

BUREAU OF RECLAMATION

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11/5/03 | McGlothlen | 1500

11/13/03 | Laush | 1500 DL

11/13 | Czaplewski | 1500 SL

11/13 | [Signature] | 1500 SE

11/7 | [Signature] | 1500 HSM

11/13 | Ellis | 1500

PXAO-1500
ENV-6.00

NOV 13 2003

MEMORANDUM

To: Area Manager, Phoenix, Arizona
Attention: PXAO-1000From: Bruce D. Ellis *Bruce D. Ellis*
Chief, Environmental Resource Management DivisionSubject: Categorical Exclusion Checklist (CEC) – Central Arizona Project (CAP) –
Modification of Cottonwood Spring Grade Control Structure

The subject CEC is attached for your approval and signature. If you have any questions, please contact Mr. John McGlothlen at extension 3866.

Attachment

cc: LC-2624 (A. Cassels)
PXAO-1500 (Laush), 2000 (Riley)
(w/att to ea)

WBR:JMcGlothlen;jkk:11/5/03

CE's * cec_cottonwood(JMC).doc

1500 Chrono

1500 File * Cottonwood Spring Fish Barrier

Categorical Exclusion Checklist

Date: November 2003

Project: Central Arizona Project (CAP)

Nature of Action: Cottonwood Spring Fish Barrier

Exclusion Category: 516 DM 6 Appendix 9, 9.4, C.3 – Minor construction activities associated with authorized projects which correct unsatisfactory environmental conditions, or which merely augment or supplement, or are enclosed within existing facilities.

Evaluation of criteria for Categorical Exclusion:

- | | |
|---|--|
| 1. This action or group of actions would have a significant effect on the quality of the human environment. | No <input checked="" type="checkbox"/> Uncertain__ Yes__ |
| 2. This action or group of actions would involve unresolved conflicts concerning alternative uses of available resources. | No <input checked="" type="checkbox"/> Uncertain__ Yes__ |

Evaluation of exceptions to actions within Categorical Exclusion:

- | | |
|---|--|
| 1. This action would have significant adverse effects on public health or safety. | No <input checked="" type="checkbox"/> Uncertain__ Yes__ |
| 2. This action would affect unique geographical features such as: Wetlands, wild or scenic rivers, refuges, floodplains, or prime and unique farmlands. | No <input checked="" type="checkbox"/> Uncertain__ Yes__ |
| 3. This action will have highly controversial environmental effects. | No <input checked="" type="checkbox"/> Uncertain__ Yes__ |
| 4. This action will have highly uncertain environmental effects or involve unique or unknown environmental risk. | No <input checked="" type="checkbox"/> Uncertain__ Yes__ |
| 5. This action will establish a precedent for future actions. | No <input checked="" type="checkbox"/> Uncertain__ Yes__ |
| 6. This action is related to other actions with individually insignificant, but cumulatively significant, effects. | No <input checked="" type="checkbox"/> Uncertain__ Yes__ |

7. This action will adversely affect properties listed or eligible for listing, in the National Register of Historic Places. No Uncertain__ Yes__
8. This action will adversely affect a species listed, or proposed to be listed, as threatened or endangered (T&E). No Uncertain__ Yes__
9. This action threatens to violate Federal, State, local, or tribal law or requirements imposed for protection of the environment. No Uncertain__ Yes__
10. This action will adversely affect Indian Trust Assets (ITA). No Uncertain__ Yes__

NEPA Action - Categorical Exclusion
 EA
 EIS

Explanation/remarks:

Proposed Action. Reclamation proposes to modify an existing grade control structure in Sonoita Creek to improve its erosion control capability and add functionality as a fish barrier. As presently configured, the structure is not impervious to fish movement and affords little if any protection to native aquatic species in upstream reaches of the creek. A constructed barrier at the proposed site would prevent upstream incursion of nonnative fishes into habitat supporting endangered Gila topminnow (*Poeciliopsis occidentalis*) and endangered Huachuca water umbel (*Lilaeopsis schaffneriana* var. *recurva*). The project area is located on private land in an ephemeral reach of Sonoita Creek approximately 50 miles southeast of Tucson, Arizona, in Santa Cruz County (Figures 1 and 2). Vehicle access to the site is provided by State Highway 82 and a two-track primitive road.

