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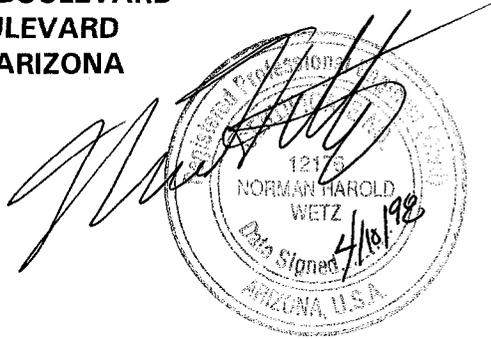
**DAM SAFETY INSPECTION  
GOLDEN EAGLE PARK DAM  
ASSIGNMENT NO. 5  
NEAR GOLDEN EAGLE BOULEVARD  
& PALISADES BOULEVARD  
FOUNTAIN HILLS, ARIZONA**

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FOUNTAIN HILLS, ARIZONA**



**Submitted To:**

**Flood Control District of Maricopa County  
2801 West Durango Street  
Phoenix, Arizona 85009**

**Submitted By:**

**AGRA Earth & Environmental, Inc.  
3232 West Virginia Avenue  
Phoenix, Arizona 85009-1502**

**April 10, 1998**

**AEE Job No. 8-117-001014**

April 9, 1998  
AEE Job No. 8-117-001014

**DRAFT**

Flood Control District of Maricopa County  
2801 West Durango Street  
Phoenix, Arizona 85009

Attention: **Warren F. Rosebraugh, P.E.**

Gentlemen:

**RE: DAM SAFETY INSPECTION  
GOLDEN EAGLE PARK DAM  
ASSIGNMENT NO. 5  
NEAR GOLDEN EAGLE BOULEVARD  
& PALISADES BOULEVARD  
FOUNTAIN HILLS, ARIZONA**

Our revised Draft Dam Safety Inspection Report for the above referenced project is herewith submitted. The report provides the results of our dam safety inspection.

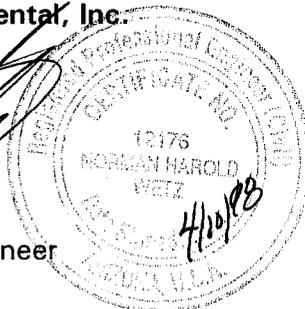
Should any questions arise concerning this report, we would be pleased to discuss them with you.

Respectfully submitted,

**AGRA Earth & Environmental, Inc.**



Norman H. Wetz, P.E.  
Senior Geotechnical Engineer



Reviewed by:



Lawrence A. Hansen, Ph.D., P.E.  
Chief Technical Officer

c: Addressee (5)

nj/J2-98/4-9-98

Dam Safety Inspection  
Golden Eagle Park Dam  
Assignment No. 5  
Near Golden Eagle Boulevard  
& Palisades Boulevard  
Fountain Hills, Arizona

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**APPENDIX A**

Photographs



## 1.0 INTRODUCTION

This report presents the results of a dam safety inspection of the existing Golden Eagle Park Dam located near Palisades and Golden Eagle Boulevards in Fountain Hills, Arizona.

## 2.0 DAM SAFETY INSPECTION

### 2.1 GENERAL

The dam safety inspection was performed by Norman H. Wetz, P.E. on February 17, 1998. The Golden Eagle Park Dam consists of a zoned earth embankment that has outlet structures and an emergency spillway. The embankment is approximately 700 feet in length with a crest width of about 12 feet and slopes of about 2 horizontal to 1 vertical. The outlet works consist of two ungated 60-inch diameter reinforced concrete pipes, one of which is filled half full with concrete. A sewer line that is encased in the concrete extends beyond the embankment on both of the upstream and downstream slopes of the embankment. Concrete aprons are located on both the upstream and downstream sides of the outlet pipes. The emergency spillway is approximately 300 feet in width and presently appears to be unlined. A concrete sill extends from the embankment to the south end of the emergency spillway. The impoundment area upstream from the dam is occupied by the Golden Eagle Park with softball fields, playground, basketball court, maintenance, restroom buildings and paved parking lots. The area downstream from the dam is occupied by an existing high school football field with bleachers and cinder running track.

### 2.2 CREST

The visual inspection at the crest indicates that there are no obvious defects. No localized settlement, slides, depressions, misalignment, longitudinal or transverse cracking, animal burrows, adverse vegetation or erosion was noted. A survey with a handlevel indicated that the dam crest elevation does not vary more than about 0.6 feet over its extent. Photo No. 1 (Appendix A) shows the crest of the dam.

