpretation, protection, and management of the cultural resources of the historical park and archeological protection sites.

(b) The Secretary shall, through the Division of Cultural Research of the Southwest Cultural Resources Center of the National Park Service, be responsible for the development of a computer-generated

43 USC 1702.

General management plan. transmittal to congressional committees.

16 USC 1a-7.

16 USC 410ii-6.

Plan, submittal to congressional committees.

Computergenerated data base, development. data base of the San Juan Basin, and make such information available to Federal and private groups when to do so will assist such groups in the preservation, management, and development of the resources of the basin.

(c) The head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking with respect to the lands and waters in the archeological protection sites, and the head of any Federal agency having authority to license or permit any undertaking with respect to such lands and waters, shall prior to the approval of the expenditure of any Federal funds on such undertaking, or prior to the issuance of any license or permit: as the case may be, afford the Secretary a reasonable opportunity to comment in writing with regard to such undertaking and its effect upon such sites, and shall give due consideration to any comments made by the Secretary and to the effect of such undertaking on the purposes for which such sites are established.

SEC. 508. Effective October 1, 1981, there are authorized to be Appropriation appropriated such sums as may be necessary to carry out the provisions of this title but not to exceed \$11,000,000 for acquisition and \$500,000 for development.

authorization 16 USC 410ii-7.

APPENDIX B

THE CHACO CULTURE ARCHAEOLOGICAL PROTECTION ACT

MUDDY WATER PROTECTION SITE ARCHEOLOGICAL RECONNAISSANCE

An Unpublished Record Compiled by the National Park Service for the Chaco Interagency Planning Group

by Robert Powers (1981)

DESCRIPTION AND ANALYSIS

Muddy Water is a 1200-acre archeological protection site on the northern margin of Lobo Mesa 3 mi northwest of Crownpoint and about 25 mi southwest of Chaco Culture National Historical Park. The site contains two separate parcels: one along a ridge west of the Crownpoint-Coyote Canyon Highway, the other a mile east of the first on the north and south sides of the highway. The archeological protection area includes approximately 125 Chacoan sites located in two separate concentrations. Ranging in date from Basketmaker III to early Pueblo III (AD 500-1175), the majority of sites are small houses (habitation sites), with a smaller number of fieldhouses and other special-use sites. The most prominent buildings within the area are three Chacoan structures; the largest is Hurley Ruin, which is two stories high with an estimated 25 rooms and two kivas. A great kiva is located southwest of Hurley Ruin. A prehistoric road links Muddy Water with Kin Ya'a and the Southwest Road system. Muddy Water has been nominated to the National Register of Historic Places.

The site lies in a rapidly developing area (just west of Crownpoint) that has traditionally been used for agricultural purposes but is currently undergoing municipal growth and intensive mineral development. There are scattered ranch buildings and homesites in the vicinity, and the site is crisscrossed with roads and telephone lines. A uranium leaching test program was recently completed on the property, and full uranium development is now proposed.

The natural setting of the Muddy Water site is a northeast/southwest-trending ridge that originates at the base of Lobo Mesa. The drainages flanking this ridge form the headwaters of an unnamed tributary of Indian Creek. The ruins in the western parcel are concentrated along a distinct ridge formation, with scattered features in the valley bottom. Ruins in the eastern parcel are distributed across a low rolling ridge formation and along a dry wash. Vegetation consists of grassland interspersed with snakeweed, saltbush, and greasewood. Scattered stands of pinyon/juniper occur to the southwest at the base of Lobo Mesa.

There is no visitor use at Muddy Water at present, and the site's interpretive value is considered low. Although the ruins are important for research purposes, most of them are reduced (collapsed) and provide few distinctive features and minimal aesthetic interest for the general public.

The entire protection site (see Muddy Water map 1) is Indian allotment land, with the title held in trust by the United States for individual allottees. There are 12 separate allottees with lands in the area (see Muddy Water map 2 for allottee numbers and locations of parcels). The site also contains four range units that are part of Navajo tribal ranches. Thirteen permits have been issued for these four range units (see Muddy Water map 3). Mineral rights are owned by the individual allottees except for sections 14 and 16 where the United States has retained the coal rights (see Muddy Water map 4). Mobil Oil Corporation currently has all 1,210 acres under lease for uranium mining. To date, Mobile has done an exemplary job of working closely with the BIA and NPS to protect the known cultural resources within the protection site. Muddy Water lies within the Crownpoint KRCRA (Known Recoverable Coal Resource Area) and federal coal leasing is possible in the near future. Some coal mining has historically taken place in the area.

Most of the Muddy Water site will be affected by the development of uranium reserves Mobil's successful test program for the in situ leaching of the ore has encouraged the company to proceed with full development of its leases. Current market problems may temporarily slow development, but eventually the entire area will likely be developed.

ALTERNATIVES AND IMPACTS

Alternative I -- Deauthorization

Under this alternative the interagency management team would recommend to Congress that Muddy Water be removed from archeological protection status under section 502(b) of PL 96-550. The entire site would then remain in private ownership.

The management team does not recommend deauthorization for the site because of its scientific value, in particular the concentration of Chacoan ruins with distinctive kivas, masonry, middens, and associated features.

Alternative II -- Preservation and Research

Under this alternative Muddy Water would be maintained as an archeological protection site, and its resources would be preserved and studied. As the result of recent boundary reconnaissance, the team recommends that two acres within the Muddy Water protection site be deleted from protection site status. These include the NW 1/4 of the SW 1/2 of Section 16 and the E 1/2 of the NE 1/4 of Section 23. No archeological sites are present in these acres. Access for managers and researchers would continue to be along existing access roads, pending determination of ownership and implementation of a cooperative agreement, but no attempt would be made to improve the roads, and the site would not be open for any type of public use or interpretation.

No stabilization is presently required.

Because Mobil Oil was granted permits before enactment of PL 96-550, current management and protection of Muddy Water falls under an agreement implemented specifically for that site. This agreement would be maintained under alternative II, but would not necessarily be considered precedent-setting for future mineral proposals at this or other archeological protection sites. All future requests and plans for active development of mineral leases and mining claims would be required to comply with the approved interim guidelines of the interagency management team. Following approval of the joint management plan called for in the enabling law, all activities would have to be consistent with the management objectives and guidelines in that plan.

About 26 separate cooperative agreements would be required to ensure adequate protection and management of the cultural resources at the site. Agreements would first be established between the interagency management team and the 12 allottees (through the BIA), then between the interagency management team and the 13 permittees for the four range units. The agreement with Mobil Oil would also be finalized to cover future operations. Given the history of Mobil's cooperative efforts in protecting cultural resources, this agreement would undoubtedly serve only to document their past procedures, allowing them to proceed with scheduled mineral development.

LAND OWNERSHIP

Available Information

Entire site is allotment land, with title held in trust by the U.S. government for individual allottees; 12 allottees are involved (see map 2).

Mineral rights also held in trust for the individual allottees, except for portions of sections 14 and 16 where coal rights have been reserved by the U.S. (see map 4).

Three residential leases have been issued for 1-acre parcels in sections 14 (Betty Craig), 16 (Francis Nez), and 23 (Christine Perry).

Twelve separate mining leases have been issued by the BIA to Mobil Oil Corporation as follows:

SE 1/4 section 11 -- mining lease 4494, 160 acres NW 1/4 section 13 -- mining lease 4947, 160 acres NE 1/4 section 14 -- mining lease 4950, 160 acres NW 1/4 section 14 -- mining lease 4949, 160 acres SW 1/4 section 14 -- mining and surface leases 7457 and 7457A, 160 acres NW 1/4 section 15 -- mining lease 8364, 160 acres NE 1/4 section 16 -- mining lease 8362, 160 acres NW 1/4 section 16 -- mining lease 8367, 160 acres SE 1/4 section 16 -- mining lease 8367, 160 acres SW 1/4 section 16 -- mining lease 8366, 160 acres SW 1/4 section 16 -- mining lease 8366, 160 acres NE 1/4 section 23 -- mining lease 7458, 160 acres NW 1/4 section 23 -- mining lease 7482, 160 acres

Highway right-of-way (BIA highway N9) affects portions of the SW 1/4 of section 14.

Powerline right-of-way held by Continental Divide Electric Cooperative affects portions of the same SW 1/4 of section 14.

Four separate range units belonging to Navajo tribal ranches overlie the protection site (see map 3).

Additional Needs

Names of grazing permittees for range unit 50 (Navajo tribe).

Individual copies of mining leases (if different); this could affect future cooperative agreements.

RESEARCH

History and Available Information

Most of the ruins recorded fairly recently (as a result of energy development proposals), some by several archeologists; most comprehensive reports: Marshall et al. (1979) and Davis (1971,

1976); no major excavations known; salvage of small sites along BIA highway N9 before its construction; surface artifact collections (by Davis) curated at Navajo Tribal Museum, Window Rock, Arizona; surrounding area traditionally used by the Navajo for farming (Fransted 1979).

Aerial photos (1:3000) available for portions of site.

Additional Needs

Aerial photos for remainder of site.

MUDDY WATER

Location: T 17 N, R 13 W, Sec. 16, NE 1/4; SE 1/4 of NW 1/4; N 1/2 of S 1/2 Sec. 15, W 1/2 of NW 1/4 Sec. 14, N 1/2; SW 1/4 Sec. 23, E 1/2 of E 1/2 of NW 1/4; NE 1/4 Sec. 13, W 1/2 of NW 1/4 Sec. 11, S 1/2 of S 1/2 of SW 1/4 of SE 1/4

Total acreage: 1210 acres

Topo quad: Crownpoint

For further information contact: BIA

National Register Status: Nomination pending

Known archeological sites: 120+

SUMMARY OF IMPACTS Natural Residuces Land Use and Management Cultural Resources Some depradation of distoral Elimination of protection status Protection and management of Atternative 1 environment liecause of surand federal funding authorization: archeological resources under Deputhorization procedures established by the rounding land use, jutential for probable continuation of existing ownership and management; additional distortance because IIIA, but continued potential of mmeral development continuing shift in tand use for disturbance or destruction from agriculture (grating) to because of erosion and mineral development surrounding land uses; probable reduction in archeological research and related preservation efforts; possible loss of valuable scientific data concerning our cultural heritage; potential for disturbance liecause of mineral development Some degradation of natural Maintenance of protection status Increased protection of site Alternative II and federal funding authorization; resources tierause of legal environment because of sur-Preservation and management and regulation of fand rounding land use; reduction stimulations, research and Research or elimination of putential for use according to legal stipulations stabilization efforts, and cooperdisturbance associated with and cooperative agreements; enalive agreements; increased combrance of private property. knowledge and data concerning mmeral development and mineral rights; potential for our cultural heritage, reduction economic loss or additional or elimination of potential for costs associated with niliteral 'resource disturbance associated itevelopment

with numeral development

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APPENDIX C

PROCEDURAL SEQUENCE FOR THE HYDRO RESOURCES, INC.

CROWNPOINT UNIT NO. 1 CULTURAL RESOURCE MANAGEMENT PLAN

- I. Complete a cultural resources environmental assessment and proposed culture resource management plan (this document).
- II. Submit assessment and cultural resource management plan to the Bureau of Indian Affairs and Navajo Nation Historic Preservation Department.
- III. Respond to comments by BIA and Navajo Nation Historic Preservation Department and revise Management Plan, if required.
- IV. Request permit to conduct cultural resources inventory and sacred-traditional site inquiry.
- V. Complete Class III cultural resources inventory and sacred-traditional site inquiry for the Unit No. 1 lease area. Document all cultural resources in the area and establish specific resource boundaries.
- VI. Prepare a cultural resources survey report following"Interim Fieldwork and Report Standards ar. J Guidelines" of the Navajo Nation Historic Preservation Department.

Evaluate all cultural resources with respect to National Register Significance (36 CFR 60.4), the Archaeological Resources Protection Act (43 CFR 7.3), and the American Indian Religious Freedom Act (P.L. 95-341). Also follow Navajo Nation Policy for the Protection of Traditional Cultural Properties (1990) and the National Register Bulletin No. 38 (1990) entitled "Guidelines for Evaluating and Documenting Traditional Cultural Properties."

Develop specific treatment for the management-avoidance plan.

- VII. Submit cultural resources report and management recommendations to the BIA-Navajo Nation for review and request permit for project clearance-approval to begin construction. Respond to comments or requests for revision.
- VIII. Following Navajo Nation and Bureau of Indian Affairs approval, survey boundaries of lease, well pads, access roads, and pipelines and verify via archaeological survey that these areas are outside all protection zones. Complete archaeological testing in all areas of proposed subsurface disturbance to determine if buried or concealed cultural resources are present. If buried resources are found, avoid or develop mitigation plan, under consultation with the Navajo Nation Historic Preservation Department.
 - IX. Brief all construction personnel and workers in the HRI lease area regarding the cultural resource protection plan and avoidance areas. Monitor, at intervals, all construction and development within the lease area. Compile a report on the monitoring program after the major development ... ese and submit to Navajo Nation Historic Preservation Department.
 - X. Develop cultural resource management plans for continued maintenance and occasional development and submit to Navajo Nation Historic Preservation Division for clearance. Monitor, at intervals, all reclamation activities.

Attachment

M. Blevins' Affidavit

Attachment I

The URI Archaeological Protection Program for the Church Rock Mine-Survey and Preservation of the Archaeological Antiquities

A Survey Project Directed by Dan Hurley and Completed by Michael P. Marshall

• July 1988

9610070117 961002 PDR ADOCK 04008968 B PDR

Project Introduction

This report presents the the initial results of an archeological program designed to protect cultural antiquities within the proposed URI Churchrock In Situ Uranium Mine. This archeological protection project has been initiated under the authorization of Mr. Mark Pelizza of Uranium Resources Inc. and under the direction of Mr. Dan Hurley. The objective of the project is to prevent adverse impact to the significance cultural resources which exist in the proposed mine area. In Situ mining , which involves the removal of Uranium Oxide in solution, is effected by the development of a series of injection, extraction an and monitoring wells. Possible adverse impact to the cultural antiquities might therefore result from the drilling activities and associated road developments.

The URI Archeological Protection Program is designed to prevent disturbance to the cultural resources during the mining development. This protective action is modeled on former projects developed by Mr. Dan Hurley for Mobil Corporation in the Kin Ya'a and Muddy Waters Archeological Districts. This protective action involves the systematic location and documentation of archeological sites in the development area and fencing of the site boundaries. Recommendations for protective actions during the mining project and occasional monitor inspection of the sites is incorporated in the program. In this report the protective plan for the initial URI Churchrock development area in the SE¹ of Section 8 is presented.

Archeological Survey

Archeological survey of the area included within the proposed URI mine was formerly conducted in 1977 for United Nuclear Corporation by the San Juan Campus Cultural Resources Division (Ford and DeHoff 1977) This earlier survey included the private lands in the initial (SE¹/₂ Section 8) development area. Four archeological sites (Nos. 8-10,8-11,8-14 and 8-15) were located in the development area. Under the dirction of Mr. Dan Hurley a renewed project was initiated to relocate and document these sites and to define the site boundaries for protective fencing. This project was conducted by Cibola Research Consultants and Mr. Dan Hurley in July of 1988. A comprehensive documentation of the sites is presented in this text. The recommended protection zone and the location of the fence barrier to be constructed around the sites was marked in the field with lath, flagging and pin flags.

These protection areas are indicated on the detailed topographic map of the development area (Figure No. 2).

A brief inspection of the SE¹ of Section No. 8 failed to reveal additional cultural resources. Various additional sites not subject to previous archeological documentation were, however, located in the NE¹ of Section 8. It is recommended, therefore that any additional expansion of the URI development involve a systematic archeological survey of the area and the completion of protection procedures similar to those which have been effected in this project.





Location of the Study Area and the Archeological sites.

All four archeological sites subject to examination in this study are located within the proposed initial development area of the Uranium Resources Inc. Churchrock In Situ Uranium Mine. This location is approximately six miles north of Churchrock New Mexico in the SE¹ of Section 8, Township 16 North, Range 16 West. The Site locations illustrated in Figure No. 1 of the Hard Ground Flats 7.5 Minute Quadrangle are situated at the base of a canyonmesaland escarpment in the Puerco River Drainage area. The sites under consideration here are settlements of a rather extensive Anasazi settlement complex which is known to exist in the Springstead area of the Puerco Valley district.

Universal Transverse Mercator locations:

Site No.	10	•	721450	Easting	by	3945100	Northing
Site No.	11		721500	Easting	by	3945100	Northing
Site No.	14		721525	Easting	by	3945100	Northing
Site No.	15		721675	Easting	by	3 <u>9</u> 45150	Northing

The archeological sites under consideration here are situated on the northern margin of the Puerco River Valley at the talus base of a high forested mesa. They appear at an elevation of 6950 feet. The Rio Puerco an intermitent stream is located 1.5 kilometers to the south. The sites are placed on the lower talus base on the west side entrance to a deep sandstone canyon. Scattered pinyon and juniper trees appear on the slopes adjacent to the sites and within the adjacent canyonlands are ponderosa pine and other upland species. All four of the documented sites are placed on open lands with a gentle south facing exposure. The placement of these ancient settlements is probably related to the adjacent runoff farmlands along the talus base and in the canyon entrance floodplain and to the availability of stone and wood building materials.

Site Documentation

Archeological survey which has been conducted in the SE¹ of Section 8 has revealed the presence of four sites of such significance to justify preservation. These four sites, designed as 8-10, 8-11,8-14 and 8-15, are all Anasazi unit publos which appear to be allied primarily with the Chacoan culture area. Both Early Formative EMIII (Ca. 500-600) and PII-Early PIII (Ca.A.D. 950-1100)occupations have been identified.

Each of the site areas contained two roomblock areas and an abundance of midden debris. It is estimated that over 60 rooms exist in the group. Three of the sites (Nos. 10,11 and 14) appear in close proximity and are considered to represent a neighborhood cluste: of a larger Anasazi community complex which is known to exist in the Springstead area of the Rio Puerco Valley. Due to the direct proximity of sites 10, 11 and 14 there are enclosed within a single contiguous protection zone.

p.3

Site No. 15 Description LA 2616+

Site No. 15 is an Anasazi Pueblo settlement which is comprised of two unit pueblos and four midden areas. The site which is located on the western side of canyon entranceland extends over an area approximately 90 meters north-south by 70 meters east-west. This masonry pueblo complex is estimated to contain 20 rooms and a substantial quantity of midden fill (estimated 400 cubic meters of midden fill is present). Ceramic types observed at the site indicate an occupation in the PII-Early PIII periods and the great quantity of midden suggests a lengthy occupation of ca. A.D. 950-1100.

The Upper Roomblock, which has been badly damaged by bulldozer activity, is a massive "L" shaped structure estimated to contain 15 rooms. The substantial mound elevation of 1.0m to 1.5m is probably more an indication of massive wall constructions than of multistoried architecture. The long east-west axis of this building is approximately 24 meters. Wall alignments are difficult to define. No kiva depression is visible.

The Lower Roomblock is a linear unit pueblo, oriented north-south, which is 16 meters long and contains an estimated five rooms. This structure is defined by a low rubble mound 25cm to 50cm in elevation. This building does not have the massive quality exhibited by the Upper Roomblock. It may have been a partial jacal construction or a diminutive simple masonry structure. Ceramics from the adjacent Midden No. 1 area indicate that the Lower Roomblock was abandoned in the Late PII Era whereas; the the Upper Roomblock continued to be occupied into the Early PIII era. The notable difference in the construction of the Upper and Lower Roomblocks at site No. 15 is also exhibited in structures at the nearby site No. 14. A functional rather than cultural developmental difference. in these differing architectural styles is most probable.

There is also a pussible small roomblock on the Midden No. 3 area as stones are scattered over an area 8 by 3 meters in size.

The four midden areas at site No. 15 contain a substantial quanity of midden fill estimated to be approximately 400 cubic meters. It is estimated based on surface densities that about 25,000 surface artifacts are present.

Midden Area	Size	estimated depth .	Cubic Meters	Artifact d
Midden No. 1	20X25= 500 M2	50cm.	250M3	· 30 per M2
Midden No. 2	10X15= 150 M2	25cm.	37.5M3	5 per M2
Midden No. 3	20X12= 240 M2	25cm.	60.0M3	20 per M2
Midden No. 4	10X18= 180 M2	25cm.	45.0M3	15 per M2

P.4

Site Condition:

Site No. 15 has been partially destroyed by dozer activities associated with drilling explorations. At least four drill holes have been placed in the site area. A wide graded road and two bulldozer paths have also been made. It is estimated that about one half of the Upper Roomblock has been destroyed by dozer activity although other parts of the site remain largely intact. Poritions of Midden No. 1 and Midden No. 2 have been removed but most of the midden debris remains undisturbed. Despite these impacts much of the site is intact and justifies preservation. The limits of the site area have been flagged for a proposed fence construction. This fenced enclosure should prevent further disturbance during the proposed URI development project.