The grade control structure was constructed in the mid-1990s to prevent head cutting that could adversely affect the riparian community in upstream reaches of Sonoita Creek. Funding for the grade control structure was provided under a "Partners for Wildlife" agreement between the Fish and Wildlife Service and Arizona Game and Fish Department. The existing structure consists of vertical 3.5-inch diameter steel pipe posts erected approximately 4.5 feet above grade with attached 12-gauge galvanized wire mesh. Rip rap is piled to the top of the posts along the upstream and downstream profile of the wire mesh (Figure 3).

The proposed modification would reconfigure the existing structure by replacing rip rap on the downstream side with a reinforced concrete vertical drop structure and apron. Site preparation would involve removing approximately 50 cubic yards of rip rap from the downstream face and

temporarily stockpiling the material for reuse as slope protection along the left and right abutments and scour protection at the toe of the apron. An additional 75 cubic yards of rip rap would be imported for channel stabilization. Approximately 150 cubic yards of native channel substrate would be excavated for placement of concrete and riprap components of the barrier. Excavation of channel substrates would be performed with standard earthmoving equipment to the depth required for scour protection, which is estimated to be approximately 6 feet. Excavated material would be placed immediately upstream of the barrier and contoured to the existing channel profile so that stream flow is not restricted or impeded. Concrete mixer trucks from a commercial ready mix plant would transport concrete to the worksite. No batching of materials would be allowed onsite. The upstream portion of the grade control structure would not be modified. The impact area for project activities is approximately 0.3 acre, including the barrier site, staging area, and off-road access.

The constructed barrier would consist of five primary features: (1) a 3-foot high concrete drop structure extending approximately 44 feet across the channel into the left and right abutments, (2) 4-foot thick concrete abutment blocks at each end of the drop structure, (3) a concrete apron extending 10 feet downstream from the drop structure, (4) a downstream key that extends into the channel substrate to the depth of scour created by the barrier, and (5) rip rap scour protection along the toe of the apron and left and right banks (Attachment 1).

Aquatic Resources and Clean Water Act Compliance. Sonoita Creek is dry most of the year at the project site. When flows do occur, they range from minimal to significant. Intense but brief winter and monsoonal storms produce large volumes of runoff within the 17-square mile watershed. These storms generate flashy flows that quickly wane. Estimated frequency flood events are shown in Table 1.

Table 1. Estimated Peak Flood Magnitudes for Sonoita Creek

Flood Frequency Interval (Years)	Estimated Peak Flood Magnitude (cfs) ADOT Method*	Estimated Peak Flood Magnitude (cfs) USGS Method*
2	464	575
5	1,092	1,381
10	1,672	2,181
25	2,595	3,506
50	3,422	4,703
100	4,354	6,257

* Arizona Department of Transportation (ADOT) – Methods for Estimating the Magnitude and Frequency of Floods in Arizona.

** US Geological Survey (USGS) – Methods for Estimating Magnitude and Frequency Floods in the Southwestern US.

Project implementation will not alter the hydrologic characteristics of the creek. The proposed concrete structure would conform to existing channel contours and cause no long-term impoundment of water, additional sediment buildup, or flooding. No effect to sediment transport within the drainage is anticipated. The project area is not located within unique waters of the State, wetlands, or other special aquatic sites.

Discharges of dredged and fill material for the project are authorized under an individual Clean Water Act (CWA) Section 404 permit issued by the U.S. Army Corps of Engineers on October 30, 2003 (Permit No. 2000-01742-MB). The project received a CWA Section 401 water quality certification from the Arizona Department of Environmental Quality on June 24, 2003. Land disturbances resulting from the proposed construction activity would affect approximately 0.3 acre. Because construction impacts are less than 1 acre, the project is not subject to permitting requirements under CWA Section 402 as implemented by Arizona Pollutant Discharge Elimination System regulations.

