FINAL REPORT
HOPI ARSENIC MITIGATION PROJECTS
HOPI INDIAN RESERVATION
NAVAJO COUNTY, ARIZONA

PROJECT NO. PH 04-S63, PH 06-D33, PH 08-T38, PH 10-E37
PUBLIC LAW 86-121

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
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BACKGROUND

Public Water Systems (PWSs) serving the Hopi Villages of First Mesa (i.e. Polacca, Sichomovi, Tewa, and Walpi) and Second Mesa (i.e. Mishongnovi, Shungopavi, and Sipaulovi) on the Hopi Reservation exhibit arsenic concentrations in excess of the Environmental Protection Agency (EPA) Maximum Contaminant Level (MCL) per the Safe Drinking Water Act (SDWA). First and Second Mesa utilities (i.e. PWSs) provide water with arsenic concentrations between 14 and 20 parts per billion (ppb), which are in excess of the 2001 EPA SDWA arsenic MCL update of 50 to 10 ppb. The utilities vary in their size, structure, ability, and are not mutually exclusive from their respective corresponding Village, Tribal, or Federal organizational structure. Most residents on the Hopi Reservation in general, including Second Mesa, are served by utilities that are owned and operated by Villages. First Mesa residents are primarily served by the entity known as First Mesa Consolidated Villages (FMCV). The Hopi Tribe's primary role is as a focal point in the government to government relationship with the United States as the Tribe's constitution and bylaws describe itself as a union of self-governing Villages that each have their own unique and autonomous form of government structure (e.g. traditional, constitutions subordinate to the Tribe's, elected officials, etc.) Therefore, the Tribe requested the assistance of the Indian Health Service (IHS) and EPA on behalf of the tribal members, villages, and utilities to address sanitation deficiencies associated with water quality and quantity. Ultimately, IHS Projects PH 04-S63, PH 06-D33, PH 08-T38, and PH 10-E37 were funded and approved to provide the requested technical assistance to the Tribe for the approximately 1,300 affected homes at First and Second Mesa.

Since the original involvement of the IHS under PH 04-S63, many alternative solutions to the water quality and quantity issues have been explored with each project described herein having become part of what is now cumulatively known as the Hopi Arsenic Mitigation Project (HAMP). The HAMP is an ongoing cooperative effort led by The Hopi Tribe and has undergone

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significant changes, additions, and involved numerous stakeholders including: the Tribe, Villages, utilities, EPA, IHS, Department of Housing and Urban Development (HUD), Hopi Tribal Housing Authority (HTHA), Bureau of Indian Affairs (BIA), Bureau of Indian Education (BIE), Bureau of Reclamation (BOR), and United States Department of Agriculture (USDA). There have been numerous public community outreach meetings throughout the years in addition to a regular monthly EPA conference call emphasizing the HAMP on the first Thursday of the month, which has been held for the past decade. Reception and support for the HAMP is seemingly universal with the primary limitation being lack of funding.

While the HAMP is still in-progress, the scopes of PH 04-S63, PH 06-D33, PH 08-T38, and PH 10-E37 are complete at this time and are administratively closed per this report. Additionally, the Tribe and EPA have funded subsequent ongoing projects that are considered wholly or partially components of the HAMP under IHS Projects PH 11-E55, PH 12-E73, PH 14-U62, PH 15-U76, and PH 15-E89. Funding for PH 04-S63 and PH 08-T38 was provided by the IHS through "Regular" funds with funding for PH 06-D33 and PH 10-E37 provided by the EPA through SDWA Tribal Set-Aside funds. The following facilities were proposed per each respective Project Summary:

PH 04-S63

- Research groundwater quality with respect to arsenic at First Mesa (i.e. Polacca, Sichomovi, Tewa, and Walpi), which is operated by FMCV (PWS ID 090400107)
- Well pumphouse/treatment building
- Proposed community water well
- Water main extension
- Installation of electrical panels and well controls

PH 06-D33

- Research arsenic mitigation strategies for PWSs on the Hopi Reservation and publish a feasibility study for arsenic rule compliance for the following water systems:
    - FMCV
    - Hopi Cultural Center (PWS ID 090400260)
    - BIE Second Mesa Day School (PWS ID 090400061)
    - Lower Sipaulovi/Mishongnovi (PWS ID 090400107)
    - Upper Sipaulovi/Mishongnovi (PWS ID 090400394)
    - Shungopavi (PWS ID 0400259)
    - Hopi High School (PWS ID 0400395)
- Amended to prepare construction documents including:
    - Geotechnical analysis

- Environmental Assessment
- Aerial mapping
- GPS equipment

PH 08-T38

- Conduct a Hopi Regional Water Study to assess the feasibility of creating a regionalized Hopi water system and to specifically evaluate the following:
  - Identify locations for wells and water storage tanks
  - Provide preliminary design concepts
  - Layout transmission main alignments
  - Assess ROW requirements
  - Conduct an Environmental Assessment
  - Develop water system management schemes
  - Identify terms of utility agreements and rates
  - Define and prioritize needed improvements to existing water system facilities
- The Hopi Regional Water Study was to encompass the following geographic areas and PWSs:
  - BIA Keams Canyon (PWS ID 090400054)
  - BIE Second Mesa
  - Toreva (PWS ID 09040055)
  - Hopi Cultural Center
  - BIE Hopi High School
  - Upper Mishongnovi/Sipaulovi
  - Lower Mishongnovi/Sipaulovi
  - FMCV
  - Shungopavi
  - Turquoise Trail
  - Hopi Veteran's Center
  - Kykotsmovi (PWS ID 090400105)
  - Old Oraibi
  - Bacavi (PWS ID 090400687)
  - Hotevilla (PWS ID 090400700)

PH 10-E37

- Construct a drinking water well (18" borehole, 14" casing, 12" perforated casing, with pump/motor, drop pipe, and pitless adapter, etc.) at Turquoise Trail
- Rehabilitate the existing Turquoise Trail well (well pump/motor, drop pipe, and pitless adapter, etc.)
- Extend NTUA electric power to the Turquoise Trail well sites
- Conduct a hydrogeologic assessment of the aquifer
- Develop an asset management plan

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HISTORY

IHS involvement with arsenic mitigation on the Hopi Reservation began with PH 04-S63 at First Mesa. A similar project, PH 06-D33 evaluated arsenic mitigation at Second Mesa and treatment technologies at First Mesa. The Hopi Tribe subsequently decided to pursue a rural (i.e. regional) water system to serve the First and Second Mesa Utilities with water from Turquoise Trail in an effort to maximize the economies of scale with respect to correcting the arsenic MCL deficiencies per the scopes of PH 08-T38 and PH 10-E37. From 2007 to 2012, the individual projects were further developed into the HAMP as further described in the below project-specific histories. Planning and design funding of the HAMP has generally followed Method 2 per the *SFC Project Management Program (PMPro) Project Management Guideline* in that it has been a major planning and design project with significant costs to-date per Chapter 5 Section VI of the *2003 Criteria for the Sanitation Facilities Construction Program* under the associated IHS projects. Counting only IHS resources; the HAMP has had five IHS Project Engineers in the IHS lead as of December 2016 plus frequent and intensive support from numerous IHS Technicians, Engineers, Utility Consultants, National Environmental Protection Act (NEPA) Coordinators, Division Directors, and administrative staff. HAMP planning and design efforts have been predicated upon garnering USDA Rural Development (RD) funding since other funding entities do not have the ability to provide the required remaining total of $17.0M to complete the project.

Following years of planning, a draft Preliminary Engineering Report (PER) for the HAMP was published in 2012 and reviewed by USDA RD. Following review of the PER, the stakeholder consensus was that the best course of action was to drill the two wells required in the rural water system alternative per the *Turquoise Trail Hydrogeologic Study* (Young, 2011) in an effort to prove the quality and quantity of the water. In December 2012, a project manual was completed for the drilling of the two wells and an invitation for sealed bids to perform work was advertised by The Hopi Tribe. There was one responsive, responsible bidder, Yellow Jacket Drilling Services of Phoenix, AZ. Yellow Jacket Drilling Services was awarded the contract to drill Turquoise Trail Wells #2 and #3, which were successfully completed. Turquoise Trail Wells #2 and #3 validated the concept of a rural water system alternative as they are expected to produce 415 gallons per minute each and exhibit arsenic concentrations of 4.7 and 4.2 ppb, respectively (Fritz et al. 2014).

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Efforts to evaluate and include the BIA/BIE PWSs in the HAMP were concluded with publication of the *Arsenic Mitigation Study for BIA Public Water Systems, Keams Canyon, Arizona* (D.B Stephens, 2011), *Preliminary Engineering Report for The Hopi Tribe Keams Canyon Proposed Project Connection to the HAMP Proposed SDS Project* (Mitchell, 2013), and installation of interim arsenic treatment facilities. After arsenic issues with the BIA/BIE PWSs were corrected, the focus of stakeholders and the IHS shifted to correct the existing MCL issues at the utilities still out of compliance with the MCL and to select a preferred alternative for the HAMP. Similarly, stakeholders decided that the BIA/BIE needed to commit to the HAMP in writing to demonstrate financial capability of amortization of a USDA RD loan or providing present worth capital equivalent prior to investing additional resources in the BIA/BIE inclusion.

Project PH 14-E90 may be funded to further evaluate and plan BIA/BIE HAMP inclusion as described in the similarly scoped IHS Sanitation Deficiency System (SDS) entry "AZ09971-0102 - Keams Canyon HAMP Connection." PH 14-E90 has been signed by The Hopi Tribe per Hopi Tribal Council Resolution H-030-2015, but not yet executed/funded as the BIA has not yet signed the MOA (i.e. on behalf of both the BIA and BIE). The BIA and Tribe intend to fund the inclusion of the BIA/BIE in the HAMP. All of the BIA and BIE systems operate treatment plants to provide potable water and have a identified the HAMP as their preferred future water source per the *Arsenic Mitigation Study for BIA Public Water Systems, Keams Canyon, Arizona*. However, the scope of the planning study was such that the assumptions include unlimited supplies of potable water at the nearest possible connection points to existing PWSs in First and Second Mesa. A Bentley WaterGEMS model shows that the proposed HAMP mains to both First and Second Mesa would need to be sized larger to include the BIA and BIE systems than necessary to serve the other utilities. Additionally, there are not hydraulic analyses of each respective PWS to demonstrate that connecting directly to them is within each system's existing capacity. Consequentially, the capital costs previously identified for each BIA/BIE system are likely under-estimates and could affect the alternative decision matrices therein if developed further.

Technical assistance provided by the IHS culminated in the completion of reports necessary for a USDA RD Grant Application including: *Preliminary Engineering Report for Hopi Arsenic Mitigation Alternatives, IHS Project PH12-E73, PH11-E55, PH10-E37, PH08-T38, PH06-D33, PH04-S63* (Hughes, 2014), *Hopi Water System Strategic Plan An Element of the Hopi Arsenic Mitigation Project Final Report* (Brough et al. 2014a), *Hopi Arsenic*

Mitigation Project Life Cycle Cost Analysis and Comparison of Arsenic Mitigation Alternatives: HAMP Groundwater System and Village Arsenic Treatment Systems Final Report (Brough et al. 2014b), and the *Environmental Assessment for Hopi Arsenic Mitigation Project, Hopi Reservation, Navajo County, Arizona* (Indian Health Service, 2014). The reports provide a more comprehensive description of the proposed HAMP than this Final Report and have been provided to the Tribe, Villages, and utilities.

The preferred alternative identified in the *Preliminary Engineering Report for Hopi Arsenic Mitigation Alternatives, IHS Project PH12-E73, PH11-E55, PH10-E37, PH08-T38, PH06-D33, PH04-S63* (Hughes, 2014), hereinafter and elsewhere referred to as the HAMP PER, is a rural water system of sufficient water quality and quantity to provide potable water to the participating Utilities of First and Second Mesa (i.e. not including PWSs operated by the BIA or BIE). Therefore, when the HAMP is cited it typically refers to the preferred alternative of a rural water system synonymously with the HAMP (i.e. not treatment alternatives). There has not yet been a USDA RD review of the HAMP PER.

The project specific history with respect to funds disbursement (see also Table 3), is summarized as follows.

<u>Project PH 04-S63:</u>
In September 2004, the IHS and The Hopi Tribe (Hopi Tribal Council Resolution H-078-2004) entered into a Memorandum of Agreement (MOA) for Project PH 04-S63 with support from FMCV. The project was to investigate the feasibility of drilling a community water well at a location and depth that would provide arsenic compliant water to First Mesa without requiring treatment to remove arsenic. By 2007, a review of available literature and continued water quality sampling lead the IHS to conclude that there were no locations nor depths in or around First Mesa that would yield potable water which would not first need treatment to remove arsenic and still be compliant with other EPA water quality standards. In 2008, the PH 04-S63 scope shifted to the HAMP scope, which will conceptually provide water from the Turquoise Trail area to the north of First Mesa. Land in the area of Turquoise Trail has had some disputes at the Tribal level (see SIGNIFICANT PROJECT/CONSTRUCTION EVENTS).

Ultimately, almost all of the funding contributions to the Tribe under PH 04-S63 were used to drill Turquoise Trail Wells #2 and #3. Some funds were also used to produce the *Hopi Water System Strategic Plan An Element of the Hopi Arsenic Mitigation Project*

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Final Report (Brough et al. 2014a), which is an integral part of the HAMP PER.

Project PH 06-D33:
In October 2006, the IHS, the US EPA, and the Hopi Tribe (Hopi Tribal Council Resolution H-080-2006) entered into a MOA for Project PH 06-D33. The project was scoped to research arsenic mitigation strategies for Hopi PWSs and to publish a feasibility study for arsenic rule compliance for the following water systems: FMCV, Hopi Cultural Center, Second Mesa Day School, Lower Sipaulovi/Mishongnovi, Upper Sipaulovi/Mishongnovi, Shungopavi, and Hopi High School.

In November 2008, Amendment #1 to the project summary and MOA were signed, which increased the scope of work and project funding by $25,000. The scope was increased to provide for additional technical assistance by the IHS to the Second Mesa Day School, which was experiencing ongoing operational issues with its recently installed arsenic treatment facility. Additional funding was provided by the US EPA and the technical assistance was provided by the IHS. In May 2010, Amendment #2 to the project summary and MOA were signed, which amended the scope of work to allow for the purchase of GPS surveying equipment for surveying the HAMP alignment and for ongoing design activities associated with the HAMP.

IHS decided to perform the PH 06-D33 scope of work in-house and consequently hired an engineer to carry out the planning scope in 2007. A significant amount of water samples and existing data were collected from 2007 through 2008 to comprehensively evaluate the drinking water of the First and Second Mesa PWSs. There were also significant resources invested in community outreach meetings and evaluation of the BIA/BIE treatment systems. In fulfillment of the project scope of work and in conjunction with other similar funded arsenic mitigation projects, the IHS published the *Public Water System Feasibility Study for Sipaulovi/Mishongnovi* (Crownholm, 2007), which was delivered to The Hopi Tribe and the EPA. The Tribe subsequently applied for a SDWA Tribal Set-Aside grant in 2007 to perform the scope of work identified in the feasibility study, but was not funded due to being phased such that the scope did not provide direct service to homes.

Ultimately, the majority of PH 03-D33 funding was spent to provide inspection services during the drilling of the Turquoise Trail wells and to develop an Environmental Assessment for HAMP PER alternatives. Both scopes of work were issued to and completed by Bohannan Huston. Well inspection services were

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provided by Bohannan Huston via John Shomaker and Associates. Following inspection and testing, the *Well Report for Hopi Arsenic Mitigation Project Wells No. 2 and No. 3* (Fritz et al. 2014) was published. Environmental Assessment preparation was extensive and resulted in publication of the following reports: *Environmental Assessment for Hopi Arsenic Mitigation Project, Hopi Reservation, Navajo County, Arizona* (Indian Health Service, 2014), *Threatened and Endangered species Survey for the Hopi Arsenic Mitigation Project* (Sahmea, 2012), *Biological Evaluation Report #013-12: Department of Health and Human Services, Indian Health Services, Hopi Arsenic Mitigation Project* (Talayumptewa, 2012), *Biological Evaluation Report #004-14: Department of Health and Human Services, Indian Health Services, Hopi Arsenic Mitigation Project* (Talayumptewa, 2014), *A Cultural Resources Inventory of the Hopi Arsenic Mitigation Project, Hopi Indian Reservation, Navajo County, Arizona, HCPO 2011-024* (Yeatts and Kuwanwisiwma, 2013), *A Cultural Resources Inventory of Additional Storage Tank Locations for the Hopi Arsenic Mitigation Project, HCPO 2011-024B* (Yeatts and Kuwanwisiwma, 2014), *and HAMP Addendum C: Archaeological Inventory of an Alternate Supply Well Location. HCPO 2011-024C* (Yeatts, 2014).

Project PH 08-T38:

In October 2008, the IHS and The Hopi Tribe entered into a MOA for Project PH 08-T38. The project was scoped to assess the feasibility of creating a regionalized water system. In addition to the water needs of First and Second Mesa, the needs of Third Mesa (i.e. Bacavi, Hotevilla, Kykotsmovi, and Oraibi) were evaluated and determined to be overly complicated both technically and politically to address in the HAMP. Furthermore, the Third Mesa PWSs were assessed to be outside of the scope of the arsenic mitigation efforts due to the water provided by the PWSs being arsenic MCL compliant with no significant deficiencies. The focus of the stakeholders then completely shifted to correct the existing arsenic MCL issues with the PWSs still out of compliance with the MCL and to select a preferred alternative for the HAMP.

Ultimately, nearly all of the funding contributions to The Hopi Tribe were used to drill Turquoise Trail Wells #2 and #3 under EA 11-12 in an effort to prove the water source as a valid alternative.

Project PH 10-E37:

In July 2010, the IHS and The Hopi Tribe (Hopi Tribal Council Resolution H-035-2010) entered into a MOA for Project PH 10-E37. The project was funded to drill a community water well at Turquoise Trail, which would become the water source in the

proposed rural water system alternative. It was also proposed to rehabilitate Turquoise Trail Well #1 and to extend power from the Navajo Tribal Utility Authority (NTUA) to the two Turquoise Trail well sites. In addition to drilling, it was proposed that a hydrogeologic study be conducted to determine the aquifer characteristics of the Turquoise Trail. Finally, funds were allocated towards development of an asset and operations management plan for the future utility that would own and operate the proposed water system(s).

Project funds were used to produce Kennedy Jenks' *Turquoise Trail Hydrogeologic Study* (Young, 2011), which recommended the drilling of a new Turquoise Trail Well and to rehabilitate the existing Turquoise Trail Well #1. Kennedy Jenks provided a well drilling specification, locations, drawdowns, and capture zones for completion of three proposed wells at full build-out including rehabilitation of the existing Well #1. It was decided to not rehabilitate Well #1 due to: insufficient casing size to install a large enough production pump per HAMP needs, non-full aquifer penetration per *The Hopi Tribe Standard Specification for Well Construction and Pump Installation* (1996), need to cross the Oraibi Wash with a water main, and land control/ordinance issues associated with the Tawa'ovi Community. The study and specifications were used in the bid package to drill Turquoise Trail Wells #2 and #3.

Kennedy Jenks was also selected to conduct the asset management and operations plan for the proposed utility with funds from PH 10-E37. The asset management plan was finalized in September 2014 and is known as the *Hopi Water System Strategic Plan An Element of the Hopi Arsenic Mitigation Project Final Report*. Additionally, Kennedy Jenks published the *Life Cycle Cost Analysis and Comparison of Arsenic Mitigation Alternatives*, which analyzed and compared the net present value of the HAMP concept in comparison to implementing arsenic treatment systems in each individual village. Both reports were integral to the HAMP PER and necessary for The Hopi Tribe to complete the USDA RD application package.

Ultimately, the majority of PH 10-E37 fund contributions to The Hopi Tribe were used to drill Turquoise Trail Wells #2 and #3 under EA 11-12.

A chronological summary of project-specific events is summarized in Table 1.

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Table 1 - Chronology of Events

PH 04-S63	
Project Request	April 2004
Project Summary	September 29, 2004
Memorandum of Agreement	September 28, 2004
Environmental Review	September 30, 2004
Construction Started	June 10, 2013
Construction Completed	December 22, 2014
Planning Completed	September 4, 2014
Acknowledgement Of Project Completion	August 29, 2016
PH 06-D33	
Project Request	November 15, 2005
Project Summary	September 21, 2006
Memorandum of Agreement	September 25, 2006
Environmental Review	September 21, 2006
Amendment No. 1 to the Project Summary	October 16, 2008
Amendment No. 1 to the MOA	December 3, 2008
Amendment No. 2 to the Project Summary	May 3, 2010
Amendment No. 2 to the MOA	May 13, 2010
Planning Completed	September 4, 2014
Acknowledgement Of Project Completion	August 29, 2016
PH 08-T38	
Project Request	May 15, 2008
Project Summary	September 29, 2008
Memorandum of Agreement	October 1, 2008
Environmental Review	October 1, 2008
Construction Started	June 10, 2013
Construction Completed	December 22, 2014
Planning Completed	September 4, 2014
Acknowledgement Of Project Completion	August 29, 2016
PH 10-E37	
Project Request	October 1, 2009
Project Summary	June 29, 2010
Memorandum of Agreement	July 1, 2010
Environmental Review	July 12, 2010
Construction Started	June 10, 2013
Construction Completed	December 22, 2014
Planning Completed	September 4, 2014
Acknowledgement Of Project Completion	August 29, 2016

SUMMARY OF FACILITIES PROVIDED

Water: The facilities provided under PH 04-S63, PH 06-D33, PH 08-T38, and PH 10-E37 include Turquoise Trail Wells #2 and #3 and the reports produced per Table 2.

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Table 2 - Facilities Provided

Description

Turquoise Trail Well #2

- 2,180-feet deep in 2,195-foot, 18-inch reamed borehole
- 1,700-feet of 12-inch i.d. HSLA casing
- 480-feet of 12-inch i.d. 304 stainless steel screen

Turquoise Trail Well #3

- 2,241-feet deep in 2,270 foot, 22-inch reamed borehole
- 1,761-feet of 12-inch i.d. HSLA casing
- 480-feet of 12-inch i.d. 304 stainless steel screen

Beckman, B.L. (2012). *Draft Preliminary Engineering Report for Hopi Arsenic Mitigation Project, IHS Project #'s PH11-E55, PH10-E37, PH08-T38, PH06-D33, PH04-S63*, Indian Health Service. Lakeside, AZ.

Brough, K. (2014a). *Hopi Water System Strategic Plan An Element of the Hopi Arsenic Mitigation Project Final Report*, GHD and OEM Services for Kennedy Jenks Consultants, Phoenix, AZ.

Brough, K. (2014b). *Hopi Arsenic Mitigation Project Life Cycle Cost Analysis and Comparison of Arsenic Mitigation Alternatives: HAMP Groundwater System and Village Arsenic Treatment Systems Final Report*, GHD and OEM Services for Kennedy Jenks Consultants, Phoenix, AZ.

Crownholm, J. (2007). *Public Water System Feasibility Study Sipaulovi/Mishongnovi, Arizona*, Indian Health Service, Lakeside, AZ.

Fritz, S., Peery, R., and Shomaker, J.W. (2014). *Well Report for Hopi Arsenic Mitigation Project Wells No. 2 and No. 3, Hopi Tribe, Arizona*, John Shomaker and Associates Inc. for Bohannan Huston, Inc., Albuquerque, NM.

Hughes, A.E. (2014). *Preliminary Engineering Report for Hopi Arsenic Mitigation Alternatives, IHS Project PH12-E73, PH11-E55, PH10-E37, PH08-T38, PH06-D33, PH04-S63*, Indian Health Service, Lakeside, AZ.

Indian Health Service (2014). *Environmental Assessment for Hopi Arsenic Mitigation Project, Hopi Reservation, Navajo County, Arizona*, Phoenix Area Indian Health Service, Indian Health Service, Phoenix, AZ.

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Mitchell, P. (2013). *Preliminary Engineering Report for The Hopi Tribe Keams Canyon Proposed Project Connection to the HAMP Proposed SDS Project*, Indian Health Service, Polacca, AZ.

Sahmea, D. (2012). *Threatened and Endangered species Survey for the Hopi Arsenic Mitigation Project*, Hopi Tribe Office of Range Management/Land Operations, Kykotsmovi, AZ.

Talayumptewa, D. (2012). *Biological Evaluation Report #013-12: Department of Health and Human Services, Indian Health Services, Hopi Arsenic Mitigation Project (HAMP)*, Hopi Wildlife and Ecosystems Management Program, Kykotsmovi, AZ.

Talayumptewa, D. (2014). *Biological Evaluation Report #004-14: Department of Health and Human Services, Indian Health Services, Hopi Arsenic Mitigation Project (HAMP), IHS Project #PH 11-E55*, Hopi Wildlife and Ecosystems Management Program, Kykotsmovi, AZ.

Yeatts, M., and Kuwanwisiwma, L. (2013). *A Cultural Resources Inventory of the Hopi Arsenic Mitigation Project, Hopi Indian Reservation, Navajo County, Arizona, HCPO 2011-024*, Hopi Cultural Preservation Office, Kykotsmovi, AZ.

Yeatts, M., and Kuwanwisiwma, L. (2014). *A Cultural Resources Inventory of Additional Storage Tank Locations for the Hopi Arsenic Mitigation Project, HCPO 2011-024B*, Hopi Cultural Preservation Office, Kykotsmovi, AZ.

Yeatts, M. (2014). *HAMP Addendum C: Archaeological Inventory of an Alternate Supply Well Location. HCPO 2011-024C*, Hopi Cultural Preservation Office, Kykotsmovi, AZ.

Young, R.F. (2011). *Turquoise Trail Hydrogeologic Study*, Kennedy Jenks Consultants. Rancho Cordova, CA.

SIGNIFICANT PROJECT/CONSTRUCTION EVENTS

The well drilling contractor, Yellow Jacket Drilling Services, experienced several adverse issues during the well drilling. The most significant issue was the failure of the first attempt to drill Well #3 due to equipment failure that led to the loss of 1,600 ft of tremie pipe downhole, which was never recovered. Yellow Jacket Drilling Services proposed to and was authorized by The Hopi Tribe to move and re-drill approximately 50 feet from the original Well #3, which was abandoned per the contract specifications. The second attempt at drilling Well #3 resulted

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in a larger borehole (i.e. 22-inch versus the originally specified 18-inch) and was successfully completed. Excessive sanding was experienced in Well #2 (likely) due to insufficient development time, which was corrected as a deficiency identified in the Final Inspection. The completed wells were per the contract documents and met or exceeded the quality and design quantity of production water expected per the *Turquoise Trail Hydrogeologic Study*.

There were some relevant issues with respect to land access encountered during the drilling of the Turquoise Trail Wells that remain relevant for future HAMP and IHS project construction in general. First Mesa Villages/Clans took exception to the presence of Yellow Jacket Drilling Services operating at Turquoise Trail as they did not give explicit formal permission in addition to or in agreement with The Hopi Tribe pursuant to the *Constitution and By-laws of the Hopi Tribe* as follows: "Assignment of use of farming land within the traditional clan holdings of the Villages [which are enumerated] as in effect at the time of approval of [the] Constitution, shall be made by each village..." IHS contacted the Tribe in an effort to resolve First Mesa's claims to the land, which resulted in a seven page response instructing the IHS to stay out of Tribal affairs and continue the IHS's role in well drilling without hesitation. The issue is seemingly resolved, but is possible to recur in similar situations in the future. In any case, all relevant land in the HAMP PER is held in trust for The Hopi Tribe with the BIA as the trustee. Federal law does not require a Tribe to obtain its own consent for Tribal use of Tribal land. Therefore, the HAMP facilities will not require a Right of Way unless a third party is involved (e.g. electrical service, BIA, BIE, etc.) Similarly, there are and have been disputes with respect to Right of Way documentation of the BIA Keams Canyon facilities, which are also lands claimed by First Mesa Villages/Clans.

There has been little substantive progress with respect to garnering the $17.0M required to complete the project since publication of the HAMP PER other than a Tribal Contribution of $0.2M under PH 15-E89. One of the largest obstacles to garnering funds is that The Hopi Tribe is out of compliance with the Single Audit Act as the FY2012 (i.e. most recent) audit was submitted to the Federal Audit Clearinghouse in February 2016 per the Hopi Tutuveni. As long as the Tribe is out of compliance with the Single Audit Act it is unlikely that they will be eligible for Federal funds in the required amount(s). Meanwhile, the Tribe has not yet submitted an application to USDA RD for review to ensure that the technical portion is

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sufficient per the USDA requirements. Similarly, the Tribe has not yet made a 25 percent funding obligation to the HAMP to match the likely USDA RD requirements. There were some early discussions on attempting to garner a direct Congressional Appropriation, but no action was taken to lobby for such monies. Due to water rights litigation throughout the course of the HAMP, the BOR has not yet been included in the HAMP or as a potential funding source. However, the Tribal study *Polacca Day School Well Assessment by the Bureau of Relamation and The Hopi Tribe* was funded by the BOR to evaluate the Polacca Well #7 with respect to arsenic and determined the well to be more suitable for agriculture or construction than a potable source (Puhuyesva, 2012).

There has been a community development proposed adjacent to the Turquoise Trail wells (i.e. Tawa'ovi, formerly known as the Turquoise Community) for the past 30 years, but there has not been significant progress with respect to funding. IHS Project PH 93-370 was funded by the IHS in 1993 to develop water and sewer infrastructure for the Turquoise Community, but was cancelled due to lack of progress and funding of the homes. Since then, the IHS has been a participant in Tawa'ovi Community Development meetings in an effort to include the community in the HAMP should funding materialize. Tawa'ovi has been a subject of political debate that some have not considered mutually exclusive from the HAMP with respect to electrical negotiations and has escalated to significant tensions between some individuals, Villages, Tribal entities, and Federal Agencies' funding abilities (e.g. exclusion of the community in planning efforts due to lack of a pro rata funding contribution). The political contentiousness of the Tawa'ovi Community culminated in the rescindment of the Master Plan and Community Development Team in August 2016 (Hopi Tribal Council Resolution H-089-2016). Similarly, the Tribe disapproved an awarded $2.9M US Department of Transportation Transportation Investment Generating Economic Recovery (TIGER) grant in the proposed Tawa'ovi footprint.

The most significant remaining issue other than funding is provision of power to the Turquoise Trail wells. While the wells can be operated on generators scoped to be provided for emergency purposes, it is at prohibitively greater costs than grid power. Therefore, The Hopi Tribe has been in confidential electrical negotiations with Arizona Power Service (APS) and the NTUA for several years regarding the well sites. The most recent APS quote in February 2015 identified the cost to provide power to the wells (i.e. only the wells with no other demand included) at $4.7M, which translates to an increase of $2.9M to

the estimate of $1.8M identified in the HAMP PER. The cost increase is included in the IHS SDS entry "AZ09981-0601 - Hopi Arsenic Mitigation Project". The NTUA has not provided an estimate on the extension since the most recent request was made exclusively for the well sites (i.e. not including Tawa'ovi) in April 2016.

PROJECT COST SUMMARY

Planning and inspection efforts of PH 04-S63, PH 06-D33, PH 08-T38, and PH 10-E37 (i.e. the HAMP) were provided by the IHS under Direct Service and Government Procurement. Construction of Turquoise Trail Wells #2 and #4 was provided by The Hopi Tribe's Office of Financial Management under Tribal Procurement. Funding for PH 04-S63 and PH 08-T38 was provided by the IHS through "Regular" funds with funding for PH 06-D33 and PH 10-E37 provided by the EPA through SDWA Tribal Set-Aside funds. Additionally, the Tribe and EPA have funded subsequent ongoing projects that are considered wholly or partially components of the HAMP under PH 11-E55, PH 12-E73, PH 14-U62, PH 15-U76, and PH 15-E89.

The Tribe, IHS, and EPA have provided funding to-date with contributions of $0.20M, $1.15M, and $5.33M, respectively. Approximately $3.36M has been spent (i.e. more than the sum of the projects in this Final Report) on planning efforts including proving the quality and production of the Turquoise Trail Wells. There is currently $3.09M cumulatively remaining in IHS Projects PH 12-E73, PH 14-U62, PH 15-U76, and PH 15-E89 that has been identified to construct scopes of the HAMP that have functional value if the HAMP does not proceed as scoped. The remainder of the HAMP is listed in the IHS SDS entry "AZ09981-0601 - Hopi Arsenic Mitigation Project" serving 1,281 homes at a total remaining cost of $16,970,942.28 (i.e. total cost of $23,501,800.28 includes PER sunken costs, funds garnered to-date, and the additional power line extension cost).