2.5

Site No. 15 Ceramic Type Frequencies:

Ceramic Type	· · ·.	Midden No. 1	Mi	dden No.	3 .
Cibola Gray Ware: Plain Corrugated Indente Incised	ed	2 29 1		2 13 1	
Cibola White Ware: La Plata B/W Red Mesa B/W Escavada B/W Gallup B/W Chaco B/W Chaco-McElmo B/W Puerco B/W(solid st Puerco B/W(hatched		9 7 28 2 2 7		1 2 2 5 3	
Tsegi Orange Ware Unidentified	· . .·			1	•
White Mt. Red Ware: Puerco B/R Unidentified Style	·		- 	2 3	•
Socorro White Ware Socorro B/W	•		•	1	•

Ceramic Discussion and Cultural-Temporal affiliation:

p.6

Ceramic inventories from the site No. 15 complex indicate a Chacoan Anasazi occupation during the late PII into the early PIII periods from Ca.A.D. 950 to about 1100.Ceramic frequencies were recorded from two provience areas : the Midden No. 1 and Midden No. 3 areas. These frequencies indicate that the South Roomblock and associated midden No. 3 were abandoned in the Late PII Period Ca. 1000 to 1050 A.D. where the North Roomblock and nearby Midden No. 3 (which contain types not present in midden No. 1 such as Chaco McElmo B/W, Socorro B/W, Tsegi Orange Ware, and Puerco B/R) continued to be inhabited into the Early PIII Era to about 1100 A.D. The absence of Wingate Polychrome and St. Johns Polychrome at the site indicate that the complex was entirely abandoned before the second half of the 12th Century.



Site No. 10 Description:

Site No. 10 is the westernmost of the pueblo triplex which exists at the western entrance to the Puerco north canyonland in the study area. The site shows . evidence of both a Formative BMIII occupation and a Pueblo II-III occupation which appear in an area approximately 110 meters north-south by 55 meters east-west. The structure of this site is similar to that of the adjacent site No. 11 complex.

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An early formative occupation area is evident in the south site by a 15 by 18 meter concentration of lino horizon artifacts about scattered spalls and a hearth area. One hearth 1.0m in diameter is visible and other concealed structures are no doubt present.

Between the Upper Pueblo and midden area and the lower BMIII component there is a possible small unit house of PII-PIII affinity. This is identical to Site No. 11. A probable hearth 1.5m in diameter is visible as are scattered and partial stone alignments.

A large "L" shaped unit pueblo of massive construction appears in the north site area. The blocks of the pueblo are both 20 meters in length and 5 to 6 meters wide. Mound elevations are 1.0 to 1.5m. A kiva depression, 6m in diameter, exists adjacent and within the roomblock enclosure toward the southeast. A midden concentrated in an area 20 by 25 meters exists directly south of the pueblo. It is estimated to have a mean depth of 50cm. Scattered artifacts also extend an additional 25 meters to the south.

Site Condition: This pueblo appears to be undisturbed. It is in excellent condition. The site is included in a protection zone and is to be enclosed in a fenced area together with sites 11 and 14 prior to the URI development project. In this manner the site will be protected from possible disturbance during the drilling operation and subsequent development.

P.8

Site No. 10

Ceramic Ware-Type Frequencies:

Ceramic Ware-Type	South Component	Midden No.1
Jeramit Ware-Type	South component	hidde ho.i
Cibola Gray Ware:		
Lino Gray Corrugated Indented (early st Corrugated Indented Incised	27 yle) 2	4 39 1
Cibola White Ware: Lino Black on Grey La Plata Black on Grey Red Mesa Black on White Escavada Black on White Gallup Black on White Chaco-McElmo Black on White	1 1 1	15 13 15 2
White Mt. Red Ware: Puerco Black on Red Wingate Black on Red	-	2 6
Chuska Grey Ware: Chuska Corrugated Indented		1
Ceramic Discussion		
Ceramics were inspected from two No. 1 directly south of the large area. Ceramics from the Pueblo BMIII occupation (Ca.A.D. of the PII-Early PIII affinity. C south of Midden No.1 and north of also pf PII-Early PIII affiliation of this site appear similiar to t frequent incidence of Red Mesa st	e upper pueblo and fro South component indic 400-600) whereas the Ceramics observed on a the South component on. The structure and the adjacent site 11 of	om the south cate a Formative e Upper Pueblo is the low knoll appear to be temporal affinities complex. The rather

frequent incidence of Red Mesa style in the Midden No 1 sample suggests that the Upper Pueblo was established in the Early PII Period Ca.A.D. 950 while the presence of Puerco and Wingate Black on Red indicate that it continued to be inhabited into the last half of the 12th Century. Ceramics in the South Component clearly indicate an early Formative occupation also traces of later material, probable comtaminates from the nearby Upper Pueblo, area present.



Site No. 11 Description: LA 26150

Site No. 11 is the central unit of a three site complex which exists at the western entrance to the Puerco North canyonland. The site exhibits two major occupations: one is Formative Period BMIII settlement (Ca. A.D. 500-600) and the other is a PII-Early PIII pueblo (1000-1100 A.D.). These cultural antiquities appear in an area approximately 110 meters north-south by 45 meters east-west.

The Formative Period component is located in the south site area. It consists of scattered sandstone slabs and artifact materials in a 20 by 15 meter area. A concentration of burned stone is visible in the southwest area. It is probable that both hearths and slablined domicile structures are present in this area.

The PII-Early PIII occupation at the site is represented by a massive masonry roomblock and associated kiva, another smaller unit house and by a large midden area. The principal structure at the site is a large masonry roomblock 20 by 8 meters in size with an adjacent 6.0m diameter kiva depression. The rubble mound is 1.0m to 1.5m high. The roomblock is estimated to contain 10 to 15 rooms of rather massive but probable single story construction. A single room defined by a low alignment of stone in a 4 by 2.5m area is present east of the roomblock.

A large midden area 35meters by 20 meters in size is located to the south of the massive roomblock. The midden has a estimated mean depth of 50cm. Numerous 'burial slabs' litter the midden surface.

To the south of the midden is a scatter of artifacts which appear about what appears to be a small unit pueblo. The structure is defined by simple wall alignments with a low mound elevation. This structure may be yet another example of the diminutive but contemporaneous roomblock as noted at other sites in the area.

Also present at Site No. 11 is a slab unit constructed against a boulder, two stone basins in a bedrock boulder and a historic Navajo rock art panel. The rock art panel portrays two old style Model T trucks.

Site Condition:

Most of the Site No. 11 area remains intact. There is, however, evidence of considerable looting in the midden area. Numerous potholes are visible in the midden which appear to represent burial excavations. Burial slabs lie littered about and some scattered human bone is present. Elsewhere the site remains undisturbed and in good condition. Site No. 11 is included in a proposed fenced protection zone contiguous with adjacent sites No. 10 and No. 14. This site is clearly a significant cultural resource and justifies preservation.

p.11

Site No. 11 Ceramic Type Frequencies:

Ceramic Ware-Type	Midden No. 1	South Component
Cibola Gray Ware:		
Lino Gray Corrugated-Indented (Old st	9 tyle)	33 1
Cibola White Ware:	•	
La Plata Black on White Red Mesa Black on White Escavada Black on White Gallup Black on White Chaco McElmo B/W	1 6 9 18 1	1
White Mt. Red Ware: Wingate B/R Unidentified Style	2 1	
Socorro White Ware: Socorro Black on White	, 1	•
Tusayan White Ware: Lino Black on Grey		3
(

Ceramic Discussion and Cultural-Temporal Affiliation.

Two ceramic samples were recored in the Site No. 11 area: one in the large Midden(Midden No. 1) South of the upper roomblock and one from among the scattered slabs in the south component area. These samples indicate a PII-Early PIII occupation for the Upper Pueblo complex and a Formative Period BMIII (Ca. 500-600 A.D.) for the South Component. Ceramics observed among the alignments in the site area south of Midden No. 1 also appear to be of PII-PIII affinity. The predominance of Cibolan material and the stylistic types present in the PII-PIII occupation suggest an affiliation with the Chacoan Anasazi culture area.

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Site No. 14 Description LA 26.52

Site No. 14 is the easternmost of three Anasazi settlements which comprise a "neighborhood complex" at the western entrance to the canyonland. The site is located at the talus base on a low rise between two south flowing arroyos. Alluvial fill from the eastern arroyo has partially covered the site area.

Site No. 14 consists of two masonry roomblocks, each with an associated midden which appear in an area 70 meters north-south by 45 meters east-west. Also present adjacent to this area are two check dams in the west arroyo, two rock alignments along the same arroyo and a large slab-lined roasting pit in the rocks above the site.

The Lower Roomblock is a massive masonry construction with a 24 meter east-west dimension which contains an estimated 15 rooms. The rather substantial mound elevation of 1.0 meter is probably a result of massive wall and large room construction rather than indicative of multistoried architecture. A midden area (No. 1) located adjacent and south of the Lower Roomblock is 20 by 25 meters in size with an estimated mean depth of 50cm. (250 cubic meters of midden fill). Some apparent "burial slabs' are present in the midden area. No kiva depressions are visible, contrary to previous record, but dozer activity associated with drill hole 0630 may conceal a depression adjacent and southeast of the Lower Roomblock.

The Upper Roomblock is located at the base of the talus slope 20 meters north of the Lower Roomblock. It is a diminutive "L" shaped block 8 meters in east-west dimension. It is estimated to contain 5 to 6 rooms. A low 25cm high rubble mound and a simple masonry wall alignment is present. Ceramics observed from the adjacent Midden No. 2 area indicate an occupation contemporaneous with the massive Lower Roomblock. The midden area adjacent to the Upper Roomblock is 10X22 meters in size with a mean estimated depth of 25cm.

Located in the west arroyo floor adjacent to the roomblock area are two check dams. These dams both 10m in length are comprised of stacked stone 20 to 50cm in size. These dams appear to have been constructed to reduce runoff velocity rather than to retain moisture. The fields were most likely paced in the deep soils of the alluvial fan below the site where the arroyo opens out and where runoff waters are dissipated. The check dams are placed in a rather active scoured out area of the arroyo where runoof waters first pour off the steep slopes.

Located among the rocks on the the talus slope about the roomblocks and west of the arroyo are three areas where vertical sandstone slabs are visible. One area is a defined roasting pit 1.0m in diameter which is built of large sandstone slabs. The slabs are oxidized. The fill of the structure has been excavated (looted).

Site No. 14 Condition:

A bulldozer cut associated with drill hole 0630 has been placed in the Site No. 14 area resulting in the partial destruction of the Lower Roomblock. It is estimated that two to four rooms in the pueblo have been removed. Fill from the dozer path may conceal a kiva depression. There is also some evidence of looting in the site area. A number of potholes are visible in the Midden No. 1 area presumeably made by pothunters excavating burials. The slab roasting pit along the west arroyo has also been excavated. Most of the Site No. 14 area remains intact despite these impacts. It is estimated that 90% of the cultural remains at the site are undisturbed. Preservation of this is certainly justified. The site is enclosed within a protection zone to be fenced in a contiguous enclosure with nearby sites No. 10 and 11.

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Site No. 14 Ceramic Type Frequencies:

Ceramic Ware-Type	Mide	ien No. 1	•	Midden	No.	. 2
Cibola Gray Ware:				•	· .	
Plain		8				
Corrugated Indented (early	style)	1		- 1		
Corrugated Indented		14		25	·	
Plain neckbanded		. 1				
Cibola White Ware:			•			
Red Mesa Black on White		6	•	. 2		
Escavada Black on White		6	•	4		
Gallup Black on White		12	•	D J		
Chaco Black on White		•		T	·	
Puerco B/W (solid style)		2	•			
White Mt. Red Ware:	•					
Puerco B/R		1	-			
Wingate B/R	•			· 1		
Unidentified style	•	1.				•
•	•			·.		•

Ceramic Dicussion-Cultural Temporal Affinity:

Ceramic samples were obtained to two areas in the site complex; one from midden No. 1 adjacent to large lower pueblo and from Midden No. 2 adjacent to the talus base unit h ouse. Both samples appear similar indicating an occupation in the Pueblo II-Early PIII Periods from Ca. A.D. 950 to 1100. Ceramic Types suggest an affiliation with the Chaco Anasazi culture area. Examination of the slope below the site to the south failed to reveal a formative period component as noted in the Adjacent site 10 and 11 areas but this area is substantially alluviated by an arroyo which fringes the site and such a component may be buried.

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M. Blevins' Affidavit

Attachment J

Attachment H

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MUSEUM OF NEW MEXICO

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M. Blevins' Affidavit

Attachment K

CULTURAL RESOURCES INVENTORY OF PROPOSED URANIUM SOLUTION EXTRACTION AND MONITORING FACILITIES AT THE CHURCH ROCK SITE AND OF PROPOSED SURFACE IRRIGATION FACILITIES NORTH OF THE CROWNPOINT SITE, MCKINLEY COUNTY, NEW MEXICO

Eric Blinman

with contributions by

Steven A. Lakatos Macy Mensel Janet E. Spivey C. Dean Wilson

ARCHAEOLOGY NOTES 214

SANTA FE 1997 NEW MEXICO

About 3,600 Navajos served in the military during World War II. The Navajo "Code Talkers" contributed greatly to the wining of the war in the Pacific theater. Although the period 1933-50 ended with a postwar economic decline, it set the stage for a mixed cash and pastoral economy that continues to this day (Doleman 1979:14).

Wage income opportunities increased considerably in the 1950s with the development of oil and gas fields, especially in the northeastern part of the reservation. Tribal wealth increased from mineral royalties. The 1980s and 1990s have seen an increase in the exploitation of coal and uranium resources. These activities have helped improve the Navajo economy and brought the Navajos into closer contact with the Anglo culture and cash economy. Although isolated houses and sheepherding activities continue today in the eastern reservation area, changes in the Navajo economy and culture are occurring at a rapid rate (Doleman 1979:14).

Regional Perspectives on Traditional Navajo Land Use

Janet E. Spivey

Information concerning traditional uses of the region and project areas has been collected from traditional practitioners, Navajo chapter officials, and local knowledgeable elderly residents. The chapters (Church Rock, Crownpoint, Pinedale, Mariano Lake, Smith Lake, Little Water, Becenti, and Dalton Pass) represented in this report have boundaries within or adjacent to the Church Rock or Section 12 project areas. The following is a brief history and information about areas that are commonly used by traditional practitioners or chapter residents but not within the project areas.

Four sacred areas that are in current use are mentioned by all the traditional practitioners interviewed for this project: Hosta Butte, Little Hosta Butte, Mount Powell, and White Spot Rock, or Mesa Butte. Of these, Hosta Butte is perhaps the most sacred site to the Navajo people and is often visited as an offering place. Hosta Butte, the most prominent and elevated landform in the Lobo Plateau, lies five miles northwest of the Smith Lake Chapter and six miles south of the Crownpoint area. Hosta Butte rises to an elevation of almost 8,600 feet. There is evidence that Hosta Butte was an important shrine during the Chacoan Anasazi occupation of the region. The pinnacle is the destination of the Chaco South Road, which extends 34 miles, linking the great houses of Chaco Canyon with Kin Ya'a and Hosta Butte (Marshall 1992:21).

The Navajo people refer to Hosta Butte as AK' i dah nast' ani (The Mountain that Sits on Top of Another Mountain). The name *Hosta Butte* dates back to 1877, when it was given to the mountain by W. J. Jackson in honor of a Jemez Indian who guided Col. John Washington's expedition in 1849 (Marshall 1992:21). Numerous shrines are located on the summit, and many contain offerings. Mr. Jim Charley, a 76-year-old traditional practitioner from Smith Lake Chapter, stated that Hosta Butte is used during war times as a place to pray for peace and to pray for rain during a drought. and as a place for Navajo people to pray for harmony with the environment. Jean Mariano, a 77-year-old traditional practitioner from Mariano Lake, also identified Hosta Butte as a special shrine to place offerings and say prayers to the spirits. William Raymond, an 84-year-old traditional practitioner from Little Water, stated that Hosta Butte was a prime location for shrines and prayers for rain during a drought (Spivey 1996).

Little Hosta Butte is three miles west of Hosta Butte. According to Jean Mariano, it is used for gathering eagle feathers, but no ceremonies are held there. Also, Mount Powell is used as a

ceremonial and sacred place in time of war with another tribe or country. When the United States is at war with another country, ceremonies are conducted to ask protection for the soldiers and to win the war. Both Jim Charley of Smith Lake and William Raymond, from the Little Water Chapter, mentioned White Face (Spot) Rock or Mesa Butte, southwest of Pinedale, as a traditional use area for the local Navajo people (Spivey 1996).

to be associated with each possible component were selected for field analysis. At larger sites, areas associated with each roomblock or midden were sampled. Study areas were usually defined by a 1 m radius dog leash that was marked by placing pinflags around the perimeter. In cases where the number of artifacts within a selected area was not large enough for confident interpretation, the sampling area was extended to a larger radius. Unusual ceramic types or formal flaked lithic tools found outside the sampling area were recorded.

Field analysis of ceramics consisted of recording ceramic type and vessel form. Sherds were not collected during analysis but left where they were found. Small clips were taken from a very small number of sherds and placed in bags with a slip recording type and vessel form. Descriptions of the pottery types and interpretations of the ceramic data are provided in Appendix 1 of this report. Field analysis of flaked lithic artifacts included observations of material type, artifact form, and technological characteristics. Flaked lithic artifacts were extremely rare both at the sites and as IOs.

BLM Farmington District requirements include the collection of tree-ring specimens from Navajo sites during Class III archaeological inventories. Tree-ring samples were not collected during the initial phase of this inventory, but a separate tree-ring sampling phase is planned for the spring of 1997. This wood sampling plan will be extended to all Navajo sites on both private and BLM land within the Church Rock Site, and the plan is described in Appendix 2.

Ethnohistory and Traditional Cultural Properties

Janet E. Spivey

Several modern peoples are accepted as having potential cultural interests in the landscape of the project areas: Navajo, Hopi, Zuni, Acoma, and Laguna. These interests fall into two categories: present uses, and concern with remains of past uses. HRI initiated contacts with the Hopi, Zuni, Acoma, and Laguna tribes concerning the project areas in February 1996. Only the Navajos have demonstrated current traditional uses of the project vicinities, while all of the groups are expected to be concerned with the treatment of resources that reflect past uses. If any archaeological sites cannot be avoided or if cultural resources are encountered during monitoring, specific consultations must be initiated with the concerned Native American groups.

Prior to the traditional cultural properties consultations, NMCRIS and NNHPD files were consulted for previously recorded resources in the vicinity of the project areas. Ethnohistoric survey work was carried out in accordance with the Navajo Nation Historic Preservation Department Traditional Cultural Properties Policy and the National Park Service National Register Bulletin 38.

The project areas lie within or adjacent to the borders of the Church Rock. Pinedale, Mariano Lake, Smith Lake, Little Water, Crownpoint, Becenti, and Nahodishgish (Dalton Pass) Chapters of the Navajo Nation. All these chapters are within the jurisdiction of the Eastern Navajo Agency. Published references on Navajo culture, traditional cultural properties, and general history were consulted for this report (Bailey and Bailey 1986; Brugge 1968, 1977, 1983; Kelley 1984; Kluckhohn and Leighton 1962; Van Valkenburgh 1941). These sources present some cultural and historical information relating to the general project areas, but no information on the specific project areas. Regional summaries are also available (Kelley 1982; Nelson and Cordell 1982;

Scheick 1983; Kaufman 1985).

Prior to OAS involvement with the project, a traditional cultural properties inventory had been conducted for both the Church Rock and Section 12 development sites by Ernest C. Becenti, Sr., a traditional practitioner and former Church Rock Chapter president. This inventory was prepared for the Environmental Impact Statement of the HRI mining project. The OAS ethnohistorian used this document as a resource, confirming its substance and augmenting the previous investigations with additional material and interviews.

Mr. Becenti's inventory of traditional cultural properties was conducted during July, August. and September of 1995, with supplemental site visits and discussions in August 1996. Mr. Becenti has been a traditional practitioner for over 30 years and was the Church Rock Chapter president in 1995. The traditional uses inventory was conducted by a walking tour of the private lands, Navajo Nation Trust lands, Navajo allotment lands, and Bureau of Land Management lands within the project are⁻⁻ of Church Rock and Crownpoint. The lands discussed in Mr. Becenti's report include areas outside of the two project development sites that are the concern of this report.

Mr. Becenti's report stated that "no significant sacred and traditional sites were found." The individuals that were interviewed stated that most of the sacred sites and herb gathering places were up in the mountains or along the mountain ridges, outside of the proposed project areas. The sacred shrines were altogether unknown and no longer used by the Navajo people. Mr. Becenti recommended that the mining project proceed as proposed, but that if a discovery were made, all project activities in that area should cease.

The OAS traditional cultural properties inventory was conducted by Janet E. Spivey, OAS ethnohistorian, with the assistance of Ben House from Smith Lake during the fall and winter of 1996. Detail concerning the entire inventory process is presented here, and summaries appropriate to the individual land jurisdictions are presented in the results section of this report.

On October 30, 1996, the ethnohistorian mailed letters containing a description of the proposed project and a project vicinity map to the chapter presidents of the Church Rock, Pinedale, Mariano Lake, Smith Lake, Little Water, Crownpoint, Becenti, and Dalton Pass Chapters. These letters were followed by telephone contacts and personal interviews during the months of November and December 1996. The ethnohistorian, with the assistance of Mr. House, contacted and visited knowledgeable Navajo traditional practitioners and chapter officials representing all the involved communities.