Vegetation. The project area lies in the Semi-desert Grassland biome. The Semidesert Grassland community, as described by Brown (1982), is a perennial grass-shrub dominated landscape, where the grass cover is reduced by encroachment of a wide variety of shrubs, trees, and stem succulents. In some areas, as pointed out by Brown (1982), trees, half-shrubs, cacti, and forbs may outnumber or completely replace the grasses. Typical grass species include black grama (*Bouteloua eriopoda*), blue grama (*Bouteloua gracilis*), sacaton (*Sporobolus wrightii*) and Porter's muhly (*Muhlenbergia* spp). Nongrass species are more typical of the Arizona Upland (paloverde-mixed cacti) and include mesquite (*Prosopis velutina*), catclaw acacia (*Acacia greggii*), foothills paloverde (*Parkinsonia microphylla*), burroweed (*Isocoma tenuisecta*), and triangle-leaf bursage (*Ambrosia deltoidea*).

Vegetation in the immediate project area consists primarily of mesquite and cat-claw acacia with some scattered hackberry (*Celtis pallida*) located adjacent to the ephemeral channel. Vegetation within the channel is sparse and consists of desert broom (*Baccharis sarathroides*) and rabbitbrush (*Chrysothamnus* spp).

An existing trail leads to both the upstream and downstream portions of the project area. No vegetation clearing will be required for either construction of the project or the staging area. Minor trimming of mesquite and hackberry trees will occur. Approximately 0.05 acre of wash bottom will be impacted by this project. A combined mitigation package for all fish barriers was completed on October 15, 2003. Mitigation consisted of the acquisition of a Conservation Easement from The Nature Conservancy on 1,420 acres of land, known as Three Links Farm, on the San Pedro River near Cascabel, Arizona. The Cottonwood Spring fish barrier portion of the mitigation amounts to 0.05 acre.

Endangered Species. The project area occurs within the known range of the Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*). Surveys were conducted in the project area on March 20, 2003, no Pima pineapple cacti were located.

Two endangered species occur upstream of the project area. A population of the Gila topminnow occurs approximately 1/2 mile upstream of the project area in an isolated side channel of Sonoita Creek, known as Cottonwood Spring. In addition, the Huachuca water umbel also occurs upstream of the project area in two short reaches of Sonoita Creek. Critical habitat for the water umbel was designated in a 1.25-mile reach of Sonoita Creek approximately

0.25 mile upstream from the project site (64 FR: 37441-37453). No adverse impacts will occur to any federally-listed species from this project. Construction of the fish barrier will provide positive benefits for the Gila topminnow.

Cultural Resources and ITAs. A Class III cultural resources survey (pedestrian survey and records check) of the project area was conducted by an archaeologist from the Phoenix Area Office. No cultural resource sites or Traditional Cultural Properties were identified in the area of potential effect. Based on these findings, Reclamation determined that no historic sites would be affected by the proposed action. The Arizona State Historic Preservation Office concurred with the no effect determination on June 24, 2003.

ITAs are legal interests in property held in trust by the U.S. for Indian Tribes or individuals. Reclamation has reviewed the proposed action for possible effects to ITAs. Project impacts would be confined to privately owned (non-Indian) property. No ITAs would be affected.

Reference:

Brown D. E. 1982. Desert Plants: Biotic Communities of the American Southwest-United States and Mexico. Vol 4, Numbers 1-4. University of Arizona. Tucson, Arizona.

Preparer's Name and Title: John McGlothlen - Environmental Biologist

Project Archaeologist concurrence with Item 7: Jon S Goplich 13 NOV 03

Project Biologist concurrence with Item 8: Diane M. Law 5 NOV 03

ITA designee concurrence with Item 10: Jon S Goplich 13 NOV 03

Concur: Bruce D. Gellin Date: 11/13/03
Chief, Environmental Resource Management Division