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Table 3 - Cost Summary

Obligating Document	Description	Cost
PH 04-S63	Risk Pool	$ 16,650.00
	Credit card purchases	$ 11,613.21
	Project Technical Support per PS	$ 69,930.00
	Project Technical Support	$ 7,390.49
EA 11-12	Turquoise Trail Wells 2&3	$ 670,718.59
Kennedy/Jenks Consultants Delivery Order		
	Strategic Plan	$ 23,697.71
	Total	**$ 800,000.00**
PH 06-D33	Credit card purchases	$ 33,941.17
	Engineering Program Support	$ 5,920.00
	Project Technical Support per PS	$ 14,800.00
	Project Technical Support	$ 972.94
EA 05-12	Cultural Resources Survey	$ 26,230.56
Bohannan Huston Inc. Delivery Orders		
	Environmental Assessment	$ 21,967.53
	Well Drilling Inspection	$ 76,167.80
	Total	**$ 180,000.00**
PH 08-T38	Project Technical Support per PS	$ 15,600.00
	Project Technical Support	$ 1,000.00
EA 11-12	Turquoise Trail Wells 2&3	$ 133,400.00
	Total	**$ 150,000.00**
PH 10-E37	Credit card purchases	$ 180.83
	Engineering Program Support per PS	$ 62,887.00
	Engineering Program Support	$ 0.65
	Project Technical Support	$ 188,660.00
EA 11-12	Turquoise Trail Wells 2&3	$ 1,436,235.67
Kennedy/Jenks Consultants Delivery Orders		
	Hydrogeological Study	$ 86,877.00
	Strategic Plan	$ 82,558.85
	Total	**$ 1,857,400.00**

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TOTAL	EA 05-12 Cultural Resources Survey	$ 26,230.56
	EA 11-12 Turquoise Trail Wells 2&3	$ 2,240,354.26
	Kennedy Jenks Consultants	
	Hydrogeologic Study	$ 86,877.00
	Strategic Plan	$ 106,256.56
	Bohannan Huston Inc.	
	Environmental Assessment	$ 21,967.53
	Well Drilling Inspection	$ 76,167.80
	Risk Pool	$ 16,650.00
	Credit card purchases	$ 45,735.21
	Engineering Program Support (EPS)	$ 93,807.65
	Project Technical Support (PTS)	$ 298,353.43
	Total	**$ 3,012,400.00**

Funding Summary

EPA SDWA Tribal Set-Aside	$ 2,062,400.00
IHS "Regular"	$ 950,000.00
Total	**$ 3,012,400.00**

OPERATION AND MAINTENANCE

All of the existing utilities scoped to be included in the HAMP PER agreed to Arsenic Compliance Plans with the EPA to provide water in compliance with MCLs by January 2015, of which no system has accomplished as of December 2016. Therefore, EPA enforcement action is pending against every utility involved. The BIA Keams Canyon PWS was subject to a September 2013 EPA enforcement action for arsenic (and other violations) in the amount of $136,000. Similarly, an Administrative Order on Consent was issued by the EPA to the Hopi Cultural Center in August 2016.

A utility organization called the Hopi Public Utility Authority (HPUA) subsidiary to and initially funded by The Hopi Tribe has been created to operate and maintain the majority of the HAMP facilities. The HPUA was established under the Hopi Public Utility Authority and Hopi Public Utility Commission Establishment Act, Ordinance No. 60 in May 2013 (Hopi Tribal Council Resolution H-039-2013). The HPUA currently exists primarily administratively with the Director position having been funded by the Tribe for $250,000.00. A Director was hired and began work in December 2016 to build the utility such that the utility will be capable of receiving HAMP facilities, scope remaining O&M line items per the PER and *Hopi Water System Strategic Plan An Element of the Hopi Arsenic Mitigation Project Final Report*, and promote funding. The Hopi Public Utility Commission (HPUC) currently exists only in writing, but is proposed to ultimately oversee the HPUA.

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The HAMP PER has identified $355,000 in O&M materials and equipment, $12,000 in startup assistance, and $40,000 in O&M manual development to be requested as part of the HAMP capital cost. The structure and operation of the HPUA is more comprehensively outlined in the *Hopi Water System Strategic Plan An Element of the Hopi Arsenic Mitigation Project Final Report* with costs also delved into in the *Hopi Arsenic Mitigation Project Life Cycle Cost Analysis and Comparison of Arsenic Mitigation Alternatives: HAMP Groundwater System and Village Arsenic Treatment Systems Final Report*, and HAMP PER.

TRAINING

The *Hopi Water System Strategic Plan An Element of the Hopi Arsenic Mitigation Project Final Report* has outlined recommended training subjects per the following:

Operator Training

- Before startup
  - HAMP system overview and operating procedures
  - Equipment operation and maintenance
  - Regulatory requirements, sampling, and reporting
  - Recordkeeping
  - Safety
  - Emergency response procedures
- After startup and ongoing
  - Water system fundamentals (e.g. math, chemistry, hydraulics)
  - Laboratory and sampling procedures and operator testing
  - Asset management practices
  - Maintenance management
  - Certification exam preparation
  - Safety
  - Emergency response review and exercises
  - Computer and control systems

Management and Administrative Staff Training

- Before startup
  - System overview and service performance measures
  - Financial practices and accounting
  - Regulatory requirements
  - Emergency response
  - Computer systems
- After startup
  - Personnel management
  - Communication skills and procedures
  - Contract preparation and management

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    - Project management
- HPUC Training
    - System overview and service performance measures
    - Policymaking and board roles and responsibilities
    - Financial requirements and systems
    - Regulatory requirements

TRANSFER OF FACILITIES

A letter of acknowledgement of completion of the projects was approved by the IHS Phoenix Area Director in August 2016. The letter also transferred all IHS vested interests in the sanitation facilities constructed under Projects PH 04-S63, PH 06-D33, PH 08-T38, and PH 10-E37 to the Tribe.

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Project Proposal

IHS-62
Rev.8/90

DEPARTMENT OF
HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
INDIAN HEALTH SERVICE

FORM APPROVED
O.M.B. NO. 0917-0001
EXPIRES: JUNE 30, 1993

(See reverse for instruction and information)

PROJECT PROPOSAL FOR PROVISION OF SANITATIO N FACILITIES/TECHNICAL ASSISTANCE
(P.L. 86-121)

1. NAME AND ADDRESS OF INDIAN TRIBE OR GROUP
The Hopi Tribe
P.O. Box 123
Kykotsmovi, AZ 86039

2. DESCRIPTION OF TYPE OF FACILITIES NEEDED INCLUDING A DESCRIPTION OF EXIST I NG FACILITIES
Project proposes to construct a new drinking water well in the vicinity of the existing Turquoise Trail Well which will be rehabilitated under this Project.

2a. INDICATE THE NUMBER OF HOMES/PERSONS TO BE SERVED BY THE PROJECT. DISTINGUISH BETWEEN FACILITIES TO SERVE NEW OR RENOVATED HOUSING
The proposed project is anticipated to serve the Second Mesa and First Mesa Villages.

3. IS THERE A COMPREHENSIVE PLAN FOR IMPROVING SANITATION FOR YOUR RESERVATION OR COMMUNITY?
X YES NO

4. IF ITEM 3 IS YES, DOES THE PROPOSED P ROJECT FIT INTO THE PLAN?
X YES NO

5. IF ITEM 3 IS NO, DOES YOUR TRIBE OR GROUP INTEND TO ADOPT A PLAN?
YES NO

6. COULD YOUR TRIBE OR GROUP MAKE A CONTRIBUTION TOWARD THE PROJECT FUNDS?
YES X NO, LABOR: YES X NO

7. PLEASE IDENTIFY THE PROPOSED SOURCE OF FUNDS FOR THE PROJECT
FEDERAL: - IHS BIA HUD X - EPA FHA FMHA
NON-FEDERAL: STATE PRIVATE OTHER (Specify)

8. DOES YOUR TRIBE OR GROUP HAVE AN OPERATION AND MAINTENANCE ORGANIZATION THAT WILL ASSUME RESPONSIBILITY FOR OPERATION AND MAINTENANCE OF THE SANITARY FACILITIES WHEN COMPLETED? IF ANSWER IS "YES" GO TO ITEM #10
X YES NO

9. IF ITEM 8 IS NO, WILL YOUR TRIBE OR GROUP BE WILLING TO ASSUME RESPONSIBILITY FOR OPERATION AND MAINTENANCE OF FACILITIES WHEN COMPLETED?
YES NO

10. DOES YOUR TRIBE OR GROUP HAVE LAWS OR REGULATIONS WHICH WILL HELP IN THE MAINTENANCE OF SANITARY FACILITIES THAT WOULD BE ACQUIRED?
X YES NO

11. IF ITEM 10 IS NO, WOULD YOUR TRIBE OR GROUP BE WILLING TO ADOPT SUCH REGULATIONS?
YES NO

12. NAME, ADDRESS AND TELEPHONE NUMBER OF ORGANIZATION AND OFFICIAL THAT WILL BE DESIGNATED TO REPRESENT YOUR TRIBE OR GROUP IN DEALING WITH THE PU BLIC HEALTH SERVICE
Brandon Beckman, PE, Project Engineer
Environmental Health & Engineering
Eastern Arizona District Office
5448 S. White Mtn. Rd., Suite 220
Lakeside, AZ 85929 (928) 537-0578

13. REMARKS (Include pertinent comments not covered above)

14. DATE

15. SIGNATURE AND TITLE OF PERSON COMPLETING THE PROJECT/TECHNICAL ASSISTANCE PROPOSAL
Vice Chairman

16. TO BE COMPLETED BY PUBLIC HEALTH SERVICE REPRESENTATIVE

FORWARD 3 COPIES OF THIS PROPOSAL TO:

Director in Charge: _____ _____
(Name and Address of Indian Health Facility)

DWTSA 06-06
PH 06-033

THE HOPI TRIBE

November 07, 2005

Wayne Taylor, Jr.
CHAIRMAN

VICE-CHAIRMAN

Sara Jacobs
U. S Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA. 9 4105

FAX TRANSMITTAL	# of pages ▸ 1
To Erika Schoen	From Sara Jacobs
Dept./Agency IHS	Phone # 415-972-3564
Fax # 928-737-6040	Fax # 415-947-3549

Dear Ms. Jacobs,

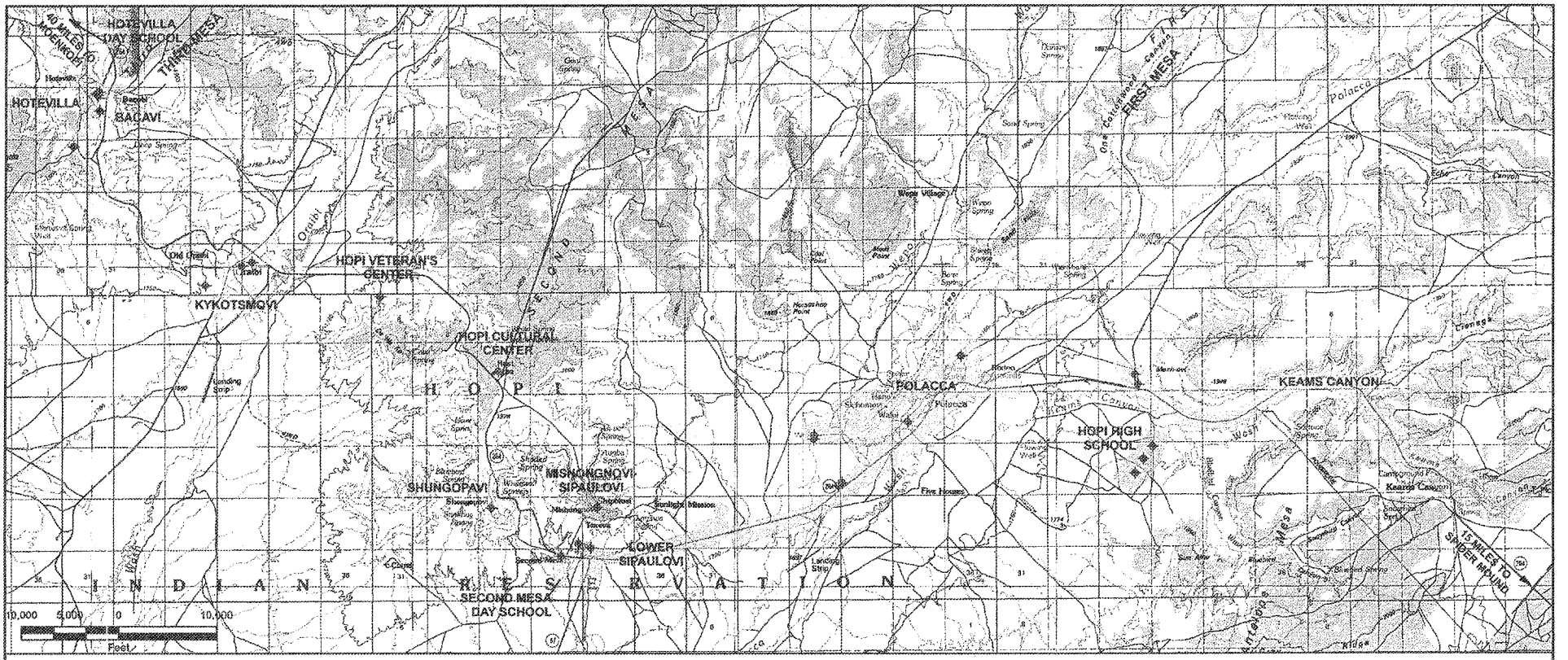
The Hopi Tribe's Water Resources Program (WRP) oh behalf of the Hopi Tribe will conduct an arsenic feasibility study by submitting the first part of the proposal for the ranking program.

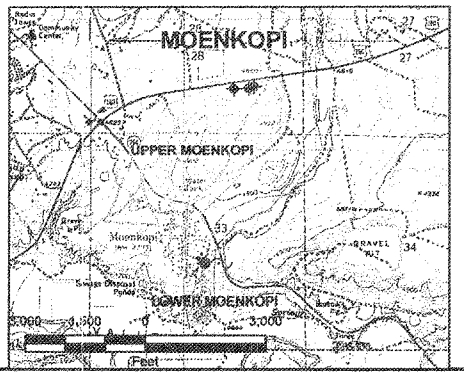
The Hopi Tribe is well aware, the Safe Drinking Water Act (SDWA) will take into effect the new arsenic standard set at 10 ppb; therefore the Hopi Tribe must comply through various treatment options. The Hopi Tribe has an estimated seven public water systems that must comply with the new arsenic rule. The Hopi Tribe Water Resources Program would like to acknowledge the new arsenic rule as precedent due to compliance for various systems. The Water Resources Program will submit an application for the arsenic feasibility study, which will lay out all possible options for the various public water systems.

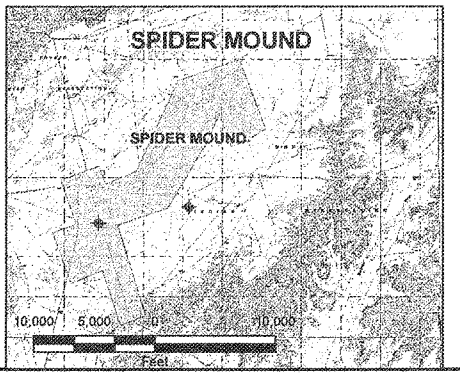
Please contact Water Resources Program Joelynn Roberson at 928/527-4242 ext. 113. Thank you for your consideration

Wayne Taylor Jr., Chairman
The Hopi Tribe

Xc: Arnold Taylor Jr., DNR Manager
Nat A. Nutongla, Water Resources Program
Joelynn Roberson, Water Resources Program
Erika Schoen, Indian Health Services







LEGEND:

PUBLIC WATER SYSTEMS:

- BACAVI
- HOPI HIGH SCHOOL
- HOTEVILLA
- HOTEVILLA DAY SCHOOL
- KEAMS
- KYKOTSMOVI
- LOWER MOENKOPI
- LOWER SIPAULOVI
- MISHONGOVI-SIPAULOVI
- POLACCA
- SECOND MESA DAY SCHOOL
- SHUNGOPAVI
- SPIDER MOUND
- UPPER MOENKOPI

WATER SUPPLY WELL

N

SOURCE: USGS 1991 Polacca 100K Quadrangle, 24K Moenkopi and TSIN NAAN TEE Quadrangles

HOPI TRIBE
EPA SOURCE WATER ASSESSMENT

FIGURE 3-1
HOPI PUBLIC WATER SYSTEMS

TETRA TECH EM INC.

S:\Dekasher\Hopi Tribe\PWS Source Water Assessments\PWS Data\MXD\RAFT_13_15_083-1.mxd WMH 12/20/2005

Project Summary

PROJECT SUMMARY
ARSENIC MITIGATION PROJECT FOR FIRST MESA
HOPI INDIAN RESERVATION
NAVAJO AND COCONINO COUNTIES, ARIZONA

PROJECT NO. PH 04-S63
PUBLIC LAW 86-121

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
INDIAN HEALTH SERVICE
PHOENIX AREA OFFICE

JULY 2004

PROJECT SUMMARY
ARSENIC TREATMENT FACILITIES FOR FIRST MESA
HOPI INDIAN RESERVATION
NAVAJO AND COCONINO COUNTIES, ARIZONA

PROJECT NO. PH 04-S63
PUBLIC LAW 86-121

INTRODUCTION

The Hopi Tribe requested Indian Health Service (IHS) assistance in constructing a new water supply source in First Mesa. The First Mesa water system exceeds the Environmental Protection Agency (EPA) current arsenic regulatory standard of 0.01 mg/l. This Project Summary initiates planning to provide for the design and construction of the facilities described in this Project Summary.

It is proposed in this project that a new water supply well be constructed in First Mesa to bring the community water sources within EPA current arsenic regulatory standards. This project will serve 318 existing homes. Total estimated cost is $800,000 and the IHS, through *Regular* funds, is contributing all project funding.

EXISTING SANITATION FACILITIES

A. Water: The water system has three pressure zones. These zones contain four functioning wells, which are identified as Well #5, 6, 7, 8. These wells have capacities of 35, 20, 30, and 150 GPM respectively. Wells #1, 2, 3 and 4 have been abandoned. Four water storage tanks serve the area's three pressure zones. Zone 1 has a 500,000-gallon tank; zone 2 has two 30,000-gallon tanks; and zone 3 has an 8,000-gallon gravity tank and a 1,000-gallon hydropneumatic tank. Approximately 318 homes are served by this system.

All the wells currently in operation exceed the EPA regulatory standards for arsenic.

B. Sewer: The FMCV's wastewater disposal system includes a six cell lagoon treatment system totaling 9.9 acres, with 14.8 acres of wastewater disposal area, making the total area of the wastewater treatment facility 24.7 acres. The facilities

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serve approximately 339 homes and 10 businesses.

C. Solid Waste: The Hopi Tribe, in conjunction with the IHS and a HUD Community Development Block Grant (CDBG), has developed a solid waste disposal program for the entire Reservation. A RCRA designed landfill has been constructed and is now in operation on the Reservation.

RECOMMENDED FACILITIES

A. Water: Facilities will be constructed that will reduce the level of Arsenic in the First Mesa community drinking water to a level that is in compliance with the EPA MCL for Arsenic.

Research will be conducted to find literature on existing groundwater documentation.

A review of the literature will be performed to determine if location can be identified to construct a new well in the First Mesa vicinity which will likely have arsenic concentrations less than the EPA Maximum Concentration Level (MCL).

A new well will be constructed and the water quality results will be evaluated.

If the well is in compliance with the EPA MCL for arsenic it will be developed and connected to the community water system. Facilities will include a new well constructed per the Hopi Water Code, a well pumphouse with system controls, 3-phase power extension and a water main connection.

B. Sewer: No sewer facilities are proposed under this project. Existing facilities are adequate.

C. Solid Waste: No solid waste facilities are recommended under this project. Existing facilities are adequate.

ENVIRONMENTAL CONSIDERATIONS

IHS conducted an environmental review of the proposed facilities to be constructed under this project in accordance with IHS policies and related NEPA and other environmental statutes. The

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review indicated that an environmental assessment is not required as the project qualifies, because of its limited scope, for an IHS categorical exclusion.

OPERATION AND MAINTENANCE (O&M)

The First Mesa Consolidated Villages (FMCV) Utility is responsible for all operation and maintenance of the First Mesa community water supply, treatment, storage and distribution system. Two full time water and wastewater operators are employed by the Utility operate and maintain the sanitation facilities. The Utility collects monthly fees from First Mesa residents connected to the community water system. The addition of Arsenic treatment systems, as a consequence of this project, may impact user rates because of additional electrical, chemical, materials, maintenance, labor and repair costs associated with an Arsenic treatment system.

COST ESTIMATE

Water System	Quantity	Cost	Cost
1. Treatment Building	1 LS	$150,000	$150,000
2. Well Construction	1 LS	400,000	400,000
3. Water Main Extension	1 LS	50,000	50,000
4. Electrical and Controls	1 LS	76,860	76,860
		Subtotal	$676,860

+10%	Project Technical Support	$67,686
+5%	Contingencies	33,843
+3%	Administration Fee	20,306
Total		$798,695
Total, Rounded		800,000
Total Cost per Unit = $800,000 ÷ 318 =		$2,516

SUMMARY

Maximum Contribution to Tribe	$714,087.00
Project Technical Support	$67,913.00
Risk Pool	$17,000.00
Total	$800,000.00
IHS Funds	$800,000.00

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PROJECT SUMMARY
ARSENIC MITIGATION PROJECT FOR FIRST MESA
HOPI INDIAN RESERVATION
NAVAJO AND COCONINO COUNTIES, ARIZONA

PROJECT NO. PH 04-S63
PUBLIC LAW 86-121

PREPARED BY:

9/23/04
Date

Erika Schroen
for J. David Mazorra, P.E.
Project Engineer

REVIEWED BY:

9/27/04
Date

Robert A Lorenz
Robert Lorenz, P.E.
District Engineer

APPROVED BY:

Sept 29, 2004
Date

Kevin S Chadwick
Kevin Chadwick, P.E.
Director
Division of Sanitation Facilities
Construction

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EXHIBIT 5 NEW PROJECT OR MODIFIED PROJECT APPROVAL FORM
PHOENIX AREA INDIAN HEALTH SERVICE SANITATION FACILITIES PROJECT

ASSIGNED PROJECT NUMBER	PROJECT TITLE AND DATE	TOTAL PROJECT ESTIMATED COST	
PH 04-S63	ARSENIC MITIGATION PROJECT FOR FIRST MESA HOPI INDIAN RESERVATION SEPTEMBER 2004	IHS	$800,000
		TRIBAL	$
		L. H. A.	$
		OTHER	$
		TOTAL	$800,000

'ROJECT DESCRIPTION: CONSTRUCT ARSENIC TREATMENT FACILITIES FOR THE FIRST MESA VILLAGES.

UNDER AND PURSUANT TO PUBLIC LAW 86-121 AND THE AUTHORITY DELEGATED TO ME, I HEREBY APPROVE THE ANITATION FACILITIES PROJECT OR MODIFIED PROJECT OUTLINED IN THE ATTACHED PROJECT SUMMARY OR AMENDED 'ROJECT SUMMARY DESCRIBED ABOVE.

'HIS ACTION: X APPROVES A NEW SANITATION FACILITIES CONSTRUCTION PROJECT

_____ APPROVES AN AMENDMENT TO A PREVIOUSLY APPROVED PROJECT

_____ INCREASES THE COST ESTIMATED OF A PREVIOUSLY APPROVED PROJECT

NEGOTIATION OF NECESSARY AGREEMENTS OR AGREEMENT AMENDMENTS RELATED TO PROJECT EXECUTION, CONTRIBUTIONS, ND RESPONSIBILITIES FOR OPERATION AND MAINTENANCE OF THE PLANNED FACILITIES MAY NOW BE INITIATED. IEGOTIATIONS SHALL BE BASED UPON THE PROJECT SUMMARY OR AMENDED PROJECT SUMMARY AS APPROVED. INDIAN IEALTH SERVICE COMMITMENTS SHALL NOT EXCEED THE ESTIMATED SET FORTH ABOVE.

THE ASSIGNED PROJECT NUMBER SHALL BE UTILIZED ON ALL CORRESPONDENCE AND DOCUMENTS RELATED TO THIS ROJECT.

ERIKA SHOEN IS HEREBY DESIGNATED AS PROJECT OFFICER AND SHALL BE RESPONSIBLE FOR THE OORDINATION OF ALL ACTIVITIES RELATED TO THE EXECUTION OF THE PROJECT.

UPON RECEIPT OF A "REQUEST FOR TRANSFER OF FUNDS BETWEEN PUBLIC LAW 86-121 PROJECT ACCOUNTS" FROM HE AREA OFFICE OF ENVIRONMENTAL HEALTH AND ENGINEERING, THE AREA FINANCIAL MANAGEMENT OFFICER IS HEREBY NSTRUCTED TO ESTABLISH A NEW PROJECT ACCOUNT IF NECESSARY AND TO TRANSFER INTO SUCH ACCOUNT OR PREVIOUSLY STABLISHED ACCOUNT AN AMOUNT EQUAL TO THE ESTIMATED COST SET FORTH ABOVE LESS AMOUNTS PREVIOUSLY RANSFERRED. OBLIGATIONS AND EXPENDITURES RELATED TO THE PROJECT ARE TO BE CHARGED TO THIS ACCOUNT.

'UND CERTIFICATIONS:

ATE: 9/20/04
UNDS IN THE AMOUNT OF THE IHS STIMATED COST LESS AMOUNTS REVIOUSLY TRANSFERRED TO THIS ROJECT ARE AVAILABLE IN THE REA AND RESERVED FOR THIS ROJECT.

REA FINANCIAL MANAGEMENT FFICER

APPROVAL RECOMMENDED:

DIRECTOR, DIVISION OF SANITATION FACILITIES CONSTRUCTION — DATE 9-16-04

CONCURRENCE:

ASSOCIATE DIRECTOR, OFFICE OF ENVIRONMENTAL HEALTH AND ENGINEERING — DATE 9/16/04

DIRECTOR, PHOENIX AREA INDIAN HEALTH SERVICE — DATE 9-21-04

:: SERVICE UNIT DIRECTOR
DIR., IHS, ATTN: DIR., OEH
AREA FINANCIAL MGM'T OFFICER

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PROJECT SUMMARY
FEASIBILITY STUDY FOR ARSENIC RULE COMPLIANCE
HOPI INDIAN RESERVATION
NAVAJO AND COCONINO COUNTIES, ARIZONA

PROJECT NO. PH 06-D33
PUBLIC LAW 86-121

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
INDIAN HEALTH SERVICE
PHOENIX AREA OFFICE

JUNE 2006

PROJECT SUMMARY
FEASIBILITY STUDY FOR ARSENIC RULE COMPLIANCE
HOPI INDIAN RESERVATION
NAVAJO AND COCONINO COUNTIES, ARIZONA

PROJECT NO. PH 06-D33
PUBLIC LAW 86-121

INTRODUCTION

The Hopi Tribe submitted a Project Proposal to the U.S. Environmental Protection Agency in coordination with the Indian Health Service (IHS) in November 2005 requesting assistance in bringing several small public drinking water systems on the Hopi Indian Reservation in compliance with the revised federal Safe Drinking Water Act (SDWA) arsenic MCL of 10 ppb. In a letter dated May 4, 2006, the Hopi Tribe was informed that the project ranked high enough to receive funding. The Tribe informed EPA that that they had selected the IHS to be the lead Agency on the project. This Project Summary will serve as the project workplan for the EPA interagency agreement between IHS and the EPA. The Phoenix Area IHS initiated this project to aid the Tribe in conducting a feasibility study for arsenic rule compliance on multiple Tribal water systems.

It is proposed that a feasibility study for arsenic rule compliance be conducted on water systems serving the Hopi Cultural Center, Shungopavi Village, Sipaulovi Village, Mishongnovi Village, Second Mesa Day School, First Mesa Consolidated Villages, and the Hopi High School. The total estimated cost of $180,000 is being contributed by the U.S. Environmental Protection Agency (EPA), Drinking Water Tribal Set Aside (DWTSA) Grant number 06-06 through an Interagency Agreement (IAG) with IHS.

EXISTING SANITATION FACILITIES

The revised EPA arsenic rule will affect Public Water Systems (PWS) that serve eight communities located within the First and Second Mesa areas. See Table 1: PWS in the First and Second Mesa Area Affected by the Revised Arsenic Rule and Figure 1: Map of Project Location). A feasibility study is needed to inventory water quality information specific to arsenic treatment, evaluate treatment options for each individual public water system described herein, and evaluate opportunities for regional system improvements to reduce overall cost. Current treatment technologies for arsenic removal will be evaluated to determine whether they can be implemented and operated within the current technical, managerial and financial (TMF) capacity constraints of each community.

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Table 1: PWSs in the First and Second Mesa Area Affected by the Revised Arsenic Rule

System Name	PWSID#09-	Arsenic Concentration Range (ppb)
Hopi Cultural Center	0400260	13-17
BIA Keams Canyon	0400054	data n/a
Second Mesa Day School (Toreva)	0400055 & 0400061	0-18
Polacca	0400106	18-22
Lower Sipaulovi/Mishongovi Villages	0400107	15-21
Shungopavi Village	0400259	17
Upper Sipaulovi/Mishongovi Villages	0400394	13-17
Hopi High School	0400395	4.3 (treated)-22

A. Water Supply: Potable water supply and distribution in the project area is typically accomplished by community systems consisting of one to three active deep groundwater wells drilled into the D- and/or N-aquifers, ground level and elevated water storage tanks, booster stations, and water mains and service lines. Well construction details and general water distribution system layouts are summarized in the Draft Final Source Water Assessment for Communities and Villages of the Hopi Reservation by Tetra Tech EM Inc. dated January 30, 2006.

Hopi Cultural Center - The system has one well and a hydropneumatic pressure system that serves the tribal cultural center, motel and restaurant

Shungopavi - The water system has one well producing 56 GPM and one 50,000-gallon water storage tank. The water system serves 58 homes with indoor water. Another 106 homes receive water from watering points or outside yard hydrants. Project PH 05-C85 provides for IHS technical assistance during construction of a new well, pumphouse, storage tank, and water distribution system funded by EPA and managed by the Hopi Tribe Water Resources program.

Mishongnovi/Sipaulovi - The water system consists of two pressure zones, one well which produces 16 GPM, one 16,000-gallon water storage tank and one hydropneumatic tank. The water system serves approximately 100 homes. Eight watering points are spread throughout the two communities.

Second Mesa Day School - The water system consists of well #1 at the school and well #2 at the tank site. The wells produce 55 and 40 GPM, respectively. Water storage includes a 75,000-gallon tank located near well #2 and a 10,000-gallon concrete tank located at Toreva. The water system serves the elementary school (currently under construction), 15 BIA compound homes, a Headstart complex, a Tribal building and a local home at Toreva. (The Toreva water tank is filled via a water haul truck that transfers water from the Veterans Center. This project will consider consolidation of the Toreva system to the Lower Sipaulovi water system).

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Ownership of Second Mesa Day School water system was recently transferred from the BIA to the Second Mesa Day School Board. Subsequently, the water system was placed into inactive status while the new school and housing is being constructed. Upon completion of the school it is assumed that school will re-activate the public water system. Alternatives for compliance with the arsenic maximum contaminant level (MCL) limit are anticipated once the school reactivates their water system and include treatment and consolidation alternatives.

Polacca (First Mesa Consolidated Villages, FMCV) - The water system has three pressure zones. These zones contain two functioning wells, which are identified as Wells #5, and #8. These wells each have capacities of 100 GPM respectively. Wells #1, 2, 3 and 4 have been abandoned. Wells # 6 and 7 are currently not in use. Zone 1 has a 500,000-gallon tank; zone 2 has one 200,000-gallon tank; and zone 3 has an 8,000-gallon gravity tank and a 1,000-gallon hydropneumatic tank. Approximately 450 homes are served by this system. Project PH 04-S63 was funded to address arsenic mitigation for the Polacca Public Water System. The Indian Health Service will proceed with soliciting a Request for Proposals for arsenic treatment at Well #8 concomitantly with the implementation of the feasibility study.

Keams Canyon System - Operated by the BIA, the system consists of two wells with in-line booster pumps, several springs, chlorination equipment and two water storage tanks. The system serves approximately 35 local homes, 12 businesses, 50 IHS compound homes, 50 BIA compound homes, a police station, and five BIA buildings. *The Keams Canyon System did not request to be included in the Feasibility study, however the Tribe desires to include them.*

Hopi Jr./Sr. High School Complex - The water system consists of three wells and one elevated water storage tank. In addition to the school, there are 36 compound homes on the system. A reverse-osmosis (RO) water treatment plant is currently operated on this system, which removes TDS and arsenic. Operational details on this existing treatment are not currently available but should be evaluated in the feasibility study.

B. Wastewater Disposal: Wastewater collection and disposal on the reservation is accomplished through a number of different methods. Seven of the villages have collection systems while only six operate disposal facilities. At Keams Canyon, the BIA operates both a collection system and disposal facility. Two of the schools have both a collection system and disposal facility and one school has only a collection system. Two Tribal facilities exist for collection and disposal. Most scattered homes are served by septic tank and drainfield

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systems. Outhouses are used extensively in older village areas.

Hopi Cultural Center - The system consists of an extended aeration activated sludge treatment plant. The effluent is discharged to subsurface irrigation areas.

Shungopavi - Wastewater disposal is provided through a three cell stabilization pond system. The primary cell is 1.3 acres and the two secondary cells are 0.54 and 0.60 acres, respectively.

Mishongnovi/Sipaulovi - Wastewater is disposed of in a 0.52 acre, two cell stabilization pond. In addition to serving the two villages, the pond also serves part of the Toreva area.

Second Mesa School - Wastewater disposal for the school compound and surrounding houses consists of a 1.0 acre stabilization pond. The Mishongnovi-Sipaulovi pond also provides wastewater disposal for part of Toreva.

Polacca (First Mesa Consolidated Villages, FMCV) - The FMCV's wastewater disposal system includes a six cell lagoon treatment system totaling 9.9 acres, with 14.8 acres of wastewater disposal area, making the total area of the wastewater treatment facility 24.7 acres. The facilities serve approximately 450 homes and 10 businesses.