On November 7, 1996, the ethnohistorian and Mr. House visited with Jean Mariano, an elderly traditional practitioner who lives within the Mariano Lake Chapter boundaries. Ms. Mariano was born three miles northeast of her present house, which lies in the NE ¼ of Section 30. She has lived in that area all her life. She is now 77 years old and began traditional practice at age 34. She was taught by her uncle, Chee Johnson. Ms. Mariano does not know of any traditional uses within Sections 8 or 17 of the Church Rock Site. The hills and mountains are the places to gather plants and herbs. These are gathered in the high places away from grazing animals or where people are not active on a daily basis. Plants and herbs need to be gathered where there is no contamination. She adds that the Navajos do not conduct ceremonies near housing developments or where there would be noise and lights. She does not know of any sacred or plant gathering areas on the Church Rock Site. She would accept Mr. Becenti's judgment and report about traditional uses in the vicinity of Sections 8 and 17.

Ms. Mariano stated she has concerns about how the uranium will be transported. It should be well protected and secured. There should be an immediate way of containing any spillage due to an accident. However, she noted that there are trucks travelling the roads all the time. Local residents don't know what is in them, she said, and uranium has been hauled over the roads in the past.

Later on November 7, 1996, the ethnohistorian and Mr. House met with Nelson J. Largo, Sr., Smith Lake Chapter president. Mr. Largo stated that he had received the letter about the project and was glad we were visiting him. He had no concerns about traditional uses in the project area. He stated that uranium trucks had travelled through the Smith Lake area before and that many trucks use the route hauling all kinds of things. He feels that as long as the HRI trucks stay on the paved roads and take safety precautions there should be no problems. He was glad we had consulted with Jean Mariano and would accept her judgment about traditional uses.

On November 8, 1996, the ethnohistorian and Mr. House visited with Bennie Y. Begay, a traditional practitioner and former vice president of the Pinedale Chapter. Mr. Begay is 75 years old and was born in the area. He has lived there all his life. He is very knowledgeable about traditional uses. The chapter boundaries of Church Rock and Pinedale are between three and four miles west of Mr. Begay's house. Mr. Begay stated that there are mesas in the Pinedale area that are used for ceremonial purposes but are isolated and not in the project areas or along the highway. There is a hill about 2,000 feet southwest of his house that is still considered a sacred place. This is because it is used by eagles during migration as a place to settle for a few days. This hill is not in the project areas or within the highway right-of-way. It would not be a place of concern as long as the trucks hauling uranium take safety precautions and stay within the right-of-way.

On the first mesa, just past the Pinedale Trading Post, there is a sacred location called the "Trail of Rainbows" because when it rains there is usually a rainbow there. A Squaw Dance ceremony has been held near the highway, about ¼ mile from his house, or four miles west of the Pinedale Trading Post. The Squaw Dance is conducted with the normal flow of traffic and noise along the highway. There would be no concerns as long as any trucks hauling the uranium stay within the right-of-way.

Mr. Begay expressed safety concerns only about the trucks. They should slow down, he said, because the highway is used by livestock and elderly people. He has no knowledge of traditional uses within Sections 8 and 17. He would accept Mr. Becenti's judgment about traditional uses within the project areas.

Mr. Begay appreciated that we were consulting with knowledgeable people about the traditional uses. Many companies had come into the area and would not consult with the local residents.

The Church Rock Chapter House was visited on November 8, 1996, to determine if the project letter had been received. Mr. Benally, chapter president, was not there, but the chapter clerk stated that the letter had been received and the chapter was familiar with the HRI project, especially regarding Sections 8 and 17 within their chapter boundaries. The Church Rock Chapter had signed a resolution supporting the uranium project after a vote was taken during the July 7, 1993, chapter meeting. It was suggested that we contact Mr. Benally on another day.

On November 11, 1996, Mr. House met with Jim Charley, a traditional practitioner, from the

Smith Lake Chapter. Mr. Charley had no concerns about traditional uses of either the Church Rock Site (Sections 8 and 17) or Section 12 near Crownpoint.

On November 21, 1996, the ethnohistorian, and Mr. House met with Tom Shorty of the Becenti Chapter and Lincoln Perry of Crownpoint. Both are knowledgeable traditional practitioners and are familiar with the project areas, especially Section 12.

Mr. Shorty is 67 years old and has been a traditional practitioner for 25 years. He is more familiar with Section 12 than with the vicinity of the Church Rock Site. About 60 years ago, the Kin Yaah Yazzie family lived in a house on Section 12. At that time plants and herbs were gathered for medicinal purposes. This is what people used when there were no western doctors or hospitals. If you were sick or hurt yourself you would pick a certain plant to use on the wound or make into a tea to drink. The "bee weed" plant is used for dying wool, medicine, and seasoning food. The yucca plant is used for shampoo and cleaning for ceremonies. Shrines, prayers, and ceremonies are placed or performed in very isolated places. Today most plants are gathered on mesa tops and ridges, away from grazing animals and use by people. The plants on the hills and mesas tend to reseed themselves, so there is no concern about their dying out. Section 12 is not used as a traditional use area today. It has been used by people too much and for grazing.

Mr. Shorty does not have any knowledge about traditional uses on the Church Rock Site. However, a place outside the Church Rock project area is considered sacred ground. It is on highway NM 371 between Becenti and Crownpoint. It is called Dragon Monster, and people do not travel through the area during ceremonial times. This area is similar to Snake Rock at Narbona Pass.

Mr. Perry is 67 years old and learned traditional practice from his grandmother. Like Mr. Shorty, he has no knowledge of traditional uses within the Church Rock Site area. Further west from Sections 8 and 17 is an area known as Nose Rock, which is used as a shrine. Nose Rock Point is slightly more than three miles west-southwest of the Church Rock Site. There used to be more game like deer and elk in the area, but since people have moved in, there is less wildlife.

Both Mr. Shorty and Mr. Perry agree that they have no concerns or knowledge of traditional uses within Sections 8 or 17. As far as transportation of the uranium, they feel as long as the trucks stay on the paved roads and are as safe as possible, they have no concerns.

On November 21, 1996, the ethnohistorian and Mr. House visited William E. Raymond, an elderly traditional practitioner and former chapter secretary from the Little Water community. Mr. Raymond is an 84-year-old traditional practitioner. Mr. Raymond stated that shrines and prayer offerings take place away from populated areas, usually up in the high places. Prayers are for rain, safety, and protection. Personal prayers are offered at home or near home.

There is a mesa about ¹/₂ mile from his house where there used to be a shrine, but the young people have desecrated it. At one time there was clay pottery for water offerings, but it has been destroyed. Some of the sacred places are Hosta Butte, Little Hosta Butte, Mount Powell, and White Face (Spot) Mesa, which is southwest of Pinedale: There are some Anasazi sites near Mr. Raymond's house. Pottery remains are present, and he thinks the Anasazi farmed in the low places near his house.

Mr. Raymond has no knowledge of traditional uses within the Church Rock Site area. He feels

Mr. Becenti should be the most knowledgeable person about that area.

The Little Water Chapter boundary comes up to NM 371, and Mr. Raymond has no concerns about traditional uses along the transportation route as long as the trucks stay on the paved roads. He has safety concerns about older people and livestock on the road. The truck drivers should be careful so as not to constitute a danger to people or livestock. Mr. Raymond has livestock that he sells and also uses for food. The transportation must be done safely, so livestock and vegetation will not be contaminated.

On November 22, 1996, the ethnohistorian and Mr. House visited Manuel Shirleson, Crownpoint Chapter community services coordinator. Mr. Shirleson confirmed that the project letter had been received and suggested we contact the chapter president, Charles Long, in the near future. Mr. Shirleson stated that the chapter is familiar with the HRI project. The Crownpoint Chapter had signed a resolution supporting the HRI project in general. Mr. Shirleson thought that the traditional practitioners who had been consulted would accept the project areas. A time was arranged to talk to Mr. Shirleson on December 4, 1996, to determine when Mr. Long would be available. The ethnohistorian contacted Mr. Shirleson on December 4, 1996, and scheduled a meeting with Mr. Long on December 11, 1996.

On December 11, 1996, the ethnohistorian and Mr. House met with Charles Long, Crownpoint chapter president, at the Crownpoint Chapter House. Mr. Long was familiar with the project areas and had helped with Mr. Becenti's report. He also felt that Lincoln Perry and the other traditional practitioners would accept what they said about traditional uses. He stated that as far as he knew, the Church Rock Site area was never considered a traditional use area. People go into the high places, like Hosta Butte, to gather plants or perform ceremonies.

Mr. Long stated that the Crownpoint Chapter had signed a resolution in support of the HRI project, and he knew of no traditional uses in the project areas.

Also on December 11, 1996, the ethnohistorian and Mr. House met with a traditional practitioner from the Dalton Pass Chapter who prefers not to be named in this report. This practitioner is familiar with the Dalton Pass and Crownpoint areas. However, he felt other practitioners closer to the Church Rock Site would be more knowledgeable about that area. He did mention the presence of a spring on top of a mesa about 2.5 miles southwest of the HRI Crownpoint offices. It is called Rock House. There are ruins on top of the mesa. This mesa is not within the project areas. This practitioner also mentioned the four sacred places used for ceremonies and shrines (Hosta Butte, Little Hosta Butte, White Spot Rock or Mesa Butte, and Mount Powell). He has no knowledge of any traditional uses within the project areas. His only concerns involve the safety of the people and livestock when transporting the uranium.

Later on December 11, 1996, visits were made to the Dalton Pass Chapter to confirm that the project letter had been received and to the Becenti Chapter House with Juliette Largo, Becenti community services coordinator.

On December 12, 1996, the ethnohistorian visited Herbert Benally, Church Rock Chapter President, to inquire about any concerns the Church Rock Chapter might have about traditional uses within the project areas. Mr. Benally will accept Mr. Becenti's findings and report on the Church Rock Site. Mr. Benally will go along with the previous administration's and chapter's position on uranium mining. He had no concerns about the project.

The Pinedale Chapter was also visited on December 12, 1996. Nelson Zuni, vice president, discussed the project. He is knowledgeable about the Church Rock Site and does not know of any traditional uses in the project area. He will accept Mr. Becenti's and Bennie Begay's judgments about traditional uses in the project area as well as the other local traditional practitioners. He has safety concerns about transporting the uranium.

Also on December 12, 1996, the ethnohistorian and Mr. House visited the Little Water Chapter House and met with George Tolth (council delegate), Bennie Enrico (chapter president). Thomas Barbone Sr. (chapter vice president), Paul Jones (chapter secretary and treasurer), and Ken Tapaha (chapter manager). Mr. Enrico stated he would accept the judgment of the local traditional practitioners concerning the project areas. Mr. Barbone stated that the medicine men or traditional practitioners should know about traditional uses, and he would accept whatever they said. He had concerns about the safety of the highways, especially during bad weather. He thought the highways should be upgraded to be able to carry the weight of the trucks.

Mr. Tolth stated that traditional practitioners use isolated high places to gather plants and herbs and to conduct ceremonies. He did not know of any concerns about traditional uses in the project areas. He has safety concerns about road conditions. There is a need to watch out for the elderly and livestock.

Mr. Tapaha had no concerns about traditional uses in the project areas. He had concerns about transporting the uranium. The roads can be slick and dangerous, especially through the canyon on highway NM 371. He would like to see the highway department widen the road through the canyon area.

On December 17, 1996, the ethnohistorian talked with Raquel Warner of the Mariano Lake Chapter and Juliette Largo, community services coordinator for Becenti Chapter. Ms. Warner said that Henry Tom, chapter president, would call back. Ms. Largo said she would talk to Mr. Hubbard, chapter president, about the project and suggested calling back on Friday, December 20. A call was made to Harrison Morgan, Dalton Pass chapter president, and Harry Jim, chapter vice president; neither was available.

On December 20, 1996, the ethnohistorian spoke with Raquel Warner, Mariano Lake community services coordinator. Ms. Warner had discussed the project with Henry Tom, chapter president. Mr. Tom stated that he had no concerns about the HRI project and would accept the judgment of the traditional practitioners.

On January 10, 1997, the ethnohistorian spoke with Juliette Largo, community services coordinator for the Becenti Chapter. Ms. Largo had discussed the project with Harry Hubbard, Becenti Chapter president. Mr. Hubbard stated that he had no concerns about the HRI project and would accept the judgment of the local traditional practitioners. If any concerns or traditional use areas were discovered after the project began, Mr. Hubbard wanted to be notified.

On February 5, 1997, Mr. House spoke with Harrison Morgan of Dalton Pass Chapter. Mr. Morgan had no concerns regarding Section 12, as long as measures are taken to ensure safety and prevent contamination of the environment.

LA 88518	. Flood plain	Flood plain Anasazi Unknown		Hearth, storage pit	ARMS file
LA 89483	Bench, unknown	Anasazi	Pueblo II	Masonry roomblock	Amsden 1992
LA 89484	Plain, unknown	Anasazi	Pueblo II	L-shaped masonry roomblock, (Bonito style, great house), great kiva	Amsden 1992
LA 89485	Plain, unknown	lain, unknown Anasazi Pu		Masonry roomblock, pithouse depression	Amsden 1992

Table 55. Isolated Occurrences for the Surveyed Portion of Section 17, Navajo NationTribal Trust Land

IO Number	Location	Context	Cultural Affiliation	Description		
1	UTM: E721280 N3944075 Legal: SEK SE NWK Elevation: 6,780 ft	Scrubland; valley floor; ground disturbed by prior construction.	Anasazi (pottery technology)	l late mineral-painted white ware sherd; jar body		
2	UTM: E721200 N3944790 Legal: NW¼ NW¼ NE¼ Elevation: 6,820 ft	Scrubland; in trench; ground disturbed by prior construction.	Anasazi (pottery tećhnology)	1 Corrugated Gray sherd; jar body		
- 3	UTM: E722120 N3944430 Legal: SE¼ NE¼ NE¼ Elevation: 6,807 ft	Scrubland; valley floor; ground disturbed by prior construction.	Anasazi (pottery technology)	l Plain Gray sherd; jar body		
4	UTM: E721510 N3944230 Legal: NE¼ SE¼ NE¼ Elevation: 6,797 ft	Scrubland; valley floor.	Anasazi (pottery technology)	1 Gallup Black-on-white sherd; jar body		
5	UTM: E721720 N3944210 Legal: NE4 SW4 NE4 Elevation: 6,805 ft	Scrubland; valley floor; ground disturbed by prior construction.	Anasazi (pottery technology)	l Corrugated Gray sherd; jar body		
6	UTM: E722010 N3944410 Legal: NE¥ SE¥ NE¥ Elevation: 6,807 ft	Scrubland; valley floor.	Anasazi (pottery technology)	l Polished White Ware sherd; bowl body		

¹UTM coordinates are within Zone 12. Quarter sections are within Section 17, T16N, R16W, on the USGS Church Rock 7.5 minute quadrangle.

Table 56. Summary of Traditional Cultural Property Results, Church Rock Site, Section17, Navajo Nation Land

Consultant	Affiliation	Concerns
Ernest C. Becenti, Sr.	Church Rock Chapter; former chapter president; traditional practitioner	No known traditional uses
Ms. Jean Mariano	Mariano Lake Chapter; traditional practitioner.	No known traditional uses
Nelson J. Largo, Sr.	Smith Lake Chapter president	No known traditional uses
Bennie Y. Begay	Pinedale Chapter; former chapter vice president; traditional practitioner	No known traditional uses
Jim Charley	Smith Lake Chapter; traditional practitioner	No known traditional uses
Tom Shorty ¹	Becenti Chapter; traditional practitioner	No known traditional uses
Lincoln Perry ^t	Crownpoint Chapter: traditional practitioner	No known traditional uses

Consultant	Affiliation	Concerns
William E. Raymond	Little Water Chapter: former chapter secretary: traditional practitioner	No known traditional uses
Charles Long	Crownpoint Chapter president	No known traditional uses
Confidential ¹	Dalton Pass Chapter; traditional practitioner	No known traditional uses
Herbert Benally	Church Rock Chapter president	No known traditional uses
Nelson Zuni	Pinedale Chapter vice president	No known traditional uses
George Tolth	Little Water Chapter; council delegate	No known traditional uses
Bennie Enrico ²	Little Water Chapter president	No known traditional uses
Thomas Barbone ²	Little Water Chapter vice president	No known traditic al uses
Ken Tapaha	Little Water Chapter manager	No known traditional uses
Henry Tom ²	Mariano Lake Chapter president	No known traditional uses

Table 56. Summary of Traditional Cultural Property Results, Church Rock Site, Section17, Navajo Nation Land

¹Less familiar with the Church Rock Site than with Section 12. ²Defers to the traditional practitioners who have been consulted.

Other Navajo Nation Lands

Although no survey was conducted on Navajo Nation lands other than the designated portions of Section 17, two sites were recorded within the Navajo Nation land of Section 9. This land is to the east of the private land portion of Section 8 and to the northeast of Section 17. It is not included within the development plans for the Church Rock Site. One of these sites (LA 26161) had originally been recorded by Ford and DeHoff (1977) and located within Section 8. Since 1977, survey monuments have been installed that identify the boundary between Sections 8 and 9, and LA 26161 has now been located within the western margin of Section 9. The site is outside of the Church Rock Site and is not included in the body of this report, but an updated site form and locational information are included in Appendix 5. The second site straddles the boundary between the private and Navajo Nation land (Sections 8 and 9). This site has been described within the private land portion of Section 8, and a copy of the site documentation is provided in Appendix 5.

Facility Plans and Recommendations

Construction plans for the surveyed portion of Section 17 call for well field development (U.S. Nuclear Regulatory Commission et al. 1997). Production wells, monitoring wells, pipelines, and roads are all ground-disturbing activities. The only cultural resources identified in the survey are isolated artifact occurrences consisting of single potsherds. These isolated occurrences are unlikely to yield important information concerning local or regional prehistory beyond that already documented during the survey, and therefore they are not eligible for inclusion in the *National Register of Historic Places*.

Consultant	Affiliation	Concerns			
Ernest C. Becenti, Sr.	Church Rock Chapter; former chapter president; traditional practitioner	No known traditional uses; one or more historic burials are be present within LA 70610			
Jean Mariano	Mariano Lake Chapter: traditional practitioner	No known traditional uses			
Bennie Y. Begay	Pinedale Chapter; former chapter vice president; traditional practitioner	No known traditional uses			
Jim Charley	Smith Lake Chapter; traditional practitioner	No known traditional uses			
Tom Shorty	Becenti Chapter; traditional practitioner	No known traditional uses			
Lincoln Perry	Crownpoint Chapter; traditional practitioner	No known traditional uses			
William E. Raymond	Little Water Chapter; former chapter secretary; traditional practitioner	No known traditional uses			
Charles Long	Crownpoint Chapter president	No known traditional uses			
Confidential	Dalton Pass Chapter; traditional practitioner	No known traditional uses			
George Tolth	Little Water Chapter; council delegate	No known traditional uses			
Bennie Enrico	Little Water Chapter president	No known traditional uses			
Thomas Barbone ¹	Little Water Chapter vice president	No known traditional uses			
Ken Tapaha	Little Water Chapter manager	No known traditional uses			
Henry Tom ¹	Mariano Lake Chapter president	No known traditional uses			
Harry Hubbard ¹	Becenti Chapter president	No known traditional uses			
Harrison Morgan	Dalton Pass Chapter president	No known traditional uses			

 Table 75. Summary of Traditional Cultural Property Results, Crownpoint Irrigation Site,

 Section 12, Private Land

¹Defers to the traditional practitioners who have been consulted.

M. Blevins' Affidavit

June 19, 1997

Attachment L

Alan Downer, Director Navajo Nation Historic Preservation Department ATTN: Peter Noyes and Rolf Nabahe P.O. Box 4950 Window Rock, AZ 86515

SUBJECT: HYDRO RESOURCES, INC. SOLUTION MINING PROJECT AT CROWNPOINT, NM

Dear Dr. Downer:

You will recall that the U.S. Nuclear Regulatory Commission is reviewing a license application submitted by Hydro Resources, Inc. (HRI) to construct and operate an *in situ* leach uranium mining facility near Crownpoint, New Mexico. In previous communications with you, the NRC has identified and provided maps of the potential areas of development. Pursuant to Section 106 of the National Historic Preservation Act (NHPA) and the Navajo Nation Cultural Resources Protection Act (19 NNC 1001 et. seq.), a cultural resources survey of Section 12 (T17N R13W) and portions of Sections 7 and 18 (T16N R16W) has been conducted. These are the areas that HRI proposes to initially develop. Although additional areas were initially proposed for development during the first five year period of the project, these areas are either no longer planned for development during this time-frame (eg., Crownpoint), or were difficult to gain access to because property leases have not been executed (eg., Unit 1). Consultation regarding these areas will be conducted at a later date.

The Museum of New Mexico, Office of Archaeological Studies, has drafted a report documenting the aforementioned survey and its findings. The report will serve as the basis of a determination of potential effect under Section 106 of NHPA. The NRC has requested additional information from HRI about planned mining locations in order to facilitate a determination of potential effect. During the interim, the NRC requests that you review and comment on the enclosed report. In addition to the report (including the confidential site location information), site forms and sacred and traditional places documentation forms are also enclosed. A. Downer

If you have any questions regarding this subject, please contact Mr. Robert Carlson of my staff at (301) 415-8165.