Approve: Cathy E. Date: 11/14/03
Area Manager

Categorical Exclusion No. PXAO-03-56 Date: NOV 14 2003

112°09.000' W 111°43.000' W 111°17.000' W 110°51.000' W 110°25.000' W 109°59.000' W WGS84 109°11.000' W

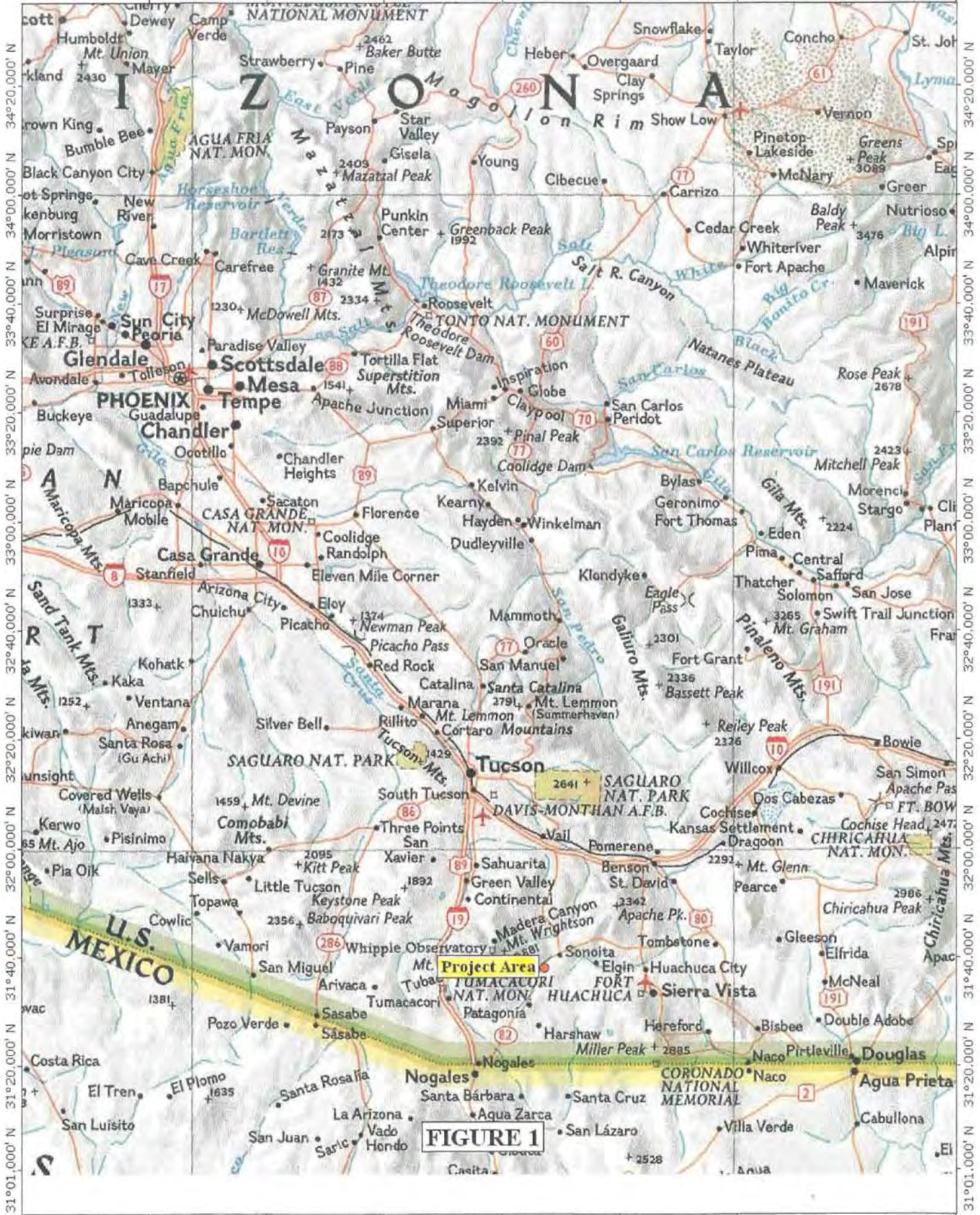


FIGURE 1

112°09.000' W 111°43.000' W 111°17.000' W 110°51.000' W 110°25.000' W 109°59.000' W WGS84 109°11.000' W