Keams Canyon System - The wastewater disposal system consists of a two cell stabilization pond. One cell is aerated; the other cell discharges under the terms of an NPDES permit.

Hopi Jr./Sr. High School Complex - A multi-cell lagoon system serves the school complex and compound homes.

C. Solid Waste Disposal: The Hopi Tribe, in conjunction with the IHS and a HUD Community Development Block Grant (CDBG), has developed a solid waste disposal program for the entire Reservation. A RCRA designed landfill has been constructed and is now in operation on the Reservation.

RECOMMENDED FACILITIES

A. Water: The Hopi Tribe Water Resources Program intends to complete a comprehensive feasibility study that will provide the Tribe with direction for arsenic rule compliance for each affected PWS. The study will document current system deficiencies, assess solutions to alleviate the potential public health problems, and recommend cost-effective solutions that meet the objective of providing a safe water supply for the communities currently served by water systems that exceed the revised arsenic standard.

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The goal of the feasibility study is to provide the information required in the most recent version of the U.S. Environmental Protection Agency, Region 9, 2005 Drinking Water Tribal Set-Aside Guidance and Procedures for Applying for Assistance, Appendix A, Feasibility Study Requirements.

In general, the affected water systems have two options to comply with the new arsenic standard:

1. Non-treatment option: Consists of blending water, modifying water sources (e.g. changing the well's screen interval), consolidating water sources, or replacing water sources with new sources or consolidating with another water system.

2. Treatment option: Consists of technologies that can be implemented at a source, point of entry, or point of use to reduce existing arsenic levels. The primary treatment options include reverse osmosis, activated alumina, ion exchange, lime softening, and adsorption media methods. Existing treatment at most systems consists of liquid chlorination at the source. Chlorination is effective in oxidizing arsenic (which likely occurs in the reduced arsenite form across the aquifer) to arsenate which is removable by the various treatment options. Therefore the existing chlorination systems will be evaluated in the feasibility study under the option of arsenic treatment at each affected Public Water Supply.

Information from the Draft Final Source Water Assessment for Communities and Villages of the Hopi Reservation dated January 30, 2006, will be incorporated as appropriate, such as well and distribution system information, projected aquifer production, scaled maps that can be used to evaluate costs and feasibility of systems consolidation, and historical water quality data.

B. Sewer: No sewer facilities are recommended under this Project. Several Projects are underway to correct sewer deficiencies on the Reservation. The feasibility study will address the suitability of the existing sewer facilities for disposal of arsenic treatment waste streams, as applicable.

C. Solid Waste: No solid waste facilities are recommended under this Project. Existing facilities are adequate. The feasibility study will address the suitability of the existing solid waste facilities for disposal of arsenic treatment waste products, as applicable.

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ENVIRONMENTAL CONSIDERATIONS

IHS conducted an environmental review of the proposed scope under this Project in accordance with IHS policies and related NEPA and other environmental statutes. The review indicates that an environmental assessment is not required as the project qualifies, because of its limited scope, for an IHS categorical exclusion.

OPERATION AND MAINTENANCE (O&M)

The feasibility study will include an evaluation of the O&M requirements and costs relative to each arsenic compliance option.

SCHEDULE

Sep-06	Grant awarded
Oct-06	Hopi Tribal Council approve project PH 06-D33 MOA
Nov-06	Solicit request for proposals to conduct feasibility study
Mar-07	Review proposals and award selection
Dec-07	First draft of feasibility study due for comment
June-08	Final draft of feasibility study due

COST ESTIMATE *Study will be conducted by IHS Professional Staff utilizing Tribal Procurement as needed.*

	FEASIBILITY STUDY	Quantity	Unit	Unit Cost	Total
A.	**Research Hopi Reservation Demographics**	1	LS	$5,000	$ 5,000
B.	**Estimated pro-rata cost per PWSID system**				
B1	First Mesa Consolidated Villages (Polacca)	1	LS	$35,000	35,000
B2	Hopi Cultural Center	1	LS	$15,000	15,000
B3	Second Mesa Day School (Toreva)	1	LS	$10,000	10,000
B4	Lower Sipaulovi/Mishongovi Villages	1	LS	$20,000	20,000
B5	Upper Sipaulovi/Mishongovi Villages	1	LS	$20,000	20,000
B6	Shungopavi Village	1	LS	$30,000	30,000
B7	Hopi High School	1	LS	$9,000	9,000
C.	**Feasbility Study printing and distribution**	1	LS	$4,000	4,000
	SUB-TOTAL FEASIBILITY STUDY				**$148,000**
	Tribal Administrative Fees	2.5%			$ 3,700
	Project Technical Support	10%			14,800
	Engineering Project Support	4%			5,920
	Contingency	5%			7,400
	Direct Costs				180
	TOTAL PROJECT				**$180,000**
	TOTAL PROJECT ROUNDED				**$180,000**

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PROJECT SUMMARY
FEASIBILITY STUDY FOR ARSENIC RULE COMPLIANCE
HOPI INDIAN RESERVATION
NAVAJO AND COCONINO COUNTIES, ARIZONA

PROJECT NO. PH 06-D33
PUBLIC LAW 86-121

PREPARED BY:

9/12/06
Date

Erika Schoen
Project Engineer

REVIEWED BY:

9-20-06
Date

Robert Lorenz, P.E.
District Engineer

APPROVED BY:

9.21.06
Date

Kevin Chadwick, P.E.
Director
Division of Sanitation Facilities
Construction

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EXHIBIT 5 NEW PROJECT OR MODIFIED PROJECT APPROVAL FORM
PHOENIX AREA INDIAN HEALTH SERVICE SANITATION FACILITIES PROJECT

ASSIGNED PROJECT NUMBER	PROJECT TITLE AND DATE	TOTAL PROJECT ESTIMATED COST	
PH 06-D33	FEASIBILITY STUDY FOR ARSENIC RULE COMPLIANCE HOPI RESERVATION JUNE 2006	IHS	$
		TRIBAL	$
		L.H.A.	$
		EPA	$180,000
		TOTAL	$180,000

PROJECT DESCRIPTION: CONDUCT FEASIBILITY STUDY FOR ARSENIC RULE COMPLIANCE ON PUBLIC WATER SYSTEMS ON THE FIRST AND SECOND MESAS, HOPI INDIAN RESERVATION.

UNDER AND PURSUANT TO PUBLIC LAW 86-121 AND THE AUTHORITY DELEGATED TO ME, I HEREBY APPROVE THE SANITATION FACILITIES PROJECT OR MODIFIED PROJECT OUTLINED IN THE ATTACHED PROJECT SUMMARY OR AMENDED PROJECT SUMMARY DESCRIBED ABOVE.

THIS ACTION: X APPROVES A NEW SANITATION FACILITIES CONSTRUCTION PROJECT

_____ APPROVES AN AMENDMENT TO A PREVIOUSLY APPROVED PROJECT

_____ INCREASES THE COST ESTIMATED OF A PREVIOUSLY APPROVED PROJECT

NEGOTIATION OF NECESSARY AGREEMENTS OR AGREEMENT AMENDMENTS RELATED TO PROJECT EXECUTION, CONTRIBUTIONS, AND RESPONSIBILITIES FOR OPERATION AND MAINTENANCE OF THE PLANNED FACILITIES MAY NOW BE INITIATED. NEGOTIATIONS SHALL BE BASED UPON THE PROJECT SUMMARY OR AMENDED PROJECT SUMMARY AS APPROVED. INDIAN HEALTH SERVICE COMMITMENTS SHALL NOT EXCEED THE ESTIMATED SET FORTH ABOVE.

THE ASSIGNED PROJECT NUMBER SHALL BE UTILIZED ON ALL CORRESPONDENCE AND DOCUMENTS RELATED TO THIS PROJECT.

ERIKA SCHOEN IS HEREBY DESIGNATED AS PROJECT OFFICER AND SHALL BE RESPONSIBLE FOR THE COORDINATION OF ALL ACTIVITIES RELATED TO THE EXECUTION OF THE PROJECT.

UPON RECEIPT OF A "REQUEST FOR TRANSFER OF FUNDS BETWEEN PUBLIC LAW 86-121 PROJECT ACCOUNTS" FROM THE AREA OFFICE OF ENVIRONMENTAL HEALTH AND ENGINEERING, THE AREA FINANCIAL MANAGEMENT OFFICER IS HEREBY INSTRUCTED TO ESTABLISH A NEW PROJECT ACCOUNT IF NECESSARY AND TO TRANSFER INTO SUCH ACCOUNT OR PREVIOUSLY ESTABLISHED ACCOUNT AN AMOUNT EQUAL TO THE ESTIMATED COST SET FORTH ABOVE LESS AMOUNTS PREVIOUSLY TRANSFERRED. OBLIGATIONS AND EXPENDITURES RELATED TO THE PROJECT ARE TO BE CHARGED TO THIS ACCOUNT.

FUND CERTIFICATIONS:

DATE: 6/12/06

FUNDS IN THE AMOUNT OF THE IHS ESTIMATED COST LESS AMOUNTS PREVIOUSLY TRANSFERRED TO THIS PROJECT ARE AVAILABLE IN THE AREA AND RESERVED FOR THIS PROJECT.

Cathy M. Harvey

AREA FINANCIAL MANAGEMENT OFFICER

APPROVAL RECOMMENDED:

Kevin S Chadwick — 6-8-06

DIRECTOR, DIVISION OF SANITATION FACILITIES CONSTRUCTION — DATE

CONCURRENCE:

Allen M. Cox — 6/9/06

ASSOCIATE DIRECTOR, OFFICE OF ENVIRONMENTAL HEALTH AND ENGINEERING — DATE

Allen M. Cox — 6/13/06

DIRECTOR, PHOENIX AREA INDIAN HEALTH SERVICE — DATE

CC: SERVICE UNIT DIRECTOR
DIR., IHS, ATTN: DIR., OEH
AREA FINANCIAL MGM'T OFFICER

DEPARTMENT OF HEALTH & HUMAN SERVICES
COMMITTED TO CARING

PUBLIC HEALTH SERVICE
Indian Health Service

Memorandum

Date: October 16, 2008

From: Mike Stover, Acting District Engineer, EADO

Subject: Amendment No. 1 to the Project Summary, Project PH 06-D33

To: John Riegel, Acting Director DSFC, Phoenix Area Indian Health Service

This memorandum shall serve as Amendment No. 1 to the Project Summary for Project PH 06-D33, Hopi Reservation.

In June of 2006, the EPA awarded the Hopi Tribe a $180,000 grant to complete an arsenic compliance rule feasibility study. The purpose of the study was to define mitigation strategies to allay naturally occurring arsenic levels that exceed federal drinking water standards in the First and Second Mesa regions within the Hopi Reservation. In July of 2006, the Hopi Tribe and IHS entered a Memorandum of Agreement to perform the work defined in the EPA grant.

The original project scope proposed to examine seven public water systems (PWS) within the study region. The project cost estimate was developed so that each PWS was allocated a pro-rated funding contribution based on the size of the system. The smallest of the water systems, Second Mesa Day School, was allotted $10,000 for IHS to examine existing water quality conditions at the schools new well and to document the performance of the school's arsenic removal system.

Construction of the school and school's water treatment facility was completed in March of 2007. The school's water system has been operating intermittently since construction was completed and has experienced a host of operational problems. In response to water quality compliance issues brought about by the apparent inadequacy of the school's water treatment facility, the EPA intervened to assist the school and requested that IHS provide technical assistance regarding water treatment methods and technologies.

The EPA project manager and IHS engineers have been providing technical representation to the school as they administer their construction contract and attempt to come into compliance with federal water quality regulations. The extent of technical representation and the duration of the ongoing assistance is beyond the original scope of Project PH 06-D33 and necessitates that additional funding be provided to support IHS Technical Assistance for the additional work related to the Day School.

Recognizing the benefit of providing continued technical assistance to the Second Mesa Day School, the EPA has agreed to contribute additional funds for IHS Project PH 06-D33 in the amount of $25,000. The attached cost estimate reflects this increase in funding. Because this study is being completed by IHS technical staff, the supplemental funds are designated as engineering program support (EPS) funds.

Revised Cost Estimate

Item	Description	Quantity	Unit	Unit Cost	Total Cost
	Feasibility Study				
1	Research Hopi Res. Demographics	1	LS	$5,000.00	$ 5,000.00
	Estimated Pro-rata Cost Per PWSID				
1	First Mesa Consolidated Villages	1	LS	$35,000.00	35,000.00
2	Hopi Cultural Center	1	LS	$15,000.00	15,000.00
3	Second Mesa Day School	1	LS	$10,000.00	10,000.00
4	Lower Sipaulovi/Mishongovi Village	1	LS	$20,000.00	20,000.00
5	Upper Sipaulovi/Mishongovi Village	1	LS	$20,000.00	20,000.00
6	Shungopavi Village	1	LS	$30,000.00	30,000.00
7	Hopi High School	1	LS	$9,000.00	9,000.00
8	Feasibility Study Printing/Distribution	1	LS	$4,000.00	4,000.00
				Subtotal	$148,000.00
				Tribal Administration Fees	3,700.00
				10% Project Technical Support	14,800.00
				Engineering Program Support	30,920.00
				Contingencies	7,400.00
				Direct Costs	180.00
				Total	**$205,000.00**

DEPARTMENT OF HEALTH & HUMAN SERVICES

COMMITTED TO CARING

PUBLIC HEALTH SERVICE

Indian Health Service

Memorandum

Date: May 3, 2010

From: Michael A. Stover, District Engineer, EADO Michael A. Stover

Subject: Amendment No. 2 to the Project Summary, Project PH 06-D33

To: John Riegel, Acting Director DSFC, Phoenix Area Indian Health Service

This memorandum shall serve as Amendment No. 2 to the Project Summary for Project PH 06-D33 Hopi Tribe.

In June 2006, the Environmental Protection Agency (EPA) awarded the Hopi Tribe $180,000 in grant funds to complete an arsenic compliance rule feasibility study. The purpose of the study was to define mitigation strategies to allay naturally occurring arsenic levels that exceed federal drinking water standards in the First and Second Mesa regions on the Hopi Reservation. In July 2006, the Hopi Tribe entered into a Memorandum of Agreement (MOA) with the Indian Health Service (IHS) to perform the work defined in the EPA grant. In October 2008, the project was revised to include an additional contribution of $25,000 by the EPA for Engineering Program Support, as outlined in Amendment No. 1 to the PS.

An initial feasibility study was conducted in September 2007 which evaluated the water quality found in the community water supply in the villages of Sipaulovi and Mishongnovi. It was recommended in the study that two new wells in the vicinity of the communities be developed in order to meet future water demand by providing a viable water source for these two communities.

Since this time, however, a water system regionalization and consolidation concept was developed by representatives from the IHS, the Tribe and the EPA that would involve the development of a water source north of First and Second Mesas in an area known as "Turquoise Trail" that will be of adequate quality and quantity to meet the EPA's Arsenic rule and provide for future growth potential in the surrounding communities. In 2008, the Hopi Tribal Council passed a resolution in support of IHS Project PH 08-T38 which provided funding for planning efforts associated with this concept. Furthermore, the Hopi Tribe recently applied for and received notice of award for an EPA grant to conduct a hydrogeological analysis and aquifer characterization of the Turquoise Trail well field, refurbish the existing well, construct an additional well in the vicinity of the existing well, and complete a regional asset management plan to support the regional operation of the proposed water system.

The IHS has conducted an analysis of the existing water quality of the sources in the affected communities, including factors that complicate treatment options, and has also developed the concept of the regionalized system including preliminary well and tank locations and water main alignments. This information has been consolidated in the format of a presentation that has been delivered on numerous occasions at community and village leadership meetings in order to build community support for the concept. Since support for the pursuance of the Turquoise Trail consolidated system has been rendered on behalf of the Tribe, the EPA and the IHS, this Amendment No. 2 proposes to utilize funds remaining in this project, PH 06-D33, towards planning efforts associated with the proposed concept as outlined above.

To further the planning efforts, it is proposed that a portion of the project funds be obligated toward the purchase of GPS survey equipment in order to obtain the topographical data required to validate the

preliminary engineering, and to ultimately complete design and construction drawings, and that the remainder of funds be used for design purposes. The total cost of the project remains at$205,000.

Revised Cost Estimate

Item	Description	Quantity	Unit	Unit Cost	Total Cost
1	Study & Planning Activities	1	LS	$7,500.00	$ 7,500.00
2	Geotechnical Analyses	1	LS	$30,000.00	$ 30,000.00
3	Environmental Assessment	1	LS	$30,000.00	$ 30,000.00
4	Aerial Mapping	1	LS	$50,000.00	$ 50,000.00
5	GPS Equipment	1	LS	$32,208.92	$ 32,208.92
				Subtotal	$149,708.92
				5% Contingencies	5,875.00
				2.5% Tribal Administration Fees	3,084.38
				Project Technical Support	14,800.00
				Engineering Program Support	31,531.70
					$205,000.00

Summary

Project Total	$205,000
Expended	- 8,850
Balance	$196,150

Project Technical Support	$14,800
Expended	6,054
Remaining	$ 8,746

Funds Available for Revised Scope of Work

Balance	$196,150
Project Technical Support	8,746
	$187,404

PROJECT SUMMARY
REGIONAL WATER SYSTEM STUDY
HOPI INDIAN RESERVATION
NAVAJO AND COCONINO COUNTIES, ARIZONA

PROJECT NO. PH 08-T38
PUBLIC LAW 86-121

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
INDIAN HEALTH SERVICE
PHOENIX AREA OFFICE

JUNE 2008

PROJECT SUMMARY
REGIONAL WATER SYSTEM STUDY
HOPI INDIAN RESERVATION
NAVAJO AND COCONINO COUNTIES, ARIZONA

PROJECT NO. PH 08-T38
PUBLIC LAW 86-121

INTRODUCTION

The Hopi Tribe, by letter of May 2008, has requested Indian Health Service (IHS) assistance in conducting a regional water system study for residents of the Hopi Indian Reservation. The Phoenix Area IHS initiated this Project to assist the Tribe in conducting the study.

It has been determined that several drinking water supply wells on the Hopi Reservation produce water that exceeds the U. S. Environmental Protection Agency (EPA) federal maximum contaminant levels (MCL) of 10 parts per billion for arsenic. Keams Canyon, First Mesa, and Second Mesa area Wells exhibit arsenic levels in drinking water ranging from 13 to 38 μg/L, exceeding the federal standard of 10 μg/L. Treatment methods for reducing arsenic levels in drinking water include various technologies such as metal oxide adsorption, coagulation filtration and source water blending, among others. Which technology may prove to be a viable option depends on the constituent parameters of the source water characteristics.

The IHS is currently engaged in the development of a feasibility study to assess source water quality at each of the affected sites to determine practical arsenic mitigation solutions under IHS Project PH 06-D33. Without a regionalized water system where water can be delivered from areas with high quality water to the lower quality water locations, some form of treatment will be required to achieve compliance with federal standards. Beyond the initial costs of construction, it is recognized that water treatment facilities are inherently cumbersome to operate resulting in higher operation and maintenance costs.

Due to limited financial resources and technical capacity to operate multiple treatment systems, the Hopi Tribe is proposing to conduct a preliminary feasibility study to develop regionalized water supplies and consolidate water systems. It is the contention of the Hopi Tribe and the IHS that efforts to regionalize and combine water systems will lessen the long term economic burden on the individual Villages and provide sustainable infrastructure capable of supplying the Hopi people with safe, reliable drinking water long into the future.

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It is proposed in this Project that a study be conducted to develop a regional water system. The specific elements of the study are outlined below. Total estimated cost is $150,000. The IHS through "Regular" funds is contributing all Project funding. This project is linked to the #16 Sanitation Deficiency System (SDS) priority project in the 2008 SDS list. It is the first phase of a Project to address arsenic modification at Shungopavi and other Villages on the Hopi Indian Reservation.

EXISTING SANITATION FACILITIES

A. Water Supply: Potable water supply and distribution in the Project area is typically accomplished by community systems consisting of one to three active deep groundwater wells drilled into the D- and/or N-aquifers, ground level and elevated water storage tanks, booster stations, and water mains and service lines. Well construction details and general water distribution system layouts are summarized in Source Water Assessment for Communities and Villages of the Hopi Reservation by Tetra Tech EM Inc. dated January 30, 2006.

Hopi Cultural Center - The system has one well and a hydropneumatic pressure system that serves the Tribal Cultural Center, motel and restaurant.

Hopi Villages are generally autonomous on issues that involve their land, water and wastewater systems, with Villages typically operating their own water and wastewater systems independently of the adjacent systems. Historically, successes with consolidating Village water and wastewater systems have been limited although several consolidated systems do exist including the First Mesa Consolidated Villages (FMCV) and both the Upper and Lower Sipaulovi/Mishongovi water systems. The Village water systems of the First Mesa, including Keams Canyon, FMCV (aka Polacca), Second Mesa, the combined Upper and Lower Sipaulovi/Mishongovi, and Shugnopavi water systems, all have arsenic levels that exceed the EPA level for arsenic. The Third Mesa Village water system's arsenic levels are generally compliant with EPA MCLs.

Both the Tribe and IHS have conceptually advocated for a regionalized water system between the Villages of Hopi, and have received revised interest from the Villages in recent months. A regionalized water system would provide redundancy within the system, economy of scale with respect to utility management and financial capacity issues, and allow water that is arsenic compliant to be delivered to non-compliant areas without the need for treatment.

Historically, the concept of Village water system operations by a homogonous organization had been developed at Hopi under the title of the Village Utility Management Co-op (VUMC). The VUMC did not receive wide support from the Villages and eventually evolved into an equipment pool Coop as it is today. The

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bylaws still exist in a format that could easily allow the VUMC to be re-organized back to a utility operational entity.

IHS Project PH 06-D33 was funded by the EPA in 2006 to evaluate arsenic mitigation alternatives on water systems serving the Hopi Cultural Center, Shungopavi Village, Sipaulovi Village, Mishongnovi Village, Second Mesa Day School, First Mesa Consolidated Villages, and the Hopi High School.

Shungopavi - The water system has one well producing 56 GPM and one 50,000-gallon water storage tank. The water system serves 88 homes with indoor water. Another 76 homes receive water from watering points or outside yard hydrants. Project PH 05-C85 provides for IHS technical assistance during construction of a new well, pumphouse, storage tank, and water distribution system funded by EPA and managed by the Hopi Tribe Water Resources program.

Mishongnovi/Sipaulovi - The water system consists of two pressure zones, one well which produces 16 GPM, one 16,000-gallon water storage tank and one hydropneumatic tank. The water system serves approximately 100 homes. Eight watering points are spread throughout the two communities.

Polacca (First Mesa Consolidated Villages, FMCV) - The water system has three pressure zones. These zones contain two functioning wells, which are identified as Wells #5 and #8. These wells each have capacities of 100 GPM. Wells #1, 2, 3 and 4 have been abandoned. Wells #6 and 7 are currently not in use. Zone 1 has a 500,000-gallon tank; zone 2 has one 200,000-gallon tank; and zone 3 has an 8,000-gallon gravity tank and a 1,000-gallon hydropneumatic tank. Approximately 450 homes are served by this system. Project PH 04-S63 was funded to address arsenic mitigation for the Polacca Public Water System.

Keams Canyon System - Operated by the Bureau of Indian Affairs (BIA), the system consists of two Wells with in-line booster pumps, several springs, chlorination equipment and two water storage tanks. The system serves approximately 35 local homes, 12 businesses, 50 IHS compound homes, 50 BIA compound homes, a police station, and five BIA buildings.

B. Wastewater Disposal: Wastewater collection and disposal on the reservation is accomplished through a number of different methods. Seven of the villages have collection systems while only six operate disposal facilities. At Keams Canyon, the BIA operates both a collection system and disposal facility. Two of the schools have both a collection system and disposal facility and one school has only a collection system. Two Tribal facilities exist for collection and disposal. Most scattered homes are served by septic tank and drainfield systems. Outhouses are used extensively in older Village areas.

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Hopi Cultural Center - The system consists of an extended aeration activated sludge treatment plant. The effluent is discharged to subsurface irrigation areas.
Shungopavi - Wastewater disposal is provided through a three cell stabilization pond system. The primary cell is 1.3 acres and the two secondary cells are 0.54 and 0.60 acres, respectively.

Mishongnovi/Sipaulovi - Wastewater is disposed of in a 0.52 acre, two cell stabilization pond. In addition to serving the two Villages, the pond also serves part of the Toreva area.

Second Mesa School - Wastewater disposal for the school compound and surrounding houses consists of a 1.0 acre stabilization pond. The Mishongnovi-Sipaulovi pond also provides wastewater disposal for part of Toreva.

Polacca (First Mesa Consolidated Villages, FMCV) - The FMCV's wastewater disposal system includes a six cell lagoon treatment system totaling 9.9 acres, with 14.8 acres of wastewater disposal area, making the total area of the wastewater treatment facility 24.7 acres. The facilities serve approximately 450 homes and 10 businesses.

Keams Canyon System - The wastewater disposal system consists of a two cell stabilization pond. One cell is aerated; the other cell discharges under the terms of an NPDES permit.

Hopi Jr./Sr. High School Complex - A multi-cell lagoon system serves the school complex and compound homes.

C. Solid Waste Disposal: The Hopi Tribe, in conjunction with the IHS and a HUD Community Development Block Grant (CDBG), has developed a solid waste disposal program for the entire Reservation. A RCRA compliant landfill has been designed and constructed, and is now in operation on the Reservation.

RECOMMENDED FACILITIES

A. Water: Regionalized and consolidated Project development at Hopi can take significant time given the various differences between Villages including land ownership conflicts. Therefore, this project was developed to start the process of planning regionalization of water systems to identify what viable regionalization is prudent and can be achieved and to determine if future regionalization design and construction Projects should be funded.

This Project proposes developing an assessment for a regionalized water system between Villages. Significant community meetings will be required to inform the

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public of the advantages of a regionalized water system. Ultimately, the decision to regionalize water systems will be up to the Villages and Tribe.

The Project will

- Identify the potential locations to drill additional wells and construct additional water storage tanks;
- Provide preliminary design concepts;
- Layout transmission main alignments;
- Assess R.O.W. requirements;
- Perform and environmental assessment;
- Develop alternative regionalized water system management schemes;
- Identify terms of utility agreements including suggested user fee rates; and
- Define goals as they pertain to identification, evaluation, and prioritization of improvements to water system facilities (water supply, treatment, storage, and distribution).

It is intended that the scope of the study will be performed by a consultant via Tribal procurement procedures.

This study shall encompass the areas associated with the following public water systems:

- BIA Keams Canyon (PWS ID 0400054)
- BIA Second Mesa (PWS ID 0400061)
- Toreva (PWS ID 0400055)
- Hopi Cultural Center (PWS ID 0400260)
- Hopi High School (PWS ID 0400395)
- Upper Mishongnovi/Sipaulovi Village (PWS ID 0400394)
- Lower Mishongovi/Sipaulovi Village (PWS ID 0400107)
- Polacca (First Mesa) (PWS ID 0400106)
- Shungopavi Village (PWS ID 0400259)
- Turquoise Trail (no PWS ID)
- Hopi Veterans Center
- Kykotsmovi (PWS ID 0400105)
- Old Oraibi (No Current Water System)
- Bacavi (PWS ID 0400687)
- Hotevilla PWS ID 0400700)

The objectives of this study will include the following tasks:

- Identify and evaluate the existing condition and operation of all water system facilities and programs for identified public water systems.

- Compile existing water quality data from all known wells in the First Mesa, Second Mesa, Keams Canyon and Turquoise Trail areas, including but not

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limited to those identified herein. Summarize the occurrence and trend of arsenic in the N-aquifer. Identify faults or major fractures that may affect movement of groundwater. Identify occurrence and trends of other water quality constituents in the N-aquifer such as sulfate, iron, manganese, pH, etc., that may affect arsenic treatment. Include data available from the US Geological Survey (USGS), US Environmental Protection Agency, Hopi Tribe Water Resources Program, individual village Water Operators, IHS and the BIA.

- Update the Hopi well schematic diagram. Add the Polacca Well #8 and Toreva (BIA #1) wells to the existing Hopi Well Schematic diagram that was prepared by DB Stephens & Associates. Evaluate and update well completion details and arsenic occurrences at each identified well.

- Recommend alternatives for upgrades to existing water treatment and distribution systems that promote consolidation among communities in strategically advantaged proximity to one another. For each proposed alternative, a detailed construction cost estimate shall be developed. Examples of opportune consolidation strategies are as follows:
    - Integration and consolidation of the Shungopavi, Hopi Cultural Center, Sipaulovi and Mishongnovi water systems.
    - Integration and consolidation of the Keams Canyon, Polacca, and Hopi High School water systems.
    - Integration of Second Mesa systems with First Mesa systems
    - Integration of Third Mesa systems with Second Mesa systems

- Perform research to determine the land status within the Project planning area and any other lands that may be affected by this Project. Identify any interests or potential interests in land that could affect the schedule or costs of the recommended improvements. Develop a summary of land status to include all land interests in the Project planning area, traditional use areas, land conflicts that could affect the Project and platting status, and proposed solutions to land conflicts.

- Evaluate and recommend opportunities to deliver water from remote sources such as the Turquoise Trail area which may have lower arsenic levels for potential use in blending schemes. Recommendations shall be accompanied by detailed construction cost estimates.

- Identify and recommend locations for drilling additional wells to supplement current water supplies. Based on compiled water quality data and fault maps, identify geographic areas that are likely to produce water wells of acceptable quality and yield.

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- Evaluate feasibility of drilling into other regional aquifers (D and C aquifers). Summarize regional water quality in the D and C aquifers based on existing water quality data available from USGS data and/or reports, the Hopi Tribe Office of Range Management/Land Operations, and BIA. Identify all water quality constituents occurring in these aquifers that exceed established EPA National Primary and Secondary Drinking Water Standards or action levels.

B. Sewer: No wastewater disposal facilities are recommended under this Project. Projects are underway or are being planned to improve sewer facilities on the Reservation.

C. Solid Waste: No solid waste facilities are recommended under this Project. Existing facilities are adequate.

ENVIRONMENTAL CONSIDERATIONS

IHS conducted an environmental review of the Proposed Scope under this Project in accordance with IHS policies and related NEPA and other environmental statutes. The review indicates that an environmental assessment is not required as the Project qualifies, because of its limited scope, for an IHS categorical exclusion.

OPERATION AND MAINTENANCE (O&M)

No O&M will be required as a result of this Project.

COST ESTIMATE

Item	Description	Quantity	Unit	Unit Cost	Total Cost
1	Hopi Regional Water Study	1	LS	$130,000.00	$130,000.00
				Tribal Administration & Direct Fees	4,150.00
				12% Project Technical Support	15,600.00
				Total	$149,750.00
				Rounded	$150,000.00

SUMMARY:

Maximum Contribution to Tribe	$134,400
Project Technical Support	15,600
Total	$150,000

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PROJECT SUMMARY
REGIONAL WATER SYSTEM STUDY
HOPI INDIAN RESERVATION
NAVAJO AND COCONINO COUNTIES, ARIZONA

PROJECT NO. PH 08-T38
PUBLIC LAW 86-121

PREPARED BY:

24 Sep 08
Date

Pete Mitchell
Project Engineer

REVIEWED BY:

26 Sept 2008
Date

Michael A Stern for
Robert Lorenz, P.E.
District Engineer

APPROVED BY:

9/29/08
Date

John Riegel, P.E.
Acting Director
Division of Sanitation Facilities
Construction

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EXHIBIT 5 NEW PROJECT OR MODIFIED PROJECT APPROVAL FORM
PHOENIX AREA INDIAN HEALTH SERVICE SANITATION FACILITIES PROJECT

ASSIGNED PROJECT NUMBER	PROJECT TITLE AND DATE	TOTAL PROJECT ESTIMATED COST	
PH 08-T38	REGIONAL WATER SYSTEM STUDY HOPI RESERVATION MAY 2008	IHS	$150,000
		TRIBAL	$
		L.H.A.	$
		OTHER	$
		TOTAL	$150,000

PROJECT DESCRIPTION: CONDUCT A STUDY TO DEVELOP A REGIONAL WATER SYSTEM ON THE HOPI INDIAN RESERVATION.

UNDER AND PURSUANT TO PUBLIC LAW 86-121 AND THE AUTHORITY DELEGATED TO ME, I HEREBY APPROVE THE SANITATION FACILITIES PROJECT OR MODIFIED PROJECT OUTLINED IN THE ATTACHED PROJECT SUMMARY OR AMENDED PROJECT SUMMARY DESCRIBED ABOVE.

THIS ACTION: _X_ APPROVES A NEW SANITATION FACILITIES CONSTRUCTION PROJECT

___ APPROVES AN AMENDMENT TO A PREVIOUSLY APPROVED PROJECT

___ INCREASES THE COST ESTIMATED OF A PREVIOUSLY APPROVED PROJECT

NEGOTIATION OF NECESSARY AGREEMENTS OR AGREEMENT AMENDMENTS RELATED TO PROJECT EXECUTION, CONTRIBUTIONS, AND RESPONSIBILITIES FOR OPERATION AND MAINTENANCE OF THE PLANNED FACILITIES MAY NOW BE INITIATED. NEGOTIATIONS SHALL BE BASED UPON THE PROJECT SUMMARY OR AMENDED PROJECT SUMMARY AS APPROVED. INDIAN HEALTH SERVICE COMMITMENTS SHALL NOT EXCEED THE ESTIMATED SET FORTH ABOVE.