Sincerely,

(Original signed by Daniel M. Gillen for)

Joseph J. Holonich, Chief Uranium Recovery Branch Division of Waste Management Office of Nuclear Material Safety and Safeguards

Enclosures: As stated

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June 19, 1997

Lynne Sebastian New Mexico State Historic Preservation Officer Historic Preservation Division 228 E Palace Avenue Santa Fe, NM 87501

22644

SUBJECT: HYDRO RESOURCES, INC. SOLUTION MINING PROJECT AT CROWNPOINT, NM

Dear Dr. Sebastian:

You will recall that the U.S. Nuclear Regulatory Commission is reviewing a license application submitted by Hydro Resources, Inc. (HRI) to construct and operate an *in situ* leach uranium mining facility near Crownpoint, New Mexico. In previous communications with you, the NRC has identified and provided maps of the potential areas of development. Pursuant to Section 106 of the National Historic Preservation Act (NHPA) and the Navajo Nation Cultural Resources Protection Act (19 NNC 1001 et. seq.), a cultural resources survey of Section 12 (T17N R13W) and portions of Sections 7 and 18 (T16N R16W) has been conducted. These are the areas that HRI proposes to initially develop. Although additional areas were initially proposed for development during the first five year period of the project, these areas are either no longer planned for development during this time-frame (eg., Crownpoint), or were difficult to gain access to because property leases have not been executed (eg., Unit 1). Consultation regarding these areas will be conducted at a later date.

The Museum of New Mexico, Office of Archaeological Studies, has drafted a report documenting the aforementioned survey and its findings. The report will serve as the basis of a determination of potential effect under Section 106 of NHPA. The NRC has requested additional information from HRI about planned mining locations in order to facilitate a determination of potential effect. During the interim, the NRC requests that you review and comment on the enclosed report. In addition to the report (including the confidential site location information), site forms and sacred and traditional places documentation forms are also enclosed. Interested parties identified in NRC's letter directed to your attention, dated October 2, 1996, have also been provided an opportunity to review and comment on the report.

NRG FRE GERIER GOPY

L. Sebastian

If you have any questions regarding this subject, please contact Mr. Robert Carlson of my staff at (301) 415-8165.

Sincerely,

(Original signed by) Daniel M. Gillen for Joseph J. Holonich, Chief Uranium Recovery Branch Division of Waste Management Office of Nuclear Material Safe :: and Safeguards

Enclosures: As stated

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Roger Anyon, Director Pueblo of Zuni Heritage and Historic Preservation Office P.O. Box 339 Zuni, NM 87327

SUBJECT: HYDRO RESOURCES, INC. SOLUTION MINING PROJECT AT CROWNPOINT, NM

Dear Mr. Anyon:

The U.S. Nuclear Regulatory Commission is reviewing a license application submitted by Hydro Resources, Inc. (HRI) to construct and operate an *in situ* leach uranium mining facility near Crownpoint, New Mexico. You were previously notified of this proposed activity and of NRC's consultation with the New Mexico State Historic Preservation Office and the Navajo Nation Historic Preservation Department.

The Museum of New Mexico, Office of Archaeological Studies, has conducted a cultural resources survey of the areas HRI proposes to initially develop. The report documenting the survey and its findings has been drafted. Because you previously expressed interest in the findings of the survey, the NRC is submitting the enclosed copy of the report for your review and comment. This report will serve as the basis of a determination of potential effect under Section 106 of the National Historic Preservation Act.

If you have any questions concerning this subject, please contact Mr. Robert Carlson of my staff at (301) 415-8165.

Sincerely,

Daniel M. Gillen for Joseph J. Holonich, Chief Uranium Recovery Branch Division of Waste Management Office of Nuclear Material Safety and Safeguards

(Original signed by)

Enclosure: As stated

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9706230360 970619 PDR___ADDCK_0400994 Leigh Jenkins, Director Hopi Cultural Preservation Office P.O. Box 123 Kykotsmovi, AZ 86309

SUBJECT: HYDRO RESOURCES, INC. SOLUTION MINING PROJECT AT CROWNPOINT, NM

Dear Mr. Jenkins:

The U.S. Nuclear Regulatory Commission is reviewing a license application submitted by Hydro Resources, Inc. (HRI) to construct and operate an *in situ* leach uranium mining facility near Crownpoint, New Mexico. You were previously notified of this proposed activity and of NRC's consultation with the New Mexico State Historic Preservation Office and the Navajo Nation Historic Preservation Department.

The Museum of New Mexico, Office of Archaeological Studies, has conducted a cultural resources survey of the areas HRI proposes to initially develop. The report documenting the survey and its findings has been drafted. Because you previously expressed interest in the findings of the survey, the NRC is submitting the enclosed copy of the report for your review and comment. This report will serve as the basis of a determination of potential effect under Section 106 of the National Historic Preservation Act.

If you have any questions concerning this subject, please contact Mr. Robert Carlson of my staff at (301) 415-8165.

Sincerely,

(Original signed by Daniel M. Gillen for)

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Joseph J. Holonich, Chief Uranium Recovery Branch Division of Waste Management Office of Nuclear Material Safety and Safeguards

Enclosure: As stated

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June 18, 1997

Roy Bernal, Chairman ATTN: Terrell Muller All Pueblo Indian Council 3939 San Pedro NE Alburquerque, NM 87190

46-8468

NLIT

SUBJECT: HYDRO RESOURCES, INC. SOLUTION MINING PROJECT AT CROWNPOINT, NM

Dear Mr. Bernal:

The U.S. Nuclear Regulatory Commission is reviewing a license application submitted by Hydro Resources, Inc. (HRI) to construct and operate an *in situ* leach uranium mining facility near Crownpoint, New Mexico. You were previously notified of this proposed activity and of NRC's consultation with the New Mexico State Historic Preservation Office and the Navajo Nation Historic Preservation Department.

The Museum of New Mexico, Office of Archaeological Studies, has conducted a cultural resources survey of the areas HRI proposes to initially develop. The report documenting the survey and its findings has been drafted. This report will serve as the basis of a determination of potential effect under Section 106 of the National Historic Preservation Act. It has been submitted to the Navajo Nation Preservation Department, the New Mexico Historic Preservation Officer, the Bureau of Land Management, and other interested agencies who have requested opportunity to review the report.

If you would like a copy of the report to review, or have any questions concerning this subject, please contact Mr. Robert Carlson of my staff at (301) 415-8165.

Sincerely,

(Original signed by Daniel M. Gillen for)

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Joseph J. Holonich, Chief Uranium Recovery Branch Division of Waste Management Office of Nuclear Material Safety and Safeguards

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Ron Shutiva, Governor Pueblo of Acoma P.O. Box 309 Acoma, NM 87304

40.8968

SUBJECT: HYDRO RESOURCES, INC. SOLUTION MINING PROJECT AT CROWNPOINT, NM

Dear Mr. Shutiva:

The U.S. Nuclear Regulatory Commission is reviewing a license application submitted by Hydro Resources, Inc. (HRI) to construct and operate an *in situ* leach uranium mining facility near Crownpoint, New Mexico. You were previously notified of this proposed activity and of NRC's consultation with the New Mexico State Historic Preservation Office and the Navajo Nation Historic Preservation Department.

The Museum of New Mexico, Office of Archaeological Studies, has conducted a cultural resources survey of the areas HRI proposes to initially develop. The report documenting the survey and its findings has been drafted. This report will serve as the basis of a determination of potential effect under Section 106 of the National Historic Preservation Act. It has been submitted to the Navajo Nation Preservation Department, the New Mexico Historic Preservation Officer, the Bureau of Land Management, and other interested agencies who have requested opportunity to review the report.

If you would like a copy of the report to review, or have any questions concerning this subject, please contact Mr. Robert Carlson of my staff at (301) 415-8165.

Sincerely,

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(Original signed by) Daniel M. Gillen for Joseph J. Holonich, Chief Uranium Recovery Branch Division of Waste Management Office of Nuclear Material Safety and Safeguards

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June 18, 1997

Roland Johnson, Governor Pueblo of Laguna P.O. Box 194 Laguna Pueblo, NM 87206

SUBJECT: HYDRO RESOURCES, INC. SOLUTION MINING PROJECT AT CROWNPOINT, NM

Dear Mr. Johnson:

The U.S. Nuclear Regulatory Commission is reviewing a license application submitted by Hydro Resources, Inc. (HRI) to construct and operate an *in situ* leach uranium mining facility near Crownpoint, New Mexico. You were previously notified of this proposed activity and of NRC's consultation with the New Mexico State Historic Preservation Office and the Navajo Nation Historic Preservation Department.

The Museum of New Mexico, Office of Archaeological Studies, has conducted a cultural resources survey of the areas HRI proposes to initially develop. The report documenting the survey and its findings has been drafted. This report will serve as the basis of a determination of potential effect under Section 106 of the National Historic Preservation Act. It has been submitted to the Navajo Nation Preservation Department, the New Mexico Historic Preservation Officer, the Bureau of Land Management, and other interested agencies who have requested opportunity to review the report.

If you would like a copy of the report to review, or have any questions concerning this subject, please contact Mr. Robert Carlson of my staff at (301) 415-8165.

Sincerely,

(Original signed by Daniel M. Gillen for)

40-8968

Joseph J. Holonich, Chief Uranium Recovery Branch Division of Waste Management Office of Nuclear Material Safety and Safeguards

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GARY E. JOHNSON GOVERNOR

STATE OF NEW MEXICO OFFICE OF CULTURAL AFFAIRS HISTORIC PRESERVATION DIVISION

VILLA RIVERA BUILDING 228 EAST PALACE AVENUE SANTA FE, NEW MEXICO 87501 (505) 827-6320

M. Blevins' Affidavit

Attachment M

20 November 1997

Joseph J. Holonich, Chief Uranium Recovery Branch Division of Waste Management Office of Nuclear material Safety and Safeguards United States Nuclear Regulatory Commission Washington, D.C. 10555-0001

Dear Mr. Holonich:

This is in response to your letter of 19 June 1997, received by this office 15 September 1997, which transmitted the Museum of New Mexico, Office of Archaeological Studies (OAS), survey report for the Hydro Resources, Inc. (HRI) leach uranium mining facility proposed near Crownpoint, New Mexico. This is also in response to your letter of 17 October 1997, received 23 October 1997, which transmitted additional information as referenced in your June letter.

Although neither letter expressly states the position of either the Commission or HRI on the findings presented by OAS in their survey report, it is this office's understanding from Dr. Lorraine Heartfield, representing HRI, that HRI agrees with the recommendations made by OAS on the eligibility of archaeological sites found in the proposed project area on Bureau of Land Management (BLM) and private lands. No archaeological sites were found on Navajo Nation land. Assuming that the Commission also agrees with those recommendations, this office concurs as follows:

We concur that the following sites are eligible under Criterion D for listing in the National Register of Historic Places:

Section 8, private land:

280121

ADOCK

LA 26159 LA 26160 LA 26163 LA 26164

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LA 88871 LA 88872 LA 88875 LA 88876 LA 116111 LA 116112 LA 116114 LA 116120

Section	8, E	BLM	land	l:
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LA 26158	LA 88877	•	LA 116120
LA 26162	LA 88878		LA 117314
LA 88873	LA 116115		LA 117316
LA 88874	LA 116118		LA 117319
LA 88874	LA 116118		LA 1173

Section 12, private land:		. ·
LA 70610	LA 116124	LA 116127
LA 116122	LA 116125	LA 116128
LA 116123	LA 116126	LA 116130
	· · · ·	

We concur that the following sites are **not eligible** for listing in the National Register of Historic Places:

Section 8, BLM land:

LA 116113

LA 117315

LA 117318

We concur that the eligibility of the following sites for listing in the National Register of Historic Places is undetermined, pending further information:

Section 8, BLM land:

LA 116116 LA 116117 LA 116119 LA 116121 LA 117317

Section 12, private land: LA 116129

Please contact me with any questions you might have on these comments, and when the project has developed to the point where it is appropriate to begin consultations on effect.

Sincerely,

ma 100 Glenna Dean

State Archaeologist

Log 53899, 54167



UNITED STATES NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

M. Blevins' Affidavit

May 20, 1998

Attachment N

Alan S. Downer, Ph.D., Director Navajo Nation Historic Preservation Department ATTN: Mr. Peter Noyes P.O. Box 4950 Window Rock, AZ 86515

SUBJECT: HYDRO RESOURCES, INC.'S URANIUM MINING PROJECT, CHURCH ROCK SECTION 17 - NO HISTORIC PROPERTIES FOUND

Dear Dr. Downer:

In my letter to you dated January 31, 1997, the staff of the U.S. Nuclear Regulatory Commission (NRC) requested National Historic Preservation Act (NHPA) consultation with your office regarding HRI's activities to occur on Navajo Tribal lands. Pursuant to the subsequent agreement entered into in April 1997, between the Navajo Nation and the National Park Service, for NHPA purposes you became the historic preservation officer with respect to undertakings occurring on Navajo Tribal lands, in addition to retaining responsibility for administering the Navajo Nation historic preservation laws on various tribal lands, and those lands held in trust for the Navajo Nation.

As stated in the enclosed letter to New Mexico's State Historic Preservation Officer (SHPO), dated May 20, 1998, the NRC staff is consulting with New Mexico's SHPO for purposes of making a determination of effect regarding Section 8, a portion of the proposed HRI uranium mining project located about seven miles north of Church Rock, New Mexico (Sections 8 and 17, T16N, R16W), and Section 12 (T17N, R13W), an area located about two miles north of Crownpoint, New Mexico. Sections 8, 12, and 17 were surveyed, pursuant to NHPA requirements, as reflected in the report prepared by the Museum of New Mexico's Office of Archaeological Studies *Cultural Resources Inventory* (1997) (OAS Report). The NRC staff sent your office a copy of the OAS Report in June 1997.

The NRC staff is consulting with your office regarding the above-described Section 17, land which is held in trust for the Navajo Nation. The NRC staff concurs with the OAS Report's finding that no historic properties (i.e., cultural properties as defined in the Navajo Nation Cultural Resources Protection Act) eligible for listing in the *National Register of Historic Places* or in the *Navajo Nation Register of Cultural Properties and Cultural Landmarks* are located within Section 17. The OAS Report found that the only cultural resources identified in Section 17 are isolated occurrences unlikely to yield information beyond that already documented in the survey performed. Pursuant to 36 CFR § 800.4 (d), the NRC staff considers the NHPA Section 106 process to be concluded with respect to the Section 17 area surveyed in the OAS Report, based on the finding that no historic properties are located within Section 17. Pursuant to § 101(d) of the Navajo Nation Cultural Resources Protection Act (NNCRPA), the NRC staff requests approval to implement the undertaking (as described above and in previous communications) on Section 17, again based on the above-described findings.

Dr. A. Downer

As stated in the enclosed letter, with respect to Section 17 and the other HRI project areas surveyed in the OAS Report, the site archaeologist will have authority to stop ground-disturbing activity in the event that previously undetected subsurface cultural resources are identified. The development of treatment protocols for the unexpected discovery of human remains will be initiated as necessary within the framework of 36 CFR § 800.11, the Native American Graves Protection and Repatriation Act, and existing New Mexico State regulations or Navajo Nation regulations (as applicable) regarding treatment of unmarked burials and protection of human remains.

Separate NHPA Section 106 and NNCRPA consultations will be conducted with your office prior to any additional undertakings which HRI may pursue under its NRC license on lands falling within your NHPA and/or NNCRPA jurisdiction.

If your office has any questions, please contact Mr. Robert Carlson, NRC's Project Manager of the HRI mining project, at (301) 415-8165. If no response from your office is received within 30 days of your receipt of this letter with respect to Section 17, the NRC staff will assume that your office, for NNCRPA purposes, approves HRI's undertaking on Section 17. The NRC staff will consider any written comments your office submits within 15 days of your receipt of this letter with respect to the findings regarding Sections 8 and 12 discussed in the enclosed letter to New Mexico's SHPO.

Sincerely,

M. 100

Joseph J. Holonich, Chief Uranium Recovery Branch Division of Waste Management Office of Nuclear Material Safety and Safeguards

Enclosure: As stated

cc: Service list attached

Dr. A. Downer

cc: for letter dated _5/20/98_

Office of Commission Appellate Adjudication Mail Stop O-16G15 U.S. Nuclear Regulatory Commission Washington, DC 20555

Chief Administrative Judge
B. Paul Cotter, Jr., Esq.
Presiding Officer
Atomic Safety and Licensing Board Mail Stop T-3F23
U.S. Nuclear Regulatory Commission Washington, DC 20555

Administrative Judge Thomas D. Murphy Special Assistant Atomic Safety and Licensing Board Mail Stop T-3F23 U.S. Nuclear Regulatory Commission Washington, DC 20555

Secretary (2) Attn: Rulemakings and Adjudication Staff Mail Stop O-16C1 U.S. Nuclear Regulatory Commission Washington, DC 20555

Adjudicatory File(2) Atomic Safety and Licensing Board Mail Stop T-3F23 U.S. Nuclear Regulatory Commission Washington, DC 20555

Atomic Safety and Licensing Board Panel Mail Stop T-3F23 U.S. Nuclear Regulatory Commission Washington, DC 20555

John T. Hull, Esq.(2) Mitzi A. Young, Esq. Office of the General Counsel Mail Stop O-15B18 U.S. Nuclear Regulatory Commission Washington, DC 20555

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Jep Hill, Esq. Jep Hill and Associates PO Box 2254 Austin, Texas 78768-2254

Richard F. Clement, Jr. President Hydro Resources, Inc. 2929 Coors Road Suite 101 Albuquerque, New Mexico 87120

Lila Bird, Executive Director Water Information Network PO Box 4524 Albuquerque, New Mexico 887106

Mitchell W. Capitan, President Eastern Navajo-Dine' Against Uranium Mining PO Box 471 Crownpoint, New Mexico 87313

Diane Curran, Esq. Harmon, Curran, Spielberg, & Eisenberg, L.L.P. 2001 S Street, N.W., Suite 430 Washington, DC 20009

Lori Goodman Dine' CARE Navajo Nation 10 A Town Plaza, S-138 Durango, Colorado 81301

Mary Lou Jones, President Zuni Mountain Coalition PO Box 39 San Rafael, New Mexico 87501

Susan G. Jordan, Esq. New Mexico Environmental Law Center 1405 Luisa Street, Suite 5 Santa Fe, New Mexico 87505

Dr. A. Downer

Bernadine Martin PO Box 370 Crownpoint, New Mexico 87313

W. Paul Robinson
Chris Shuey
Southwest Research and
Information Center
PO Box 4524
Albuquerque, New Mexico 87106

Mervyn Tilden PO Box 457 Church Rock, New Mexico 87311

Anthony J. Thompson, Esq. Paul Gormley, Esq. Counsel for Hydro Resources, Inc. Shaw, Pittman, Potts & Trowbridge 2300 N Street, N.W. Washington, DC 20037-1128

Jon J. Indall Comeau, Maldegen, Templeman and Indall, LLP 141 East Palace Avenue Santa Fe, New Mexico 87504-0669

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Mr. Charles Long, President

M. Blevins' Affidavit

Attachment O

Crownpoint Chapter, Navajo Nation PO Box 336 Crownpoint, NM 87313

SUBJECT: HISTORIC PROPERTIES ON PORTIONS OF THE HYDRO RESOURCES, INC. **URANIUM MINING PROJECT AREAS**

Dear Mr. Long: .

As indicated in the enclosed letter to Dr. Lynne Sebastian, dated May 20, 1998 :: e U.S. Nuclear Regulatory Commission (NRC) staff is consulting with the New Mexico State Historic Preservation Officer (SHPO) pursuant to the National Historic Preservation Act (NHPA). The consultation regards a portion of the proposed Hydro Resources, Incorporated (HRI) uranium mining project located in Sections 8 and 17 (T16N, R16W) about seven miles north of Church Rock, New Mexico; and Section 12 (T17N, R13W), located about two miles north of Crownpoint, New Mexico. NHPA Section 106 and the regulations through which it is implemented (36 CFR 800) require federal agencies to take into account the effects of undertakings on any historic properties eligible for, or listed in, the National Register of Historic Places.

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The NRC staff is also consulting with Dr. Alan Downer, the Director of the Navajo Nation Historic Preservation Department, as reflected in the enclosed letter to him dated May 20, 1998. This consultation regards the above-described Section 17, on which no historic properties eligible for inclusion in the National Register were found. Regarding this finding, the NRC staff will consider any written comments you submit within 15 days of your receipt of this letter.

C. Long

-2-

If you have any questions, please contact Mr. Robert Carlson, NRC's Project Manager of the HRI mining project, at (301) 415-8165.