TN MN 11%

0 10 20 30 40 50 60 miles
0 25 50 75 100 km
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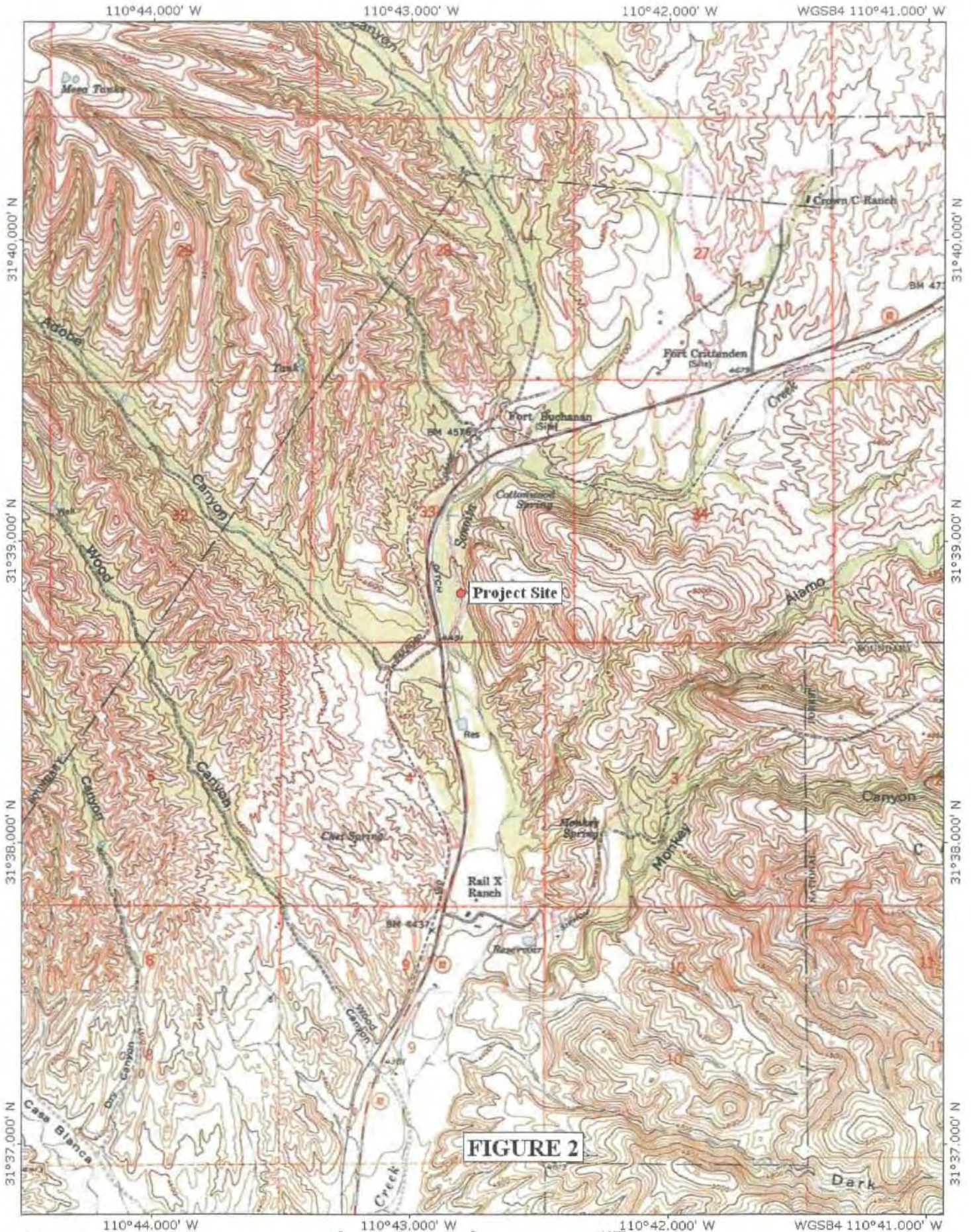


FIGURE 2

TN * MN
11 1/2°

0 1000 FEET 0 500 1000 METERS
0 5 1 MILE
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FIGURE 3