THE ASSIGNED PROJECT NUMBER SHALL BE UTILIZED ON ALL CORRESPONDENCE AND DOCUMENTS RELATED TO THIS PROJECT.

Peter Mirabal ~~ERIKA SCHOEN~~ IS HEREBY DESIGNATED AS PROJECT OFFICER AND SHALL BE RESPONSIBLE FOR THE COORDINATION OF ALL ACTIVITIES RELATED TO THE EXECUTION OF THE PROJECT.

UPON RECEIPT OF A "REQUEST FOR TRANSFER OF FUNDS BETWEEN PUBLIC LAW 86-121 PROJECT ACCOUNTS" FROM THE AREA OFFICE OF ENVIRONMENTAL HEALTH AND ENGINEERING, THE AREA FINANCIAL MANAGEMENT OFFICER IS HEREBY INSTRUCTED TO ESTABLISH A NEW PROJECT ACCOUNT IF NECESSARY AND TO TRANSFER INTO SUCH ACCOUNT OR PREVIOUSLY ESTABLISHED ACCOUNT AN AMOUNT EQUAL TO THE ESTIMATED COST SET FORTH ABOVE LESS AMOUNTS PREVIOUSLY TRANSFERRED. OBLIGATIONS AND EXPENDITURES RELATED TO THE PROJECT ARE TO BE CHARGED TO THIS ACCOUNT.

FUND CERTIFICATIONS:

DATE: 10/1/08

FUNDS IN THE AMOUNT OF THE IHS ESTIMATED COST LESS AMOUNTS PREVIOUSLY TRANSFERRED TO THIS PROJECT ARE AVAILABLE IN THE AREA AND RESERVED FOR THIS PROJECT.

APPROVAL RECOMMENDED:

DIRECTOR, DIVISION OF SANITATION FACILITIES CONSTRUCTION — DATE 9/29/08

CONCURRENCE:

ASSOCIATE DIRECTOR, OFFICE OF ENVIRONMENTAL HEALTH AND ENGINEERING — DATE 9/29/08

AREA FINANCIAL MANAGEMENT OFFICER

DIRECTOR, PHOENIX AREA INDIAN HEALTH SERVICE — DATE 10/1/08

CC: SERVICE UNIT DIRECTOR
DIR., IHS, ATTN: DIR., OEH
AREA FINANCIAL MGM'T OFFICER

PROJECT SUMMARY
TURQUOISE TRAIL REGIONAL ARSENIC MITIGATION PROJECT
HOPI INDIAN RESERVATION
NAVAJO AND COCONINO COUNTIES, ARIZONA

PROJECT NO. PH 10-E37
PUBLIC LAW 86-121

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
INDIAN HEALTH SERVICE
PHOENIX AREA OFFICE

APRIL 2010

PROJECT SUMMARY
TURQUOISE TRAIL REGIONAL ARSENIC MITIGATION PROJECT
HOPI INDIAN RESERVATION
NAVAJO AND COCONINO COUNTIES, ARIZONA

PROJECT NO. PH 10-E37
PUBLIC LAW 86-121

INTRODUCTION

In October 2009, the Hopi Tribe requested Indian Health Service (IHS) assistant to advance an arsenic mitigation strategy to address water quality issues affecting residents of the First and Second Mesa Villages on the Hopi Indian Reservation.

The Phoenix Area IHS initiated this project, PH 10-E37, to pursue a collaborative effort to address the persistent water quality deficiencies inherent to the region by developing a new high quality water source. It is proposed in this project to construct the first phase of a multi-phase arsenic mitigation project herein referred to as the Turquoise Trail Regional Arsenic Mitigation Project. Total estimated cost for this first phase is $1,857,400. The Environmental Protection Agency (EPA), through the Drinking Water Tribal Set-Aside program, is contributing all project funding.

EXISTING SANITATION FACILITIES

A. Water Supply: Hopi Villages are generally autonomous on issues that involve their land, water and wastewater systems, with Villages typically operating their own water and wastewater systems independently of the adjacent systems. Historically, successes with consolidating Village water and wastewater systems have been limited although several consolidated systems do exist including the First Mesa Consolidated Villages (FMCV) and both the Upper and Lower Sipaulovi/Mishongnovi water systems. The Village water systems of the First Mesa, including Keams Canyon, FMCV (aka Polacca), Second Mesa, the combined Upper and Lower Sipaulovi/Mishongnovi, and Shungopavi water systems, all have arsenic levels that exceed the EPA level for arsenic. The Third Mesa Village water system's arsenic levels are generally compliant with EPA MCLs.

Both the Tribe and IHS have conceptually advocated for a regionalized water system between the Villages of Hopi, and have received revised interest from the Villages in recent months. A regionalized water system would provide redundancy within the system, economy of scale with respect to utility management and financial capacity issues, and allow water that is arsenic compliant to be delivered to non-compliant areas without the need for treatment.

Historically, the concept of Village water system operations by a homogonous organization had been developed at Hopi under the title of the Village Utility Management Co-op (VUMC). The

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VUMC did not receive wide support from the Villages and eventually evolved into an equipment pool Coop as it is today. The bylaws still exist in a format that could easily allow the VUMC to be re-organized back to a utility operational entity.

IHS Project PH 06-D33 was funded by the EPA in 2006 to evaluate arsenic mitigation alternatives on water systems serving the Hopi Cultural Center, Shungopavi Village, Sipaulovi Village, Mishongnovi Village, Second Mesa Day School, First Mesa Consolidated Villages, and the Hopi High School.

The Hopi Tribe, IHS and the EPA began exploring arsenic mitigation strategies to address persistent water quality issues in the First and Second Mesa areas on the Hopi Reservation. Under the resulting IHS Project PH 06-D33, funded by the EPA's Drinking Water Tribal Set-Aside Program, data was collected throughout the region and analyzed. After quantifying the presence and extent of the occurrence of arsenic in the region, IHS compiled a summary of the findings and disseminated information to the Tribe and EPA through multiple presentations. In addition, IHS recommended mitigation strategies.

Per the findings of the study, water quality data indicated that due to the peculiar chemistry of the region's water, arsenic treatment technologies would prove cumbersome and expensive to operate and maintain, hence a non-treatment option was recommended. The non-treatment option identified has come to be known as the Turquoise Trail concept. This project proposes to develop a remote well field in a region identified as having superior water quality and quantity relative to the existing sources utilized by the region. In 2008, IHS funded an additional project referred to as the Hopi Regional Water System Study (PH 08-T38) to further explore the practicality of advancing the Turquoise Trail concept as proposed under IHS project PH 06-D33.

As a result of the postulations and substantiated findings garnered from the aforementioned projects, the Hopi Tribe requested further assistance from IHS to develop the Turquoise Trail concept.

Shungopavi - The water system has one well producing 56 GPM and one 50,000-gallon water storage tank. The water system serves 88 homes with indoor water. Another 76 homes receive water from watering points or outside yard hydrants. Project PH 05-C85 provides for IHS technical assistance during construction of a new well, pump house, storage tank, and water distribution system funded by EPA and managed by the Hopi Tribe Water Resources program.

Mishongnovi/Sipaulovi - The water system consists of two pressure zones, one well which produces 16 GPM, one 16,000-gallon water storage tank and one hydro-pneumatic tank. The water system serves approximately 100 homes. Eight watering points are spread throughout the two communities.

Polacca (First Mesa Consolidated Villages, FMCV) - The water system has three pressure zones. These zones contain two functioning wells, which are identified as Wells #5 and #8. These wells each have capacities of 100 GPM. Wells #1, 2, 3 and 4 have been abandoned. Wells #6 and 7 are currently not in use. Zone 1 has a 500,000-gallon tank; zone 2 has one

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200,000-gallon tank; and zone 3 has an 8,000-gallon gravity tank and a 1,000-gallon hydropneumatic tank. Approximately 450 homes are served by this system. Project PH 04-S63 was funded to address arsenic mitigation for the Polacca Public Water System.

B. Wastewater Disposal: Wastewater collection and disposal on the reservation is accomplished through a number of different methods. Seven of the villages have collection systems while only six operate disposal facilities. At Keams Canyon, the BIA operates both a collection system and disposal facility. Two of the schools have both a collection system and disposal facility and one school has only a collection system. Two Tribal facilities exist for collection and disposal. Most scattered homes are served by septic tank and drainfield systems. Outhouses are used extensively in older village areas.

Second Mesa School - Wastewater disposal for the school compound and surrounding houses consists of a 1.0 acre stabilization pond. The Mishongnovi-Sipaulovi pond also provides wastewater disposal for part of Toreva.

Polacca (First Mesa Consolidated Villages, FMCV) - The FMCV's wastewater disposal system includes a six cell lagoon treatment system totaling 9.9 acres, with 14.8 acres of wastewater disposal area, making the total area of the wastewater treatment facility 24.7 acres. The facilities serve approximately 450 homes and 10 businesses.

C. Solid Waste Disposal: The Hopi Tribe, in conjunction with the IHS and a HUD Community Development Block Grant (CDBG), has developed a solid waste disposal program for the entire Reservation. A RCRA compliant landfill has been designed and constructed, and is now in operation on the Reservation.

RECOMMENDED FACILITIES

A. Water: The scope of work for this project includes constructing a new drinking water well in the vicinity of the existing Turquoise Trail well which will be rehabilitated under this project. Electric power will be extended to each of the well sites from an adjacent power system operated by the Navajo Tribal Utility Authority (NTUA). During and directly following drilling activities, a hydro-geological analysis and aquifer characterization study will be conducted to determine and document the long term viability of the aquifer to serve the Hopi communities. Finally, this project scope includes funding to develop and advance a regional asset management study/plan to explore various options pertaining to management and operation of a multi-community shared asset.

B. Sewer: No wastewater disposal facilities are recommended under this Project. Projects are underway or are being planned to improve sewer facilities on the Reservation.

C. Solid Waste: No solid waste facilities are recommended under this Project. Existing facilities are adequate.

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ENVIRONMENTAL CONSIDERATIONS

IHS conducted an environmental review of the Proposed Scope under this Project in accordance with IHS policies and related NEPA and other environmental statutes. The review indicates that an environmental assessment is not required for this phase of the regional project as the project qualifies, because of its limited scope, for an IHS categorical exclusion. However, an environmental assessment will be conducted on the entire proposed system as part of a separate project once the full scope is defined.

OPERATION AND MAINTENANCE (O&M)

The proposed facilities constructed under this project will be operated and maintained by a Tribally endorsed management entity to be defined in the "Regional Asset Management Study".

The funds awarded for the "Regional Asset Management Study/Plan" will be used to support the development of a regional operations and management program for the proposed water system. The ultimate success of a shared utility amongst the villages of First and Second Mesa will depend on the determined structure of its managing entity. The product of this study will be a guidance document that defines a multi-party utility management plan based on region specific data to be collected by the contracted service provider. The study would explore several aspects of utility management including, but not limited to: structure of managing entity, completion of a utility business plan, required utility staffing, anticipated annual operations and maintenance costs, utility rate structure and utility compliance requirements.

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COST ESTIMATE

The estimated cost of the project is $1,857,400. The project is being funded through an EPA-DWTSA grant. All work proposed under this project will be accomplished through Tribal procurement under the terms of the Memorandum of Agreement.

Item	Description	Quantity	Unit	Unit Cost	Total Cost
	New Well				
1	Mobilization & demobilization	1	LS	$28,000.00	$ 28,000.00
2	Drill 8-inch nominal borehole	2,400	LF	$60.00	144,000.00
3	Conduct geological logging	1	EA	$17,000.00	17,000.00
4	Reaming 18" pilot hole	1,800	LF	$65.00	117,000.00
5	14" blank casing installed	1,800	LF	$130.00	234,000.00
6	Reaming 12" pilot hole	600	LF	$65.00	39,000.00
7	Install 12" perforated casing	600	LF	$90.00	54,000.00
8	Well dev.-air lift pumping/jetting	24	HR	$500.00	12,000.00
9	Well disinfection	1	LS	$2,000.00	2,000.00
10	Furnish, install, remove test pump	1	EA	$24,000.00	24,000.00
11	Surge & test pumping	50	HR	$500.00	25,000.00
12	Water quality testing	1	LS	$10,000.00	10,000.00
13	Video & alignment surveys	1	LS	$4,800.00	4,800.00
14	Pitless adapter, drop pipe, well pump	1	LS	$180,000.00	180,000.00
15	Three phase power	2.5	MI	$80,000.00	200,000.00
				Subtotal	$1,090,800.00
	Refurbish Existing Turquoise Trail Well				
16	Mobilization & demobilization	1	LS	$10,000.00	$ 10,000.00
17	Pitless adapter, drop pipe, well pump	1	LS	$160,000.00	160,000.00
18	Well disinfection	1	LS	$1,500.00	1,500.00
19	Well quality testing	1	LS	$10,000.00	10,000.00
20	Aquifer test	50	HR	$500.00	25,000.00
21	Hydrogeological study	1	LS	$75,000.00	75,000.00
22	Planning for regional O&M program	1	LS	$125,000.00	125,000.00
				Subtotal	$ 406,500.00
				Total	$1,497,300.00
				5% Contingencies	74,865.00
				Tribal Administration Fee	33,693.30
				12% Project Technical Support	188,659.80
				4% Engineering Program Support	62,886.60
				Total	$1,857,404.70
				Rounded	$1,857,400.00

SUMMARY:

Maximum Contribution to Tribe	$1,605,853.00
Project Technical Support	188,660.00
Engineering Program Support	62,887.00
Total	$1,857,400.00

Homes Served

Number	Type	IDL	FDL	Service
1,013	E1	4	4	Water

Unit Cost = $1,857,400/1,103 = $1,830

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PROJECT SUMMARY
TURQOISE TRAIL REGIONAL ARSENIC MITIGATION PROJECT
HOPI INDIAN RESERVATION
NAVAJO AND COCONINO COUNTIES, ARIZONA

PROJECT NO. PH 10-E37
PUBLIC LAW 86-121

PREPARED BY:

6/24/2010
Date

Brandon Beckman, P.E.
Project Engineer

REVIEWED BY:

6/24/2010
Date

Michael A. Stover, P.E.
District Engineer

APPROVED BY:

6/29/10
Date

John Riegel, P.E.
Acting Director
Division of Sanitation Facilities
Construction

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EXHIBIT 5 NEW PROJECT OR MODIFIED PROJECT APPROVAL FORM
PHOENIX AREA INDIAN HEALTH SERVICE SANITATION FACILITIES PROJECT

ASSIGNED PROJECT NUMBER	PROJECT TITLE AND DATE		TOTAL PROJECT ESTIMATED COST
PH 10-E37	REGIONAL WATER SYSTEM STUDY HOPI RESERVATION APRIL 2010	IHS	$
		TRIBAL	$
		L.H.A.	$
		OTHER (EPA)	$1,857,400
		TOTAL	$1,857,400

PROJECT DESCRIPTION: WELL STUDY AND DEVELOPMENT, POWER EXTENSIONNAD ASSET MANAGEMENT PLAN DEVELOPMENTIN SUPPORT OF AN ARSENIC MITIGATION WATER SYSTEM PROJECT ON THE HOPI INDIAN RESERVATION.

UNDER AND PURSUANT TO PUBLIC LAW 86-121 AND THE AUTHORITY DELEGATED TO ME, I HEREBY APPROVE THE SANITATION FACILITIES PROJECT OR MODIFIED PROJECT OUTLINED IN THE ATTACHED PROJECT SUMMARY OR AMENDED PROJECT SUMMARY DESCRIBED ABOVE.

THIS ACTION: _X_ APPROVES A NEW SANITATION FACILITIES CONSTRUCTION PROJECT

____ APPROVES AN AMENDMENT TO A PREVIOUSLY APPROVED PROJECT

____ INCREASES THE COST ESTIMATED OF A PREVIOUSLY APPROVED PROJECT

NEGOTIATION OF NECESSARY AGREEMENTS OR AGREEMENT AMENDMENTS RELATED TO PROJECT EXECUTION, CONTRIBUTIONS, AND RESPONSIBILITIES FOR OPERATION AND MAINTENANCE OF THE PLANNED FACILITIES MAY NOW BE INITIATED. NEGOTIATIONS SHALL BE BASED UPON THE PROJECT SUMMARY OR AMENDED PROJECT SUMMARY AS APPROVED. INDIAN HEALTH SERVICE COMMITMENTS SHALL NOT EXCEED THE ESTIMATED SET FORTH ABOVE.

THE ASSIGNED PROJECT NUMBER SHALL BE UTILIZED ON ALL CORRESPONDENCE AND DOCUMENTS RELATED TO THIS PROJECT.

BRANDON BECKMAN IS HEREBY DESIGNATED AS PROJECT OFFICER AND SHALL BE RESPONSIBLE FOR THE COORDINATION OF ALL ACTIVITIES RELATED TO THE EXECUTION OF THE PROJECT.

UPON RECEIPT OF A "REQUEST FOR TRANSFER OF FUNDS BETWEEN PUBLIC LAW 86-121 PROJECT ACCOUNTS" FROM THE AREA OFFICE OF ENVIRONMENTAL HEALTH AND ENGINEERING, THE AREA FINANCIAL MANAGEMENT OFFICER IS HEREBY INSTRUCTED TO ESTABLISH A NEW PROJECT ACCOUNT IF NECESSARY AND TO TRANSFER INTO SUCH ACCOUNT OR PREVIOUSLY ESTABLISHED ACCOUNT AN AMOUNT EQUAL TO THE ESTIMATED COST SET FORTH ABOVE LESS AMOUNTS PREVIOUSLY TRANSFERRED. OBLIGATIONS AND EXPENDITURES RELATED TO THE PROJECT ARE TO BE CHARGED TO THIS ACCOUNT.

FUND CERTIFICATIONS:

DATE: _____
FUNDS IN THE AMOUNT OF THE IHS ESTIMATED COST LESS AMOUNTS PREVIOUSLY TRANSFERRED TO THIS PROJECT ARE AVAILABLE IN THE AREA AND RESERVED FOR THIS PROJECT.

WM Cof
AREA FINANCIAL MANAGEMENT OFFICER

APPROVAL RECOMMENDED:

DIRECTOR, DIVISION OF SANITATION FACILITIES CONSTRUCTION — 6/29/10 DATE

CONCURRENCE:

Michael M. Miller
ASSOCIATE DIRECTOR, OFFICE OF ENVIRONMENTAL HEALTH AND ENGINEERING — 6/29/10 DATE

DIRECTOR, PHOENIX AREA INDIAN HEALTH SERVICE — 7.12.10 DATE

CC: SERVICE UNIT DIRECTOR
DIR., IHS, ATTN: DIR., OEH
AREA FINANCIAL MGM'T OFFICER

EXHIBIT 5 NEW PROJECT OR MODIFIED PROJECT APPROVAL FORM
PHOENIX AREA INDIAN HEALTH SERVICE SANITATION FACILITIES PROJECT

ASSIGNED PROJECT NUMBER	PROJECT TITLE AND DATE		TOTAL PROJECT ESTIMATED COST
PH 10-E37	REGIONAL WATER SYSTEM STUDY	IHS	$
	HOPI RESERVATION	TRIBAL	$
	APRIL 2010	L.H.A.	$
		OTHER (EPA)	$1,857,400
		TOTAL	$1,857,400

PROJECT DESCRIPTION: WELL STUDY AND DEVELOPMENT, POWER EXTENSIONNAD ASSET MANAGEMENT PLAN DEVELOPMENTIN SUPPORT OF AN ARSENIC MITIGATION WATER SYSTEM PROJECT ON THE HOPI INDIAN RESERVATION.

UNDER AND PURSUANT TO PUBLIC LAW 86-121 AND THE AUTHORITY DELEGATED TO ME, I HEREBY APPROVE THE SANITATION FACILITIES PROJECT OR MODIFIED PROJECT OUTLINED IN THE ATTACHED PROJECT SUMMARY OR AMENDED PROJECT SUMMARY DESCRIBED ABOVE.

THIS ACTION: X APPROVES A NEW SANITATION FACILITIES CONSTRUCTION PROJECT

____ APPROVES AN AMENDMENT TO A PREVIOUSLY APPROVED PROJECT

____ INCREASES THE COST ESTIMATED OF A PREVIOUSLY APPROVED PROJECT

NEGOTIATION OF NECESSARY AGREEMENTS OR AGREEMENT AMENDMENTS RELATED TO PROJECT EXECUTION, CONTRIBUTIONS, AND RESPONSIBILITIES FOR OPERATION AND MAINTENANCE OF THE PLANNED FACILITIES MAY NOW BE INITIATED. NEGOTIATIONS SHALL BE BASED UPON THE PROJECT SUMMARY OR AMENDED PROJECT SUMMARY AS APPROVED. INDIAN HEALTH SERVICE COMMITMENTS SHALL NOT EXCEED THE ESTIMATED SET FORTH ABOVE.

THE ASSIGNED PROJECT NUMBER SHALL BE UTILIZED ON ALL CORRESPONDENCE AND DOCUMENTS RELATED TO THIS PROJECT.

BRANDON BECKMAN IS HEREBY DESIGNATED AS PROJECT OFFICER AND SHALL BE RESPONSIBLE FOR THE COORDINATION OF ALL ACTIVITIES RELATED TO THE EXECUTION OF THE PROJECT.

UPON RECEIPT OF A "REQUEST FOR TRANSFER OF FUNDS BETWEEN PUBLIC LAW 86-121 PROJECT ACCOUNTS" FROM THE AREA OFFICE OF ENVIRONMENTAL HEALTH AND ENGINEERING, THE AREA FINANCIAL MANAGEMENT OFFICER IS HEREBY INSTRUCTED TO ESTABLISH A NEW PROJECT ACCOUNT IF NECESSARY AND TO TRANSFER INTO SUCH ACCOUNT OR PREVIOUSLY ESTABLISHED ACCOUNT AN AMOUNT EQUAL TO THE ESTIMATED COST SET FORTH ABOVE LESS AMOUNTS PREVIOUSLY TRANSFERRED. OBLIGATIONS AND EXPENDITURES RELATED TO THE PROJECT ARE TO BE CHARGED TO THIS ACCOUNT.

FUND CERTIFICATIONS:

DATE: _____
FUNDS IN THE AMOUNT OF THE IHS ESTIMATED COST LESS AMOUNTS PREVIOUSLY TRANSFERRED TO THIS PROJECT ARE AVAILABLE IN THE AREA AND RESERVED FOR THIS PROJECT.

AREA FINANCIAL MANAGEMENT OFFICER

APPROVAL RECOMMENDED:

DIRECTOR, DIVISION OF SANITATION FACILITIES CONSTRUCTION — DATE: 6/29/10

CONCURRENCE:

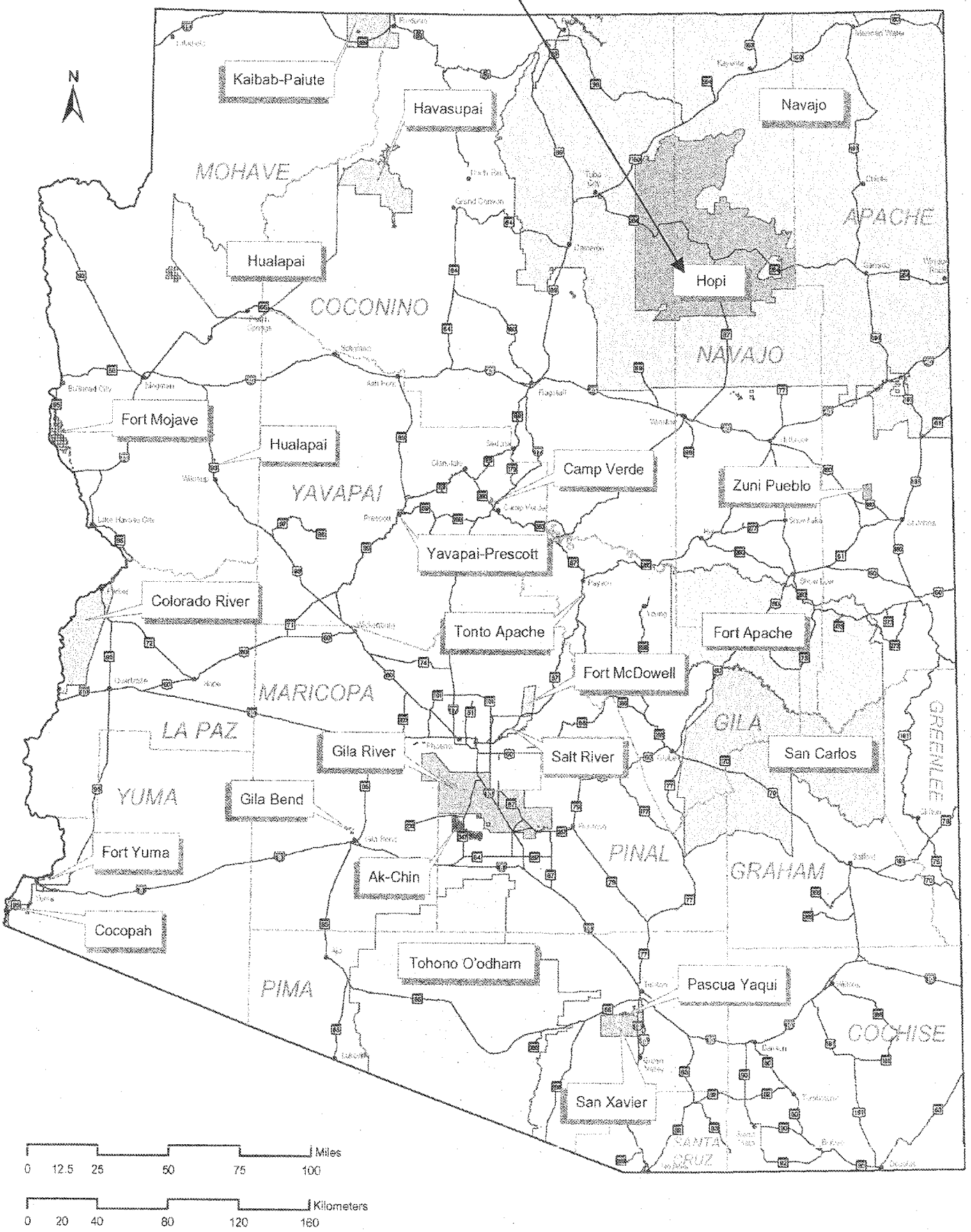
ASSOCIATE DIRECTOR, OFFICE OF ENVIRONMENTAL HEALTH AND ENGINEERING — DATE: 6/29/10

DIRECTOR, PHOENIX AREA INDIAN HEALTH SERVICE — DATE: 7.12.10

CC: SERVICE UNIT DIRECTOR
DIR., IHS, ATTN: DIR., OEH
AREA FINANCIAL MGM'T OFFICER

Environmental Review

American Indian Reservations



ENVIRONMENTAL REVIEW AND DOCUMENTATION
PHOENIX AREA INDIAN HEALTH SERVICE
SANITATION FACILITIES CONSTRUCTION PL-86-121

PROJECT NAME: Arsenic Treatment Facilities for First Mesa, Hopi Indian Reservation HUD PROJECT: N.A. IHS PROJECT: PH-04-S63

CONSIDERATIONS	DETERMINATION (YES OR NO)	BASIS FOR DETERMINATION DOCUMENTATION
1. Wetlands/Water Resources: Will the project adversely affect wetland/water resources or will there be construction in wetlands, except in conformance with a Corps of Engineer's Section 404 Permit?	NO	No wetlands outside the scope of a Nationwide Permit #12 are anticipated. PERSONAL CONTACT: NRCS Soil Scientist - soil survey of the reservation. *ALSO:* Corps of Engineers
2. Floodplains Executive order (11988): Will the project involve construction in a flood plain (except for agency activities excluded as a class) or impact floodplain development?	NO	FEMA Flood Plain Maps are not available for the Indian Reservation. The project is well outside of the floodplain of the River and its tributaries. RESOURCE REVIEW: FEMA Flood Maps PROFESSIONAL EXPERIENCE: J. David Mazorra
3. Endangered Species Act of 1973 as amended: Is the project likely to adversely affect a species listed on the Federal list of endangered or threatened species or the category I candidate species being considered for listing?	NO	PERSONAL CONTACT: Hopi Department of Natural Resources (DNR).
4. Historic Preservation Act of 1966 and Related Acts and Executive Orders: Will the project adversely affect properties listed or eligible for listing, on the National Register of Historic Places?	NO	An archeological survey and cultural resources inventory will be conducted by the Hopi Cultural Preservation Office (HCPO) and the results of the report will be submitted to the Arizona State Historic Preservation Office and Tribes claiming cultural affinity with Hopi lands for review and consultation.
5. Wild and Scenic Rivers Act: Is the project a "Water Resources Project" which will impact a wild, scenic or recreational river area and create conditions inconsistent with the character of the river?	NO	No facilities to be constructed that will impact any river. RESOURCE REVIEW: www.nps.gov/rivers PERSONAL CONTACT: Tribal Water Resources Manager
6. Coastal Zone Management Act: Will the project directly affect a Coastal Zone in an manner inconsistent with the Coastal Zone Management Plan?	NO	No facilities to be constructed within a Coastal Zone Management area. WRITTEN REPORT: Environmental Consultant provided a Coastal Zone Program Consistency Certification
7. Wilderness Act: Will the project adversely impact a Wilderness Area?	NO	No facilities to be constructed within a Wilderness Area. There are no designated Wilderness Areas on the Indian Reservation.
8. Farmland Protection Act: Will the project convert significant Agricultural Lands to non-agricultural uses?	NO	No agricultural lands will be converted under the scope of this project.
9. Safe Drinking Water Act: Will the project impact a sole source aquifer?	NO	No sole source aquifer exists in the project area. RESOURCE REVIEW: www.epa.gov/OGWDW/swp/ssa/reg10.html
10.Clean Air Act: Will the project result in violation of a conformity rule; i.e. will the project not comply with the air quality goals and purposes of the applicable or appropriate state implementation plan or Tribal implementation plan.	NO	No facilities built under this project will generate air emissions. Construction equipment emissions shall be typical. PROFESSIONAL EXPERIENCE: J. David Mazorra

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CONSIDERATIONS	DETERMINATION (YES OR NO)	BASIS FOR DETERMINATION DOCUMENTATION
11. NEPA: Will the project result in a violation or continuance of a violation of applicable (Federal, Tribal local) law or requirements imposed for protection of environment or public health and safety?	NO	The project will not violate any Federal or Tribal environmental laws or requirements imposed for protection of environment or public health and safety. PROFESSIONAL EXPERIENCE: J. David Mazorra
12. NEPA: Is there a controversy with respect to environmental effects of the project based on reasonable substantial issues?	NO	None known. The Tribe and Village are eager to complete this project for the benefit of the people of the Hopi Reservation. FIELD VISITS/MEETINGS: J. David Mazorra
13. NEPA: Is the project significantly greater in scope than normal projects for the Area or Does the project have significant unusual characteristics?	NO	The scope of this project is normal for the community and the office managing the project. PROFESSIONAL EXPERIENCE: J. David Mazorra
14. NEPA: Does the project establish a precedent for future action or represent in principle about future actions with potentially significant environmental effects? (cumulative impact)	NO	The scope does not have any long-term significant impacts. PROFESSIONAL EXPERIENCE: J. David Mazorra
15. NEPA: Does the project have significant adverse direct or indirect effects on parkland, other public lands, or areas of recognized scenic or recreational value?	NO	There are no parks in the vicinity of the project. PROFESSIONAL EXPERIENCE: J. David Mazorra
16. NEPA: Will the project provide for the construction of a sanitary landfill at a new solid waste disposal site?	NO	The scope of this project is for the treatment of the community water source. PROFESSIONAL EXPERIENCE: J. David Mazorra
17. NEPA: Will the project include construction of a new wastewater treatment facility with direct discharge of treated sewage to surface waters.	NO	The scope of this project is for the treatment of the community water source. PROFESSIONAL EXPERIENCE: J. David Mazorra
18. CERCLA: Does the project involve the use, transfer or lease of real property which has been used as a storage for hazardous waste for more than one year?	NO	No hazardous wastes are known to have been stored in the project area. No recognized Superfund sites are in the area. PROFESSIONAL EXPERIENCE / FIELD: J. David Mazorra
19. Is an assessment required for other reasons?	NO	PROFESSIONAL EXPERIENCE / FIELD: J. David Mazorra

Conclusion: An Environmental Assessment is **not** required for Project PH-04-S63.

Project Engineer — Date 9/23/04

District Engineer — Date 9/27/04

Director, DSFC — Date 9/29/04

Area NEPA Coordinator — Date 9/30/04

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Tribe: Hopi	Reservation: Hopi Indian Reservation
Project, Program, Grant Description & Location:	Project PH 06-D33, FEASIBILITY STUDY FOR ARSENIC RULE COMPLIANCE, Public Law 86-121, EPA DWTSA Funds, Hopi Indian Reservation, Navajo County, Arizona

Action includes purchasing, construction, alteration, renovation, or leasing activities, new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by federal agencies.