Sincerely,

M. LOC

1

Joseph J. Holonich, Chief Uranium Recovery Branch Division of Waste Management Office of Nuclear Material Safety and Safeguards

Enclosures: As stated

cc: Service list attached *Copies of the enclosures are included in your package
C. Long

cc: for letter dated _5/20/98

Office of Commission Appellate Adjudication Mail Stop O-16G15 U.S. Nuclear Regulatory Commission Washington, DC 20555

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-3-

C. Long

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Jon J. Indall Comeau, Maldegen, Templeman and Indall, LLP 141 East Palace Avenue Santa Fe, New Mexico 87504-0669



UNITED STATES

WASHINGTON, D.C. 20555-0001

May 20, 1998

Mr. Herbert Benally, President Churchrock Chapter, Navajo Nation PO Box 549 Churchrock, NM 87311

SUBJECT: HISTORIC PROPERTIES ON PORTIONS OF THE HYDRO RESOURCES, INC. URANIUM MINING PROJECT AREAS

Dear Mr. Benally:

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H. Benally

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If you have any questions, please contact Mr. Robert Carlson, NRC's Project Manager of the HRI mining project, at (301) 415-8165.

Sincerely,

MODA

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Joseph J. Holonich, Chief Uranium Recovery Branch Division of Waste Management Office of Nuclear Material Safety and Safeguards

Enclosures: As stated *

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H. Benally

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UNITED STATES NUCLEAR REGULATORY COMMISSIOI WASHINGTON, D.C. 20555-0001

May 20, 1998

Mr. Roland Johnson, Governor Pueblo of Laguna PO Box 194 Laguna Pueblo, NM 87026

SUBJECT: HISTORIC PROPERTIES ON PORTIONS OF THE HYDRO RESOURCES, INC. URANIUM MINING PROJECT AREAS

Dear Mr. Johnson:

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R. Johnson

If you have any questions, please contact Mr. Robert Carlson, NRC's Project Manager of the HRI mining project, at (301) 415-8165.

· -2-

Sincerely,

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Joseph J. Holonich, Chief Uranium Recovery Branch **Division of Waste Management** Office of Nuclear Material Safety and Safeguards

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R. Johnson

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UNITED STATES NUCLEAR REGULATOPY COMMISSION WASHINGTON, D.C. 20555-0001



ASHINGTON, D.C. 20555-0001

May 20, 1998

MAY 26 199

Mr. Roy Bernal, Chairman All Pueblo Indian Council ATTN: Terrell Muller 3939 San Pedro NE Albuquergue, NM 87190

SUBJECT: HISTORIC PROPERTIES ON PORTIONS OF THE HYDRO RESOURCES, INC. URANIUM MINING PROJECT AREAS

Dear Mr. Bernal:

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Joseph J. Holonich, Chief Uranium Recovery Branch Division of Waste Management Office of Nuclear Material Safety and Safeguards

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UNITED STATES NUCLEAR REGULATORY COMMISSION

. WASHINGTON, D.C. 20555-0001

May 20, 1998

Mr. Reginald T. Pasqual, Governor Pueblo of Acoma PO Box 309 Acoma, NM 87304

SUBJECT: HISTORIC PROPERTIES ON PORTIONS OF THE HYDRO RESOURCES, INC. URANIUM MINING PROJECT AREAS

Dear Mr. Pasqual:

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Sincerely,

In. All

Joseph J. Holonich, Chief Uranium Recovery Branch Division of Waste Management Office of Nuclear Material Safety and Safeguards

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R. Pasqual

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1



UNITED STATES NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

May 20, 1998

Mr. Leigh Jenkins, Director Hopi Cultural Preservation Office PO Box 123 Kykotsmovi, AZ 86039

Dear Mr. Jenkins:

SUBJECT: HISTORIC PROPERTIES ON PORTIONS OF THE HYDRO RESOURCES, INC. URANIUM MINING PROJECT AREAS

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You previously have expressed concerns about protection of archaeological sites over the duration of the project, about identifying traditional cultural properties, and about the treatment and disposition of human remains and associated funery objects and sacred objects. As stated

in the OAS Report, historic properties will be protected by fencing throughout the duration of HRI's project. We believe that the fencing as described in the OAS Report adequately addresses your previously-stated concerns. Please note that discovery of human remains, should this occur during HRI's project, will be addressed as necessary through the implementation procedures of the Native American Graves Protection and Repatriation Act.

If you have any questions, please contact Mr. Robert Carlson, NRC's Project Manager of the HRI mining project, at (301) 415-8165.

Sincerely,

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Lori Goodman Dine' CARE Navajo Nation 10 A Town Plaza, S-138 Durango, Colorado 81301

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Susan G. Jordan, Esq. New Mexico Environmental Law Center 1405 Luisa Street, Suite 5 Santa Fe, New Mexico 87505 L. Jenkins

Bernadine Martin PO Box 370 Crownpoint, New Mexico 87313

W. Paul Robinson
Chris Shuey
Southwest Research and
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PO Box 4524
Albuquergue, New Mexico 87106

Mervyn Tilden PO Box 457 Church Rock, New Mexico 87311

Anthony J. Thompson, Esq. Paul Gormley, Esq. Counsel for Hydro Resources, Inc. Shaw, Pittman, Potts & Trowbridge 2300 N Street, N.W. Washington, DC 20037-1128

Jon J. Indall Comeau, Maldegen, Templeman and Indall, LLP 141 East Palace Avenue Santa Fe, New Mexico 87504-0669



UNITED STATES NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

May 20, 1998

Mr. Joseph Dishta, Director Pueblo of Zuni Heritage and Historic Preservation Office PO Box 339 Zuni, NM 87327

SUBJECT: HISTORIC PROPERTIES ON PORTIONS OF THE HYDRO RESOURCES, INC. URANIUM MINING PROJECT AREAS

Dear Mr. Dishta:

As indicated in the enclosed letter to Dr. Lynne Sebastian, dated May 20, 1998, the U.S. Nuclear Regulatory Commission (NRC) staff is consulting with the New Mexico State Historic Preservation Officer (SHPO) pursuant to the National Historic Preservation Act (NHPA). The consultation regards a portion of the proposed Hydro Resources, Incorporated (HRI) uranium mining project located in Sections 8 and 17 (T16N, R16W) about seven miles north of Church Rock, New Mexico; and Section 12 (T17N, R13W), located about two miles north of Crownpoint, New Mexico. NHPA Section 106 and the regulations through which it is implemented (36 CFR 800) require federal agencies to take into account the effects of undertakings on any historic properties eligible for or listed in the *National Register of Historic Places*

As documented in the Museum of New Mexico's Office of Archaeological Studies report (OAS Report), a copy of which was previously sent to your office for review, historic properties eligible for inclusion in the *National Register* were found in Section 8 (T16N, R16W) and Section 12 (T17N, R13W). No such properties were found on Section 17 (T16N, R16W). No traditional cultural properties were identified at or near any of these project areas. As discussed more fully in the enclosed letter to Dr. Sebastian, the NRC staff proposes to determine that any HRI undertakings on Sections 8 and 12, as described above, would have no effect on the historic properties located there.

The NRC staff will consider any written comments you submit within 15 days of your receipt of this letter with respect to this proposed determination of no effect.

The NRC staff is also consulting with Dr. Alan Downer, the Director of the Navajo Nation Historic Preservation Department, as reflected in the enclosed letter to him dated May 20, 1998. This consultation regards the above-described Section 17, on which no historic properties eligible for inclusion in the *National Register* were found. Regarding this finding, the NRC staff will consider any written comments you submit within 15 days of your receipt of this letter.

J. Dishta

Your office previously asserted affiliation with a number of prehistoric cultures of the Southwestern United States, some of which are represented at historic properties identified as eligible for the *National Register* in the OAS Report. Throughout the duration of HRI's project, these properties will be protected by fencing. Although your office previously indicated that there may be places of traditional and cultural importance in the project area, the OAS Report did not find this to be the case. Your office has had the opportunity to review and comment on the OAS Report, and has not, to date, provided any information that would warrant further study of these project areas. We believe that the fencing, as described in the OAS Report, adequately addresses your office's previously stated concerns. Please note that discovery of human remains, should this occur during HRI's project, will be addressed as necessary through the implementation procedures of the Native American Graves Protection and Repatriation Act.

If you have any questions, please contact Mr. Robert Carlson, NRC's Project Manager of the HRI mining project, at (301) 415-8165.

Sincerely,

Joseph J. Holonich, Chief Uranium Recovery Branch Division of Waste Management Office of Nuclear Material Safety and Safeguards

Enclosures: As stated *

cc: Service list attached *Copies of the enclosures are included in your package

J. Dishta

cc: for letter dated _5/20/98_

Office of Commission Appellate Adjudication Mail Stop O-16G15 U.S. Nuclear Regulatory Commission Washington, DC 20555

Chief Administrative Judge B. Paul Cotter, Jr., Esq. Presiding Officer Atomic Safety and Licensing Board Mail Stop T-3F23 U.S. Nuclear Regulatory Commission Washington, DC 20555

Administrative Judge Thomas D. Murphy Special Assistant Atomic Safety and Licensing Board Mail Stop T-3F23 U.S. Nuclear Regulatory Commission Washington, DC 20555

Secretary (2) Attn: Rulemakings and Adjudication Staff Mail Stop O-16C1 U.S. Nuclear Regulatory Commission Washington, DC 20555

Adjudicatory File(2) Atomic Safety and Licensing Board Mail Stop T-3F23 U.S. Nuclear Regulatory Commission Washington, DC 20555

Atomic Safety and Licensing Board Panel Mail Stop T-3F23 U.S. Nuclear Regulatory Commission Washington, DC 20555

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Mitchell W. Capitan, President Eastern Navajo-Dine' Against Uranium Mining PO Box 471 Crownpoint, New Mexico 87313

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-3-

J. Dishta

-4-

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GARY E. JOHNSON

GOVERNOR

STATE OF NEW MEXICO OFFICE OF CULTURAL AFFAIRS HISTORIC PRESERVATION DIVISION

> VILLA RIVERA BUILDING 228 EAST PALACE AVENUE SANTA FE, NEW MEXICO 87501 (505) 827-6320

M. Blevins' Affidavit

Attachment. P

3 June 1998

Joseph J. Holonich, Chief Uranium Recovery Branch Division of Waste Management Office of Nuclear Material Safety and Safeguards United States Nuclear Regulatory Commission Washington, D.C. 20555-0001

Dear Mr. Holonich:

This is in response to your letter of 20 May 1998, received by this office 27 May 1998, which made recommendations about site eligibility based on opinions offered by the Museum of New Mexico, Office of Archaeological Studies (OAS), in their survey report for the Hydro Resources, Inc. (HRI) leach uranium mining facility proposed near Crownpoint, New Mexico (Archaeology Notes 214). Your letter also recommends a finding of "no effect" for the proposed mining activities.

Forty-one archaeological sites were found in Sections 8 (T16N, R16W) and 12 (T17N, R13W). No archaeological sites were found in Section 17 (T16N, R16W). My previous letter of 20 November 1997 supported the recommendations put forward by OAS, but included five sites on BLM land (LA 116116, 116117, 116119, 116121, and 117317) and one site on private land (LA 116129) whose eligibility cannot be determined with current information. Under National Historic Preservation Act definitions, these six sites are not technically "historic properties" as they are not definitively eligible for listing in the National Register of Historic Places.

Point 2 on page two of your letter states that "All eligible and potentially eligible historic properties on Sections 8 and 12 would be fenced, as necessary, to preclude intrusion during any construction, mining, or other ground-disturbing activity." This wording would appear to include sites LA 116116, 116117, 116119, 116121, 116129, and 117317 whose eligibility remains undetermined without additional information. If HRI intends to avoid these six sites and protect them with fencing, their eligibility can remain undetermined. If HRI cannot avoid these six sites, or if mining plans change, determining eligibility becomes a point still in need of resolution.

This office recommends that the eligibility of sites LA 116116, 116117, 116119, 116121, 116129, and 117317 be determined. Failing that, this office concurs that the project will have no effect on these six sites provided they are also fenced and avoided by construction, mining, or other ground-disturbing activities.

This office concurs that the proposed mining project will have no effect on the following eligible archeological sites, provided they are fenced and avoided by construction, mining, or other ground-disturbing activities:

LA 26158	LA 88875	LA 116123
LA 26159	LA 88876	LA 116124
LA 26160	LA 88877	LA 116125
LA 26162	LA 88878	LA 116126
LA 26163	LA 116111	LA 116127
LA 26164	LA 116112	LA 116128
LA 70610	LA 116114	LA 116130
LA 88871	LA 116115	LA 117314
LA 88872	LA 116118	LA 117316
LA 88873	LA 116120	LA 117319
LA 88874	LA 116122	•••
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Please contact me with any questions you might have on these comments.

Sincerely,

UU.

Glenna Dean State Archaeologist

Log 55442



THE NAVAJO NATION M. Blevins' Affidavit

Attachment Q

THOMAS E. ATCITTY PRESIDENT

June 24, 1998

Joseph J. Holonich, Chief Uranium Recovery Branch Division of Waste Management Office of Nuclear Material Safety and Safeguards U.S. Nuclear Regulatory Commission Washington D.C. 20535-0001

Dear Mr. Holonich:

The Cultural Resources Compliance Section of the Historic Preservation Department received your letter dated May 20, 1998 on June 4, 1998. Your letter referred to consultation on Navajo Tribal lands, and then specified Section 17 - a section of trust land – and requested consultation with the Navajo Nation Historic Preservation Officer pursuant to Section 106 of the National Historic Preservation Act under the authority of the April 1997 agreement. We have deemed your request as applicable to and appropriate to any and all lands within the exterior boundaries of the Navajo Nation (including sections 8, 12, and 17) and are responding accordingly. Further, your letter requested approval pursuant to the Navajo Nation Cultural Resources Protection Act for Navajo Nation lands. With this letter we provide approval pursuant to the NNCRPA and offer the following comments regarding the entirety of the project.

1) We concur, based on the information previously provided, with your proposed determinations of eligibility for each of the properties described in the OAS report.

2) We further concur that the undertaking described in your May 20 letters to Alan Downer and Lynne Sebastian at the New Mexico State Historic Preservation Office will have no effect on properties listed on or eligible to the National Register of Historic Places, provided that:

A) All of the eligible properties are avoided by any and all ground disturbing activity by a minimum of 50 feet; and

B) In the event of a discovery ["discovery" means any previously unidentified or incorrectly Identified cultural resources including but not limited to archaeological deposits, human remains, or locations reportedly associated with Native American religions/traditional beliefs or resources all operations in the immediate vicinity of the uncovery must cease and are reavage reason. Historic Preservation Department shall be notified at 520-871-7132.

We thank you for your interest in the history and heritage of the Navajo Nation. Should questions arise, please contact the Historic Preservation Office as indicated below.

Sincerela: T. Noyes, Supervisor Cultural Resource Compliance Section

Historic Preservation Department P.O. Box 4950 Window Rock, Navajo Nation, AZ 86515 (520) 871-7132



UNITED STATES NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

M. Blevins' Affidavit

July 10, 1998

Attachment R

Mr. Richard F. Clement, Jr., President Hydro Resources, Inc. 2929 Coors Blvd., NW Suite 101 Albuquerque, NM 87120

SUBJECT: RESPONSES TO STAFF'S NATIONAL HISTORIC PRESERVATION ACT LETTERS DATED MAY 20, 1998

Dear Mr. Clement:

By letters dated June 1, 3, and 24, 1998, the U.S. Nuclear Regulatory Commission (NRC) staff received responses to the subject letters from the Bureau of Land Management (BLM), the Office of the New Mexico State Historic Preservation Officer (NMSHPO), and the Navajo Nation Historic Preservation Department (NNHPD), respectively. These responses are discussed below. As of the date of this letter, no other responses have been received.

The NMSHPO concurred with the NRC staff's proposed finding that Hydro Resources, Inc. (HRI) undertakings on Section 8 at the Church Rock site, and Section 12 north of Crownpoint, would have no effect on the historic properties located therein which are eligible for inclusion in the National Register of Historic Places – provided such properties "are fenced and avoided by construction, mining, or other ground-disturbing activities."

The NMSHPO had comments concerning six other potentially eligible sites (LA 116116, 116117, 116119, 116121, 116129, and 117317) located on Sections 8 and 12. Five of the six sites are on the public lands portion of Section 8 (i.e., the northeast quarter and western half of Section 8). These public lands are administered by the BLM and are not part of HRI's proposed mining area (although HRI owns patented Federal mining claims on these lands). LA 116129 is located on Section 12 land owned jointly by HRI and a private individual. The only potential mining-related use of the lands on which the six sites are located would be for application of treated waste water. Such use of these land parcels is one of several waste water disposal options available to HRI, as discussed in Sections 2.1.2 and 4.2.1 of the Final Environmental Impact Statement for the proposed Crownpoint, New Mexico, *in situ* leach uranium mining project. Should irrigation operations come within 100 feet of any of the sites identified above, placement of protective fencing around the site would be necessary.

The BLM's response states that if HRI's mining activities expand beyond the southeast quarter of Section 8 onto Section 8 public lands, "we agree that as long as significant or potentially significant cultural properties are avoided the undertaking will have no effect on the properties located there." Any such expansion of the mining area would first require HRI to submit a license amendment application to the NRC.

The NNHPD response asserts that the Navajo Nation has jurisdiction over the above-described Sections 8 and 12, in addition to control of the trust lands on Section 17 at HRI's Church Rock

R. Clement, Jr.

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site. Other than this assertion of jurisdiction, the NNHPD response largely agrees with the NMSHPO's concurrence on the NRC staff's no effect finding, except the NNHPD specifies that the proposed protective fencing on Sections 8 and 12 be placed so as to create buffer areas extending 50 feet around each eligible historic property. Regarding Section 17, the NNHPD response expressed no disagreement with the NRC staff's finding that no historic properties are located there, and approved HRI's undertaking pursuant to the Navajo Nation Cultural Resources Protection Act (NNCRPA).

Until the jurisdictional issues are resolved by the litigation now pending in the United States Court of Appeals for the Tenth Circuit, the effect of the NNHPD comments regarding Sections 8 and 12 will be uncertain.

Based on the NMSHPO concurrence discussed above, and pursuant to 36 CFR § 800.5 (b), the National Historic Preservation Act (NHPA) process is concluded with respect to Sections 8 and 12. Additionally, based on the NNHPD approval discussed above, the NNCRPA process is concluded with respect to Section 17. Accordingly, HRI may proceed with its planned mining-related activities in these areas to the extent authorized by its NRC Materials License SUA-1508. However, if HRI cannot meet any of the following conditions, it must notify the NRC immediately and cease ground-disturbing activities in the affected area.

Activities must be restricted to Sections 8 and 17 (T16N, R16W) and Section 12 (T17N, 13W), which constitute the areas covered under this NHPA/NNCRPA consultation. Additional NHPA and/or NNCRPA consultations will be required prior to any additional undertakings which HRI may pursue under its NRC license on other lands.

All eligible and potentially eligible historic properties on Sections 8 and 12 will be fenced, as necessary, to preclude intrusion during any construction, mining, or other ground-disturbing activity. The recommended fencing (as identified in the Museum of New Mexico, Office of Archaeological Studies, "Cultural Resources Inventory of Proposed Uranium Solution Extraction and Monitoring Facilities at the Church Rock Site and of Proposed Surface Irrigation Facilities North of the Crownpoint Site, McKinley County, New Mexico" (OAS Report), dated 1997) would serve both as a mechanical equipment barrier, and to discourage casual foot traffic trespass. Fencing would remain in place throughout construction and mining phases, and it would not be removed until after site reclamation processes have been concluded following completion of mining. This protective measure will assure that the characteristics of the historic properties will not be changed by the undertaking.

All ground-disturbing activities within the vicinity of the historic properties (the areas as identified in the OAS Report) will be monitored by an archaeologist who will have authority to stop ground-disturbing activity in the event that previously undetected subsurface cultural resources are identified. If such a find occurs, the NRC (Mr. Robert Carlson, 301-415-8165), the NNHPD (520-871-7132), and the NMSHPO (505-827-6320) must be notified within 24 hours of the find. The

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R. Clement, Jr.

development of treatment protocols for the unexpected discovery of human remains will be initiated as necessary within the framework of 36 CFR § 800.11, the Native American Graves Protection and Repatriation Act, and applicable New Mexico and Navajo Nation regulations regarding treatment of unmarked burials and protection of human remains.

Should unanticipated circumstances arise such that an effect on any eligible or potentially eligible historic property cannot be avoided, NHPA and/or NNCRPA consultations must be reopened.

If you have any questions concerning this subject, please contact Mr. Robert Carlson of my staff at (301) 415-8165.