### 2.3 UPSTREAM SLOPE

The upstream slope of the dam appears to be satisfactory with the exception of trees, large brush and some minor erosion. No animal burrows, settlement, slides, depressions, bulges or cracking was noted. Several tamarisk trees and small palo verde trees are present on the upstream slope. Also, a moderate growth of low brush along with some larger brush is present. A cut has been made on the southern portion of the embankment to allow for

construction traffic to the impoundment area. The cut is about 1 to 2 feet in depth and 12 to 15 feet in width near the base of the embankment. Photos 2 and 3 depict the vegetation and the cut in the embankment.

## **2.4 DOWNSTREAM SLOPE**

The downstream slope is satisfactory and has no cracking, settlement, bulges, slides, depressions, soft spots, evidence of movement or animal burrows. Vegetation consists of a moderate growth of brush with some palo verde trees. Also, there are some minor erosion features near the center of the embankment. Photo 4 depicts the vegetation present on the downstream slope.

## **2.5 DRAINAGE - SEEPAGE CONTROL**

The reservoir was dry and no seepage was noted.

## **2.6 ABUTMENT CONTACTS**

Abutment contacts showed no erosion, differential movement, cracks, settlements, slides, bulges, depressions, seepage or animal burrows.

## **2.7 OUTLET WORKS**

### **2.7.1 Approach Channel**

The approach channel is unlined and is not eroding, back cutting, sloughing or obstructed with debris or silt.

### **2.7.2 Inlet Structure**

The inlet structure consists of a concrete apron with training walls on the sides. Trees and brush are present upstream from the apron. A small amount of water was flowing over the apron and into the pipes. The exposed concrete was in good condition and was not spalled, cracked, eroding or showing reinforcement. A small amount of clear water seepage was occurring between the concrete apron and the headwall of the conduits.

The wooden trash racks appeared to be in good condition. Some brush and trees are obstructing inlet and trash rack area. Photo 5 depicts the trash rack.

### 2.7.3 Conduits

Two 60-inch diameter reinforced concrete pipes (RCP) extend through the dam. The south RCP is filled with concrete up to the spring line. The concrete is encasement for a sanitary sewer line. The pipes appeared to be in good condition and concrete surfaces showed no spalling, scaling, cracking, erosion or exposed reinforcement. The joints of the RCP are in good condition and no seepage, offset or loss of joint material is apparent. A small amount of water was flowing through the pipes (less than 1 gpm).

### 2.7.4 Outlet Works

A concrete lined stilling basin is present. The exposed concrete joint had no displacement, loss of joint material or leakage. The southern portion of the stilling basin is clogged with silt and vegetation. Photo 6 depicts the stilling basin.

### 2.7.5 Outlet Channel

The outlet channel is unlined and has some minor erosion to about 30 feet downstream from the stilling basin.

## 2.8 EMERGENCY SPILLWAY

The emergency spillway is unlined and has a concrete sill that extends below ground for the width of the spillway. The upstream portion of the spillway is occupied by an asphaltic concrete paved parking lot and lawn areas for the park. The downstream portion of the spillway is stepped down on three benches that are separated with 2- to 4-foot high block retaining walls. The spillway exits into the south end of a football field that has a cinder running track on its perimeter. About four mesquite trees are located in the emergency spillway and chain-link fence posts spaced about 8 feet apart are located downstream from the concrete sill. The mesquite trees are downstream of the concrete sill and are widely spaced, so they do not obstruct the emergency spillway.

No erosion, sloughing or other distress is evident in the emergency spillway. Riprap is not evident from the surface exposures. However, borings and test pits indicate that dumped riprap is present from the concrete sill to the first downstream retaining wall. Photos 7 and 8 depict the emergency spillway.

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## **2.9 RESERVOIR**

The reservoir is dry and is presently occupied by athletic fields. There is no sign of highwater marks, erosion, slides, floating debris, depressions, sinkholes or sediment accumulations.

## **2.10 INSTRUMENTATION**

Instrumentation consists of a water level recorder that is located on the inlet side of the inlet structures, with related antenna located on the crest of the dam. No other instrumentation is existing at the structure.