Consideration	How will the proposed action/activity affect the Consideration? Provide supporting information for your responses and explain any mitigations to be implemented.
1. Will the proposed action result in a known violation or continuance of a violation of applicable (Federal, Tribal, State or local) laws or requirements for protection of environment or public health and safety?	**No** PRINTED All applicable Federal or Tribal laws will be complied with on this project as per the MOA. The project will not violate any requirements imposed for protection of environment or public health and safety.
2. Will the proposed action result in a conflict with existing or proposed federal, Tribal, state, and local land use plans?	**No** Existing land use plans will be considered. EXPERIENCE Erika Schoen, Field Engineer, 6/2006
3. Is there a controversy with respect to environmental effects of the proposed action based on reasonable and substantial issues?	**No** None known. The community is eager to implement the project. EXPERIENCE Erika Schoen, Field Engineer, 6/2006
4. Is the proposed action significantly greater in scope than normal for the area or does it have significant unusual characteristics?	**No** PRINTED Project is smaller than an IHS average project (average IHS project site is approximately $300,000). The scope of this project is normal for the community and the office managing the project.
5. Does the proposed action establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects?	**No** The project is typical and presents nothing unusual or new in its technology. No precedent in regards to future actions is stated or implied by this project. EXPERIENCE Erika Schoen, Field Engineer, 6/2006
6. Does the proposed action have significant adverse direct or indirect effects on parkland, other public lands, or areas of recognized scenic or recreational value?	**No** The proposed action (feasibility study) will not result in any changes to the scenic integrity of the area. EXPERIENCE Erika Schoen, Field Engineer, 6/2006

ED_005149_00042934-00069

Tribe: Hopi	Reservation: Hopi Indian Reservation
Project, Program, Grant Description & Location:	Project PH 06-D33, FEASIBILITY STUDY FOR ARSENIC RULE COMPLIANCE, Public Law 86-121, EPA DWTSA Funds, Hopi Indian Reservation, Navajo County, Arizona

Action includes purchasing, construction, alteration, renovation, or leasing activities, new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by federal agencies.

Consideration	How will the proposed action/activity affect the Consideration? Provide supporting information for your responses and explain any mitigations to be implemented.
7. Does the proposed action include construction of a new municipal solid waste landfill at a new solid waste disposal site?	**No** (If the answer is Yes, then an environmental assessment is needed) PRINTED Not in project scope - see project summary.
8. Will the proposed action create a need for additional capacity at solid waste disposal facilities?	**No** This project will not promote a need of additional capacity at solid waste disposal facilities. PRINTED Not in project scope - see project summary.
9. Does the proposed action include construction of a new wastewater treatment facility that will discharge treated sewage effluent?	**No** (If the answer is Yes, then an environmental assessment is needed.) PRINTED Not in project scope - see project summary.
10. Will the proposed action create a need for additional capacity at wastewater treatment facilities?	**No** No additional wastewater treatment capacity will be required as a result of this action (feasibility study). PRINTED Not in project scope - see project summary.
11. Will the proposed action create a need for additional capacity in the drinking water supply?	**No** PRINTED Not in project scope - see project summary.
12. Are there other considerations about the proposed action that could adversely affect the environment and/or public health and safety?	**No** PRINTED The proposed action will ultimately benefit the public health environment - see project summary.
13. Will the proposed action create a need for additional capacity in health care facilities and for health care services?	**No** PRINTED Not in project scope - see project summary.

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Tribe: Hopi	Reservation: Hopi Indian Reservation
Project, Program, Grant Description & Location:	Project PH 06-D33, FEASIBILITY STUDY FOR ARSENIC RULE COMPLIANCE, Public Law 86-121, EPA DWTSA Funds, Hopi Indian Reservation, Navajo County, Arizona

Action includes purchasing, construction, alteration, renovation, or leasing activities, new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by federal agencies.

Consideration	How will the proposed action/activity affect the Consideration? Provide supporting information for your responses and explain any mitigations to be implemented.
14. Will the proposed action create a need for additional energy supply or generation?	No PRINTED Not in project scope - see project summary.
15. Will the proposed action create a need for additional capacity in educational facilities?	No PRINTED Not in project scope - see project summary.
16. Will the proposed action create a need for additional capacity in transportation systems?	No PRINTED Not in project scope - see project summary. The proposed action will reduce need for transportation by installing automatic controls.
17. Historic Preservation: a. Does the proposed action involve the purchase, construction, alteration, renovation, or lease of a building or portion of a building that is more that 50 years old?	No PRINTED Not in project scope - see project summary.
b. Will the proposed action adversely affect properties listed, or eligible for listing, on the National Register of Historic Places? (buildings, archaeological sites; objects of significance to a Tribe including graves, funerary objects, and traditional cultural properties)	No Consideration is not applicable to proposed action (feasibility study). EXPERIENCE Erika Schoen, Field Engineer, 6/2006
18. Endangered Species Act: Is the proposed action likely to adversely affect a plant or animal species listed on the Federal or applicable state list of endangered or threatened species or a specific critical habitat of an endangered or threatened species? (Consult with Fish & Wildlife Service or NOAA Fisheries Service. Discovering an endangered or threatened species in the project area will stop the project, and the Endangered Species Act has significant fines and penalties for violations.)	No (If the answer is Yes, then an environmental assessment is needed.) Consideration is not applicable to proposed action (feasibility study). EXPERIENCE Erika Schoen, Field Engineer, 6/2006

ED_005149_00042934-00071

Tribe: Hopi	Reservation: Hopi Indian Reservation
Project, Program, Grant Description & Location:	Project PH 06-D33, FEASIBILITY STUDY FOR ARSENIC RULE COMPLIANCE, Public Law 86-121, EPA DWTSA Funds, Hopi Indian Reservation, Navajo County, Arizona

Action includes purchasing, construction, alteration, renovation, or leasing activities, new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by federal agencies.

Consideration	How will the proposed action/activity affect the Consideration? Provide supporting information for your responses and explain any mitigations to be implemented.
19. Will the proposed action require major sedimentation and erosion control measures? (Consider earth-disturbing activities including construction or expansion of a parking lot.)	**No** Consideration is not applicable to proposed action (feasibility study). EXPERIENCE Erika Schoen, Field Engineer, 6/2006
20. Will the proposed action violate the applicable storm water permit or NPDES permit? (Earth disturbing activities may require permits from the EPA or other agency and a storm water control plan, including parking lot construction activities. Contact tribal, local or state authorities, or EPA.)	**No** Consideration is not applicable to proposed action (feasibility study). EXPERIENCE Erika Schoen, Field Engineer, 6/2006
21. Safe Drinking Water Act: Will the proposed action impact an EPA designated sole source aquifer? (Designation of sole source aquifer puts restrictions and conditions on federal expenditures, projects, and grants.)	**No** The proposed action will not impact an EPA designated sole source aquifer. PRINTED/RESOURCE REVIEW: http://www.epa.gov/OGWDW/swp/ssa/reg9.html [6/13/06]
22. Wetlands and Water Resources (lakes, rivers, ponds, streams, etc.): Will the proposed action affect wetlands and water resources, except in compliance with the applicable permit; e.g., Section 404 (Clean Water Act) and Section 10 (Rivers and Harbors Act) permits? (Activities in or near a wetland may require a permit from the U.S. Corps of Engineers. Includes: construction in or near any wet or dry waterway, stream crossings, intake structures, outfalls, etc.)	**No** Consideration is not applicable to proposed action (feasibility study). EXPERIENCE Erika Schoen, Field Engineer, 6/2006
23. Floodplains: Will the proposed action endanger people who occupy the property, involve purchase, construction, or lease of a facility in a floodplain, or encourage floodplain development? (May be applicable to construction in or near any wet or dry waterway, stream crossings, intake structures, outfalls, etc.) *(Consider if the facility will require flood insurance coverage.)*	**No** Consideration is not applicable to proposed action (feasibility study). EXPERIENCE Erika Schoen, Field Engineer, 6/2006

ED_005149_00042934-00072

Tribe: Hopi	Reservation: Hopi Indian Reservation
Project, Program, Grant Description & Location:	Project PH 06-D33, FEASIBILITY STUDY FOR ARSENIC RULE COMPLIANCE, Public Law 86-121, EPA DWTSA Funds, Hopi Indian Reservation, Navajo County, Arizona

Action includes purchasing, construction, alteration, renovation, or leasing activities, new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by federal agencies.

Consideration	How will the proposed action/activity affect the Consideration? Provide supporting information for your responses and explain any mitigations to be implemented.
24. Does this proposed action involve the purchase, construction or lease of a building(s) which will total more than 1080 square meters (12,000 square feet)? (Include portable and modular facilities and trailers.)	**No** PRINTED Not in project scope - see project summary.
25. Does this proposed action involve the purchase, construction or lease of building(s) on more than 2 hectares (5 acres) of land?	**No** PRINTED Not in project scope - see project summary.
26. Does the proposed action involve the sale or transfer of real property, on which any hazardous substance or any petroleum product or its derivatives (including aviation fuel and motor oil) was stored for one year or more, known to have been released, or disposed of? (Document substance, dates, times, and response actions, if any. Also, include underground storage tank (UST) and above ground storage tank systems.)	**No** PRINTED Not in project scope - see project summary.
27. Will the proposed action violate Tribal, local, state, or federal law on the use and storage of hazardous substances or the transportation, storage, and disposal of hazardous wastes or medical wastes? (Activities that generate those items include air conditioning repair and service, pesticide application, motor pools, automobile repair, welding, landscaping, agricultural activities, print shops, hospitals, clinics, medical centers, etc. Repair, renovation, or demolition activities can generate waste that has asbestos-containing materials, asbestos, lead-based paint, PCBs, CFCs, etc.)	**No** PRINTED Not in project scope - see project summary.
28. Will the proposed action adversely affect community air pollution for a long period of time? (Consider if your activity must conform to an applicable air quality implementation plan.)	**No** Project does not have the potential to emit significant emissions of air pollution. PRINTED/RESOURCE REVIEW: http://www.epa.gov/air/oaqps/index.html [6/13/06] EXPERIENCE: Erika Schoen, Field Engineer, 6/2006

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Tribe: Hopi	Reservation: Hopi Indian Reservation
Project, Program, Grant Description & Location:	Project PH 06-D33, FEASIBILITY STUDY FOR ARSENIC RULE COMPLIANCE, Public Law 86-121, EPA DWTSA Funds, Hopi Indian Reservation, Navajo County, Arizona

Action includes purchasing, construction, alteration, renovation, or leasing activities, new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by federal agencies.

Consideration	How will the proposed action/activity affect the Consideration? Provide supporting information for your responses and explain any mitigations to be implemented.
29. If the proposed action is implemented, will it have a disproportionately high and adverse human health or environmental impact on the Tribe, low-income populations, or minority populations?	**No** The proposed action does not create any hazards nor expose anyone to adverse environmental conditions. PRINTED: See Project Summary. EXPERIENCE: Erika Schoen, Field Engineer, 6/2006
30. Will the proposed action adversely affect community noise levels?	**No** Consideration is not applicable to proposed action (feasibility study). EXPERIENCE Erika Schoen, Field Engineer, 6/2006
31. Wilderness Act: Will the proposed action adversely impact a Wilderness Area? (Wilderness Areas are specifically designated areas of land.	**No** There are no designated Wilderness Areas on the Hopi Reservation as per Wilderness Act (16 USC 1131-1136) PRINTED/RESOURCE REVIEW: http://www.blm.gov/az/wildarea.htm; [6/13/06]
32. Farmland Protection Policy Act: Will the proposed action convert significant agricultural lands to non-agricultural uses and exceed 160-point score on the farmland impact rating?	**No** PRINTED Not in project scope - see project summary.
33. Coastal Zone Management Act: Will the proposed action directly affect a Coastal Zone in a manner inconsistent with the State Coastal Zone Management Plan? (All federal programs or projects in the coastal zone must comply with the consistency provisions of the Act. Each coastal state should have a state office to manage its coastal zone development and use. On Federal or Tribal trust land, the IHS will make the determination.)	**No** The Hopi Reservation has no designated "coastal zones" as per CZMA (16 USC 1451-1464) PRINTED/RESOURCE REVIEW http://www.law.cornell.edu/uscode/html/uscode16/usc_sup_01_16_10_33.html [6/13/06]

ED_005149_00042934-00074

Tribe: Hopi	Reservation: Hopi Indian Reservation
Project, Program, Grant Description & Location:	Project PH 06-D33, FEASIBILITY STUDY FOR ARSENIC RULE COMPLIANCE, Public Law 86-121, EPA DWTSA Funds, Hopi Indian Reservation, Navajo County, Arizona

Action includes purchasing, construction, alteration, renovation, or leasing activities, new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by federal agencies.

Consideration	How will the proposed action/activity affect the Consideration? Provide supporting information for your responses and explain any mitigations to be implemented.
34. Wild and Scenic Rivers Act: Will the proposed action affect a wild, scenic, or recreational river area or create conditions inconsistent with the character of the river? (A consideration for activities that are in or near any wild and scenic waterway including construction of stream/river crossings, intake structures, outfalls, etc.)	**No** The proposed action will not affect a wild, scenic, or recreational river area. To date, Congress has not designated any rivers on the Hopi Reservation under this category. (WSRA; 16 USC 1271-1287) PRINTED/RESOURCE REVIEW: http://www.nps.gov/rivers/wildriverslist.html#az; [6/13/06] http://www.law.cornell.edu/uscode/html/uscode16/usc_sup_01_16_10_28.html [6/13/06]

Based on the available record, the IHS has made the following determination on the proposed activity/action/undertaking. The record was examined to identify potential extraordinary or exceptional circumstances which would require further environmental review.

The project is categorically excluded, Federal Register, Vol. 58, No. 3, January 6, 1993, Exclusion E2, "Technical Assistance." There are no extraordinary or exceptional circumstances.

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Appendix: Environmental Information and Documentation

I certify that to the best of my knowledge and ability the information presented herein is true and correct:

(1) Erika Sh	Project Engineer	9/12/06
Signature, Project Engineer		Date
(2) Robert J. Brown	District Engineer	9-20-06
Signature, District Engineer		Date
(3) Kevin S Clark	DSFC Director	9-21-06
Signature, DSFC Director		Date
(4) John R. Hamilton	Area NEPA Coordinator	9-21-06
Signature, Area NEPA Coordinator		Date
(5) Kevin S Clark	Acting Associate Director, Area OEHE	9-21-06
Signature, Associate Director, Area OEHE		Date

ED_005149_00042934-00076

ENVIRONMENTAL INFORMATION AND DOCUMENTATION

Tribe: Hopi	Reservation: Hopi Indian
Project, Program, Grant Description & Location:	PH 08-T38, Public Law 86-121, IHS Regular Funds, Hopi Indian Reservation, Navajo and Coconino Counties, Arizona

Action includes purchasing, construction, alteration, renovation, or leasing activities, new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by the Indian Health Service.

Note: A "Yes" or "No" response is required for every question. Answer each item completely with adequate supporting information to justify your response. **Depending upon the context and intensity, any consideration listed below can result in an Environmental Assessment.**

Consideration	Will the proposed action/activity affect the Consideration? Provide supporting information for your responses and explain any mitigations to be implemented.
1. Will the proposed action result in a known violation or continuance of a violation of applicable (Federal, Tribal, State or local) laws or requirements for protection of environment or public health and safety?	No PRINTED All applicable Federal or Tribal laws will be complied with on this project as per project summary. The project will not violate any requirements imposed for protection of environment or public health and safety.
2. Will the proposed action result in a conflict with existing or proposed Federal, Tribal, state, and local land use plans?	No The proposed project is a study and will not involve land use plans. EXPERIENCE Erika Schoen, Field Engineer, 5/2008
3. Is there a controversy with respect to environmental effects of the proposed action based on reasonable and substantial issues?	No None known. PRINTED See Project Proposal Form.
4. Is the proposed action significantly greater in scope than normal for the area or does it have significant unusual characteristics?	No PRINTED Project will involve conducting a regional water system study.
5. Does the proposed action establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects?	No The project is typical and presents nothing unusual or new in its technology. No precedent in regards to future actions is stated or implied by this project. EXPERIENCE Erika Schoen, Field Engineer, 5/2008
6. Does the proposed action have significant adverse direct or indirect effects on park land, other public lands, or areas of recognized scenic or recreational value? (For example, consider how your activity will affect the view?)	No The proposed action will not result in any changes to the scenic integrity of the area. EXPERIENCE Erika Schoen, Field Engineer, 5/2008

ED_005149_00042934-00077

Tribe: Hopi	Reservation: Hopi Indian
Project, Program, Grant Description & Location:	PH 08-T38, Public Law 86-121, IHS Regular Funds, Hopi Indian Reservation, Navajo and Coconino Counties, Arizona

Action includes purchasing, construction, alteration, renovation, or leasing activities, new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by the Indian Health Service.

Consideration	Will the proposed action/activity affect the Consideration? Provide supporting information for your responses and explain any mitigations to be implemented.
7. Does the proposed action include construction of a new municipal solid waste landfill at a new solid waste disposal site?	No PRINTED Not in project scope - see project summary.
8. Will the proposed action create a need for additional capacity at solid waste disposal facilities?	No This project will not promote a need of additional capacity at solid waste disposal facilities. PRINTED Not in project scope - see project summary.
9. Does the proposed action include construction of a new wastewater treatment facility that will discharge treated sewage effluent to the waters of the U.S.?	No PRINTED Not in project scope - see project summary.
10. Will the proposed action create a need for additional capacity at wastewater treatment facilities?	No No additional wastewater treatment capacity will be required as a result of this project. PRINTED Not in project scope - see project summary.
11. Will the proposed action create a need for additional capacity in the drinking water supply?	No No additional drinking water supply capacity will be required as a result of this project. PRINTED Not in project scope - see project summary.
12. Are there other considerations about the proposed action that could adversely affect the environment and/or public health and safety?	No PRINTED The proposed action will ultimately benefit the public health environment - see project summary.
13. Will the proposed action create a need for additional capacity in health care facilities and for health care services?	No PRINTED Not in project scope - see project summary.

ED_005149_00042934-00078

Tribe: Hopi	Reservation: Hopi Indian
Project, Program, Grant Description & Location:	PH 08-T38, Public Law 86-121, IHS Regular Funds, Hopi Indian Reservation, Navajo and Coconino Counties, Arizona

Action includes purchasing, construction, alteration, renovation, or leasing activities, new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by the Indian Health Service.

Consideration	Will the proposed action/activity affect the Consideration? Provide supporting information for your responses and explain any mitigations to be implemented.
14. Will the proposed action create a need for additional energy supply or generation?	No PRINTED Not in project scope - see project summary.
15. Will the proposed action create a need for additional capacity in educational facilities?	No PRINTED Not in project scope - see project summary.
16. Will the proposed action create a need for additional capacity in transportation systems?	No PRINTED Not in project scope - see project summary.
17. Historic Preservation: a. Does the proposed action involve the purchase, construction, alteration, renovation, or lease of real property or portion of real property that is more that 50 years old?	No PRINTED Not in project scope - see project summary.
b. Will the proposed action adversely affect properties listed, or eligible for listing, on the National Register of Historic Places? [Buildings, archaeological sites, National Historic Landmarks; objects of significance to a Tribe including graves, funerary objects, and traditional cultural properties. For assistance, consult with the State Historic Preservation Officer (SHPO) or the Tribal Historic Preservation Officer (THPO)])	No Experience, Erika Schoen, Field Engineer, 5/2008.

ED_005149_00042934-00079

Tribe: Hopi	Reservation: Hopi Indian
Project, Program, Grant Description & Location:	PH 08-T38, Public Law 86-121, IHS Regular Funds, Hopi Indian Reservation, Navajo and Coconino Counties, Arizona

Action includes purchasing, construction, alteration, renovation, or leasing activities, new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by the Indian Health Service.

Consideration	Will the proposed action/activity affect the Consideration? Provide supporting information for your responses and explain any mitigations to be implemented.
18. Endangered Species Act: Is the proposed action likely to adversely affect a plant or animal species listed on the Federal or applicable state list of endangered or threatened species or a specific critical habitat of an endangered or threatened species? (Consult with Fish & Wildlife Service or NOAA Fisheries Service. Discovering an endangered or threatened species in the project area will stop the project, and the Endangered Species Act has significant fines and penalties for violations.)	No PRINTED – Project involves a study only.
19. Will the proposed action require major sedimentation and erosion control measures? (Consider earth disturbing activities including construction or expansion of a parking lot.)	No Experience, Erika Schoen, Field Engineer, 5/2008. PRINTED See project summary.
20. Will the proposed action violate a storm water permit or a wastewater discharge permit either for construction or on-going operations? (Earth disturbing activities may require a Notice of Intent (NOI) to be covered under a storm water general permit or individual permit from the EPA or other agency and a storm water control plan, including some parking lot construction activities. A discharge of wastewater to the environment may require a permit from Tribal, local or state authorities, or EPA.)	No Experience, Erika Schoen, Field Engineer, 5/2008.
21. Safe Drinking Water Act: Will the proposed action impact an EPA designated sole source aquifer? (Designation of sole source aquifer puts restrictions and conditions on Federal expenditures, projects, and grants.)	No The proposed action will not impact an EPA designated sole source aquifer. PRINTED/RESOURCE REVIEW: http://cfpub.epa.gov/safewater/sourcewater/sourcewater.cfm?action=whereyoulive&view=result&datatype=state&CRSearch=Arizona#Arizona

ED_005149_00042934-00080

Tribe: Hopi	Reservation: Hopi Indian
Project, Program, Grant Description & Location:	PH 08-T38, Public Law 86-121, IHS Regular Funds, Hopi Indian Reservation, Navajo and Coconino Counties, Arizona

Action includes purchasing, construction, alteration, renovation, or leasing activities, new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by the Indian Health Service.

Consideration	Will the proposed action/activity affect the Consideration? Provide supporting information for your responses and explain any mitigations to be implemented.
22. Wetlands and Water Resources (lakes, rivers, ponds, streams, etc.): Will the proposed action violate a Section 404 (Clean Water Act) permit for actions in a wetland and/or Section 10 (Rivers and Harbors Act) permit for actions in a stream or river? (Activities in or near a wetland or river may require a permit from the U.S. Army Corps of Engineers or U.S. Coast Guard. Includes: construction in or near any wet or dry waterway, stream crossings, intake structures, outfalls, etc.)	No The proposed action will not affect wetlands and water resources, except in compliance with the applicable permit; e.g., Section 404 (Clean Water Act) and Section 10 (Rivers and Harbors Act) permits. See project summary. EXPERIENCE: Erika Schoen, Field Engineer, 5/2008
23. Floodplains: a. Is the proposed action located in either a 100-year or, for critical actions, a 500-year floodplain? (If Flood Insurance Rate Maps do not exist for the project site, a floodplain survey or consultation may be required. Also may need to consider if the facility will require flood insurance).	No FEMA Flood Plain Maps are not available for the Indian Reservation. The project is outside of the floodplain of the Little Colorado River and it's tributaries. PRINTED/RESOURCE REVIEW: FEMA Flood Maps
b. Will the proposed action adversely impact flood flows in a floodplain or support development in a floodplain?	No Project is not located in a floodplain. EXPERIENCE: Erika Schoen, Field Engineer, 5/2008
24. Existing site: Would the proposed action, involving the purchase, construction or lease of **new** facilities (including portable facilities and trailers), substantially increase the capacity of an **existing** health care facility?	No PRINTED Not in project scope - see project summary.
25. New site: Does the proposed action involve purchase, construction, or lease of **new** facilities (including portable facilities and trailers) where such action is for buildings equal to or more than 12,000 square feet (1080 square meters) of useable space when more than 5 acres (2 hectares) of surface land area are involved at a **new site**?	No PRINTED Not in project scope - see project summary.

ED_005149_00042934-00081

Tribe: Hopi	Reservation: Hopi Indian
Project, Program, Grant Description & Location:	PH 08-T38, Public Law 86-121, IHS Regular Funds, Hopi Indian Reservation, Navajo and Coconino Counties, Arizona

Action includes purchasing, construction, alteration, renovation, or leasing activities, new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by the Indian Health Service.

Consideration	Will the proposed action/activity affect the Consideration? Provide supporting information for your responses and explain any mitigations to be implemented.
26. New site: Does the proposed action involve purchase, construction, or lease of health care facilities (other than buildings) for projects equal to or more than 5 acres (2 hectares) of surface land area at a new site?	No PRINTED Not in project scope - see project summary.
27. Does the proposed action involve the sale or transfer of real property, on which any hazardous substance was stored for one year or more, known to have been released, or disposed of? (Provide relevant documentation for any hazardous substance releases. See 40 CFR 373.2(b), 302.4, and 261.30 for reportable quantities.)	No PRINTED Not in project scope - see project summary.
28. Does the proposed action involve the sale or transfer of real property, on which underground or above ground storage tanks are located?	No PRINTED Not in project scope - see project summary.
29. Will the proposed action violate Tribal, local, state, or Federal law on the use and storage of hazardous substances or the transportation, storage, and disposal of hazardous wastes or medical wastes? (Activities that may generate reportable quantities include air conditioning repair and service, pesticide application, motor pools, automobile repair, welding, landscaping, agricultural activities, print shops, hospitals, clinics, medical centers, etc. Repair, renovation, or demolition activities can generate waste that has asbestos-containing materials, asbestos, lead-based paint, PCBs, CFCs, etc.)	No The proposed action does not violate Tribal, local, state, or federal law on the use and storage of hazardous substances or the transportation, storage, and disposal of hazardous wastes or medical wastes. All applicable laws and requirements will be complied with on this project. PRINTED: See Project Summary.
30. Will the proposed action adversely affect community air pollution for a long period of time? (Consider if your activity must conform to an applicable air quality implementation plan.)	No Project does not have the potential to emit significant emissions of air pollution. PRINTED/RESOURCE REVIEW: http://www.epa.gov/air/oaqps/index.html EXPERIENCE: Erika Schoen, Field Engineer, 3/2008

ED_005149_00042934-00082

Tribe: Hopi	Reservation: Hopi Indian
Project, Program, Grant Description & Location:	PH 08-T38, Public Law 86-121, IHS Regular Funds, Hopi Indian Reservation, Navajo and Coconino Counties, Arizona

Action includes purchasing, construction, alteration, renovation, or leasing activities, new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by the Indian Health Service.

Consideration	Will the proposed action/activity affect the Consideration? Provide supporting information for your responses and explain any mitigations to be implemented.
31. If the proposed action is implemented, will it have a disproportionately high and adverse human health or environmental impact on the Tribe, low-income populations, or minority populations?	No The proposed action does not create any hazards nor expose anyone to adverse environmental conditions. PRINTED: See Project Summary. EXPERIENCE: Erika Schoen, Field Engineer, 3/2008
32. Will the proposed action adversely affect community noise levels?	No No long term noise levels will result from the completed project. EXPERIENCE: Erika Schoen, Field Engineer, 3/2008
33. Wilderness Act: Will the proposed action adversely impact a Wilderness Area? (Wilderness Areas are specifically designated areas of land.)	No There are no designated Wilderness Areas on the Hopi Reservation as per Wilderness Act (16 USC 1131-1136) PRINTED/RESOURCE REVIEW: http://www.blm.gov/az/wildarea.htm
34. Farmland Protection Policy Act: Will the proposed action convert significant agricultural lands to non-agricultural uses and exceed 160-point score on the farmland impact rating?	No No significant agricultural lands will be crossed. PRINTED: See Project Summary.
35. Coastal Zone Management Act: Will the proposed action directly affect a Coastal Zone in a manner inconsistent with the State Coastal Zone Management Plan? (All Federal programs or projects in the coastal zone must comply with the consistency provisions of the Act. Each coastal state should have a state office to manage its coastal zone development and use.)	No The Hopi Reservation has no designated "coastal zones" as per CZMA (16 USC 1451-1464) PRINTED/RESOURCE REVIEW http://www.law.cornell.edu/uscode/html/uscode16/usc_sup_01_16_10_33.html

ED_005149_00042934-00083

Tribe: Hopi	Reservation: Hopi Indian
Project, Program, Grant Description & Location:	PH 08-T38, Public Law 86-121, IHS Regular Funds, Hopi Indian Reservation, Navajo and Coconino Counties, Arizona

Action includes purchasing, construction, alteration, renovation, or leasing activities, new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by the Indian Health Service.

Consideration	Will the proposed action/activity affect the Consideration? Provide supporting information for your responses and explain any mitigations to be implemented.
36. Wild and Scenic Rivers Act: Will the proposed action adversely affect a wild, scenic, or recreational river area or create conditions inconsistent with the character of the river? (A consideration for activities that are in or near any wild and scenic waterway including construction of stream/river crossings, intake structures, outfalls, etc.)	No The proposed action will not affect a wild, scenic, or recreational river area. To date, Congress has not designated any rivers on the Hopi Reservation under this category. (WSRA; 16 USC 1271-1287) PRINTED/RESOURCE REVIEW: http://www.rivers.gov/wildriverslist.html#az http://www.law.cornell.edu/uscode/html/uscode16/usc_sup_01_16_10_28.html

Based on the available record, the IHS has made the following determination on the proposed activity/action/undertaking. The record was examined to identify potential extraordinary or exceptional circumstances which would require further environmental review. (State if an Environmental Impact Statement or Environmental Assessment is needed, or which Categorical Exclusion applies to this activity/action/undertaking).

The project is categorically excluded, Federal Register, Vol. 58, No. 3, January 6, 1993, Exclusion J, "Construction of Sanitation Facilities." There are no extraordinary or exceptional circumstances.

ED_005149_00042934-00084

Indian Health Service

ENVIRONMENTAL INFORMATION AND DOCUMENTATION

Tribe: Hopi	Reservation: Hopi
Project, Program, Grant Description & Location:	PH 08-T38, Public Law 86-121, IHS Regular Funds, Hopi Indian Reservation, Navajo and Coconino Counties, Arizona

I certify that to the best of my knowledge and ability the information presented herein is true and correct (enter appropriate information in the shaded blanks):

(1) Michael Stone for P. Mitchell	Field Engineer	9/26/08
Signature (Grantee or responsible, knowledgeable person who completed this document)	Title or Position (e.g., as appropriate, Tribal chair, utility director, diabetes coordinator, project/facility engineer, etc., or Federal official or officer, etc.)	Date
(2) Michael A Stone	Acting District Engineer	9/26/08
Signature Service Unit Director/District Engineer	Title or Position (Service Unit Director, District Engineer)	Date
(3)	DIR DSFC	9/29/08
Signature IHS Area Program Coordinator/Manager	Title or Position (e.g., as appropriate, IHS diabetes coordinator, facility manager/director, DSFC Director, etc.)	Date
(4) John R. Hamilton	AREA NEPA COORDINATOR	9/30/08
Signature Area NEPA Coordinator		Date
(5) Michael M. Mitchell	ASSOCIATE DIRECTOR, AREA OEHE	10/1/08
Signature, Associate Director, Area OEHE		Date
(6)	DIRECTOR, ENGINEERING SERVICES	
Signature, Director, ES (as appropriate)		Date

*Signatories may vary at the IHS Area. At minimum, signatures (1) through (4) are required, and signature (5) is required for all non-OEHE actions or activities

ED_005149_00042934-00085

Indian Health Service

ENVIRONMENTAL INFORMATION AND DOCUMENTATION

Tribe: Hopi	Reservation: Hopi Indian
Project, Program, Grant Description & Location:	IHS Project PH10-E37, Public Law 86-121, EPA-DWTSA Grant, Hopi Indian Reservation, Navajo and Coconino Counties, Arizona

Action includes purchasing, construction, alteration, renovation, or leasing activities, new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by the Indian Health Service.

Note: A "Yes" or "No" response is required for every question. Answer each item completely with adequate supporting information to justify your response. **Depending upon the context and intensity, any consideration listed below can result in an Environmental Assessment.**

Consideration	Will the proposed action/activity affect the Consideration? Provide supporting information for your responses and explain any mitigations to be implemented.
1. Will the proposed action result in a known violation or continuance of a violation of applicable (Federal, Tribal, State or local) laws or requirements for protection of environment or public health and safety?	No - PRINTED All applicable Federal or Tribal laws will be complied with on this project as per project summary. The project will not violate any requirements imposed for protection of environment or public health and safety. Experience - Jason Crownholm, Field Engineer, 02/22/10.
2. Will the proposed action result in a conflict with existing or proposed Federal, Tribal, state, and local land use plans?	No - The proposed project will comply with existing land use plans. Experience - Jason Crownholm, Field Engineer, 02/22/10.
3. Is there a controversy with respect to environmental effects of the proposed action based on reasonable and substantial issues?	No – None known. Experience - Jason Crownholm, Field Engineer, 02/22/10.
4. Is the proposed action significantly greater in scope than normal for the area or does it have significant unusual characteristics?	No - The scope of this project is normal for the community and the office managing the project. Experience - Jason Crownholm, Field Engineer, 02/22/10.
5. Does the proposed action establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects?	No - The project will is typical and presents nothing unusual or new in its technology. No precedent in regards to future actions is stated or implied by this project. Experience - Jason Crownholm, Field Engineer, 02/22/10.
6. Does the proposed action have significant adverse direct or indirect effects on park land, other public lands, or areas of recognized scenic or recreational value? (For example, consider how your activity will affect the view?)	No - The proposed action will not result in any changes to the scenic integrity of the area. Experience - Jason Crownholm, Field Engineer, 02/22/10.

ED_005149_00042934-00086

Tribe: Hopi	Reservation: Hopi Indian
Project, Program, Grant Description & Location:	IHS Project PH10-E37, Public Law 86-121, EPA-DWTSA Grant, Hopi Indian Reservation, Navajo and Coconino Counties, Arizona

Action includes purchasing, construction, alteration, renovation, or leasing activities, new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by the Indian Health Service.