Sincerely,

On. yel

Joseph J. Holonich, Chief Uranium Recovery Branch Division of Waste Management Office of Nuclear Material Safety and Safeguards

cc: HRI Service List B. Saulsbury, ORNL

HRI Mailing List - Letter dated _July 10, 1998

Office of Commission Appellate Adjudication Mail Stop O-16C1 U.S. Nuclear Regulatory Commission Washington, DC 20555

Administrative Judge Peter B. Bloch Presiding Officer Atomic Safety and Licensing Board Mail Stop T-3F23 U.S. Nuclear Regulatory Commission Washington, DC 20555

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Secretary (2) Attn: Rulemakings and Adjudications Staff Mail Stop O-16C1 U.S. Nuclear Regulatory Commission Washington, DC 20555

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Mervyn Tilden PO Box 457 Church Rock, New Mexico 87311

Anthony J. Thompson, Esq. Counsel for Hydro Resources, Inc. Shaw, Pittman, Potts & Trowbridge 2300 N Street, N.W. Washington, DC 20037-1128

Jon J. Indall Comeau, Maldegen, Templeman and Indall, LLP 141 East Palace Avenue Santa Fe, New Mexico 87504-0669

Johanna Matanich DNA - People's Legal Services, Inc. PO Box 116 Crownpoint NM 87313



UNITED STATES Attachment S NUCLEAR REGULATORY COMMIS

M. Blevins' Affidavit

WASHINGTON, D.C. 20555-0001

May 13, 1999

Dr. Lynne Sebastian, State Historic Preservation Officer Historic Preservation Division Office of Cultural Affairs 228 East Palace Avenue Santa Fe, NM 87501

SUBJECT: DETERMINATION OF EFFECT FOR THE HYDRO RESOURCES, INC. FACILITY COMPOUND AT CROWNPOINT, NEW MEXICO

Dear Dr. Sebastian:

Pursuant to National Historic Preservation Act (NHPA) Section 106 requirements, the U.S. Nuclear Regulatory Commission (NRC) staff requests consultation with your office for the purpose of making a determination of effect regarding the next phase of permitted development at the Hydro Resources, Inc. (HRI) in-situ leach uranium mining project in Crownpoint, NM. Based on previous communications between the New Mexico State Historic Preservation Officer (NMSHPO) and NRC staff, a phased process for consultation was established regarding this project. As you may recall, consultations were completed for the first project phase (i.e., Sections 8 and 17 [T16N, R16W] of the Church Rock, NM site and Section 12 [T17N, R13W]). This particular consultation is for the Crownpoint facility compound (i.e., where the uranium processing plant is located), situated on the western edge of the town of Crownpoint in the SE¼ of Section 24 [T17N, R13W]. The plant site improvements are an additional phase of permitted development that constitute an undertaking for Section 106 consultation purposes.

The existing Crownpoint processing facilities would be used for drying and packaging uranium yellowcake slurry that was initially transported to the plant from the Church Rock mining site. The existing facilities are located along the southern portion of the HRI property and were initially constructed in 1980 and 1981 on a leveled pad built by excavation and fill operations. The modifications to the plant site during this phase of activity would be limited to the area of the leveled pad at the southern portion of the facility (see Figure 2 of enclosed Blinman Report, 1998).

Prior to the 1980-81 construction, an archaeological survey of the entire SE¼ of Section 24 [T17N, R13W] was conducted (Klager, 1979; see enclosed Blinman Report). In 1998, HRI contracted with the Museum of New Mexico, Office of Archaeological Studies to identify cultural resources on the HRI Crownpoint facility compound. The enclosed Blinman Report documents this activity. Three archaeological sites (eligible for the *National Register*) and two "localities" (potentially eligible for the *National Register*) occur within the facility compound boundaries. All areas are located on the western side of the HRI facility compound. The three archaeological sites were fenced before the 1980-81 construction and have not been affected by subsequent facility construction or use. No construction activities or use has occurred in the area of the two archaeological "localities." Thus, the condition of these resources is excellent due to the protection provided by fencing around the archaeological sites and around the entire HRI facility compound. The Blinman Report states that there are no traditional uses of the area by the Navajo community.

L. Sebastian

May 13, 1999

Pursuant to 36 CFR 800.5 and 800.9, the NRC staff has considered the aforementioned resources and the proposed undertaking. Based on its review, the NRC staff has determined that the plant site improvements, as described above and in the referenced Blinman Report, would have no effect on the historic properties located on HRI's property, and seeks the NMSHPO's concurrence on this proposed finding of no effect.

If you have any questions concerning this subject, please contact Mr. Robert Carlson, the NRC Project Manager for the HRI mining project, at (301) 415-8165. If no response is received from the NMSHPO within 30 days of the date of this letter, the NRC staff will conclude that your office concurs in the proposed determination of no effect. In addition, if your office so concurs, or does not otherwise submit any objections to the NRC staff's proposed determination, then pursuant to 36 CFR 800.5(b), the NRC staff would consider the NHPA process to be concluded with respect to HRI's Section 24 property.

Sincerely,

Stablein.

N. Kipg Stablein, Acting Chief Uranium Recovery and Low-Level Waste Branch Division of Waste Management Office of Nuclear Material Safety and Safeguards

Enclosure: As stated

cc: See attached list
Museum of New Mexico

Office of Archaeological Studies

29 April 1998

Mr. Mark S. Pelizza Hydro Resources, Inc. Suite 1020, LB 12 12750 Merit Drive Dallas, TX 75251

Dear Mr. Pelizza:

Per your request, I have reviewed the engineering plans for modifications of the Hydro Resources, Inc. (HRI) Crownpoint facility as part of the first phase of mining development. I toured the existing facility compound with Mr. Salvador Chavez on April 22, 1998, and I discussed the planned improvements with him. I also discussed land ownership, plant history, and local history with Mr. Chavez, Mr. Billy Johnson, Ms. Kathy Shorty, and Mr. Ben House. We searched the Continental Oil Company (CONOCO), HRI, and Mobil files and map archives for information relating to plant history and prior cultural resources investigations of the plant area. Following the tour of the Crownpoint facility, I spoke with Mr. Richard Clement, Jr., and Mr. Frank Lichnovsky of the engineering staff at the HRI office in Albuquerque to confirm the details of the plant modification plans. I also reviewed these issues with Dr. Lynne Sebastian, New Mexico State Historic Preservation Officer (April 23, 1998) and with Mr. Peter Noyes, Navajo Nation Historic Preservation Department (April 29, 1998). Based on these informal discussions, there appear to be no significant cultural resource issues associated with first phase developments at the Crownpoint facility. My observations and conclusions are summarized below.

The HRI Crownpoint facility is owned by HRI, with a variety of ownership and management responsibilities for adjacent parcels (Figure 1). The existing facility was constructed between January 1980 and March 1981 by Continental Oil Company (CONOCO) as part of its proposed mining operation. Initial shafts were drilled, but mining was never conducted at the site. The shafts are now plugged, and the buildings are currently used for office space, training, and storage. The majority of the existing facilities are occupied by the Crownpoint Technical Institute (CTI) under an agreement with HRI while dedicated CTI facilities are being constructed elsewhere in the Crownpoint area.

Prior to construction by CONOCO, an archaeological inventory was conducted of the entire SE¼ of Section 24, T17N, R13W (USGS Crownpoint 7.5' quadrangle). This ¼ section (160 acres) encompasses the facility location. The inventory was conducted by the staff of the University of New Mexico, Office of Contract Archaeology (Klager 1979). Eight archaeological sites were defined within the survey area, but only three are within the present boundaries of the HRI facility compound. Two "localities" were also identified within the compound boundaries, and these localities may or may not be considered sites under current cultural resource conventions. All of these cultural resources are along the western portion of the facility compound. The three sites were fenced by CONOCO and have not been affected by subsequent facility construction or use. The two localities are at the extreme northwest area of the compound, and no construction or use has occurred in that

P.O. Box 2087 Santa Fe, New Mexico 87504-2087

Timothy D. Maxwell Director ______ 505 827-6343

FAX 827-6390

New Mexico
 Office of Cultural Affairs

Fnclosure

area. The conditions of these resources are excellent due to the protection provided by the compound fence as well as the individual fences around the sites.

CONOCO facilities were constructed along the southern portion of the compound, avoiding the fenced cultural resources (Figure 2). These facilities consist of an extensive leveled pad for buildings, parking areas, work areas, and tanks; a new channel for the arroyo that had transected the plant area; a series of retention ponds; access roads; protective berms for an explosives magazine; a runoff retention embankment; spoil dumps for material removed from the shafts; and utilities poles and trenches. The leveled pad was created by excavating through bedrock along the northern margin of the compound and filling low areas toward the south to define the southern edge of the pad. All of these features were in place at the time HRI acquired the facility.

Facility modification at the Crownpoint compound as part of the first phase of the HRI mining development will be limited to the area of the leveled pad. Two storage tanks will be removed from the southern margin of the pad, and processing equipment will be installed within the buildings. There are no plans for road relocation, changes in arroyo channelization, or pond rejuvenation within the first phase. All utility modifications and subsurface trenching, if any, will be limited to the pad and building areas. All of these activities are confined to areas of artificial fill or prior ground disturbance, and no archaeological sites were present in these areas prior to CONOCO's original construction. In addition, since all construction within the compound post-dates 1980, none of the existing facilities qualifies as an historic property. Finally, since the start of CONOCO construction in 1980, access to the compound has been restricted, and there are no current traditional uses of the compound area by the Navajo community. Although traditional concerns within the compound cannot be ruled out (discoveries could occur during the course of development), the HRI developments associated with the first phase are limited to superficial modifications of the existing post-1980s buildings and grounds. These modifications should not pose any constraint on current cultural practice.

Based on these observations and the facility modifications outlined above, there are no cultural resource issues associated with the first phase developments at the HRI Crownpoint facility. Depending on their nature, subsequent phase developments may raise cultural resources issues. Consistent with HRI's permit requirements, cultural resources investigations will be pursued as additional engineering plans are developed and prior to any implementation of those plans.

Please contact me if you have any questions concerning these observations and conclusions.

Yours,

Fri Bhi

Eric Blinman, Ph.D. Assistant Director

Reference:

Klager, Karol J.

1979 An Archeological Survey of 160 Acres of Land in the Crownpoint, New Mexico, Area for the Continental Oil Company. Office of Contract Archeology, UNM Proposal 185-38b. University of New Mexico, Albuquerque.



Figure 1. Ownership and control of lands within and adjacent to the SE¼ of Section 24, T17N, R13W. Boundaries are based on CONOCO plat dated April 17, 1979, with amendments and additions based on information from Mr. Billy Johnson and Mr. Salvador Chavez.



Figure 2. HRI compound and locations of facilities developed by CONOCO. All first phase HRI developments will be confined to the area of the leveled pad, including removal of the storage tanks and installation of equipment within existing buildings.

HRI Mailing List - Letter dated <u>May 13</u>, 1999

Office of Commission Appellate Adjudication Mail Stop O-16C1 U.S. Nuclear Regulatory Commission Washington, DC 20555

Administrative Judge Peter B. Bloch Presiding Officer Atomic Safety and Licensing Board Mail Stop T-3F23 U.S. Nuclear Regulatory Commission Washington, DC 20555

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Atomic Safety and Licensing Board Panel Mail Stop T-3F23 U.S. Nuclear Regulatory Commission Washington, DC 20555

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Richard F. Clement, Jr. President Hydro Resources, Inc. 2929 Coors Road Suite 101 Albuquerque, New Mexico 87120

Mitchell W. Capitan, President Eastern Navajo-Dine' Against Uranium Mining PO Box 471 Crownpoint, New Mexico 87313

James Copeland Bureau of Land Management Farmington District Office 1235 LaPlata Highway Farmington, NM 87401

Diane Curran, Esq. Harmon, Curran, Spielberg, & Eisenberg, L.L.P. 2001 S Street, N.W., Suite 430 Washington, DC 20009

Jenni Denetsone Area Realty Office Bureau of Indian Affairs Navajo Area Office Real Estate Services PO Box 1060 Gallup, NM 87305-1060

Alan Downer, Director Navajo Nation Historic Preservation Dept. ATTN: Peter Noyes & Rolf Nabahe PO Box 4950 Window Rock, AZ 86515

Douglas Meiklejohn New Mexico Environmental Law Center 1405 Luisa Street, Suite 5 Santa Fe, New Mexico 87505 W. Paul Robinson Chris Shuey Southwest Research and Information Center PO Box 4524 Albuquerque, New Mexico 87106

Anthony J. Thompson, Esq. Counsel for Hydro Resources, Inc. Shaw, Pittman, Potts & Trowbridge 2300 N Street, N.W. Washington, DC 20037-1128



THE NAVAJO NATION

M. Blevins' Affidavit

Attachment T

HISTORIC PRESERVATION DEPARTMENT

June 7, 1999

N. King Stablein, Acting Chief Uranium Recovery and low level Waste Branch Division of Waste Management Office of Nuclear Material Safety and Safeguards U.S. Nuclear Regulatory Commission Washington DC 20555-0001

Attention: Robert Carlson

Dear Mr. Stablein:

A copy of your letter dated May 13, 1999 to Dr. Lynne Sebastian arrived in my office today. Unfortunately the Navajo Nation Historic Preservation Office must OBJECT to your proposal that the NHPA process can be concluded prior to consultation with the Navajo Nation Historic Preservation Department for this phase of the undertaking. Furthermore, since the area is within the general jurisdiction of the Navajo Nation, we believe that the Navajo Nation Cultural Resource Protection Act is applicable to undertakings proposed for the area in question.

We request your immediate review of the undertaking and the area in question since we believe that this review will clearly demonstrate that the area is a dependent Indian community and thus subject to the Navajo Nation Tribal Historic Preservation Officer's jurisdiction under the NHPA. We further request that you consult with this office in accordance with Section 106 of the NHPA and the regulations at 36 C.F.R. 800.

Sincerely:

Peter T. Noyes, Program Supervisor Historic Preservation Department P.O. Box 4950 Window Rock, Navajo Nation AZ 86515

> (520) 871-7144 (520) 871-7886(f)

cc: See attached list

M. Blevins' Affidavit

AND CLEAR REGULADONA COMMAN

UNITED STATES Attachment U NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

May 13, 1999

Dr. Lynne Sebastian, State Historic Preservation Officer Historic Preservation Division Office of Cultural Affairs 228 East Palace Avenue Santa Fe, NM 87501



SUBJECT: DETERMINATION OF EFFECT FOR THE HYDRO RESOURCES, INC. FACILITY COMPOUND AT CROWNPOINT, NEW MEXICO

Dear Dr. Sebastian:

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Pursuant to National Historic Preservation Act (NHPA) Section 106 requirements, the U.S. Nuclear Regulatory Commission (NRC) staff requests consultation with your office for the purpose of making a determination of effect regarding the next phase of permitted development at the Hydro Resources, Inc. (HRI) in-situ leach uranium mining project in Crownpoint, NM. Based on previous communications between the New Mexico State Historic Preservation Officer (NMSHPO) and NRC staff, a phased process for consultation was established regarding this project. As you may recall, consultations were completed for the first project phase (i.e., Sections 8 and 17 [T16N, R16W] of the Church Rock, NM site and Section 12 [T17N, R13W]). This particular consultation is for the Crownpoint facility compound (i.e., where the uranium processing plant is located), situated on the western edge of the town of Crownpoint in the SE¼ of Section 24 [T17N, R13W]. The plant site improvements are an additional phase of permitted development that constitute an undertaking for Section 106 consultation purposes. and the sub-state of the second s The existing Crownpoint processing facilities would be used for drying and packaging uranium yellowcake slurry that was initially transported to the plant from the Church Rock mining site. The existing facilities are located along the southern portion of the HRI property and were initially constructed in 1980 and 1981 on a leveled pad built by excavation and fill operations. The modifications to the plant site during this phase of activity would be limited to the area of the leveled pad at the southern portion of the facility (see Figure 2 of enclosed Blinman Report, 1998).

Prior to the 1980-81 construction, an archaeological survey of the entire SE¼ of Section 24 [T17N, R13W] was conducted (Klager, 1979; see enclosed Blinman Report). In 1998, HRI contracted with the Museum of New Mexico, Office of Archaeological Studies to identify cultural resources on the HRI Crownpoint facility compound. The enclosed Blinman Report documents this activity. Three archaeological sites (eligible for the National Register) and two "localities" (potentially eligible for the National Register) occur within the facility compound boundaries. All areas are located on the western side of the HRI facility compound. The three archaeological sites were fenced before the 1980-81 construction and have not been affected by subsequent facility construction or use. No construction activities or use has occurred in the area of the two archaeological "localities." Thus, the condition of these resources is excellent due to the protection provided by fencing around the archaeological sites and around the entire HRI facility compound. The Blinman Report states that there are no traditional uses of the area by the Navajo community. A Stand Parts of a case of the graph comparison provides the state of a and the second en en el el Martine de la martine de la companya de la martine de la martine de la martine de la martine de la

L. Sebastian

Pursuant to 36 CFR 800.5 and 800.9, the NRC staff has considered the aforementioned resources and the proposed undertaking. Based on its review, the NRC staff has determined that the plant site improvements, as described above and in the referenced Blinman Report, would have no effect on the historic properties located on HRI's property, and seeks the NMSHPO's concurrence on this proposed finding of no effect.

If you have any questions concerning this subject, please contact Mr. Robert Carlson, the NRC Project Manager for the HRI mining project, at (301) 415-8165. If no response is received from the NMSHPO within 30 days of the date of this letter, the NRC staff will conclude that your office concurs in the proposed determination of no effect. In addition, if your office so concurs, or does not otherwise submit any objections to the NRC staff's proposed determination, then pursuant to 36 CFR 800.5(b), the NRC staff would consider the NHPA process to be concluded with respect to HRI's Section 24 property.

Sincerely,

ablein

N. King Stablein, Acting Chief Uranium Recovery and Low-Level Waste Branch Division of Waste Management Office of Nuclear Material Safety and Safeguards

Enclosure: As stated

cc: See attached list

This undertaking will have no effect on registered or eligible properties

State Hist

SUNCTAR REGULADORA COMMISSION

UNITED STATES NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

June 25, 1999

M. Blevins' Affidavit

Attachment V

Alan S. Downer, Ph.D., Director Navajo Nation Historic Preservation Department ATTN: Mr. Peter Noyes, Program Supervisor P.O. Box 4950 Window Rock, AZ 86515

SUBJECT: JUNE 7, 1999, LETTER REGARDING HISTORIC PROPERTIES AT THE HYDRO RESOURCES, INC. FACILITY COMPOUND IN CROWNPOINT, NEW MEXICO

Dear Dr. Downer:

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed your department's letter dated June 7, 1999. On behalf of the Navajo Nation's Historic Preservation Department (NNHPD), Mr. Peter Noyes of your staff objected to the New Mexico State Historic Preservation Officer (NMSHPO) exercising any concurrence authority on a National Historic Preservation Act (NHPA) determination regarding the subject properties. The objection appears to be based on the argument that the subject properties are located in a "dependent Indian community," and that the NNHPD, rather than the NMSHPO, therefore has primary NHPA jurisdiction. By letter dated May 13, 1999, the NRC staff had requested the NMSHPO's concurrence on a NHPA finding of no effect regarding historic properties on Section 24, located within the town of Crownpoint on land owned by Hydro Resources, Inc. (HRI). In the June 7th letter, NNHPD acknowledges receiving a copy of the aforementioned NRC staff's May 13th letter.

In 1998, the United States Supreme Court narrowly construed the term "dependent Indian community" (which is used in several Federal statutes, including the NHPA), rejecting a previously-used balancing test. The NRC staff has determined that pursuant to the Court's narrow reading of the term, the town of Crownpoint cannot properly be regarded as a "dependent Indian community." As stated in the NRC staff's May 13th letter and the report attached thereto, the subject historic properties are on land privately owned by HRI. Accordingly, for purposes of NHPA jurisdiction, these historic properties fall under the authority of the NMSHPO, since they are not located in a "dependent Indian community," or on "tribal lands." See NHPA, 16 U.S.C. Section 470w(14).

If you have any questions concerning this subject, please contact Mr. Robert Carlson, the NRC Project Manager for the HRI mining project, at (301) 415-8165.

Sincerely. ing Stablan

John J. Surmeier, Chief Uranium Recovery and Low-Level Waste Branch Division of Waste Management Office of Nuclear Material Safety and Safeguards

cc: Dr. Lynn Sebastian, NMSHPO See attached list "RI Mailing List - Letter dated June 25, 1999

Office of Commission Appellate Adjudication Mail Stop O-16C1 U.S. Nuclear Regulatory Commission Washington, DC 20555

Administrative Judge Peter B. Bloch Presiding Officer Atomic Safety and Licensing Board Mail Stop T-3F23 U.S. Nuclear Regulatory Commission Washington, DC 20555

Administrative Judge Thomas D. Murphy Special Assistant Atomic Safety and Licensing Board Mail Stop T-3F23 U.S. Nuclear Regulatory Commission Washington, DC 20555

decretary (2)
 Attn: Rulemakings and Adjudications Staff
 Mail Stop O-16C1
 U.S. Nuclear Regulatory Commission
 Washington, DC 20555

Adjudicatory File(2) Atomic Safety and Licensing Board Mail Stop T-3F23 U.S. Nuclear Regulatory Commission Washington, DC 20555

Atomic Safety and Licensing Board Panel Mail Stop T-3F23 U.S. Nuclear Regulatory Commission Washington, DC 20555

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Richard F. Clement, Jr. President Hydro Resources, Inc. 2929 Coors Road Suite 101 Albuquerque, New Mexico 87120

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James Copeland Bureau of Land Management Farmington District Office 1235 LaPlata Highway

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Anthony J. Thompson, Esq. Counsel for Hydro Resources, Inc. Shaw, Pittman, Potts & Trowbridge 2300 N Street, N.W. Washington, DC 20037-1128

ule I young Word Inger / Dambly ED CORRESPONDENCE LOON FT 758) UNITED STATES NUCLEAR REGULATORY COMMISSION WASHINGTON, D.C. 20555-0001 M. Blevins' Affidavit July 8, 1999 Attachment W

Mr. Richard F. Clement, Jr., President Hydro Resources, Inc. 2929 Coors Blvd., NW Suite 101 Albuquerque, NM 87120

40-2°58-ML

SUBJECT: RESPONSES TO STAFF'S NATIONAL HISTORIC PRESERVATION ACT LETTER DATED MAY 13, 1999

Dear Mr. Clement:

On June 16, 1999, the Office of the New Mexico State Historic Preservation Officer (NMSHPO) responded to the U.S. Nuclear Regulatory Commission (NRC) letter dated May 13, 1999. In this letter, the NRC staff requested the NMSHPO's concurrence with the proposed finding that the Hydro Resources, Inc. (HRI) undertakings at the proposed Crownpoint processing site, as described in the May 13 letter, and the 1998 Blinman Report attached thereto, would have no effect on the historic properties located in Section 24. The NMSHPO concurred with this finding.