## **3.0 RECOMMENDATIONS**

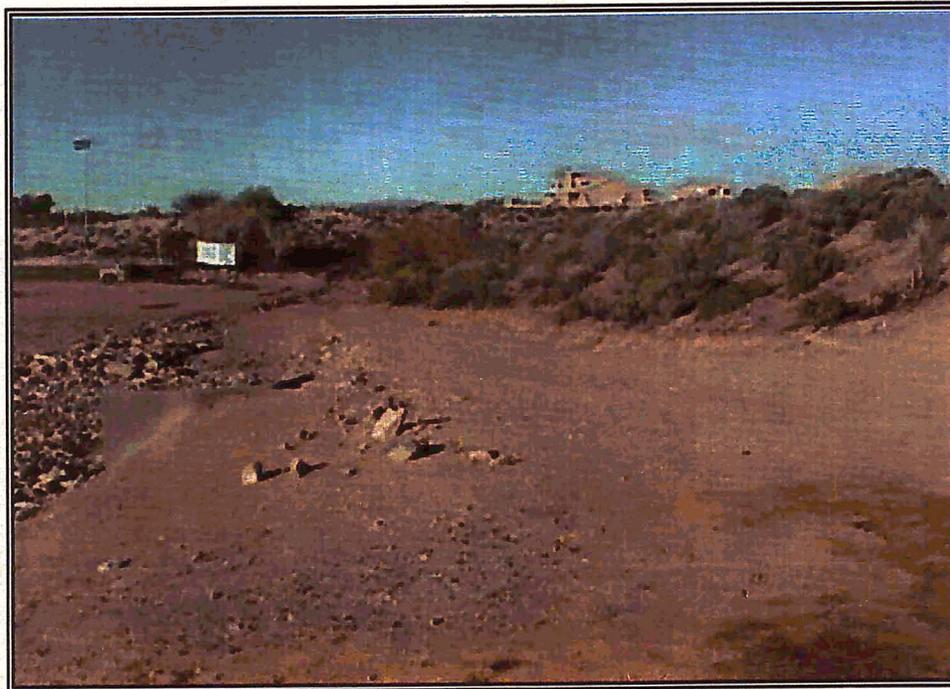
It is recommended that trees, large brush (2 feet or taller) and desert broom be removed from the embankments and the intake area near the trash rack. The stilling basin should be cleaned of silt and vegetation. The cut on the upstream slope should be repaired. The emergency spillway should be checked for erosion potential.

**APPENDIX A**

**PHOTOGRAPHS**



**Photo 1. Crest of Dam**



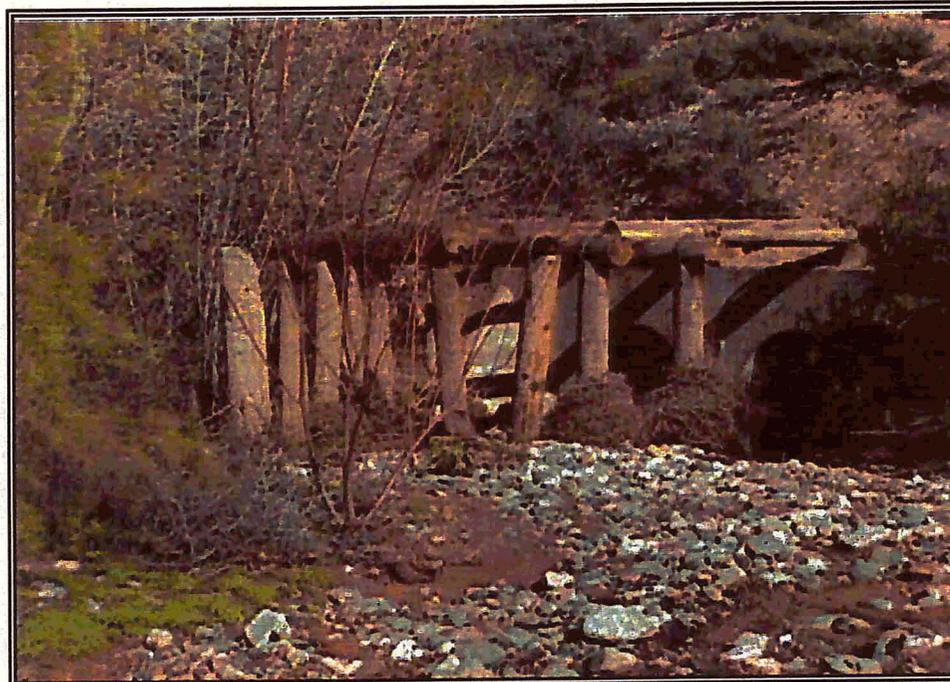
**Photo 2. Cut in Upstream Slope**



**Photo 3. Trees Along Upstream Slope**



**Photo 4. Downstream Slope**



**Photo 5. Trash Rack Area**



**Photo 6. Outlet Stilling Basin**



**Photo 7. Emergency Spillway**



**Photo 8. Emergency Spillway**

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