Consideration	Will the proposed action/activity affect the Consideration? Provide supporting information for your responses and explain any mitigations to be implemented.
7. Does the proposed action include construction of a new municipal solid waste landfill at a new solid waste disposal site?	No – Project does not involve solid waste disposal. Experience - Jason Crownholm, Field Engineer, 02/22/10.
8. Will the proposed action create a need for additional capacity at solid waste disposal facilities?	No - Experience - Jason Crownholm, Field Engineer, 02/22/10.
9. Does the proposed action include construction of a new wastewater treatment facility that will discharge treated sewage effluent to the waters of the U.S.?	No – Experience - Jason Crownholm, Field Engineer, 02/22/10.
10. Will the proposed action create a need for additional capacity at wastewater treatment facilities?	No - Experience - Jason Crownholm, Field Engineer, 02/22/10.
11. Will the proposed action create a need for additional capacity in the drinking water supply?	No - Experience - Jason Crownholm, Field Engineer, 02/22/10.
12. Are there other considerations about the proposed action that could adversely affect the environment and/or public health and safety?	No – Proposed project is intended to improve environment and/or public health and safety. Experience - Jason Crownholm, Field Engineer, 02/22/10.
13. Will the proposed action create a need for additional capacity in health care facilities and for health care services?	No - Experience - Jason Crownholm, Field Engineer, 02/22/10.

ED_005149_00042934-00087

Tribe: Hopi	Reservation: Hopi Indian
Project, Program, Grant Description & Location:	IHS Project PH10-E37, Public Law 86-121, EPA-DWTSA Grant, Hopi Indian Reservation, Navajo and Coconino Counties, Arizona

Action includes purchasing, construction, alteration, renovation, or leasing activities, new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by the Indian Health Service.

Consideration	Will the proposed action/activity affect the Consideration? Provide supporting information for your responses and explain any mitigations to be implemented.
14. Will the proposed action create a need for additional energy supply or generation?	No - Experience - Jason Crownholm, Field Engineer, 02/22/10.
15. Will the proposed action create a need for additional capacity in educational facilities?	No - Experience - Jason Crownholm, Field Engineer, 02/22/10.
16. Will the proposed action create a need for additional capacity in transportation systems?	No - Experience - Jason Crownholm, Field Engineer, 02/22/10.
17. Historic Preservation: a. Does the proposed action involve the purchase, construction, alteration, renovation, or lease of real property or portion of real property that is more that 50 years old?	No - Experience - Jason Crownholm, Field Engineer, 02/22/10.
b. Will the proposed action adversely affect properties listed, or eligible for listing, on the National Register of Historic Places? [Buildings, archaeological sites, National Historic Landmarks; objects of significance to a Tribe including graves, funerary objects, and traditional cultural properties. For assistance, consult with the State Historic Preservation Officer (SHPO) or the Tribal Historic Preservation Officer (THPO)])	No - The IHS will conduct a Cultural Resources Survey prior to any construction under this agreement to minimize disturbance of Traditional and Cultural properties. IHS shall consult with the Tribe, Village and AZ SHPO prior to construction. Experience - Jason Crownholm, Field Engineer, 02/22/10.

ED_005149_00042934-00088

Tribe: Hopi	Reservation: Hopi Indian
Project, Program, Grant Description & Location:	IHS Project PH10-E37, Public Law 86-121, EPA-DWTSA Grant, Hopi Indian Reservation, Navajo and Coconino Counties, Arizona

Action includes purchasing, construction, alteration, renovation, or leasing activities, new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by the Indian Health Service.

Consideration	Will the proposed action/activity affect the Consideration? Provide supporting information for your responses and explain any mitigations to be implemented.
18. Endangered Species Act: Is the proposed action likely to adversely affect a plant or animal species listed on the Federal or applicable state list of endangered or threatened species or a specific critical habitat of an endangered or threatened species? (Consult with Fish & Wildlife Service or NOAA Fisheries Service. Discovering an endangered or threatened species in the project area will stop the project, and the Endangered Species Act has significant fines and penalties for violations.)	No - IHS will conduct a literature review and consult with tribal DNR to determine the potential for impact to endangered species in the area. If a potential exists, IHS will conduct a biological survey through a contract biologist with review by U.S. Fish and Wildlife Service as necessary
19. Will the proposed action require major sedimentation and erosion control measures? (Consider earth disturbing activities including construction or expansion of a parking lot.)	No – Experience - Jason Crownholm, Field Engineer, 02/22/10.
20. Will the proposed action violate a storm water permit or a wastewater discharge permit either for construction or on-going operations? (Earth disturbing activities may require a Notice of Intent (NOI) to be covered under a storm water general permit or individual permit from the EPA or other agency and a storm water control plan, including some parking lot construction activities. A discharge of wastewater to the environment may require a permit from Tribal, local or state authorities, or EPA.)	No – Experience - Jason Crownholm, Field Engineer, 02/22/10.
21. Safe Drinking Water Act: Will the proposed action impact an EPA designated sole source aquifer? (Designation of sole source aquifer puts restrictions and conditions on Federal expenditures, projects, and grants.)	No - Experience - Jason Crownholm, Field Engineer, 02/22/10.

ED_005149_00042934-00089

Tribe: Hopi	Reservation: Hopi Indian
Project, Program, Grant Description & Location:	IHS Project PH10-E37, Public Law 86-121, EPA-DWTSA Grant, Hopi Indian Reservation, Navajo and Coconino Counties, Arizona

Action includes purchasing, construction, alteration, renovation, or leasing activities, new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by the Indian Health Service.

Consideration	Will the proposed action/activity affect the Consideration? Provide supporting information for your responses and explain any mitigations to be implemented.
22. Wetlands and Water Resources (lakes, rivers, ponds, streams, etc.): Will the proposed action violate a Section 404 (Clean Water Act) permit for actions in a wetland and/or Section 10 (Rivers and Harbors Act) permit for actions in a stream or river? (Activities in or near a wetland or river may require a permit from the U.S. Army Corps of Engineers or U.S. Coast Guard. Includes: construction in or near any wet or dry waterway, stream crossings, intake structures, outfalls, etc.)	No - It is anticipated that the area is not jurisdiction under Section 404 of the Clean Water Act. PRINTED.
23. Floodplains: a. Is the proposed action located in either a 100-year or, for critical actions, a 500-year floodplain? (If Flood Insurance Rate Maps do not exist for the project site, a floodplain survey or consultation may be required. Also may need to consider if the facility will require flood insurance).	No - FEMA Flood Plain Maps are not available for the Indian Reservation. The project is outside of the floodplain of the Little Colorado River and it's tributaries. PRINTED/RESOURCE REVIEW: FEMA Flood Maps
b. Will the proposed action adversely impact flood flows in a floodplain or support development in a floodplain?	No - Experience - Jason Crownholm, Field Engineer, 02/22/10.
24. Existing site: Would the proposed action, involving the purchase, construction or lease of **new** facilities (including portable facilities and trailers), substantially increase the capacity of an **existing** health care facility?	No - Experience - Jason Crownholm, Field Engineer, 02/22/10.
25. New site: Does the proposed action involve purchase, construction, or lease of **new** facilities (including portable facilities and trailers) where such action is for buildings equal to or more than 12,000 square feet (1080 square meters) of useable space when more than 5 acres (2 hectares) of surface land area are involved at a **new site**?	No - PRINTED Not in project scope - see project summary.

ED_005149_00042934-00090

Tribe: Hopi	Reservation: Hopi Indian
Project, Program, Grant Description & Location:	IHS Project PH10-E37, Public Law 86-121, EPA-DWTSA Grant, Hopi Indian Reservation, Navajo and Coconino Counties, Arizona

Action includes purchasing, construction, alteration, renovation, or leasing activities, new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by the Indian Health Service.

Consideration	Will the proposed action/activity affect the Consideration? Provide supporting information for your responses and explain any mitigations to be implemented.
26. New site: Does the proposed action involve purchase, construction, or lease of health care facilities (other than buildings) for projects equal to or more than 5 acres (2 hectares) of surface land area at a new site?	No - PRINTED Not in project scope - see project summary.
27. Does the proposed action involve the sale or transfer of real property, on which any hazardous substance was stored for one year or more, known to have been released, or disposed of? (Provide relevant documentation for any hazardous substance releases. See 40 CFR 373.2(b), 302.4, and 261.30 for reportable quantities.)	No - PRINTED Not in project scope - see project summary.
28. Does the proposed action involve the sale or transfer of real property, on which underground or above ground storage tanks are located?	No - PRINTED Not in project scope - see project summary.
29. Will the proposed action violate Tribal, local, state, or Federal law on the use and storage of hazardous substances or the transportation, storage, and disposal of hazardous wastes or medical wastes? (Activities that may generate reportable quantities include air conditioning repair and service, pesticide application, motor pools, automobile repair, welding, landscaping, agricultural activities, print shops, hospitals, clinics, medical centers, etc. Repair, renovation, or demolition activities can generate waste that has asbestos-containing materials, asbestos, lead-based paint, PCBs, CFCs, etc.)	No - The proposed action does not violate Tribal, local, state, or federal law on the use and storage of hazardous substances or the transportation, storage, and disposal of hazardous wastes or medical wastes. All applicable laws and requirements will be complied with on this project. PRINTED: See Project Summary.
30. Will the proposed action adversely affect community air pollution for a long period of time? (Consider if your activity must conform to an applicable air quality implementation plan.)	No - The proposed action will not adversely affect community air pollution for a long period of time. Experience - Jason Crownholm, Field Engineer, 02/22/10.

ED_005149_00042934-00091

Tribe: Hopi	Reservation: Hopi Indian
Project, Program, Grant Description & Location:	IHS Project PH10-E37, Public Law 86-121, EPA-DWTSA Grant, Hopi Indian Reservation, Navajo and Coconino Counties, Arizona

Action includes purchasing, construction, alteration, renovation, or leasing activities, new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by the Indian Health Service.

Consideration	Will the proposed action/activity affect the Consideration? Provide supporting information for your responses and explain any mitigations to be implemented.
31. If the proposed action is implemented, will it have a disproportionately high and adverse human health or environmental impact on the Tribe, low-income populations, or minority populations?	No - The proposed action does not create any hazards nor expose anyone to adverse environmental conditions. Project is intended to improve environmental health in the area. PRINTED: See Project Summary.
32. Will the proposed action adversely affect community noise levels?	No - The proposed action may result in minimal short term increased noise levels with the mobilization of heavy equipment but no long term noise levels will result from the completed project. Experience - Jason Crownholm, Field Engineer, 02/22/10.
33. Wilderness Act: Will the proposed action adversely impact a Wilderness Area? (Wilderness Areas are specifically designated areas of land.)	No - There are no designated Wilderness Areas on the Hopi Reservation as per Wilderness Act (16 USC 1131-1136) PRINTED/RESOURCE REVIEW: http://www.blm.gov/az/wildarea.htm
34. Farmland Protection Policy Act: Will the proposed action convert significant agricultural lands to non-agricultural uses and exceed 160-point score on the farmland impact rating?	No - No significant agricultural lands will be crossed. PRINTED: See Project Summary.
35. Coastal Zone Management Act: Will the proposed action directly affect a Coastal Zone in a manner inconsistent with the State Coastal Zone Management Plan? (All Federal programs or projects in the coastal zone must comply with the consistency provisions of the Act. Each coastal state should have a state office to manage its coastal zone development and use.)	No - The Hopi Reservation has no designated "coastal zones" as per CZMA (16 USC 1451-1464) PRINTED/RESOURCE REVIEW http://www.law.cornell.edu/uscode/html/uscode16/usc_sup_01_16_10_33.html

ED_005149_00042934-00092

Tribe: Hopi	Reservation: Hopi Indian
Project, Program, Grant Description & Location:	IHS Project PH10-E37, Public Law 86-121, EPA-DWTSA Grant, Hopi Indian Reservation, Navajo and Coconino Counties, Arizona

Action includes purchasing, construction, alteration, renovation, or leasing activities, new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by the Indian Health Service.

Consideration	Will the proposed action/activity affect the Consideration? Provide supporting information for your responses and explain any mitigations to be implemented.
36. Wild and Scenic Rivers Act: Will the proposed action adversely affect a wild, scenic, or recreational river area or create conditions inconsistent with the character of the river? (A consideration for activities that are in or near any wild and scenic waterway including construction of stream/river crossings, intake structures, outfalls, etc.)	No - The proposed action will not affect a wild, scenic, or recreational river area. To date, Congress has not designated any rivers on the Hopi Reservation under this category. (WSRA; 16 USC 1271-1287) PRINTED/RESOURCE REVIEW: http://www.rivers.gov/wildriverslist.html#az http://www.law.cornell.edu/uscode/html/uscode16/usc_sup_01_16_10_28.html

Based on the available record, the IHS has made the following determination on the proposed activity/action/undertaking. The record was examined to identify potential extraordinary or exceptional circumstances which would require further environmental review. (State if an Environmental Impact Statement or Environmental Assessment is needed, or which Categorical Exclusion applies to this activity/action/undertaking).

The project is categorically excluded, Federal Register, Vol. 58, No. 3, January 6, 1993, Exclusion J, "Construction of Sanitation Facilities." There are no extraordinary or exceptional circumstances.

ED_005149_00042934-00093

ENVIRONMENTAL INFORMATION AND DOCUMENTATION

Tribe: Hopi	Reservation: Hopi Indian
Project, Program, Grant Description & Location:	IHS Project PH10-E37, Public Law 86-121, EPA-DWTSA Grant, Hopi Indian Reservation, Navajo and Coconino Counties, Arizona

I certify that to the best of my knowledge and ability the information presented herein is true and correct (enter appropriate information in the shaded blanks):

(1)	PROJECT ENGINEER	6/24/2010
Signature (Grantee or responsible, knowledgeable person who completed this document)	Title or Position (e.g., as appropriate, Tribal chair, utility director, diabetes coordinator, project/facility engineer, etc., or Federal official or officer, etc.)	Date
(2) Michael Stone	DISTRICT Engineer	6/24/2010
Signature Service Unit Director/District Engineer	Title or Position (Service Unit Director, District Engineer)	Date
(3)	DIR DSFC	6/29/30
Signature IHS Area Program Coordinator/Manager	Title or Position (e.g., as appropriate, IHS diabetes coordinator, facility manager/director, DSFC Director, etc.)	Date
(4) John R. Hamilton	AREA NEPA COORDINATOR	7/12/10
Signature Area NEPA Coordinator		Date
(5)	ASSOCIATE DIRECTOR, AREA OEHE	7/12/10
Signature, Associate Director, Area OEHE		Date
(6)	DIRECTOR, ENGINEERING SERVICES	
Signature, Director, ES (as appropriate)		Date

*Signatories may vary at the IHS Area. At minimum, signatures (1) through (4) are required, and signature (5) is required for all non-OEHE actions or activities

ED_005149_00042934-00094

Memorandum of Agreement

MEMORANDUM OF AGREEMENT
BETWEEN
THE INDIAN HEALTH SERVICE
AND
FIRST MESA CONSOLIDATED VILLAGES
AND
THE HOPI TRIBE
HOPI INDIAN RESERVATION
NAVAJO AND COCONINO COUNTIES, ARIZONA

PROJECT NO. PH 04-S63
PUBLIC LAW 86-121

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
INDIAN HEALTH SERVICE
PHOENIX AREA OFFICE

JULY 2004

MEMORANDUM OF AGREEMENT
BETWEEN
THE INDIAN HEALTH SERVICE
AND
FIRST MESA CONSOLIDATED VILLAGES
AND
THE HOPI TRIBE
HOPI INDIAN RESERVATION
NAVAJO AND COCONINO COUNTIES, ARIZONA

PROJECT NO. PH 04-S63
PUBLIC LAW 86-121

THIS AGREEMENT is made between the Indian Health Service, Department of Health and Human Services, hereinafter referred to as IHS, acting through the Director, Phoenix Area Indian Health Service, under and pursuant to the provisions of Public Law 86-121 (73 Stat. 267) and the Hopi Tribe of the Hopi Indian Reservation, hereinafter referred to as the Tribe on behalf of the First Mesa Consolidated Villages, hereinafter referred to as the Villages.

WHEREAS, the Tribe and Villages desire to provide for a new water source which meets the EPA maximum contamination level for arsenic in community water sources serving the Villages on the Hopi Indian Reservation, Navajo and Coconino Counties, Arizona, and

WHEREAS, the Tribe, acting on behalf of the Villages and through its Chairman, submitted a project proposal to the IHS in May 2004 , requesting IHS assistance in the installation of a new water supply source for residents of the First Mesa Villages, and

WHEREAS, the IHS desires to assist in the provision of sanitation facilities under Public Law 86-121 for the First Mesa Consolidated Villages and the Hopi Tribe, and

WHEREAS, the Tribe and Villages have reviewed the attached Project Summary and concur with its provisions.

NOW THEREFORE, in order to carry out the project as set forth in the attached Project Summary titled "Arsenic Treatment Facilities for First Mesa, First Mesa Consolidated Villages" dated April 2004, the parties here to mutually agree that:

TRIBAL LANDS

1. The IHS recognizes the special relationship between the Hopi Tribe, Hopi Villages and Hopi Clans on matters of local land use. Further, while IHS recognizes the Hopi Tribe as the focal point in the government to government relationship between the United States and the Tribe for Agreements such as this, IHS respects the Villages and realizes that Village and/or Clan approval is necessary prior to entering upon certain Hopi lands.

2. The Tribe and Villages hereby grant permission for the IHS and its representatives to enter upon or across Tribal lands without charge. Said permission to be on these lands is granted for the sole purpose of carrying out the project outlined in the attached Project Summary and provided for herein. IHS and its representatives shall provide advance notice

to the Tribe and/or Village representatives when and where they will be present on Tribal/Village lands. The Tribe agrees to waive all claims against IHS, which may arise by reason of such entry upon Tribal lands, except those that may be pursuant to or arise under the Federal Tort Claims Act. This waiver shall not extend to claims against third parties or agents or employees of IHS who act beyond the authority of their employment. Construction under this Agreement within the land holdings of the Villages will be located in areas acceptable to the Villages.

3. The Tribe shall obtain all rights-of-way and easements on or over Tribal lands which, in the judgment of the IHS, may be necessary for the provision and operation of any facilities provided for in this Agreement. The Tribe and Villages, as appropriate, will allow use of the land to the extent determined necessary to carry out the obligations of the IHS under this Agreement.

4. The IHS will conduct a Cultural Resources Survey prior to any construction under this Agreement to minimize disturbance of any Traditional and Cultural properties. IHS shall consult with the Tribe and Village prior to any excavations that may result in inadvertent discovery of human remains in accordance with the Native American Graves Protection and Repatriation Act and related Regulations, 43 CFR Part 10. In the event that previously unidentified archeological features and/or concentrations of artifacts are encountered in the project areas during any phase of development or construction, all excavation and construction shall cease within a 100-foot radius of the discovery. The Hopi Tribal Cultural Preservation Office and Village shall be consulted and mutually agree on procedures which will be followed to mitigate or avoid damage to the site, if necessary. This Agreement shall serve as official notice to the Tribe and Village that the proposed sanitation facilities construction may result in inadvertent discoveries, and that any such discoveries shall be subject to the above Regulations, including consultation between the IHS, Village, and the Tribally designated cultural resources representative regarding the disposition of human remains or related cultural items. In addition, as part of IHS' normal project procedures, IHS will comply with applicable NEPA and other applicable environmental regulatory requirements prior to construction.

IHS CONTRIBUTIONS

5. The IHS will provide without charge to the Tribe:

   a. Technical assistance for contract administration, construction inspection, supply and materials purchase, construction staking, and preparation of plans and specifications. The IHS shall include clauses in the specifications, requiring compliance with applicable Federal and Tribal laws, codes, and regulations.

   b. Instruction as to the proper utilization, maintenance, operation, and protection of the facilities provided for herein.

6. The IHS shall contribute to the Tribe an amount not to exceed $714,087.00 for administration and construction of the proposed facilities. The IHS Area Director may increase this amount subject to the availability of funds, and will notify the other parties in writing of any changes. The exact amount to be contributed shall be the sum of the following items:

a. Actual cost of **construction contracts**;

b. **Contract administrative support fee** to be paid to the Tribe in lieu of indirect costs. This fee is to cover a portion of the cost of administering construction contracts under the project. The contract administrative support fee shall be as follows:

Contract Amount	Administrative Fee
$0 to $25,000	Four percent of the contract amount.
$25,000 to $200,000	$1,000 plus three percent of the contract amount in excess of $25,000.
Above $200,000	$6,250 plus two percent of the contract amount in excess of $200,000.

c. Actual cost of **construction of facilities** listed in the Project Summary, including labor, equipment, material, supplies, and services; and

d. **Direct costs** such as printing, copying, advertising, and accounting fees may be paid if approved in advance by the IHS District Engineer, Division of Sanitation Facilities Construction.

7. The IHS contributions to the Tribe shall be made on a quarterly basis in amounts approved by the IHS District Engineer based on cost estimates for construction projected during the upcoming quarter. Supplemental requests for contributions may be made should costs exceed the quarterly estimate. Any funds contributed and not expended within a given quarter shall be applied toward the next quarterly estimate and the contribution adjusted accordingly.

8. The IHS will release contributions to the Tribe as provided for in Paragraph 6 and 7 of this Agreement, upon:

a. Execution of this Agreement by all parties;

b. Receipt of a written request from the Tribe for the required funds;

c. Certification from the IHS Project Engineer that the amount of funds requested is required to make timely payments in accordance with the project budget for the supplies, materials, equipment, and services being obtained under the provisions of this Agreement; and

d. Approval by the IHS Area office.

9. The IHS shall utilize project funds in the amount of $67,913.00 for project technical support expenses. Project technical support expenses shall include IHS expenditures such as technician and clerical salaries, GSA vehicles and miscellaneous project related expenses.

10. The IHS shall retain 50% of the identified contingency amount for the "Risk Pool." The "Risk Pool" will be used to make funds available to any Area project that may exceed the budgeted project contingency amount. Fifty percent of the estimated project contingency amount (the portion not retained for the "Risk Pool") will be directly available to the Tribe for construction of the facilities proposed in this project. If all facilities proposed in the Project Summary are completed and there are funds remaining in the project, the remaining funds may be used for additional facilities, provided the additional facilities are within the general scope of work. Additional facilities must be sanitation facilities eligible under the PL 86-121 program that funded the project. The District Engineer will review and approve the additional scope and estimated cost of additional facilities. A copy of the cost accounting of completed facilities, a Tribal request for additional facilities and District Engineer approval must be forwarded to the Director, DSFC prior to the construction of any additional facilities.

REPRESENTATIVES

11. The Tribe will provide one or more representatives to coordinate the conduct of Tribal and Village participation respectively under this Agreement. All correspondence related to the project shall be provided to the Tribal Chairman.

12. The IHS Project Engineer shall manage the project and coordinate IHS participation in the Project.

TRANSFER OF TRIBALLY PROVIDED FACILITIES

13. All parties understand that the facilities constructed (including equipment, land, and supplies purchased) under this Agreement are at no time the property of the IHS, but rather belong to the Tribe, which shall operate and maintain such facilities properly, until or unless transferred to other parties.

14. Because the IHS will not at any time own the facilities constructed, no formal transfer Agreement is necessary. In lieu of a transfer Agreement, the IHS will notify the Tribe by registered mail when IHS participation in the project is complete.

OPERATION AND MAINTENANCE FEES AND ORDINANCES

15. The Tribe and or the Villages will establish connection fees and user rates and collect such charges from individuals served by the system to obtain the revenue necessary to sustain the operation, maintenance, and repair of the community water supply and sewerage systems. As an alternative, the Tribe and/or Villages may provide all of this revenue from another source.

16. The Tribe agrees to enact and enforce appropriate ordinances or regulations governing:

    a. Connection to the community water supply by the residents of the community;

    b. The methods and materials to be used in making connections to the community water supply in a safe and sanitary manner; and

c. The continued operation, maintenance, and repair of individual water supply facilities in a safe and sanitary condition by the persons served thereby.

PROJECT SCHEDULE

17. The IHS project engineer shall prepare a project schedule for the planning, design, construction and training activities as outlined in the Project Summary. The Project Engineer shall submit the schedule to the Tribe and Villages during the planning phase of the project. Thereafter, the Project Engineer shall provide changes made to the schedule to the Tribe and Village for review and comment prior to implementation of the changes.

18. The Tribe, Villages and IHS will work in partnership to resolve delays that affect the start of construction. In the event that actual construction of this project cannot be initiated for any reason by June 30, 2006 the IHS reserves the right to cancel the project and use the designated project funds for other projects. If the condition which impeded construction is resolved following such cancellation, the IHS will give high priority to funding the project from appropriated sanitation facilities funds available at the time or from future appropriations for sanitation facilities.

TRIBAL FINANCIAL MANAGEMENT STANDARDS AND PROCEDURES

19. The Tribe shall provide the following features in its financial management system:

    a. The Tribe shall maintain original accounting records which accurately identify the source and application of all project funds it receives. The source documentation shall include canceled checks, paid bills, payrolls, time and attendance records, purchasing documents, and financial records. Accurate, current, and complete project records shall be reported in accordance with other provisions of this Agreement;

    b. The Tribe shall maintain effective controls and accountability for all cash, real and personal property, and other assets acquired;

    c. The Tribe shall compare actual Tribal expenditures with budgeted amounts for the project; and

    d. Applicable OMB cost principles (OMB Circular A-87) and the terms of this Agreement shall govern in determining the reasonableness, allowability, and allocability of all costs under the project.

20. The Tribe shall maintain a separate financial account for the project.

21. The Tribe shall submit a projected cash flow schedule. The Tribe and IHS shall minimize the time elapsed between fund transfer and disbursement.

22. Interest in excess of $100 per year earned on cash advances (Federal funds) must be returned to the IHS in the appropriate project account.

23. Funds for construction projects under an Agreement shall not be borrowed or intentionally invested. Funds from one IHS funded construction project shall not be used for cash flow

or other unauthorized purposes or for another IHS funded construction project.

24. Any proposed changes by the Tribe in the project scope and/or budgeted costs must be reviewed and approved by IHS as provided for in the Agreement.

PROVISIONS FOR TRIBAL PROCUREMENT

25. The facilities described in the Project Summary shall be designed and constructed in accordance with normal IHS standards for such facilities.

26. The Tribe, through its procurement system, shall provide for construction of all water and sewage facilities described in the Project Summary as being provided by the Tribe and shall procure the facilities in accordance with this Agreement and in compliance with applicable Federal requirements.

27. The Tribe shall submit to the IHS, for review and approval before advertising, all proposed solicitations and shall make such adjustments in the solicitations as determined necessary by IHS.

28. The Tribe shall develop and submit to IHS for approval a proposed construction contract showing proposed unit costs, based on bids received, for construction of sanitation facilities to be installed. The Tribe shall negotiate these unit costs if necessary to receive approval from IHS. These unit costs shall govern for the duration of the Tribal contract under which they are proposed. No work shall be performed prior to written approval by IHS of the corresponding unit costs.

29. If additional or special units of work are needed for specific sites during execution of the project, the Tribe shall submit a list of proposed costs for negotiation on those items. Costs for the additional or special items shall then govern either for the duration of the Tribal contract, or for just those sites specified in the proposal, as agreed at the time. Major modifications to the construction contract (such as adding facilities not included in the Project Summary or requiring additional project funds) shall not be executed without written approval by the IHS Associate Director, Office of Environment Health and Engineering, Phoenix Area.

30. The IHS shall review and approve proposed unit costs for all items of work under the project. Once approved by IHS, these unit costs shall govern all work for the duration of the Tribal contract under which they are proposed. All unit costs are subject to approval by the Director, Sanitation Facilities Construction prior to the award of any contract or the start of any construction involving those items of work.

31. The Tribe shall procure construction of facilities outlined in the Project Summary using a system of contract administration that ensures performance by its contractors in accordance with the terms and conditions of the contract and compliance with the latest edition of the IHS MOA Guideline Chapter 6, Section 2. Some, but not all, of the requirements are:

    a. Procurement Standards;

    b. Competitive Procurement Practice;

c. Indian Preference;

d. Bonding Requirements; and

e. Subcontract Limits.

32. Tribal procurement documents shall provide for the right of the IHS to inspect sanitation facilities installed to insure they meet minimum IHS standards. The procurement documents shall also note that the IHS inspector does not have authority to modify the contract or issue direction to the contractor.

33. The IHS will, at the request of the Tribe, provide oversight and technical assistance on the contractor submittals, progress payments, change order requests, and other project related information submitted by the Tribal contractor and make recommendations to the Tribe.

34. The IHS shall provide construction inspection services to the Tribe. The IHS inspector shall not have the authority to modify the contract or direct the contractor. The IHS and Tribe will inspect all sanitation facilities constructed through Tribal procurement to insure construction meets minimum IHS standards. Following construction inspection, the IHS will advise the Tribe on whether the construction meets the IHS interpretation of the contract requirements.

35. At no time during the project will the Tribe represent the IHS nor will the IHS represent the Tribe in contract administration matters.

36. The Tribe shall conduct with the contractor, IHS representatives, and other interested parties, a final inspection of the facilities provided under the contract. Final acceptance and payment for the work by the Tribe shall not occur until the contractor has corrected all deficiencies identified at the final inspection and until the work is in full compliance with the plans, specifications and other contract requirements.

37. Work will be inspected by IHS to insure that the work performed complies with all the terms and conditions of the Tribal contract. Final IHS contributions for the work performed will not be released to the Tribe until such time as the IHS participates in a final inspection and determines that the work complies with all contract requirements.

PROJECT CLOSEOUT

38. The IHS will close out the project when it determines that all applicable administrative actions and all required project work has been completed. The Tribe shall return unexpended project funds contributed by IHS within 90 days after the completion of the project construction phase and shall submit a closeout financial report after completion of the project.

39. Except as otherwise provided, project records shall be retained for three (3) years from the project completion date. These records include all financial records, supporting documents, procurement documents, titles, and equipment records; including, but not limited to, time sheets, canceled checks, invoices, and purchase orders. These records shall be made

available to the IHS, Inspectors General, or other designated representatives upon request. The Tribe shall be subject to audit in accordance with the requirements of the Single Audit Act.

40. If any litigation, claim, negotiation, audit, or other action involving the records has been started before the expiration of the three year period, the records shall be retained until completion of the action and resolution of all issues which arise from it, or until the end of the three year period, whichever is later.

WARRANTIES

41. The Tribe, to the extent economically feasible, will obtain a one year warranty for the Tribe and head of household from the Tribal contractors, suppliers, and manufacturers on equipment, work, and supplies provided by them. The IHS shall assist the Tribe or head of household in obtaining the benefits and protection of all warranties on equipment or work provided under this Agreement. In the event of a problem occurring within the first year of installation with the design or construction of installed facilities, equipment, or work not protected by the warranties of the suppliers or manufacturers, the IHS will correct the problem, subject to the availability of funds and staff resources, as determined by the IHS.

AGREEMENT DISPUTES

42. The parties to this Agreement agree to resolve all disputes regarding the provisions of this Agreement among the parties through administrative procedures first. If a dispute cannot be resolved locally, the parties to this Agreement agree that the next administrative procedure is an appeals board established at the IHS headquarters level, which will make a recommendation to the IHS Director, who will issue a decision for IHS. If a further administrative review is desired by the Tribe, the parties agree to jointly employ the services of a mutually agreed upon mediator to facilitate a resolution of the dispute. After allowing as much time as necessary for a resolution, the parties to this Agreement may thereafter pursue their available remedies for any disputes.

43. Nothing in this Agreement shall be construed as a waiver of the sovereign immunity of either the US Government, the Hopi Tribe, or the Villages for any purpose.

AGREEMENT TERMINATION

44. Any party to this Agreement may terminate its relationship with the other Agreement parties prior to project completion upon 30 days notice in writing to all other parties.

45. Unless earlier terminated pursuant to paragraph 18 above, this Agreement shall remain in effect until the earliest of the following dates:

    a. The date when all obligations under the terms of the MOA have been fulfilled, or

    b. December 31, 2009

IN WITNESS WHEREOF, the parties have subscribed their names:

FOR THE VILLAGE AND TRIBE:

20/9/04
Date

CAO

Chairman, Hopi Indian Tribe, having been duly authorized to enter into this Agreement on behalf of the First Mesa Consolidated Villages and the Hopi Tribe, as evidenced by the attached copy of the resolutions made by the Hopi Tribal Council.

FOR THE INDIAN HEALTH SERVICE:

9-29-04
Date

Area Director
Phoenix Area Indian Health Service
Department of Health and Human Service

HOPI TRIBAL COUNCIL
RESOLUTION
H-078-2004

WHEREAS, pursuant to the Constitution and By-Laws of the Hopi Tribe, ARTICLE VI-POWERS OF THE TRIBAL COUNCIL, SECTION 1(a), (e) and (f) the Hopi Tribal Council is authorized, "To represent and speak for the Hopi Tribe in all matters for the welfare of the Tribe, . . .", "To raise and take care of a Tribal Council fund by accepting gifts and grants . . .", and "To use such Tribal Council fund for the welfare of the Tribe . . ."; and

WHEREAS, pursuant to the Indian Sanitations Facilities Act, Public Law 86-121, the Indian Health Service (I.H.S.) is authorized to enter into agreements with Native American Tribes for the purposes of construction, repair and maintenance of sanitation facilities; and

WHEREAS, the I.H.S. desires to enter into a Memorandum of Agreement (MOA) with the Hopi Tribe in furtherance of I.H.S. Project No. PH 04-S63, to construct and install arsenic treatment facilities for 318 homes in First Mesa; and

WHEREAS, the benefits derived from this Project will improve the health, sanitary conditions and will far offset any damages that may occur from land utilized.