Earlier, by letter dated June 7, 1999, the Navajo Nation Historic Preservation Department (NNHPD) responded to the NRC staff May 13 letter, objecting to the NMSHPO exercising any concurrence authority under the National Historic Preservation Act (NHPA). The NNHPD indicated that it, rather than the NMSHPO, has primary NHPA jurisdiction over the historic properties located in Section 24. The NNHPD also stated that the Navajo Nation Cultural Resource Protection Act (NNCRPA) is applicable to HRI's planned undertakings in Section 24.

As stated in its letter to the NNHPD dated June 25, 1999, the NRC staff determined that the NMSHPO has primary NHPA jurisdiction over the historic properties located in Section 24. Based on the NMSHPO concurrence referenced above, and pursuant to 36 CFR § 800.5(b), the NRC staff finds that the NHPA process is concluded with respect to the Section 24 properties. Accordingly, HRI may proceed with its planned mining-related activities (*i.e.*, establishing a processing facility, and related actions) in Section 24, to the extent authorized by NRC Materials License SUA-1508. However, if HRI cannot meet any of the following conditions, it must notify the NRC immediately and cease any ground-disturbing activities in the affected area.

OGC-99- 004131

R. Clement

1.

Activities in Crownpoint must be restricted to Section 24, which constitutes the area covered under this NHPA consultation. Additional NHPA and/or NNCRPA consultations will be required prior to any additional undertakings which HRI may pursue under its NRC license on other lands within the project area.

-2-

2. All eligible and potentially eligible historic properties in Section 24 will be fenced, as necessary, to preclude intrusion during any construction or other ground-disturbing activity. The recommended fencing (as identified in the Museum of New Mexico, Office of Archaeological Studies, "Cultural Resources Inventory of Proposed Uranium Solution Extraction and Monitoring Facilities at the Church Rock Site and of Proposed Surface Irrigation Facilities North of the Crownpoint Site, McKinley County, New Mexico," dated 1997) would serve as a mechanical equipment barrier, and would discourage casual foot traffic trespass. The existing fencing, and any additional fencing that may be needed, would not be removed until after site reclamation has been concluded following completion of all mining-related activities. This protective measure will assure that the characteristics of the historic properties will not be changed by the undertaking.

3. All ground-disturbing activities within the vicinity of the historic properties (the areas as identified in the 1998 Blinman Report) will be monitored by an archaeologist who will have authority to stop ground-disturbing activity in the event that previously undetected subsurface cultural resources are identified. If such a find occurs, the NRC (Mr. Robert Carlson, 301-415-8165), the NNHPD (520-871-7132), and the NMSHPO (505-827-6320) must be notified within 24 hours of the find. The development of treatment protocols for the unexpected discovery of human remains will be initiated as necessary within the framework of 36 CFR § 800.11, the Native American Graves Protection and Repatriation Act, and applicable New Mexico and Navajo Nation regulations regarding treatment of unmarked burials and protection of human remains.

Should unanticipated circumstances arise such that an effect on any eligible or potentially eligible historic property in Section 24 cannot be avoided, NHPA consultations must be reopened. The NRC staff considered the proposed Section 24 undertaking pursuant to NHPA regulations 36 CFR 800.5 and 800.9, which have since been amended.¹ Any future HRI undertakings under its NRC license would be subject to the amended NHPA regulations.

¹ Amendments to the NHPA regulations became effective on June 17, 1999. Since this NHPA consultation was completed prior to June 17, the amended NHPA regulations are not applicable here.

R. Clement

If you have any questions concerning this letter, please contact Mr. Robert Carlson of my staff at (301) 415-8165.

Sincerely, u alar

John J. Surmeier, Chief Uranium Recovery and Low-Level Waste Branch Division of Waste Management Office of Nuclear Material Safety and Safeguards

cc: Dr. Lynn Sebastian, NMSHPO Dr. Alan Downer, NNHPD See attached list

HRI Mailing List - Letter dated 7/ 8/99

Office of Commission Appellate Adjudication Mail Stop O-16C1 U.S. Nuclear Regulatory Commission Washington, DC 20555

Administrative Judge Peter B. Bloch Presiding Officer Atomic Safety and Licensing Board Mail Stop T-3F23 U.S. Nuclear Regulatory Commission Washington, DC 20555

Administrative Judge Thomas D. Murphy Special Assistant Atomic Safety and Licensing Board Mail Stop T-3F23 U.S. Nuclear Regulatory Commission Washington, DC 20555

Secretary (2) Attn: Rulemakings and Adjudications Staff Mail Stop O-16C1 U.S. Nuclear Regulatory Commission Washington, DC 20555

Adjudicatory File(2) Atomic Safety and Licensing Board Mail Stop T-3F23 U.S. Nuclear Regulatory Commission Washington, DC 20555

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James Copeland Bureau of Land Management Farmington District Office 1235 LaPlata Highway

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Anthony J. Thompson, Esq. Counsel for Hydro Resources, Inc. Shaw, Pittman, Potts & Trowbridge 2300 N Street, N.W. Washington, DC 20037-1128 Staff Exhibit 2

5

AGREEMENT BETWEEN THE NATIONAL PARK SERVICE, U.S. DEPARTMENT OF THE INTERIOR AND THE NAVAJO NATION

FOR THE ASSUMPTION BY THE NAVAJO NATION OF CERTAIN RESPONSIBILITIES PURSUANT TO THE NATIONAL HISTORIC PRESERVATION ACT

WHEREAS, sovereign Indian tribes are uniquely suited to make decisions about historic resources on tribal lands; and

WHEREAS, enhancing the role of Indian tribes in the national historic preservation partnership will result in a stronger and better national effort to identify and protect historic and cultural resources for future generations of all Americans; and

WHEREAS, Section 101(d)(2) of the National Historic Preservation Act, 16 U.S.C. § 470a <u>et seq.</u>, (the "Act") provides that, "A tribe may assume all or any part of the functions of a State Historic Preservation Officer in accordance with subsections (b)(2) and (b)(3), with respect to tribal lands;" and

WHEREAS, for the purposes of this agreement "tribal lands" means all lands within the exterior boundaries of the Navajo Reservation (excluding the lands of the Hopi Reservation), any additional lands held in trust for the Navajo Nation by the Secretary of the Interior (the "Secretary"), any additional lands owned by the Navajo Nation subject to a restriction on alienation, and any Navajo dependent Indian communities formally recognized as such by the Department of the Interior; and

WHEREAS, in accordance with Section 101(d)(2)(A) of the Act, the chief governing authority of the Navajo Nation has requested approval to assume certain of those functions; and

WHEREAS, in accordance with Section 101(d)(2)(B) of the Act, the Navajo Nation has designated a tribal preservation official to administer the Navajo Nation historic preservation program; and

WHEREAS, in accordance with Section 101(d)(2)(C) of the Act, the Navajo Nation has provided to the Secretary acting through the National Park Service a plan that describes how the functions the Navajo Nation proposes to assume will be carried out; and

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WHEREAS, the National Park Service, on behalf of the Secretary, has reviewed the Navajo Nation's plan and determined that it is consistent with the Act, 36 C.F.R. Part 61 and 36 C.F.R. Part 67, as applicable; and

WHEREAS, the National Park Service, on behalf of the Secretary, has reviewed the staffing plan incorporated into the plan and determined that it is consistent with 'the Secretary's Professional Qualification Standards, as applicable; and

WHEREAS, the National Park Service, on behalf of the Secretary, has reviewed the Navajo Nation's plan and has determined in accordance with Section 101(d)(2)(D)(i) of the Act that the Navajo Nation is fully capable of carrying out the functions set out below, now, therefore,

THE NATIONAL PARK SERVICE AND THE NAVAJO NATION DO HEREBY AGREE AS FOLLOWS:

1. The Navajo Nation assumes responsibility on tribal lands for all of the functions set out in Section 101(b)(3) of the Act, except as noted in items 2 and 3 below.

2. The State Historic Preservation Officers ("SHPO") of Arizona, New Mexico, and Utah, in consultation and cooperation with the Navajo Nation, retain responsibility for nominating properties to the National Register of Historic Places.

3. The appropriate SHPO, in accordance with Section 101(d)(2)(D)(iii) of the Act, may exercise the historic preservation responsibilities along with the tribal preservation official on land that is neither owned by a Navajo Nation member nor held in trust for the Navajo Nation by the Secretary or owned by the Navajo Nation subject to a restriction on alienation, provided that the owner of such property requests the SHPO's participation.

4. The Navajo Nation will carry outs its responsibilities for review of Federal undertakings pursuant to Section 106 of the Act in accordance with the regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation. In the event that the Navajo Nation seeks to substitute its own review procedures for those established by the Council, such substitution is subject to a separate negotiation with the Council, pursuant to Section 101(d)(5) of the Act.

5. In accordance with the Navajo Nation's plan, the Navajo Nation Historic Preservation Officer will maintain a professionally gualified staff.

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6. The Navajo Nation Historic Preservation Officer will, in accordance with Section 101(d)(4)(C) of the Act, provide for the appropriate participation in the historic preservation program by the Navajo traditional cultural authorities, representatives of other tribes whose traditional lands are under the jurisdiction of the Navajo Nation, if any, and the interested public, in a manner described in the Navajo Nation's plan and its letter to the National Park Service dated June 10, 1996, and summarized below.

The Navajo Nation Historic Preservation Department seeks the views of traditional cultural authorities through its Navajo Traditional Culture Program. The program includes an effort to interview Navajo cultural authorities and other Navajo Nation members on their historic preservation concerns. The program also includes recording oral histories from Navajo elders and others. The Department regularly consults with all other Indian tribes in the vicinity of the Navajo Reservation. In any case where an action arising pursuant to the Act may affect the traditional lands of another tribe, the Preservation Officer will, as needed, seek and take into account the views of that tribe. Finally, the Department provides for participation by the interested public in a variety of ways including individual interviews and participation in local chapter meetings. In addition, the Department's annual work plan is available for review and comment as a part of the annual budget process that includes open hearings held by the appropriate oversight committees.

7. The Navajo Nation Historic Preservation Officer will, in accordance with Section 101(d)(2)(D)(iii) of the Act, ensure that, for properties neither owned by Navajo Nation members nor held in trust for the Navajo Nation by the Secretary of the Interior or owned by the Navajo Nation subject to a restriction on alienation, the property owners may request the participation of the appropriate SHPO, along with the Navajo Nation Historic Preservation Officer, in decisions pursuant to the Act that may specifically affect their property.

8. The Navajo Nation Historic Preservation Officer will provide to the National Park Service a brief annual written report at the end of each calendar year on the Navajo Nation's accomplishments pursuant to this Agreement. The report will include, at a minimum, the number of additional properties surveyed and added to the Navajo Nation's inventory, the number of Federal undertakings reviewed pursuant to Section 106 of the Act, and a description of any educational activities and programs carried out. The report shall not be construed as requiring the provision of information that the Navajo Nation deems to be sensitive or culturally inappropriate.

9. As of the date of this Agreement, the Navajo Nation Historic Preservation Officer is Alan S. Downer. The Navajo Nation will notify the National Park Service whenever there is a vacancy in the position and whenever a successor is designated by the Navajo Nation.

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10. In carrying out the function of cooperating with local governments in the development of local historic preservation programs and assisting local governments in becoming certified pursuant to Section 101(c) of the Act, the Navajo Nation Historic Preservation Officer will notify the National Park Service of the existence of any local governments - defined in the Act as a city, county, parish, township, municipality, or borough, or any other general purpose political subdivision of the State - within Navajo Nation lands. In the event that such local government or governments exist, the Navajo Nation Historic Preservation Officer will develop procedures by which a local government can become certified to participate in the national historic preservation program. Such procedures must be consistent with Section 101(c) of the Act and must be submitted to the National Park Service for approval by a date to be determined by the National Park Service in consultation with the Navajo Nation.

11. The National Park Service will, in accordance with Section 101(d)(2)(A) of the Act, foster communication, cooperation and coordination among the Navajo Nation, the SHPOs and Federal agencies in the administration of the national historic preservation program. All such efforts by the National Park Service will be on an asneeded basis and will be based on consultation with the Navajo Nation to ensure that Navajo values are fully respected.

12. The National Park Service, upon execution of this Agreement, will notify all Federal Preservation Officers, the Advisory Council on Historic Preservation, the SHPOs of Arizona, New Mexico and Utah, and the National Conference of State Historic Preservation Officers that the Navajo Nation has assumed formal responsibility on tribal lands for all of the functions set out in item 1 above. In particular, such notice shall make clear that the Navajo Nation has assumed the role of the SHPO on tribal lands for the purposes of consultation on Federal undertakings pursuant to Section 106 of the Act.

13. The National Park Service will consult with the Navajo Nation to determine what technical assistance the Navajo Nation needs and wants in order to enhance its participation in the national historic preservation program. Based on that consultation, the National Park Service will make available to the Navajo Nation such technical assistance as is appropriate and feasible. Nothing in this Agreement requires the National Park Service to provide financial assistance to the Navajo Nation to carry out the functions it has assumed under this agreement. Only a separate grant agreement, cooperative agreement, or contract obligates NPS to provide funding for Navajo Nation activities.

14. The National Park Service, pursuant to Sections 101(d)(2) and 101(b)(2) of the Act, and in direct consultation with the Navajo Nation, will carry out a periodic review of the Navajo Nation's program pursuant to the Act, to ensure that the Navajo Nation is carrying out the program in conformance with the Navajo Nation's plan and

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with this Agreement. To the greatest extent feasible, the review will be a collegial process that Involves both NPS and the Navajo Nation in a mutual evaluation and assessment of the program. Generally, such a review will occur every four years.

15. The Navajo Nation may terminate this Agreement for any reason by providing the National Park Service sixty days written notice of such termination. The National Park Service may terminate this Agreement upon determining that the Navajo Nation has not carried out its assumed responsibilities in accordance with this Agreement, the Act or any other applicable Federal statute or regulation. Unless circumstances warrant immediate action, the National Park Service will not terminate the Agreement without first providing the Navajo Nation a reasonable and appropriate opportunity to correct any deficiencies.

16. This Agreement may be amended by the mutual consent of the Navajo Nation and the National Park Service.

17. This Agreement shall become effective upon signature by the Director of the National Park Service or his designee, which signature shall not occur until after the President of the Navajo Nation has signed the Agreement.

FOR THE NATIONAL PARK SERVICE:

Director

Date

FOR THE NAVAJØ NATION: Président

UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

BEFORE THE PRESIDING OFFICER

In the Matter of \cdot)
)
HYDRO RESOURCES, INC.)
2929 Coors Road, Suite 101)
Albuquerque, New Mexico 87120)

Docket No. 40-8968-ML

AFFIDAVIT OF ROBERT D. CARLSON

I, Robert D. Carlson, being duly sworn, state as follows:

1. I am competent to make this affidavit, and the factual statements herein are true and correct to the best of my knowledge, information, and belief.

2. I am employed by the U.S. Nuclear Regulatory Commission (NRC), in the Office of Nuclear Material Safety and Safeguards. I presently work in the Division of Waste Management's Uranium Recovery Branch. I am the Project Manager of Hydro Resources, Inc.'s (HRI's) proposed in situ leach (ISL) uranium mining project at Crownpoint, New Mexico, and have served in this capacity since August 1996. In my current position, I oversee all aspects of regulating HRI's license to operate its Crownpoint Project. As Project Manager, I managed the environmental and safety reviews of HRI's license application, and supervised the development of HRI's source materials license. I currently oversee the National Historic Preservation Act (NHPA) Section 106 process, relating to HRI's ISL project. I have worked at the NRC since March 1991, in the Division of Waste Management, in various project management capacities.

3. My resume, attached hereto as Attachment 1, accurately describes my general background, training, and qualifications to express the opinions stated herein.

4. In preparation of filing this affidavit, I reviewed the following documents, with which I was previously familiar:

A. Final Environmental Impact Statement to Construct and Operate the Crownpoint Uranium Solution Mining Project, Crownpoint, New Mexico, NUREG-1508 (FEIS).

B. Cultural Resources Inventory of Proposed Uranium Solution Extraction and Monitoring Facilities at the Church Rock Site and of Proposed Surface Irrigation Facilities North of the Crownpoint Site, McKinley County, New Me xico, published by the Museum of New Mexico, Office of Archaeological Studies (OAS Report).

C. Crownpoint Uranium Project Consolidated Operations Plan, Revision 2.0, dated August 15, 1997 (COP).

D. ENDAUM's and SRIC's Motion for Stay, Request for Prior Hearing, and Request for Temporary Stay, dated January 15, 1998 (Stay Request), including the exhibits attached thereto.

E. HRI's Response to Petitioners' Motion For Stay, dated January 26, 1998 (HRI's Response), including the exhibits attached thereto.

5. I previously reviewed and was familiar with the following documents in connection with the NHPA Section 106 process:

A. The NHPA statute.

- 2 -

B. Advisory Council for Historic Preservation (ACHP) regulations,
36 C.F.R. Part 800, et seq.

C. National Register Bulletin 38, on Traditional Cultural Properties, published by the National Park Service.

D. A Five-Minute Look At Section 106 Review, published by the ACHP.

6. I helped draft all of the Staff's NHPA Section 106 letters (some of which are reproduced in Appendix C of the FEIS) regarding the NHPA review of HRI's ISL project. As part of this process, I have worked with Oak Ridge National Laboratory (ORNL), which has provided technical assistance in support of the Section 106 process. In all of the Staff's NHPA letters, I am listed as the NRC person to contact to answer any questions, and my correct telephone number is stated in all of these letters. Additionally, any written replies to any of these letters would cross my desk, due to my duties as Project Manager.

7. A letter directed to my attention, dated October 31, 1996 (a copy of this letter is reproduced in Appendix C of the FEIS), was received from Alan Downer, Director of the Navajo Nation Historic Preservation Department (NNHPD). I understood from this letter that Dr. Downer and the NNHPD would review reports to be submitted to them in furtherance of the NHPA review process.

8. By cover letter dated January 31, 1997 (a copy of which is reproduced in Appendix C of the FEIS), NRC sent a package of NHPA-related material to Dr. Downer, asking him and the NNHPD for any advice he or the NNHPD might care to give

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regarding the NHPA review process. To date, I have received no verbal or written response to this letter from Dr. Downer, nor from anyone else at the NNHPD, and do not believe that anyone else at the NRC (or ORNL) received a response from any Navajo representative regarding this letter. As a follow-up to mailing this letter, I placed two telephone calls to NNHPD in the February-March 1997 time frame, to confirm receipt of the letter and enclosed materials. I left messages with an administrative person (identity unknown), asking that Dr. Downer return my call. I did not receive any return calls or messages.

9. Following publication of the FEIS, the OAS Report was received from HRI. By letter dated June 19, 1997, a full copy of the OAS Report was sent to Dr. Downer. *See* Exhibit 4, attached to the Staff's Response. I received no verbal or written response to this letter, nor to the OAS Report, from Dr. Downer, nor from anyone else at the NNHPD, and do not believe that anyone else at the NRC (or ORNL) received a response from any Navajo representative regarding the OAS Report. As a follow-up to mailing this letter and the OAS Report, I placed two telephone calls to NNHPD in the July-August 1997 time frame, to confirm receipt of the OAS Report. I spoke to Peter Noyes of Dr. Downer's staff. At that time, according to Mr. Noyes, the OAS Report had not been received. I later confirmed in the August-September 1997 time frame that the OAS Report had been received (I believe I spoke with Mr. Noyes again in this regard). I later placed several telephone calls in the October-December 1997 time frame to NNHPD, inquiring about the status of their OAS Report review. I was only able to make contact with an administrative person (identity unknown), and left messages

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asking Dr. Downer or Mr. Noyes to return my calls. I did not receive any return phone calls or messages from the NNHPD.

10. I drafted additional letters, dated June 19, 1997, by which full copies of the OAS Report were mailed for review and comment to the New Mexico State Historic Preservation Officer (SHPO)¹; to Roger Anyon (Director of the Pueblo of Zuni heritage and Historic Preservation Office); and to Leigh Jenkins (Director of the Hopi Cultural Preservation Office). *See* Exhibits 5, 6, and 7, attached to the Staff's Response. I received no verbal or written response from Mr.Anyon (nor from any other Zuni representative) regarding the OAS Report, and I do not believe that anyone else at the NRC (or ORNL) heard from any Zuni representative regarding the OAS Report. I likewise received no verbal or written response from Mr. Jenkins (nor from any other Hopi representative) regarding the OAS Report, and I do not believe that anyone else at the NRC (or ORNL) heard from any Hopi representative regarding the OAS Report.