NOW THEREFORE BE IT RESOLVED that Hopi Tribal Council has reviewed the attached MOA along with the Project Scope and hereby accepts the terms and conditions contained therein.

BE IT FURTHER RESOLVED that the Hopi Tribal Council hereby delegates to the Chairman or his designee the authority to execute the attached MOA and Project Scope with the I.H.S. for the development and completion of I.H.S. Project No. PH 04-S63.

HOPI TRIBAL COUNCIL
RESOLUTION
H-078-2004

BE IT FURTHER RESOLVED that the Hopi Tribal Council authorizes the Treasurer to accept and spend funding for the purpose of completing the project.

BE IT FINALLY RESOLVED that the Hopi Tribal Council hereby authorizes the Chairman or his designee the authority to enter into and execute all agreements, contracts, and legal instruments necessary to complete the project as outlined in the MOA and Project Scope for Project No. PH 04-S63.

CERTIFICATION

The Hopi Tribal Council duly adopted the foregoing resolution on September 10, 2004, at a meeting at which a quorum was present with a vote of 11 in favor, 0 opposed, 1 abstaining (Chairman presiding and not voting) pursuant to the authority vested in the Hopi Tribal Council by ARTICLE VI-POWERS OF THE TRIBAL COUNCIL, SECTION 1 (a), (e) and (f) of the Hopi Tribal Constitution and By-Laws of the Hopi Tribe of Arizona, as ratified by the Tribe on October 24, 1936, and approved by the Secretary of Interior on December 19, 1936, pursuant to Section 16 of the Act of June 18, 1934. Said resolution is effective as of the date of adoption and does not require Secretarial approval.

Wayne Taylor Jr.

Wayne Taylor, Jr., Chairman
Hopi Tribal Council

ATTEST:

Martha A. Mase

Martha A. Mase, Tribal Secretary
Hopi Tribal Council

MEMORANDUM OF AGREEMENT
AMONG
THE INDIAN HEALTH SERVICE
AND
THE HOPI TRIBE
HOPI INDIAN RESERVATION
AND
THE U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT PH 06-D33
PUBLIC LAW 86-121

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
INDIAN HEALTH SERVICE
PHOENIX AREA OFFICE

JULY 2006

MEMORANDUM OF AGREEMENT
AMONG
THE INDIAN HEALTH SERVICE
AND
THE HOPI TRIBE
HOPI INDIAN RESERVATION
AND
THE U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT PH 06-D33
PUBLIC LAW 86-121

THIS MEMORANDUM OF AGREEMENT, hereinafter AGREEMENT, is made among the Indian Health Service, Department of Health and Human Services, hereinafter referred to as IHS, acting through the Director, Phoenix Area Indian Health Service, under the provisions of Public Law 86-121 (73 Stat. 267), the Hopi Tribe, Hopi Indian Reservation, Navajo and Coconino Counties, Arizona, hereinafter called the Tribe, acting through the Chairman, and the US Environmental Protection Agency, Region 9, hereinafter referred to as the EPA, acting through its Director, Water Division.

WHEREAS, the Tribe desire to conduct a feasibility study for arsenic rule compliance on the public water systems on the Hopi Indian Reservation, Navajo and Coconino Counties, Arizona, and

WHEREAS, the Tribe has requested IHS assistance in the provision of sanitation facilities outlined in the Project Summary by letter dated June 2006, and

WHEREAS, the IHS desires to assist in the provision of sanitation facilities under Public Law 86-121 for the Hopi Tribe, and

WHEREAS, the Tribe has obtained EPA Drinking Water Tribal Set Aside funding for the provision of sanitation facilities described in the attached Project Summary, and

WHEREAS, the Tribe has requested that IHS enter into an interagency agreement with EPA to manage the sanitation facilities project and receive project funding from EPA, and

WHEREAS, the Tribe has reviewed the attached Project Summary and concur with its provisions.

NOW THEREFORE, in order to carry out the Project as set forth in the attached Project Summary titled Feasibility Study For Arsenic Rule Compliance, Hopi Indian Reservation, and dated March 2006, the parties mutually agree that:

TRIBAL LANDS

1. The IHS recognizes the special relationship between the Hopi Tribe, Hopi Villages and Hopi Clans on matters of local land use. Further, while IHS recognizes the Hopi Tribe as the focal point in the government to government relationship between the United States and the Tribe for agreements such as this, IHS respects the Villages and realizes that Village and/or Clan approval is necessary prior to entering upon certain Hopi lands.

2. The Tribe hereby grants permission for the IHS and its representatives to enter upon or across tribal lands under the control of the Tribe without monetary charge. Said permission to be on these lands is granted for the sole purpose of carrying out the Project outlined in the attached Project Summary and provided for herein. IHS and its representatives shall provide advance notice to the Tribe and/or Village representatives when and where they will be present on Tribal lands. The Tribe agrees to waive all claims against IHS, which may arise by reason of such entry upon Tribal lands, except as to those claims that may be recognized pursuant to or arise under the Federal Tort Claims Act. This waiver shall not extend to claims against third parties or agents or employees of IHS who act beyond the authority of their employment. Construction under this Agreement within the land holdings of the Village will be located in areas acceptable to the Village.

3. The Tribe shall obtain all rights-of-way and easements on or over Tribal lands which may be necessary for the provision and operation of any facilities provided for in this Agreement. The Tribe will allow use of the land to the extent determined necessary to carry out the obligations of the IHS under this Agreement.

4. The IHS will conduct a Cultural Resources Survey prior to any construction under this agreement to minimize disturbance of Traditional and Cultural properties. IHS shall consult with the Tribe and Village prior to any excavations that may result in inadvertent discovery of human remains in accordance with the Native American Graves Protection and Repatriation Act and related Regulations, 43 CFR Part 10. In the event that previously unidentified archeological features and/or concentrations of artifacts are encountered in the project areas during any phase of development or construction, all excavation and construction shall cease within a 100-foot radius of the discovery. The Hopi Tribal Cultural Preservation Office and Village shall be consulted and mutually agree on procedures which will be followed to mitigate or avoid damage to the site, if necessary. This Agreement shall serve as official notice to the Tribe and Village that the proposed sanitation facilities construction may result in inadvertent discoveries, and that any such discoveries shall be subject to the above Regulations, including consultation between the IHS, Village, and the Tribally designated cultural resources representative regarding the disposition of human remains or related cultural items. In addition, as part of IHS' normal project procedures, IHS will comply with NEPA and other applicable environmental regulatory requirements prior to construction. If the Tribe is administering construction of the sanitation facilities through a Tribal contract, the Tribe shall assume full responsibility for compliance with 43 CFR Part 10.

EPA CONTRIBUTIONS

5. The EPA shall designate a representative to coordinate its participation in the Project. The EPA shall provide to the Tribe and IHS technical assistance as needed to help them meet applicable requirements to successfully conduct each phase of the Project.

6. The EPA funds shall be used by IHS to reimburse the Tribe for authorized eligible expenses incurred during each phase of the Project. IHS, after consultation with the Tribe shall establish by letter a budget for this type of reimbursement within thirty (30) days of execution of this Agreement.

7. EPA shall transfer to the IHS, through an Interagency Agreement, funds for the eligible work as described in the Project Summary. The EPA shall contribute to the IHS an amount totaling $180,000 for completion of the proposed feasibility study.

8. That if the actual costs for completion of the proposed feasibility study are less than the total amount of $180,000, then the difference will be returned to EPA. If, on the other hand, at any point while designing and constructing the Project, the projection for the cost of the proposed project exceeds $180,000, then IHS will notify EPA and the Tribe. No further obligations shall be undertaken by IHS beyond the amount of funds available. Cost increases may result in either a reduction to the eligible scope of the project or the provision of funding by the Tribe to complete the Project.

IHS CONTRIBUTIONS

9. The IHS will provide without charge to the Tribe:
   a. All materials, supplies, equipment, and labor for the design of the proposed feasibility study outlined in the attached Project Summary;
   b. Technical assistance for contract administration and preparation of plans and specifications;

10. The IHS shall make contributions to the Tribe in amounts not exceeding total approved costs for construction of facilities as outlined below in Paragraphs 11 & 12. Contributions shall include funds for administration and construction of the proposed facilities. The exact amount to be contributed shall be the sum of the following items:

    a. Actual cost of approved consultant contracts;

    b. Contract administrative support fee to be paid to the Tribe in lieu of indirect costs. This fee is to cover a portion of the cost of administering consultant contracts under the Project. The contract administrative support fee shall be as follows:

Contract Amount	Administrative Fee
$0 to $25,000	Four percent of the contract amount.

$25,000 to $200,000	$1,000 plus three percent of the contract amount in excess of $25,000.
Above $200,000	$6,250 plus two percent of the contract amount in excess of $200,000.

c. Direct costs such as printing, copying, advertising, and accounting fees may be paid if approved in advance by the IHS District Engineer, Division of Sanitation Facilities Construction.

11. The IHS contributions to the Tribe shall be made on a quarterly basis in amounts recommended by the IHS District Engineer based on cost estimates for consultation projected during the upcoming quarter. Supplemental requests for contributions may be made should costs exceed the quarterly estimate. Any funds contributed and not expended within a given quarter shall be applied toward the next quarterly estimate and the contribution adjusted accordingly.

12. The IHS will release contributions to the Tribe as provided for in Paragraphs 10 and 11 of this Agreement, upon:
    a. Execution of this Agreement by all parties;
    b. Receipt of a written request from the Tribe for the required funds;
    c. Certification from the IHS District Engineer that the amount of funds requested is required to make timely payments in accordance with the project budget for the supplies, materials, equipment, and services being obtained under the provisions of this Agreement; and
    d. Approval by the IHS Director, Division of Sanitation Facilities Construction.

13. The IHS shall utilize project funds in the amount of $14,800 for project technical support expenses. Project technical support expenses shall include IHS expenditures such as technician and clerical salaries, GSA vehicles and miscellaneous project related expenses. IHS shall also use project funds in the amount of $5,920 for Engineering Program Support expenses. Engineering Program Support expenses include salaries, training, travel, vehicles, equipment, etc., for professional staff.

REPRESENTATIVES

14. The Tribe will provide one or more representatives to coordinate the conduct of Tribal and Village participation under this Agreement. The Tribal representative shall obtain cooperation of respective Villages in the fulfillment of labor responsibilities assumed by the Tribe under this Agreement; and attend the final inspection. All correspondence related to the project shall be provided to the Tribal Chairman.

15. The IHS Project Engineer shall manage the project and coordinate IHS participation in the Project. The IHS shall assure that all expenditures made through the Project are in conformance with, and necessary to perform, the scope of work.

16. All parties will provide concurrence that the design phase of the Project has been satisfactorily completed pertinent to federal regulations/requirements and in accordance with the provisions of this MOA prior to proceeding to the next phase.

TRANSFER OF TRIBALLY PROVIDED FACILITIES

17. All parties understand that the study conducted through Tribal Procurement under this Agreement with IHS contributed funds are at no time the property of the IHS or the EPA, but rather belong to the Tribe.

18. Because neither the IHS nor EPA will at any time own the study, no formal transfer agreement is necessary. In lieu of a transfer agreement, the IHS will notify the Tribe by registered mail when IHS participation in the Project is complete.

OPERATION AND MAINTENANCE FEES AND ORDINANCES

19. The Tribe will establish connection fees and user rates and collect such charges from individuals served by the system to obtain the revenue necessary to sustain the operation, maintenance, and repair of the community water supply and sewerage systems. As an alternative, the Tribe may provide all or any part of this revenue from another source.

20. The Tribe agrees to enact and enforce appropriate ordinances or regulations governing:
    a. Connection to the community water supply and sewage systems by the residents of the community;
    b. The methods and materials to be used in making connections to the community water supply and sewage systems in a safe and sanitary manner; and
    c. The continued operation, maintenance, and repair of individual water supply and waste disposal facilities in a safe and sanitary condition by the persons served thereby.

PROJECT SCHEDULE

21. In the interest of coordination, understanding, and economy, before commencement of the Project begins, the IHS Project Engineer in consultation with the Tribe and Village shall prepare a Project schedule for the activities as outlined in the Project Summary. The Project engineer shall submit the schedule to the Tribe during the planning phase of the Project. Thereafter, the Project engineer shall provide changes made to the schedule to the Tribe for review and comment prior to implementation of the changes.

22. Implementation of the study provided for herein shall be completed as soon as is practicable in accordance with the schedule developed by the IHS project engineer. The Tribe and IHS will work in partnership to resolve delays that affect the start of the Project.

23. In the event that this Project cannot be initiated for any reason by June 30, 2008, the IHS

reserves the right to cancel the Project and return all remaining funds to EPA. If the condition which impeded the Project is resolved following such cancellation, the IHS will work with the Tribe and EPA to receive high priority to funding the Project from subsequent grant opportunities for sanitation facilities.

TRIBAL FINANCIAL MANAGEMENT STANDARDS AND PROCEDURES

24. The Tribe shall provide the following features in its financial management system:
    a. The Tribe shall maintain original accounting records that accurately identify the source and application of all Project funds it receives. The source documentation shall include canceled checks, paid bills, payrolls, time and attendance records, purchasing documents, and financial records. Accurate, current, and complete project records shall be reported in accordance with other provisions of this Agreement.
    b. The Tribe shall maintain effective controls and accountability for all cash, real and personal property, and other assets acquired;
    c. The Tribe shall compare actual Tribal expenditures with budgeted amounts for the Project; and
    d. Applicable OMB cost principles (OMB Circular A-87) and the terms of this Agreement shall govern in determining the reasonableness, allowability, and allocability of all costs under the Project.

25. The Tribe shall maintain a separate financial account for the Project.

26. The Tribe shall submit a projected cash flow schedule. The Tribe and IHS shall minimize the time elapsed between fund transfer and disbursement.

27. Interest in excess of $100 per year earned on cash advances (Federal funds) must be returned to the IHS in the appropriate project account.

28. Funds under an Agreement shall not be borrowed or intentionally invested.

29. Any proposed changes by the Tribe in the project Summary and/or budgeted costs must be reviewed and approved by IHS as provided for in the Agreement.

TRIBAL PROCUREMENT PROVISIONS

30. The study described in the Project Summary shall be designed and implemented in accordance with applicable normal IHS and EPA standards for such studies.

31. The Tribe, through its procurement system, shall provide for procurement as described in the Project Summary as being provided by the Tribe and shall procure the consultation in accordance with this Agreement and in compliance with applicable Federal requirements.

32. The Tribe shall submit to the IHS, for review and approval before advertising, all proposed solicitations and shall make such adjustments in the solicitations as determined necessary by IHS.

33. The Tribe shall develop and submit to IHS for approval a proposed consultation contract showing proposed unit costs, based on bids received, for the study. The Tribe shall negotiate these unit costs if necessary to receive approval from IHS. These unit costs shall govern for the duration of the Tribal contract under which they are proposed. No work shall be performed prior to written approval by IHS of the corresponding unit costs.

34. If additional or special units of work are needed during execution of the Project, the Tribe shall submit a list of proposed costs for negotiation on those items. Costs for the additional or special items shall then govern either for the duration of the Tribal contract, or for just those sites specified in the proposal, as agreed at the time. Major modifications to the consultation contract, such as adding scope not included in the Project Summary or requiring additional project funds, shall not be executed without written approval by the IHS Director, Division of Sanitation Facilities Construction, Phoenix Area.

35. The IHS shall review and approve proposed unit costs for all items of work under the project. Once approved by IHS, these unit costs shall govern all work for the duration of the Tribal contract under which they are proposed. All unit costs are subject to approval by the Director, Division of Sanitation Facilities Construction prior to the award of any contract or the start of any work.

36. The Tribe shall procure the study outlined in the Project Summary using a system of contract administration that ensures performance by its contractors in accordance with the terms and conditions of the contract and compliance with the latest edition of the IHS MOA Guideline Chapter 6, Section 2. Some, but not all, of the requirements are:
    a. Procurement Standards;
    b. Competitive Procurement Practice;
    c. Indian Preference;
    d. Davis-Bacon Wage Rate Application;
    e. Bonding Requirements; and
    f. Subcontract Limits; and
    g. Specific Contract Provisions.

37. The procurement documents shall note that the IHS project manager does not have authority to modify the contract or issue direction to the contractor.

38. The IHS will, at the request of the Tribe, provide oversight and technical assistance on the contractor submittals, progress payments, change order requests, bid evaluation, consultant qualification review, dispute and claim resolution, and other project related information submitted by the tribal contractor and make recommendations to the Tribe.

39. The IHS shall provide review services to the Tribe. The IHS project manager shall not have the authority to modify the contract or direct the consultant. The IHS and Tribe will review the study contracted through Tribal procurement to insure the study meets minimum IHS standards. Following review, the IHS will advise the Tribe on whether the

study meets the IHS interpretation of the contract requirements.

40. At no time during the project will the Tribe represent the IHS nor will the IHS represent the Tribe in contract administration matters. The Tribe shall be responsible, applying good administrative practice and sound business judgment, for the settlement of all contractual and administrative issues arising out of procurement. These issues include, but are not limited to source evaluation, protests, disputes, and claims.

41. IHS inspection of work is to ensure that the work performed complies with all the terms and conditions of the Tribal contract. Acceptance and final IHS contribution for the work performed will not be made to the Tribe until such time as the IHS participates in a final inspection and determines that all work complies with all contract requirements.

42. The Tribe shall conduct a final review of the study provided under each contract with the contractor, IHS representatives, and other interested parties. Final payment for the work by the Tribe shall not occur until the contractor has corrected all deficiencies identified at the final review and until the work is in full compliance with the plans, specifications and other contract requirements.

FINAL INSPECTION and PROJECT CLOSEOUT

43. The IHS and Tribal representatives, and other interested parties, shall conduct a final review of the study provided under the Project. A review of the Project scope shall be made to confirm completion of the Project. IHS will close out the Project when it determines that all applicable administrative actions and all required Project work have been completed. The Tribe shall return unexpended project funds contributed by IHS within 90 days after the completion of the Project and shall submit a closeout financial report after completion of the Project.

44. Except as otherwise provided, Project records shall be retained for three (3) years from the Project completion date. These records include all financial records, supporting documents, procurement documents, titles, and equipment records; including, but not limited to, time sheets, canceled checks, invoices, purchase orders, and contracts. These records shall be made available to the IHS, Inspectors General, or other designated representatives upon request. The Tribe shall be subject to audit in accordance with the requirements of the Single Audit Act.

45. If any litigation, claim, negotiation, audit, or other action involving the records has been started before the expiration of the three year period, the records shall be retained until completion of the action and resolution of all issues which arise from it, or until the end of the three year period, whichever is later.

AGREEMENT DISPUTES

46. All disputes regarding the provisions of this Agreement will be resolved among the

parties through the IHS Area's established administrative procedures first. If a dispute cannot be resolved locally, the parties agree that the next administrative procedure is an appeals board established at the IHS headquarters level, which will make a recommendation to the IHS Director, who will exercise final authority for the IHS in the administrative review of all disputes.

47. Nothing in this Agreement shall be construed as a waiver of the sovereign immunity of either the US Government, the Hopi Tribe, or the Village for any purpose.

AGREEMENT TERMINATION

48. Any party to this Agreement may terminate its relationship with the other Agreement parties prior to Project completion upon 30 days notice in writing to all other parties.

EFFECTIVE DATE

49. This Agreement shall take effect upon a) transfer of the full amount of the contributions provided for in Paragraphs 5 & 6 to the IHS, and b) execution by the Tribe, EPA, and IHS.

IN WITNESS WHEREOF, the parties have subscribed their names:

FOR THE TRIBE:

9/11/06
Date

Chairman, having been duly authorized to enter into this Agreement on behalf of the Hopi Tribe, as evidenced by the attached copy of the resolution made by the Hopi Tribal Council.

FOR THE INDIAN HEALTH SERVICE:

9/25/06
Date

Area Director
Phoenix Area Indian Health Service
Department of Health and Human Services

FOR THE ENVIRONMENTAL PROTECTION AGENCY:

11 October 2006
Date

Director, Water Division, Region 9
US Environmental Protection Agency

HOPI TRIBAL COUNCIL
RESOLUTION
H-080-2006

WHEREAS, the Constitution and By-Laws of the Hopi Tribe, ARTICLE VI-POWERS OF THE TRIBAL COUNCIL, SECTON 1 (a), (e), and (f), authorize the Hopi Tribal Council "To represent and speak for the Hopi Tribe in all matters for the welfare of the Tribe, . . .", "To raise and take care of a Tribal Council fund . . .", and "To use such Tribal Council fund for the welfare of the Tribe, . . ."; and

WHEREAS, pursuant to the Indian Sanitations Facilities Act, Public Law 86-121, the Indian Health Services (I.H.S.) is authorized to enter into agreements with Native American Tribes for the purposes of conducting a feasibility study for Arsenic Rule Compliance on multiple Tribal water systems in the Second Mesa and First Mesa Villages; and

WHEREAS, the I.H.S. desires to enter into a Memorandum of Agreement (MOA) with the Hopi Tribe in furtherance of I.H.S. Project No. PH 06-D33, to conduct feasibility study for Arsenic Rule Compliance on multiple Tribal water systems serving the Hopi Cultural Center, Shungopavi Village, Sipaulovi Village, Mishongnovi Village, Second Mesa Day School, First Mesa Consolidated Villages and the Hopi Jr./Sr. High School on the Hopi Reservation; and

WHEREAS, upon completion of such service by the I.H.S., the results of the Arsenic Rule of Compliance Study will be transferred to the Hopi Tribe, and appropriate Villages and Schools; and

WHEREAS, the U.S. Environmental Protection Agency (EPA), Drinking Water Tribal Set Aside (DWTSA) Grant Number 06-06 through and Interagency Agreement Grant

HOPI TRIBAL COUNCIL
RESOLUTION
H-080-2006

(IGA) with the Indian Health Service will contribute One Hundred Eighty Thousand Dollars ($180,000.00) for the Project whose purpose is to improve the health welfare, and sanitary conditions of the Hopi people.

NOW THEREFORE BE IT RESOLVED that the Hopi Tribal Council has reviewed the MOA along with the Project Summary attached and made a part hereof and hereby approves and accepts the terms and conditions contained therein.

BE IT FURTHER RESOLVED that the Hopi Tribal Council hereby delegates to the Chairman or his designee the authority to enter into and sign the attached MOA and all agreements, contracts, and legal instruments necessary for the development and completion of I.H.S. Project No. PH 06-D33.

BE IT FINALLY RESOLVED that the Hopi Tribe's Treasurer is hereby authorized to receive and expend funds in accordance with this Resolution and with applicable financial policies and procedures.

HOPI TRIBAL COUNCIL
RESOLUTION

H-080-2006

CERTIFICATION

The Hopi Tribal Council duly adopted the foregoing Resolution on September 6, 2006, at a meeting at which a quorum was present with a vote of 16 in favor, 0 opposed, 0 abstaining (Vice Chairman presiding and not voting) pursuant to the authority vested in the Hopi Tribal Council by ARTICLE VI-POWERS OF THE TRIBAL COUNCIL, SECTION 1 (a), (e) and (f) of the Hopi Tribal Constitution and By-Laws of the Hopi Tribe of Arizona, as ratified by the Tribe on October 24, 1936, and approved by the Secretary of Interior on December 19, 1936, pursuant to Section 16 of the Act of June 18, 1934. Said Resolution is effective as of the date of adoption and does not require Secretarial approval.

Todd Honyaoma, Sr. Vice Chairman
Hopi Tribal Council

ATTEST:

Mary A. Felter, Tribal Secretary
Hopi Tribal Council

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Phoenix Area Indian Health Service
Two Renaissance Square
40 North Central Avenue
Phoenix, Arizona 85004

OCT 2 3 2008

Mr. Ben Nuvamsa
Chairman, Hopi Tribe
P.O. Box 123
Kykotsmovi, Arizona 86039

Dear Chairman Nuvamsa:

Indian Health Service (IHS) Project PH 06-D33 was approved to complete an arsenic compliance rule feasibility study for the Hopi Indian Reservation with funding provided by the Environmental Protection Agency (EPA).

The project, as outlined in Amendment No. 1 to the Project Summary, is now being revised to include an additional contribution of $25,000 by the EPA for Engineering Project Support. This document will serve as Amendment No. 1 to the Memorandum of Agreement (MOA) to acknowledge a revision in the project scope as outlined in Amendment No. 1 to the Project Summary and provide for an additional EPA contribution. The cost estimate for Project PH06-D33 has been revised.

The MOA is amended as follows:

1. Change the amount specified in Paragraph 7 from $180,000 to $205,000.

2. Change the amount specified in Paragraph 8 (two places) from $180,000 to $205,000.

3. Increase the Engineer Program Support amount outlined in Paragraph 13 by $25,000, from $5,920 to $30,920.

All other sections of the original MOA remain as approved. If

you have any questions, please contact Mike Stover, Acting District Engineer, Eastern District Office.

Sincerely,

Don J. Davis, M.P.H.
Director

Concurrence

Chairman, Hopi Tribe — 11/06/08 Date

Director, Water Division, Region 9
US Environmental Protection Agency — 3 Dec. 2008 Date

cc:
Mike Stover, Acting District Engineer
John Riegel, DSFC

D33/MOA

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Phoenix Area Indian Health Service
Two Renaissance Square
40 North Central Avenue
Phoenix, Arizona 85004

APR 29 2010

Mr. Leroy Shingoitewa
Chairman, Hopi Tribe
P.O. Box 123
Kykotsmovi, Arizona 86039

Dear Chairman Shingoitewa:

Indian Health Service (IHS) Project PH 06-D33 was approved to complete an arsenic compliance rule feasibility study for First and Second Mesa on the Hopi Indian Reservation with funding from an Environmental Protection Agency (EPA) Drinking Water Tribal Set-Aside Grant. Following completion of the feasibility study and since approval of the project, the Tribe, IHS and EPA have determined that a water system regionalization and consolidation concept would best serve the area and meet arsenic compliance requirements. It was also determined that a water source north of First and Second Mesas in an area know as "Turquoise Trail" would provide adequate water source quality and quantity to meet the EPA's Arsenic rule and provide for future growth potential in the surrounding communities.

To best continue with planning and design of the recommended regional water system incorporating Turquoise Trail, a revision to the scope of work under project PH 06-D33 is proposed as outlined in Amendment #2 to the Project Summary. This letter shall serve as Amendment #2 to the Memorandum of Agreement (MOA) for Project PH 06-D33 to concur with the revised scope of work per Amendment #2 to the Project Summary.

All provisions of the original MOA and Amendment #1 to the MOA remain as approved. If you have any questions, please contact Michael Stover, District Engineer, Eastern District Office.

Sincerely,

Dorothy A. Dupree, B.S., M.B.A.
Acting Director, Phoenix Area IHS

Concurrence

Chairman, Hopi Tribe

May 13, 2010
Date

cc:
Michael Stover, District Engineer
John Riegel, DSFC

MEMORANDUM OF AGREEMENT
AMONG
THE INDIAN HEALTH SERVICE
AND
THE HOPI TRIBE
HOPI INDIAN RESERVATION

PROJECT NO. PH08-T38
PUBLIC LAW 86-121

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
INDIAN HEALTH SERVICE
PHOENIX AREA OFFICE

JUNE 2008

MEMORANDUM OF AGREEMENT
AMONG
THE INDIAN HEALTH SERVICE
AND
THE HOPI TRIBE
HOPI INDIAN RESERVATION

PROJECT NO. PH08-T38
PUBLIC LAW 86-121

THIS AGREEMENT is made by and between the Indian Health Service, Department of Health and Human Services, hereinafter referred to as IHS, acting through the Director, Phoenix Area Indian Health Service, under and pursuant to the provisions of Public Law 86-121 (73 Stat. 267), and the Hopi Tribe, Hopi Indian Reservation, Navajo and Coconino Counties, Arizona, hereinafter called the Tribe, acting through the Hopi Tribal Council.

WHEREAS, the Tribe desires to conduct a regional water system study for Tribal members on the Hopi Indian Reservation, Navajo and Coconino Counties, Arizona, and

WHEREAS, the Tribe has requested IHS assistance in the provision of sanitation facilities outlined in the Project Summary by letter dated June 2008, and

WHEREAS, the IHS desires to assist in the provision of sanitation facilities under Public Law 86-121 for the Hopi Tribe, and

WHEREAS, the Tribe has reviewed the attached Project Summary and concur with its provisions.

NOW THEREFORE, in order to carry out the project as set forth in the attached Project Summary titled Regional Water System Study, Hopi Indian Reservation, and dated May 2008, the parties mutually agree that:

TRIBAL LANDS

1. The IHS recognizes the special relationship between the Hopi Tribe, Hopi Villages and Hopi Clans on matters of local land use. Further, while IHS recognizes the Hopi Tribe as the focal point in the government to government relationship between the United States and the Tribe for agreements such as this, IHS respects the Villages and realizes that Village and/or Clan approval is necessary prior to entering upon certain Hopi lands.

2. The Tribe and Villages hereby grant permission for the IHS and its representatives to enter upon or across tribal lands under the control of the Tribe without charge. Said permission to be on these lands is granted for the sole purpose of carrying out the project outlined in the attached Project Summary and provided for herein. IHS and its

representatives shall provide advance notice to the Tribe and/or Village representatives when and where they will be present on Tribal/Village lands. The Tribe agrees to waive all claims against IHS, which may arise by reason of such entry upon tribal lands, except those that may be pursuant to or arise under the Federal Tort Claims Act. This waiver shall not extend to claims against third parties or agents or employees of IHS who act beyond the authority of their employment. Construction under this agreement within the land holdings of the Villages will be located in areas acceptable to the Villages.

3. The Tribe shall obtain all rights-of-way and easements on or over Tribal lands which may be necessary for the provision and operation of any facilities provided for in this Agreement. The Tribe and Villages, as appropriate, will allow use of the land to the extent determined necessary to carry out the obligations of the IHS under this Agreement.

IHS CONTRIBUTIONS

4. The IHS will provide technical assistance for the scope of work described in the Project Summary.

5. The IHS shall make contributions to the Tribe in amounts not exceeding total approved costs for construction of facilities as outlined below in Paragraphs 6 & 7 below. IHS contributions shall include funds for administration and construction of the proposed facilities. The exact amount to be contributed by IHS shall be the sum of the following items:

   a. Actual cost of approved construction or feasibility study contracts, a total of $150,000.00;

   b. Contract administrative support fee to be paid to the Tribe in lieu of indirect costs. This fee is to cover a portion of the cost of administering construction contracts under the project. The contract administrative support fee shall be as follows:

Contract Amount	Administrative Fee
$0 to $25,000	Four percent of the contract amount.
$25,000 to $200,000	$1,000 plus three percent of the contract amount in excess of $25,000.
Above $200,000	$6,250 plus two percent of the contract amount in excess of $200,000.

   c. Direct costs such as printing, copying, advertising, and accounting fees may be paid if approved in advance by the IHS District Engineer, Division of Sanitation Facilities Construction.

6. The IHS contributions to the Tribe shall be made on a quarterly basis in amounts recommended by the IHS District Engineer based on cost estimates for construction Projected during the upcoming quarter. Supplemental requests for contributions may be made should costs exceed the quarterly estimate. Any funds contributed and not expended within a given quarter shall be applied toward the next quarterly estimate and the contribution adjusted accordingly.

7. The IHS will release contributions to the Tribe as provided for in Paragraphs 5 & 6 of this Agreement, upon:
   a. Execution of this Agreement by all parties;
   b. Receipt of a written request from the Tribe for the required funds;
   c. Certification from the IHS District Engineer that the amount of funds requested is required to make timely payments in accordance with the Project budget for the supplies, materials, equipment, and services being obtained under the provisions of this Agreement; and
   d. Approval by the IHS Director, Division of Sanitation Facilities Construction.

8. The IHS shall retain and utilize Project funds in the amount of $15,600 for Project technical support expenses. Project technical support expenses shall include IHS expenditures such as technician and clerical salaries, GSA vehicles and miscellaneous Project related expenses.

REPRESENTATIVES

9. The Tribe will provide one or more representatives to coordinate the conduct of tribal and village participation under this Agreement. The Tribal representative shall, at a minimum, obtain consent of each participating Indian family on forms furnished by the IHS; obtain cooperation of Village members in the fulfillment of labor responsibilities assumed by the Tribe and Villages under this Agreement; and attend the final inspection. All correspondence related to the Project shall be provided to the Tribal Chairman.

10. The IHS Project Engineer shall manage the Project and coordinate IHS participation in the Project.

PROJECT SCHEDULE

11. In the interest of coordination, understanding, and economy, before the project begins, the IHS Project Engineer in consultation with the Tribe and Villages shall prepare a project schedule for the study activities as outlined in the Project Summary. The Project Engineer shall submit the schedule to the Tribe and Village during the planning phase of the Project. Thereafter, the Project Engineer shall provide changes made to the schedule to the Tribe and Villages for review and comment.

12. Provision of technical services provided for herein shall be completed as soon as is practicable in accordance with the schedule developed by the IHS Project Engineer. The Tribe, Village and IHS will work in partnership to resolve delays that affect the execution

of the study.

13. In the event that the study cannot be initiated for any reason by June 30, 2010, the IHS reserves the right to cancel the Project and use the designated Project funds for other Projects. If the condition which impeded construction is resolved following such cancellation, the IHS will give high priority to funding the Project from appropriated sanitation facilities funds available at the time or from future appropriations for sanitation facilities.

TRIBAL FINANCIAL MANAGEMENT STANDARDS AND PROCEDURES

14. The Tribe shall provide the following features in its financial management system:
    a. The Tribe shall maintain original accounting records that accurately identify the source and application of all project funds it receives. The source documentation shall include canceled checks, paid bills, payrolls, time and attendance records, purchasing documents, and financial records. Accurate, current, and complete project records shall be reported in accordance with other provisions of this Agreement.
    b. The Tribe shall maintain effective controls and accountability for all cash, real and personal property, and other assets acquired;
    c. The Tribe shall compare actual tribal expenditures with budgeted amounts for the Project; and
    d. Applicable OMB cost principles (OMB Circular A-87) and the terms of this Agreement shall govern in determining the reasonableness, allowability, and allocability of all costs under the Project.

15. The Tribe shall maintain a separate financial account for the Project.

16. The Tribe shall submit a projected cash flow schedule. The Tribe and IHS shall minimize the time elapsed between fund transfer and disbursement.

17. Interest in excess of $100 per year earned on cash advances (Federal funds) must be returned to the IHS in the appropriate Project account.

18. Funds for projects under an Agreement shall not be borrowed or intentionally invested. Funds from one IHS funded project shall not be used for cash flow or other unauthorized purposes or for another IHS funded Project.

19. Any proposed changes by the Tribe in the project Summary and/or budgeted costs must be reviewed and approved by IHS as provided for in the Agreement.

TRIBAL PROCUREMENT PROVISIONS

20. The study to be completed under this project shall be completed in accordance with IHS requirements outlined in the Project Summary.

21. The Tribe, through its procurement system, shall provide for the study described in the Project Summary as being provided by the Tribe and shall procure the study in accordance with this Agreement and in compliance with applicable Federal requirements.

22. The Tribe shall submit to the IHS, for review and approval before advertising, all proposed solicitations and shall make such adjustments in the solicitations as determined necessary by IHS.

23. The Tribe shall develop and submit to IHS for approval a proposed contract showing proposed unit costs, based on bids received, for the study. The Tribe shall negotiate these unit costs if necessary to receive approval from IHS. These unit costs shall govern for the duration of the Tribal contract under which they are proposed. No work shall be performed prior to written approval by IHS of the corresponding unit costs.

24. If additional or special units of work are needed during execution of the project, the Tribe shall submit a list of proposed costs for negotiation on those items. Costs for the additional or special items shall then govern either for the duration of the Tribal contract, or for just those sites specified in the proposal, as agreed at the time. Major modifications to the study contract, such as adding elements or tasks not included in the Project Summary or requiring additional project funds, shall not be executed without written approval by the IHS Director, Division of Sanitation Facilities Construction, Phoenix Area.

25. The IHS shall review and approve proposed unit costs for all items of work under the Project. Once approved by IHS, these unit costs shall govern all work for the duration of the Tribal contract under which they are proposed. All unit costs are subject to approval by the Director, Division of Sanitation Facilities Construction prior to the award of any contract or the start of any construction involving those items of work.

26. The Tribe shall procure the study outlined in the Project Summary using a system of contract administration that ensures performance by its contractors in accordance with the terms and conditions of the contract and compliance with the latest edition of the IHS MOA Guideline Chapter 6, Section 2. Some, but not all, of the requirements are:
    a. Procurement Standards;
    b. Competitive Procurement Practice;
    c. Indian Preference;
    d. Davis-Bacon Wage Rate Application;
    e. Bonding Requirements;
    f. Subcontract Limits; and
    g. Specific Contract Provisions.

27. Tribal procurement documents shall provide for the right of the IHS to inspect progress of the study to insure it meets minimum IHS standards. The procurement documents shall also note that the IHS inspector does not have authority to modify the contract or issue direction to the contractor. In addition, the contract documents shall require the contractor to comply with OSHA safety requirements for all construction activity.

28. The IHS will, at the request of the Tribe, provide oversight and technical assistance on the contractor submittals, progress payments, change order requests, bid evaluation, contractor qualification review, dispute and claim resolution, and other project related information submitted by the tribal contractor and make recommendations to the Tribe.

29. At no time during the project will the Tribe represent the IHS nor will the IHS represent the Tribe in contract administration matters. The Tribe shall be responsible, applying good administrative practice and sound business judgment, for the settlement of all contractual and administrative issues arising out of procurement. These issues include, but are not limited to source evaluation, protests, disputes, and claims.

30. IHS review of work is to ensure that the work performed complies with all the terms and conditions of the Tribal contract. Acceptance and final IHS contribution for the work performed will not be made to the Tribe until such time as the IHS participates in a final review and determines that all work complies with all contract requirements.

31. The Tribe shall conduct a final review of the work provided under each contract with the contractor, IHS representatives, and other interested parties. Final payment for the work by the Tribe shall not occur until the contractor has corrected all deficiencies identified in the final review and until the work is in full compliance with the scope of work, specifications and other contract requirements.

PROJECT CLOSEOUT

32. The IHS and Tribal representatives, and other interested parties, shall conduct a final review of the study provided under the project. A review of the Project Scope shall be made to confirm completion of the Project. IHS will close out the Project when it determines that all applicable administrative actions and all required Project work have been completed. The Tribe shall return unexpended Project funds contributed by IHS within 90 days after the completion of the project construction phase and shall submit a closeout financial report after completion of the Project.

33. Except as otherwise provided, Project records shall be retained for three (3) years from the Project completion date. These records include all financial records, supporting documents, procurement documents, titles, and equipment records; including, but not limited to, time sheets, canceled checks, invoices, purchase orders, and contracts. These records shall be made available to the IHS, Inspectors General, or other designated representatives upon request. The Tribe shall be subject to audit in accordance with the requirements of the Single Audit Act.

34. If any litigation, claim, negotiation, audit, or other action involving the records has been started before the expiration of the three year period, the records shall be retained until completion of the action and resolution of all issues which arise from it, or until the end of the three year period, whichever is later.

AGREEMENT DISPUTES

35. All disputes regarding the provisions of this agreement will be resolved among the parties through the IHS Area's established administrative procedures first. If a dispute cannot be resolved locally, the parties agree that the next administrative procedure is an appeals board established at the IHS headquarters level, which will make a recommendation to the IHS Director, who will exercise final authority for the IHS in the administrative review of all disputes.

36. Because the IHS will not at any time own the study, no formal transfer agreement is necessary. In lieu of a transfer agreement, the IHS will notify the Tribe by registered mail when IHS participation in the Project is complete.

37. Nothing in this Agreement shall be construed as a waiver of the sovereign immunity of either the US Government, the Hopi Tribe, or the Village for any purpose.

AGREEMENT TERMINATION

38. Any party to this Agreement may terminate its relationship with the other Agreement parties prior to Project completion upon 30 days notice in writing to all other parties.

IN WITNESS WHEREOF, the parties have subscribed their names:

FOR THE TRIBE:

9/19/08
Date

Chairman, Hopi Tribal Council, having been duly authorized to enter into this Agreement on behalf of the Hopi Tribe, as evidenced by the attached copy of the resolution made by the Hopi Tribal Council.

FOR THE INDIAN HEALTH SERVICE:

10/1/08
Date

Area Director
Phoenix Area Indian Health Service
Department of Health and Human Services

MEMORANDUM OF AGREEMENT
AMONG
THE INDIAN HEALTH SERVICE
AND
THE HOPI TRIBE
HOPI INDIAN RESERVATION

PROJECT NO. PH 10-E37
PUBLIC LAW 86-121

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
INDIAN HEALTH SERVICE
PHOENIX AREA OFFICE

APRIL 2010

MEMORANDUM OF AGREEMENT
AMONG
THE INDIAN HEALTH SERVICE
AND
THE HOPI TRIBE
HOPI INDIAN RESERVATION

PROJECT NO. PH 10-E37
PUBLIC LAW 86-121

THIS AGREEMENT is made among the Indian Health Service, Department of Health and Human Services, hereinafter referred to as IHS, acting through the Director, Phoenix Area Indian Health Service, under and pursuant to the provisions of Public Law 86-121 (73 Stat. 267), the Hopi Tribe, Hopi Indian Reservation, Navajo and Coconino Counties, Arizona, hereinafter called the Tribe, acting through the Chairman, hereinafter referred to as the Hopi Tribe.

WHEREAS, the Tribe desires to obtain water facilities for Tribal members on the Reservation, Navajo and Coconino Counties, Arizona, and

WHEREAS, the Tribe has requested IHS assistance in the provision of sanitation facilities outlined in the Project Summary by letter dated March 2010, and

WHEREAS, the IHS desires to assist in the provision of sanitation facilities under Public Law 86-121 for the tribal members on the Hopi Reservation, and

WHEREAS, the Tribe has obtained an Environmental Protection Agency Safe Drinking Water Act grant for the provision of sanitation facilities described in the attached Project Summary, and

WHEREAS, the Tribe has reviewed the attached Project Summary and concurs with its provisions.

NOW THEREFORE, in order to carry out the project as set forth in the attached Project Summary titled Turquoise Trail Regional Arsenic Mitigation Project, Hopi Indian Reservation, and dated April 2010, the parties mutually agree that:

TRIBAL LANDS

1. The IHS recognizes the special relationship between the Hopi Tribe, Hopi Villages and Hopi Clans on matters of local land use. Further, while IHS recognizes the Hopi Tribe as the focal point in the government to government relationship between the United States and the Tribe for agreements such as this, IHS respects the Villages and realizes that Village and/or Clan approval is necessary prior to entering upon certain Hopi lands.

2. The Tribe and Village hereby grant permission for the IHS and its representatives to enter upon or across tribal lands under the control of the Tribe without charge. Said permission to be on these lands is granted for the sole purpose of carrying out the project outlined in the attached Project Summary and provided for herein. IHS and its representatives shall provide advance notice to the Tribe and/or Village representatives when and where they will be present on Tribal/Village lands. The Tribe agrees to waive all claims against IHS, which may arise by reason of such entry upon

tribal lands, except those that may be pursuant to or arise under the Federal Tort Claims Act. This waiver shall not extend to claims against third parties or agents or employees of IHS who act beyond the authority of their employment. Construction under this agreement within the land holdings of the Village will be located in areas acceptable to the Village.

3. The Tribe shall obtain all rights-of-way and easements on or over tribal lands which, in the judgment of the IHS, may be necessary for the provision and operation of any facilities provided for in this Agreement. The Tribe and Village, as appropriate, will allow use of the land to the extent determined necessary to carry out the obligations of the IHS under this agreement.

4. The IHS will conduct a Cultural Resources Survey prior to any construction under this agreement to minimize disturbance of Traditional and Cultural properties. IHS shall consult with the Tribe and Village prior to any excavations that may result in inadvertent discovery of human remains in accordance with the Native American Graves Protection and Repatriation Act and related Regulations, 43 CFR Part 10. In the event that previously unidentified archeological features and/or concentrations of artifacts are encountered in the project areas during any phase of development or construction, all excavation and construction shall cease within a 100-foot radius of the discovery. The Hopi Tribal Cultural Preservation Office and Village shall be consulted and mutually agree on procedures which will be followed to mitigate or avoid damage to the site, if necessary. This Agreement shall serve as official notice to the Tribe and Village that the proposed sanitation facilities construction may result in inadvertent discoveries, and that any such discoveries shall be subject to the above Regulations, including consultation between the IHS, Village, and the Tribally designated cultural resources representative regarding the disposition of human remains or related cultural items. In addition, as part of IHS' normal project procedures, IHS will comply with NEPA and other applicable environmental regulatory requirements prior to construction. If the Tribe is administering construction of the sanitation facilities through a Tribal contract, the Tribe shall assume full responsibility for compliance with 43 CFR Part 10.

TRIBAL CONTRIBUTIONS

5. The Tribe shall have primary responsibility to contribute any funds necessary to construct the facilities as planned and designed if costs accrued for the project are not within the scope of approved work or are beyond the EPA's cost ceiling of $1,857,400 as described in Paragraph 8 below. The Tribe shall provide necessary administrative services and support to complete the design and construction phases.

EPA CONTRIBUTIONS

6. The EPA shall designate a representative to coordinate its participation in the project. The EPA shall provide to the Tribe and IHS technical assistance as needed to help them meet applicable requirements to successfully conduct each phase of the project.

7. The EPA funds shall be used by IHS to reimburse the Tribe for authorized eligible expenses incurred during each phase of the project. IHS, after consultation with the Tribe shall establish by letter a budget for this type of reimbursement within thirty (30) days of execution of this Agreement.

8. EPA shall transfer to the IHS, through an Interagency Agreement, funds for the eligible work as described in the Project Summary. The EPA shall contribute to the IHS an amount totaling

$1,857,400 for design and construction of the proposed facilities.

9. That if the actual costs of design and construction are less than the total amount of $1,857,400, then the difference will be returned to EPA. If, on the other hand, at any point while designing and constructing the project, the projection for the cost of the proposed project exceeds $1,857,400, then IHS will notify EPA and the Tribe. No further obligations shall be undertaken by IHS beyond the amount of funds available. Cost increases may result in either a reduction to the eligible scope of the project or the provision of funding by the Tribe to complete the project.

IHS CONTRIBUTIONS

10. The IHS will provide without charge to the Tribe:
    a. All materials, supplies, equipment, and labor for the design of the facilities outlined in the attached Project Summary;
    b. Technical assistance for contract administration, construction inspection, supply and materials purchase, construction staking, and preparation of plans and specifications;
    c. All materials, supplies, equipment, and labor for the installation of the facilities outlined in the attached Project Summary identified as being provided for by IHS, and;
    d. Instruction as to the proper utilization, maintenance, operation, and protection of the facilities provided for herein.

11. The IHS shall make contributions to the Tribe in amounts not exceeding total approved costs for construction of facilities as outlined below in Paragraphs 12 & 13. Contributions shall include funds for administration and construction of the proposed facilities. The exact amount to be contributed shall be the sum of the following items:

    a. Actual cost of approved construction contracts;

    b. Contract administrative support fee to be paid to the Tribe in lieu of indirect costs. This fee is to cover a portion of the cost of administering construction contracts under the project. The contract administrative support fee shall be as follows:

Contract Amount	Administrative Fee
$0 to $25,000	Four percent of the contract amount.
$25,000 to $200,000	$1,000 plus three percent of the contract amount in excess of $25,000.
Above $200,000	$6,250 plus two percent of the contract amount in excess of $200,000.

    c. Direct costs such as printing, copying, advertising, and accounting fees may be paid if approved in advance by the IHS District Engineer, Division of Sanitation Facilities Construction.

12. The IHS contributions to the Tribe shall be made on a quarterly basis in amounts recommended by the IHS District Engineer based on cost estimates for construction projected during the upcoming quarter. Supplemental requests for contributions may be made should costs exceed the quarterly estimate. Any funds contributed and not expended within a given quarter shall be applied toward

the next quarterly estimate and the contribution adjusted accordingly.

13. The IHS will release contributions to the Tribe as provided for in Paragraphs 11 & 12 of this Agreement, upon:
    a. Execution of this Agreement by all parties;
    b. Receipt of a written request from the Tribe for the required funds;
    c. Certification from the IHS District Engineer that the amount of funds requested is required to make timely payments in accordance with the project budget for the supplies, materials, equipment, and services being obtained under the provisions of this Agreement; and
    d. Approval by the IHS Director, Division of Sanitation Facilities Construction.

14. The IHS shall utilize project funds in the amount of $188,660 for Project Technical Support (PTS) expenses. Project Technical Support expenses shall include IHS expenditures such as technician and clerical salaries, GSA vehicles and miscellaneous project related expenses. IHS shall also use project funds in the amount of $62,887 for Engineering Program Support expenses. Engineering Program Support expenses include salaries, training, travel, vehicles, equipment, etc., for professional staff.

REPRESENTATIVES

15. The Tribe will provide one or more representatives to coordinate the conduct of tribal and village participation under this Agreement. The Tribal representative shall, at a minimum, obtain consent of each participating Indian family on forms furnished by the IHS; obtain cooperation of Village members in the fulfillment of labor responsibilities assumed by the Tribe and Village under this Agreement; and attend the final inspection. All correspondence related to the project shall be provided to the Tribal Chairman.

16. The IHS Project Engineer shall manage the project and coordinate IHS participation in the Project. The IHS shall assure that all expenditures made through the project are in conformance with, and necessary to perform, the scope of work.

17. All parties will provide concurrence that the design phase of the project has been satisfactorily completed pertinent to federal regulations/requirements and in accordance with the provisions of this MOA prior to proceeding to the next phase.

TRANSFER OF TRIBALLY PROVIDED FACILITIES

18. All parties understand that the facilities constructed (including equipment, land, and supplies purchased) through Tribal Procurement under this Agreement with IHS contributed funds are at no time the property of the IHS or the EPA, but rather belong to the Tribe, which shall operate and maintain such facilities properly, until or unless transferred to other parties.

19. Because the IHS nor EPA will not at any time own the facilities constructed, no formal transfer agreement is necessary. In lieu of a transfer agreement, the IHS will notify the Tribe by registered mail when IHS participation in the project is complete.

20. The Tribe shall transfer on-site water and waste facilities to individual homeowners. Upon completion of construction, the homeowners will become responsible for operation and maintenance of their facilities. Facilities constructed under this Agreement at all times belong to

the Tribe until transferred to individual homeowners or other parties.

OPERATION AND MAINTENANCE FEES AND ORDINANCES

21. The Tribe or designated utility authority will establish connection fees and user rates and collect such charges from individuals served by the system to obtain the revenue necessary to sustain the operation, maintenance, and repair of the community water supply and sewerage systems. As an alternative, the Tribe or designated utility authority may provide this revenue from another source.

22. The Tribe or designated utility authority agrees to enact and enforce appropriate ordinances or regulations governing:
    a. Connection to the community water supply and sewage systems by the residents of the community;
    b. The methods and materials to be used in making connections to the community water supply and sewage systems in a safe and sanitary manner; and
    c. The continued operation, maintenance, and repair of individual water supply and waste disposal facilities in a safe and sanitary condition by the persons served thereby.

PROJECT SCHEDULE

23. In the interest of coordination, understanding, and economy, before construction of the project begins, the IHS Project Engineer in consultation with the Tribe and Village shall prepare a project schedule for the planning, design, construction and training activities as outlined in the Project Summary. The Project Engineer shall submit the schedule to the Tribe and Village during the planning phase of the project. Thereafter, the Project Engineer shall provide changes made to the schedule to the Tribe and Village for review and comment.

24. Installation of the water supply and waste disposal facilities provided for herein shall be completed as soon as is practicable in accordance with the schedule developed by the IHS Project Engineer. The Tribe, Villages and IHS will work in partnership to resolve delays that affect the start of construction.

25. In the event that actual construction of this project cannot be initiated for any reason by June 30, 2012, the IHS reserves the right to cancel the project and return all remaining funds to EPA. If the condition which impeded construction is resolved following such cancellation, the IHS will work with the Tribe and EPA to receive high priority to funding the project from subsequent grant opportunities for sanitation facilities.

TRIBAL FINANCIAL MANAGEMENT STANDARDS AND PROCEDURES

26. The Tribe shall provide the following features in its financial management system:
    a. The Tribe shall maintain original accounting records that accurately identify the source and application of all project funds it receives. The source documentation shall include canceled checks, paid bills, payrolls, time and attendance records, purchasing documents, and financial records. Accurate, current, and complete project records shall be reported in accordance with other provisions of this Agreement.
    b. The Tribe shall maintain effective controls and accountability for all cash, real and personal property, and other assets acquired;
    c. The Tribe shall compare actual tribal expenditures with budgeted amounts for the project; and

d. Applicable OMB cost principles (OMB Circular A-87) and the terms of this Agreement shall govern in determining the reasonableness, allowability, and allocability of all costs under the project.

27. The Tribe shall maintain a separate financial account for the project.

28. The Tribe shall submit a projected cash flow schedule. The Tribe and IHS shall minimize the time elapsed between fund transfer and disbursement.

29. Interest in excess of $100 per year earned on cash advances (Federal funds) must be returned to the IHS in the appropriate project account.

30. Funds for construction projects under an Agreement shall not be borrowed or intentionally invested. Funds from one IHS funded construction project shall not be used for cash flow or other unauthorized purposes or for another IHS funded construction project.

31. Any proposed changes by the Tribe in the project Summary and/or budgeted costs must be reviewed and approved by IHS as provided for in the Agreement.

TRIBAL PROCUREMENT PROVISIONS

32. The facilities described in the Project Summary shall be designed and constructed in accordance with normal IHS standards for such facilities.

33. The Tribe, through its procurement system, shall provide for construction of all water and sewage facilities described in the Project Summary as being provided by the Tribe and shall procure the facilities in accordance with this Agreement and in compliance with applicable Federal requirements.

34. The Tribe shall submit to the IHS, for review and approval before advertising, all proposed solicitations and shall make such adjustments in the solicitations as determined necessary by IHS.

35. The Tribe shall develop and submit to IHS for approval a proposed construction contract showing proposed unit costs, based on bids received, for construction of sanitation facilities to be installed. The Tribe shall negotiate these unit costs if necessary to receive approval from IHS. These unit costs shall govern for the duration of the Tribal contract under which they are proposed. No work shall be performed prior to written approval by IHS of the corresponding unit costs.

36. If additional or special units of work are needed during execution of the project, the Tribe shall submit a list of proposed costs for negotiation on those items. Costs for the additional or special items shall then govern either for the duration of the Tribal contract, or for just those sites specified in the proposal, as agreed at the time. Major modifications to the construction contract, such as adding facilities not included in the Project Summary or requiring additional project funds, shall not be executed without written approval by the IHS Director, Division of Sanitation Facilities Construction, Phoenix Area.

37. The IHS shall review and approve proposed unit costs for all items of work under the project. Once approved by IHS, these unit costs shall govern all work for the duration of the Tribal contract under which they are proposed. All unit costs are subject to approval by the Director, Division of

Sanitation Facilities Construction prior to the award of any contract or the start of any construction involving those items of work.

38. The Tribe shall procure construction of facilities outlined in the Project Summary using a system of contract administration that ensures performance by its contractors in accordance with the terms and conditions of the contract and compliance with the latest edition of the IHS MOA Guideline Chapter 6, Section 2. Some, but not all, of the requirements are:
    a. Procurement Standards;
    b. Competitive Procurement Practice;
    c. Indian Preference;
    d. Davis-Bacon Wage Rate Application;
    e. Bonding Requirements; and
    f. Subcontract Limits; and
    g. Specific Contract Provisions.

39. Tribal procurement documents shall provide for the right of the IHS to inspect sanitation facilities installed to insure they meet minimum IHS standards. The procurement documents shall also note that the IHS inspector does not have authority to modify the contract or issue direction to the contractor. In addition, the contract documents shall require the contractor to comply with OSHA safety requirements for all construction activity.

40. The IHS will, at the request of the Tribe, provide oversight and technical assistance on the contractor submittals, progress payments, change order requests, bid evaluation, contractor qualification review, dispute and claim resolution, and other project related information submitted by the tribal contractor and make recommendations to the Tribe.

41. The IHS shall provide construction inspection services to the Tribe. The IHS inspector shall not have the authority to modify the contract or direct the contractor. The IHS and Tribe will inspect all sanitation facilities constructed through Tribal procurement to insure construction meets minimum IHS standards. Following construction inspection, the IHS will advise the Tribe on whether the construction meets the IHS interpretation of the contract requirements.

42. At no time during the project will the Tribe represent the IHS nor will the IHS represent the Tribe in contract administration matters. The Tribe shall be responsible, applying good administrative practice and sound business judgment, for the settlement of all contractual and administrative issues arising out of procurement. These issues include, but are not limited to source evaluation, protests, disputes, and claims.

43. IHS inspection of work is to ensure that the work performed complies with all the terms and conditions of the Tribal contract. Acceptance and final IHS contribution for the work performed will not be made to the Tribe until such time as the IHS participates in a final inspection and determines that all work complies with all contract requirements.

44. The Tribe shall conduct a final inspection of the facilities provided under each contract with the contractor, IHS representatives, and other interested parties. Final payment for the work by the Tribe shall not occur until the contractor has corrected all deficiencies identified at the final inspection and until the work is in full compliance with the plans, specifications and other contract requirements.

FINAL INSPECTION and PROJECT CLOSEOUT

45. The IHS and Tribal representatives, and other interested parties, shall conduct a final inspection of the facilities provided under the project. A review of the Project Scope shall be made to confirm completion of the project, including As-Built drawings, and O&M manuals, as applicable. IHS will close out the project when it determines that all applicable administrative actions and all required project work have been completed. The Tribe shall return unexpended project funds contributed by IHS within 90 days after the completion of the project construction phase and shall submit a closeout financial report after completion of the project.

46. Except as otherwise provided, project records shall be retained for three (3) years from the project completion date. These records include all financial records, supporting documents, procurement documents, titles, and equipment records; including, but not limited to, time sheets, canceled checks, invoices, purchase orders, and contracts. These records shall be made available to the IHS, Inspectors General, or other designated representatives upon request. The Tribe shall be subject to audit in accordance with the requirements of the Single Audit Act.

47. If any litigation, claim, negotiation, audit, or other action involving the records has been started before the expiration of the three year period, the records shall be retained until completion of the action and resolution of all issues which arise from it, or until the end of the three year period, whichever is later.

WARRANTIES

48. The Tribe, to the extent economically feasible, will obtain a one-year warranty for the Tribe and heads of household from the Tribal contractors, suppliers, and manufacturers on equipment, work, and supplies provided by them. The IHS shall assist the Tribe or heads of household in obtaining the benefits and protection of all warranties on equipment or work provided under this Agreement. In the event of a problem occurring within the first year of installation with the design or construction of installed facilities, equipment, or work not protected by the warranties of the suppliers or manufacturers, the IHS will correct the problem, subject to the availability of funds and staff resources, as determined by the IHS.

AGREEMENT DISPUTES

49. All disputes regarding the provisions of this agreement will be resolved among the parties through the IHS Area's established administrative procedures first. If a dispute cannot be resolved locally, the parties agree that the next administrative procedure is an appeals board established at the IHS headquarters level, which will make a recommendation to the IHS Director, who will exercise final authority for the IHS in the administrative review of all disputes.

50. Nothing in this Agreement shall be construed as a waiver of the sovereign immunity of either the US Government, the Hopi Tribe, or the Village for any purpose.

AGREEMENT TERMINATION

51. Any party to this Agreement may terminate its relationship with the other Agreement parties prior to project completion upon 30 days notice in writing to all other parties.

EFFECTIVE DATE

52. This Agreement shall take effect upon (a) transfer of the full amount of the contributions provided for in Paragraphs 8 to the IHS, and (b) execution by the Tribe, EPA, and IHS.

IN WITNESS WHEREOF, the parties have subscribed their names:

FOR THE TRIBE:

June 15, 2010
Date

Chairman, having been duly authorized to enter into this Agreement on behalf of the Hopi Tribe, as evidenced by the attached copy of the resolution made by the Hopi Tribal Council.

FOR THE INDIAN HEALTH SERVICE:

7.1.10
Date

Area Director
Phoenix Area Indian Health Service
Department of Health and Human Services

HOPI TRIBAL COUNCIL
RESOLUTION
H-035-2010

WHEREAS, the Constitution and By-Laws of the Hopi Tribe, ARTICLE VI-POWERS OF THE TRIBAL COUNCIL, SECTION 1(a), (e) and (f) respectively, authorize the Hopi Tribal Council "To represent and speak for the Hopi Tribe in all matters for the welfare of the Tribe, . . .", "To raise and take care of a Tribal Council fund . ." and "To use such Tribal Council fund for the welfare of the Tribe, . . ."; and

WHEREAS, under provisions of the Indian Sanitations Facilities Act, Public Law 86-121, the Indian Health Services (I.H.S.) is authorized to enter into Agreements with Native American Tribes, including the agreement authorized by this Resolution for the purpose of providing assistance in the construction of a first phase multi-phase arsenic mitigation project for the residents of the First and Second Mesa Villages on the Hopi Reservation; and

WHEREAS, the I.H.S. desires to enter into a Memorandum of Agreement (MOU) with the Hopi Tribe in furtherance of I.H.S. Project No. PH 10-E37, to provide assistance in the construction of a new drinking water well in the vicinity of the existing Turquoise Trail Well which will be rehabilitated under this project. Electric power will be extended to each of the well sites from an adjacent power system operated by the Navajo Tribal Utility Authority (NTUA). A hydro-geological analysis and aquifer study will be conducted to determine and document the long term viability of the aquifer to serve the Hopi Communities. The Project Scope includes funding to develop and advance a regional asset management study/plan to explore

various options pertaining to management and operation of a multi-community shared asset; and

WHEREAS, upon completion of the well, the project will be transferred to the Hopi Tribe on the Hopi Reservation; and

WHEREAS, the Environmental Protection Agency through the Drinking Water Tribal Set-Aside (EPA-DWTSA) Grant is contributing One Million, Eight Hundred Fifty Seven Thousand, Four Hundred Dollars ($1,857,400.00) to the project, said amount being the entire costs of the Project, for the purpose of improving the health, welfare, and sanitary condition of the Hopi people.

NOW THEREFORE BE IT RESOLVED that the Hopi Tribal Council has reviewed and hereby approves the attached MOA and the Project Scope for I.H.S. Project PH 10-E37, which by this reference are incorporated herein made a part hereof, and the Tribe accepts the terms and conditions contained therein.

BE IT FURTHER RESOLVED that the Hopi Tribal Council hereby delegates to the Chairman of the Hopi Tribal Council or his designee the authority to negotiate and execute the attached MOA, all agreements, contracts, and other documents necessary for the development and completion of I.H.S. Project No. PH 10-E37.

BE IT FINALLY RESOLVED that the Hopi Tribe's Treasurer is hereby authorized to receive and expend federal funds in accordance with this Resolution and applicable financial policies and procedures.

HOPI TRIBAL COUNCIL
RESOLUTION
H-035-2010

CERTIFICATION

The Hopi Tribal Council duly adopted the foregoing Resolution on June 15, 2010, at a meeting at which a quorum was present with a vote of in 7 favor, 2 opposed, 1 abstaining (Chairman presiding and not voting) pursuant to the authority vested in the Hopi Tribal Council by ARTICLE VI-POWERS OF THE TRIBAL COUNCIL, SECTION 1 (a), (e) and (f) of the Hopi Tribal Constitution and By-Laws of the Hopi Tribe of Arizona, as ratified by the Tribe on October 24, 1936, and approved by the Secretary of Interior on December 19, 1936, pursuant to Section 16 of the Act of June 18, 1934. Said resolution is effective as of the date of adoption and does not require Secretarial approval.

LeRoy N. Shingoitewa, Chairman
Hopi Tribal Council

ATTEST:

George Mase, Interim Tribal Secretary
Hopi Tribal Council

Transfer Document

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Phoenix Area Indian Health Service
Two Renaissance Square
40 North Central Avenue
Phoenix, Arizona 85004

AUG 29 2016

Mr. Herman Honanie
Chairman, Hopi Tribe
P.O. Box 123
Kykotsmovi, Arizona 86039

Dear Chairman Honanie:

This is to inform you that the Indian Health Service (IHS) has fulfilled its obligations in regards to IHS Projects PH 04-S63, PH 06-D33, PH 08-T38, and PH 10-E37. The projects provided for technical assistance on arsenic mitigation for approximately 1,300 homes at First and Second Mesas. Since the original involvement of the IHS, many alternative solutions to the water quality and quantity issues have been explored with each project becoming part of what is now cumulatively known as the Hopi Arsenic Mitigation Project (HAMP). Additionally, the Tribe and EPA have funded subsequent ongoing projects that are considered wholly or partially components of the HAMP under IHS Projects PH 11-E55, PH 12-E73, PH 14-U62, PH 15-U76, and PH 15-E89.

While the HAMP is still in-progress, this letter serves as the Acknowledgement of Project Completion (AOPC) for Projects PH 04-S63, PH 06-D33, PH 08-T38, and PH 10-E37 and that the IHS hereby transfers all vested interests in Projects PH 04-S63, PH 06-D33, PH 08-T38, and PH 10-E37 to the Tribe. The IHS will develop a final report on the project and a copy will be sent to the Tribe.

Sincerely,

for Charles Ty Reidhead, M.D., M.P.H.
Rear Admiral, U.S. Public Health Service
Director (Acting)

Enclosure

cc: Jesse DeCoteau, Field Engineer, Eastern Arizona District Office, OEHE
Robert Lorenz, District Engineer, Eastern Arizona District Office, OEHE

ENCLOSURE
PROJECTS PH 04-S63, PH 06-D33, PH 08-T38 & PH 10-E37
LIST OF FACILITIES AND REPORTS PROVIDED

Turquoise Trail Well #2

- 2,180-feet deep in 2,195-foot, 18-inch reamed borehole
- 1,700-feet of 12-inch i.d. HSLA casing
- 480-feet of 12-inch i.d. 304 stainless steel screen

Turquoise Trail Well #3

- 2,241-feet deep in 2,270 foot, 22-inch reamed borehole
- 1,761-feet of 12-inch i.d. HSLA casing
- 480-feet of 12-inch i.d. 304 stainless steel screen

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