11. Based on the lack of response to the correspondence and telephone calls as discussed above, I assumed that the NNHPD and other Native American groups we had contacted were in agreement with the OAS Report's findings, and that they were satisfied that no archaeological sites or traditional cultural properties (TCPs) were endangered by HRI's proposed mining activities at the sites discussed in the OAS Report.

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¹ I placed a telephone call to the SHPO's office in the July-August 1997 time frame, to confirm receipt of the OAS Report. At that time, the OAS Report had not been received (I believe I spoke with Glenna Dean on this occasion). It was later confirmed in September 1997 that the SHPO's office had received the OAS Report.

I believe my assumption in this regard to be a reasonable one, given the OAS Report's detailed and extensive discussions.

12. I further believe that the OAS Report, combined with all the earlier NHPArelated information obtained by HRI, as detailed in the affidavits of Eric Blinman and Lorraine Heartfield, attached as Attachments A and B to HRI's Response, constitute an adequate base of NHPA-related information, and fully supported issuing a license to HRI on January 5, 1998. I am in full agreement with the opinions expressed by Mr. Blinman and Ms. Heartfield in their affidavits. I incorporate those opinions by reference as if fully set forth herein, and I adopt those opinions as my own.

13. I fully realize and appreciate that the NHPA review process is far from concluded with respect to HRI's mining project. In compliance with NHPA guidance and procedures, I will continue to work with the New Mexico SHPO's office, in response to their letter dated November 20, 1997. *See* Exhibit 8, attached to the Staff's Response. The NRC staff is currently in on-going consultation with the New Mexico SHPO's office to make a determination of effect under Section 106 of NHPA. The results of this consultation will be forwarded for comment to all interested parties, Native American groups, and the public, before the staff finalizes its determination of effect. To date, on behalf of the NRC Staff, I believe I have engaged in a reasonable and good faith effort to comply with NHPA requirements, and I will continue to do so. As any new NHPA-related information becomes available, I will continue to forward that information to the NNHPD as I have in the past. The NHPA process will work better if the NNHPD

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provides the NRC with timely input, but obviously I cannot force the NNHPD to cooperate.

14. I take issue and disagree with many of the statements made by William Dodge in his affidavit dated January 9, 1998, attached as Exhibit 2 to the Stay Request.

A. To the extent that Mr. Dodge suggests, at **§§** 19-21 of his affidavit, that the NRC published misleading statements as to the scope of HRI's ISL project, I disagree with his opinion. As reflected in the June 1997 letters sent to Dr. Downer and the New Mexico SHPO, forwarding copies of the OAS Report, the NRC adopted the OAS Report for purposes of determining potential effect under NHPA Section 106. See Exhibits 4 and 5, attached to Staff's Response, at 1. The statements made therein regarding the reduced scope of HRI's ISL project are consistent with what the OAS Report states. The OAS Report was received from HRI in early April, 1997 (*see* Attachment 4 hereto), after the FEIS was published. Far from misleading anyone, the Staff's June 1997 letters accurately reported the reduced scope of HRI's ISL project.

B. At ¶ 21 of his affidavit, Mr. Dodge cites pages 42-43 of HRI's COP, in apparent support for his statement that "it appears that the NRC has omitted from its cultural resources survey significant areas slated for development during the first five years of HRI's operation." COP § 2.7.1, at 42-43 (a copy of which is attached hereto as Attachment 2), discusses parcels of land available at the Churchrock site for land application of waste water. The final paragraph of this COP section states:

HRI will commit to filing an application with the NRC at the time irrigation plans have been finalized. Such an application will contain information on the environmental conditions of the parcel of land to be used.

However, this waste water disposal option is only one of several options available to HRI (*see* COP § 4.5, pages 53-59, a copy of which is attached hereto as Attachment 3), and HRI has not yet finalized its plans regarding waste water disposal. *See* HRI's Response, at 7. Accordingly, any cultural resources survey of land to be used for disposal of waste water at or near the Churchrock site (*e.g.*, Section 16) must necessarily await HRI's decision on how to proceed in this regard. Deferring a further cultural resources survey of land near the Churchrock site until waste water disposal plans are finalized is, in my opinion, a prudent course to take, since the parcels of land in question may never be used by HRI for waste water disposal, or for any other purpose.

C. At § 27 of his affidavit, Mr. Dodge relates a conversation he had with Dr. Downer, about a perceived lack of urgency on the NRC's part to complete the NHPA section 106 process. Should the Presiding Officer choose to consider this part of Mr. Dodge's affidavit (Staff counsel advises me that the statements attributed to Dr. Downer are hearsay), I would note that Dr. Downer's lack of cooperation to date has certainly slowed the NHPA process. He had previously agreed to review reports submitted to the NNHPD (*see* his letter dated October 31, 1996, at 1), but such review of the OAS Report has apparently not taken place.

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D. At ¶ 30 of his affidavit, Mr. Dodge charges that the NRC "has not properly consulted with the Navajo Nation on the evaluation of the historic properties identified to date." I can only conclude from this that Mr. Dodge has not seen my June 1997 letter to Dr. Downer (Mr. Dodge's affidavit, at ¶ 6, is vague as to what correspondence he reviewed) forwarding the OAS Report to Dr. Downer for review. Additionally, Ms. Susan Schexnayder, an ORNL cultural resources consultant, has made repeated but so far futile attempts to discuss the OAS Report with Peter Noyes of NNHPD, who works for Dr. Downer. *See* Ms.Schexnayder's affidavit, attached to the Staff's Response as Exhibit 11.

E. Regarding ¶¶ 31, 37, 39, 40, 42, and 43 of Mr. Dodge's affidavit, to the extent therein that he is critical of NRC efforts to engage the NHPA participation of the Hopi and Zuni, I have the following opinions: (1) because these Native American groups were given copies of the 1997 OAS Report, I feel they have certainly been provided an opportunity to conduct fieldwork in the HRI project area (*see* $\{31\}$, and I disagree with the inference that NRC will fulfill its NHPA obligations only by offering to provide funds to finance visits to the project area (*see* $\{42\}$; and (2) as referenced in $\{39$, after the Zuni and Hopi tribes were given copies of the OAS Report in June 1997 (*see* Exhibits 6, and 7, attached to the Staff's Response), the Staff did not thereafter violate the good faith requirements of the NHPA process (*see* $\{40\}$) in not making further inquiry of those tribes (*see* $\{43\}$) after they did not respond to the June 1997 letters.

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F. Mr. Dodge, at \P 32 of his affidavit, in quoting from the proposed NHPA-related license condition published in the FEIS,² omitted the last sentence, which states as follows:

In the event that previously unidentified cultural resources or human remains are discovered during project activities, the activity in the area would cease, appropriate protective action and consultation would be conducted, and, if indicated, the artifacts or human remains would be evaluated for their significance.

FEIS, at 4-112. I disagree with his opinion that the policy of avoidance as expressed in the FEIS is not equivalent to having completed the Section 106 process prior to license issuance. In my opinion, the goal of protecting cultural resources is adequately met by HRI's policy of avoidance, and until the NHPA review process is completed, HRI's policy will serve as an adequate substitute. I do agree with Mr. Dodge's statement, at ¶ 32, that the section 106 process "relies on a consultative process among all interested parties to try and reach agreement." I have engaged in a good faith and reasonable effort to promote such a process, and will continue to do so, but have so far been frustrated in this regard by the NNHPD's lack of cooperation.

G. I agree with Mr. Dodge's statement, at \P 41 of his affidavit, "that ethnographers and tribal religious and cultural practitioners are the ones best suited to identify TCPs." In my opinion, this is precisely what the OAS Report does. *See* Exhibit 2, attached to the Staff's Response, at 17-22.

 $^{^{2}}$ The wording of the NHPA-related license condition 9.12, contained in the license issued to HRI, differs from that stated in the FEIS, but the difference is not significant for purposes of the opinions expressed herein.

15. I take issue and disagree with many of the statements made by Dr. Klara Kelley, in her affidavit dated January 8, 1998, attached as Exhibit 3 to the Stay Request.

A. At § 6 of Dr. Kelley's affidavit, she references the need to conduct site inspections "on foot," at spaces of "no more than 15 meters apart." To the extent she implies that inadequate inspections have been conducted to date, I disagree with her. The OAS Report states that a "pedestrian survey was conducted with a maximum of 15m between transects," and otherwise describes the thorough survey made of Sections 8 and 17 at HRI's Churchrock site. *See* OAS Report excerpts, attached to Staff's Response as Exhibit 2, at 15-16. Should HRI choose to develop additional sites, compliance with NHPA requirements regarding such sites is imposed by license condition 9.12 of HRI's source materials license.

B. At **¶¶** 8-12 of Dr. Kelley's affidavit, to the extent she contends therein that the OAS Report fails to adequately document contacts with local Navajos regarding TCPs, I disagree with such opinions. The OAS Report contains a detailed discussion of conversations with local Navajos regarding this topic. *See* Exhibit 2, attached to the Staff's Response, at 17-22.

C. At ¶ 16 of Dr. Kelley's affidavit, she asserts that "HRI's reports systematically ignore how the project may affect [TCP's] and other cultural resources outside the project area" by ignoring "those qualities of a property's visual, auditory, and atmospheric setting that contribute to its significance." The relevance of this criticism is questionable, since the FEIS fully examines these qualities, and concludes that HRI's ISL project will cause no significant impacts in these areas. *See* FEIS

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Sections 4.1 (Air Quality and Noise); 4.10 (Aesthetics); and 4.11 (Cultural Resources). Dr. Kelley's affidavit, at ¶ 4, states that she reviewed "the cultural resources portions" of the FEIS, so her review may only have encompassed FEIS Section 4.11.

16. The statements expressed above are true and correct to the best of my knowledge, information, and belief.

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Robert D. Carlson

Sworn and subscribed to before me this $\frac{2047}{2}$ day of February, 1998

Notary Public My commission expires: EUX EOW/DEN EESKY NOTAEN FUBLIC STATE OF MARYLAND My Commission Expires December 1, 1999 ۱.

UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

BEFORE THE PRESIDING OFFICER

In the Matter of)
)
HYDRO RESOURCES, INC.)
2929 Coors Road, Suite 101)
Albuquerque, New Mexico 87120)

Docket No. 40-8968-ML

AFFIDAVIT OF SUSAN M. SCHEXNAYDER

I, Susan M. Schexnayder, being duly sworn, state as follows:

1. I am competent to make this affidavit, and the factual statements herein are true and correct to the best of my knowledge, information, and belief.

2. I am employed by the University of Tennessee, Energy, Environment, and Resources Center, and have consulted for nine years to Oak Ridge National Laboratory (ORNI.) on socioeconomic and cultural resource impact assessments under the National Environmental Protection Act (NEPA) and on Section 106 compliance under the National Historic Preservation Act (NHPA). Beginning in September 1995, I served in both these roles during the U.S. Nuclear Regulatory Commission's (NRC) review of the license application of Hydro Resources, Incorporated (HRI). In this capacity I have assisted NRC in its determination of potential socioeconomic and cultural resource impacts (NEPA) and in its consultation under Section 106 (NHPA). I have had numerous communications with many tribal officials and the New Mexico State Historic Preservation Office (NM SHPO) and assisted in drafting letters to the NM SHPO, to potentially interested parties (including the Navajo Nation), and to the Navajo Nation once they officially assumed responsibilities as SHPO. 3. My resume, attached hereto as Attachment 1, accurately describes my general background, training, and qualifications to express the opinions stated herein.

4. In preparation of filing this affidavit, I reviewed personal project notes from the years 1995-1998 and my appointments calendar for 1997 and 1998. I have also reviewed and am familiar with the following project documents:

A. Final Environmental Impact Statement to Construct and Operate the Crownpoint Uranium Solution Mining Project, Crownpoint, NM (FEIS), NUREG-1508, dated February 1997.
B. Museum of New Mexico Cultural Resources Inventory of Proposed Uranium Solution Extraction and Monitoring Facilities at the Church Rock Site and of Proposed Surface Irrigation Facilities North of the Crownpoint Site, McKinley County, New Mexico (OAS Report), dated 1997.

5. I previously reviewed and was familiar with the following guidance documents in connection with implementation of the National Historic Preservation Act (NHPA):

A. National Environmental Policy Act (NEPA) of 1969, as amended.

B. National Historic Preservation Act (NHPA) of 1966, as amended.

C. Advisory Council for Historic Preservation (ACHP), Section 106 Regulations. 36 CFR Part 800.

D. National Park Service, "National Register Bulletin 38," on Traditional Cultural
 Properties.

E. Draft Guidance for Considering Environmental Justice Under the National Environmental Policy Act, dated March 26, 1997.

F. The American Indian Religious Freedom Act (AIRFA) of 1978 (Pub, L. 95-431, 92

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Stat. 469).

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G. Presidential Memorandum on Government-to-Government Relations with Native American Tribal Governments. April 29, 1994.

H. Native American Graves Protection and Repatriation Act of 1990 (Pub. L. 101-601).

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I. Navajo Nation Cultural Resources Protection Act. Tribal Council Resolution CMY-19-88.

J. Navajo Nation Policies and Procedures Concerning the Protection of Cemeteries, Gravesites and Human Remains. Jan. 24, 1991.

K. Navajo Nation Policy to Protect Traditional Cultural Properties. Navajo Nation Historic Preservation Department, Window Rock, Az., Jan. 24, 1991.

L. Navajo Nation Historic Preservation Department Policies, Procedures, and Requirements for Acquiring Cultural Resources Investigation Permits. December 15, 1993.

M Pueblo of Zuni Statement of Cultural Affiliation with Prehistoric and Historic Cultures. July 11, 1995.

N. Zuni Tribal Council, Zuni, New Mexico, Resolution no. M70-92-L164. Approving
 Policy Statement Regarding the Protection and Treatment of Human Remains and Associated
 Funerary Objects. November 1992.

O. Pueblo of Acomas Statement by Stanley Paytiam, Environmental Protection Specialist at Environmental Fair on Solid Waste, "Solidwaste Traditional Values," May 18, 1995, Window Rock Arizona. "Mother Earth is Sacred."

P. Section 106, Step-by-Step. Advisory Council on Historic Preservation. October 1986.

Q. Introduction to Federal Projects and Historic Preservation Law, Participant's Desk Reference. Advisory Council on Historic Preservation and The GSA Interagency Training

Center. November 1991.

R. Introduction to Federal Projects and Historic Preservation Law, Participant's Course
 Book. Advisory Council on Historic Preservation and The GSA Interagency Training Center.
 November 1991

6. Regulations for implementing Section 106 consultation, 36 CFR Part 800, allow consultation under the National Historic Preservation Act to be coordinated with National Environmental Policy Act consultation. As ORNL's cultural resources consultant, I, in consultation with NRC, have adopted this approach from the outset of this project. Specifically, this was done by informing all persons with whom we met in person during the October 9-12, 1995 site visit (see paragraph 9.C. for list of persons) that ORNL would be assisting NRC with its Section 106 consultation, and that the purpose of our meetings was to inform them of the proposed activity and its locations, to acquire information about cultural resources and acceptable cultural resouce management practices, to identify concerns about cultural resouce protection, and to make further communication easier.

7. NRC assigned HRI the responsibility for conducting cultural resource surveys (including for traditional cultural properties) necessary for NEPA and NHPA compliance. This work has been carried out by HRI's consultants. Dr. Lorraine Heartfield and Dr. Eric Blimman of the Museum of New Mexico, Office of Archaeological Studies. ORNL and NRC both advised and monitored this work through frequent interactions with Dr. Heartfield. In her capacity as cultural resources consultant to HRI, Dr. Heartfield has had numerous interactions with Navajo Nation Historic Preservation Department (NNHPD) and the directors of cultural resource programs of the Hopi, Zuni, and Acoma, and the All Pueblo Council. Her interactions with the NNHPD were to assure that cultural resources survey and reporting complied with the regulations of the NNHPD. Interactions with other tribes were conducted by Dr. Heartfield in an attempt to acquire information about traditional cultural properties, or about the potential for their existence in the project area. I was fully aware of these interactions and consulted with Dr. Heartfield throughout this process.

8. The Section 106 consultation process is currently on-going. At this point, NRC and NM SHPO are in agreement regarding the eligibility of archaeological sites in the project area as documented in NM SHPO (Glenna Dean) Nov. 20, 1997 letter to NRC. I am assisting NRC as it begins consultation to determine potential effect to cultural resources. I have not received, and am not aware that NRC has received, comment from NNIIPD regarding either determinations of eligibility of site or potential effects. This is despite my attempts to contact NNHPD on this matter as documented below in paragraph 9.

9. The following is a record of communication between ORNL consultants (myself and Robert B. Braid, who is now retired) and other involved parties.

A. On October 2, 1995, Bob Braid and I contacted Lynne Sebastian (Deputy SHPO, State of New Mexico, phone no. 505-827-4044) to acquaint her with the HRI proposed activity, ourselves (as consultants to NRC, the licensing agency), and our responsibilities in the NEPA and NHPA context.

B. On October 3, 1995, I contacted Peter Noyes, Navajo Nation Historic Preservation Department (NNHPD), Cultural Resource Compliance Section (phone no. 520-871-7132), to acquaint Mr. Noyes (and through him, Dr. Downer, Director, NNHPD) with the HRI proposed activity, ourselves (as consultants to NRC, the licensing agency), and our responsibilities in the NEPA and NHPA context. Mr. Noyes stated that he was familiar with the proposed activity. He identified himself as the lead member of Dr. Downer's staff for the HRI project, confirmed that correspondence should be addressed to Dr. Downer and directed to his attention, and confirmed that it was appropriate to contact him rather than Dr. Downer for all other communication. C. Between October 9 and October 12, 1995, Bob Braid and/or I met with the following persons and groups to acquaint them with the HRI proposed activity, ourselves (as consultants to NRC, the licensing agency), and our responsibilities in the NEPA and NHPA context. At each meeting, we elicited concerns about cultural resources and cultural resource protection and solicited information about the existence of cultural resources in the project area. The people with who we met were

- Peter Noyes, NNHPD

- Charles Damon, Community Services Coordinator, Churck Rock Chapter

- Charles Long, President, Crownpoint Chapter

- Pinedale Chapter Council (at Council meeting)

- Eastern Navajo Dine Against Uranium Mining (ENDAUM), 16 members present

- Leigh Jenkins, Director, Hopi Cultural Preservation Office

- Roger Anyon, Director of Zuni Heritage and Historic Preservation Office

- Stanley Paytiamo, Environmental Compliance Officer, Pueblo of Acoma

D. On December 6, 1995, Bob Braid and I contacted Lynne Sebastian about lead agency status and the Navajo Nation's role as contractor for Bureau of Indian Affairs cultural resources work.

E. On March 26, 1996, Bob Braid and I contacted Peter Noyes (NNHPD) about the Navajo Nation's expectations regarding cultural resources survey work Mr Noyes indicated that complete surveys of project areas for archaeological and traditional cultural properties would meet Navajo requirements.

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F. On March 26, 1996, Bob Braid and I contacted Leonard Robbins, Bureau of Indian Affairs, Gallup, New Mexico (phone no. 505-863-8287). Mr. Robbins stated that he did not want to see the Sect. 106 materials, but was interested in the protection plan.

G. On March 27, 1996, Bob Braid and I contacted Lynne Sebastian (NM SHPO) to discuss a incremental approach (based on the 5-year development plan of HRI) to Sect. 106 consultation. Dr. Sebastian found this approach to be acceptable.

H. On October 15, 1996, I contacted Peter Noyes, NNHPD, to discuss recent National Park Service approval for NNHPD to act as SHPO on Navajo Nation land. We also discussed the 5-year incremental approach to Sect. 106 consultation, and Mr. Noyes favored the concept if the project was not segmented into small parcels.

I. On October 16, 1996, I contacted Lynne Sebastian (NM SHPO) to discuss NM SHPO preferences for proceeding with consultation given the new NNHPD status. We also discussed continuing the Sect. 106 consultation on properties on which surveys could be completed (Sect. 17 and 8, T16N, R16W (Church Rock); and Sect. 12, T17N, R13W).

J. On August 11, 1997, I attempted to contact Peter Noyes, NNHPD (phone no. 520-871-7132). I left a message with an administrative person (identity unknown). I never received a return call or message from Mr. Noyes.

K. On August 15, 1997, I attempted to contact Peter Noyes, NNHPD. Mr.
 Noyes was not in. I did not leave a new message.

L. On November 12, 1997, I attempted to contact Peter Noyes, NNHPD. I left a message with an administrative person (identity unknown). I never received a return call or message from Mr. Noyes. 1<u>9.</u> UUO

10. The statements expressed above are true and correct to the best of my

knowledge, information, and belief.

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Susan M. Schexnayder

Sworn and subscribed to before me this $\frac{19}{2}$ day of February, 1998.

Notary Public Ny commission expires March 3, 1899. My commission expires: