

Sheth, Gary

From: Jeffrey.Allmon@pinnaclewest.com
Sent: Saturday, March 18, 2017 11:19 AM
To: Hagler, Tom; Sheth, Gary
Cc: Meagan.Vamos@pinnaclewest.com; Neal.Brown@aps.com; Charles.Spell@aps.com; Richard.Grimes@aps.com
Subject: RE: Four Corners NPDES Permit Renewal (Morgan Lake Information) [WARNING: SPF validation failed]
Attachments: image002.jpg; image003.png

Sounds good, thank you.

Jeffrey Allmon
Senior Attorney, Environmental
Pinnacle West Capital Corporation / APS
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Direct - 602.250.4799
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jeffrey.allmon@pinnaclewest.com

From: Hagler, Tom
Sent: Saturday, March 18, 2017 6:04:46 AM
To: Allmon, Jeffrey; Sheth, Gary
Cc: Vamos, Meagan; Brown, Neal W; Spell, Charles M; Grimes, Richard L
Subject: Re: Four Corners NPDES Permit Renewal (Morgan Lake Information) [WARNING: SPF validation failed]

USE CAUTION - EXTERNAL SENDER:(Hagler.Tom@epa.gov)

Do not click on links or open attachments that are not expected.

For questions or concerns, please email the APS Cyber Defense Center team at ACDC@apsc.com<<mailto:ACDC@apsc.com>> or contact the APS Helpdesk.

Thanks to all for pulling this together. I'm bouncing it on to Gary Sheth to digest it. If we have questions about what means, we'll give you a call.

From: Jeffrey.Allmon@pinnaclewest.com <Jeffrey.Allmon@pinnaclewest.com>
Sent: Friday, March 17, 2017 9:34 AM
To: Hagler, Tom
Cc: Meagan.Vamos@pinnaclewest.com; Neal.Brown@aps.com; Charles.Spell@aps.com; Richard.Grimes@aps.com

Hi Tom,

As we discussed, attached you'll find several files containing topographical maps of the area containing Morgan Lake and the downgradient zone extending to the Chaco Wash. A guide to these topo files is provided below. In addition, we've provided several annotated photographs of the area that now contains Morgan Lake, which were taken during construction of the dam. Finally, we've also attached a recent aerial photograph of Morgan Lake. We believe this material establishes that Morgan Lake was constructed in a dry, upland desert area. In addition, we offer the following information:

- Morgan Lake was constructed for the purposes of providing a cooling water pond for the Four Corners Power Plant. If there were no thermal power plant to service, Morgan Lake and the dam would not have been constructed.
- The area around Four Corners Power Plant and Morgan Lake receives approximately 8 inches of precipitation per year.
- The foot of Morgan Lake Dam is approximately 200 ft. higher than the Chaco River, an ephemeral stream which is the closest significant tributary. This represents a high-point among the area topography.
- Morgan Lake is filled exclusively by a pumping station from the San Juan River. There are no other confined, discrete, or identifiable (ephemeral or otherwise) flows into Morgan Lake, other than sheet flow precipitation runoff. As such, Morgan Lake receives only very small contributions of water from rainfall.

Please let us know if you have any additional questions regarding this information. We are happy to discuss further if you'd like. Thanks.

Best,

Jeff

Topographical Map File Guide

- Topo 1: Morgan Lake

- Topo 2: West from Morgan Lake, downgradient
- Topo 3: West from Topo 2, downgradient
- Topo 4: West from Topo 3, downgradient to Chaco Wash

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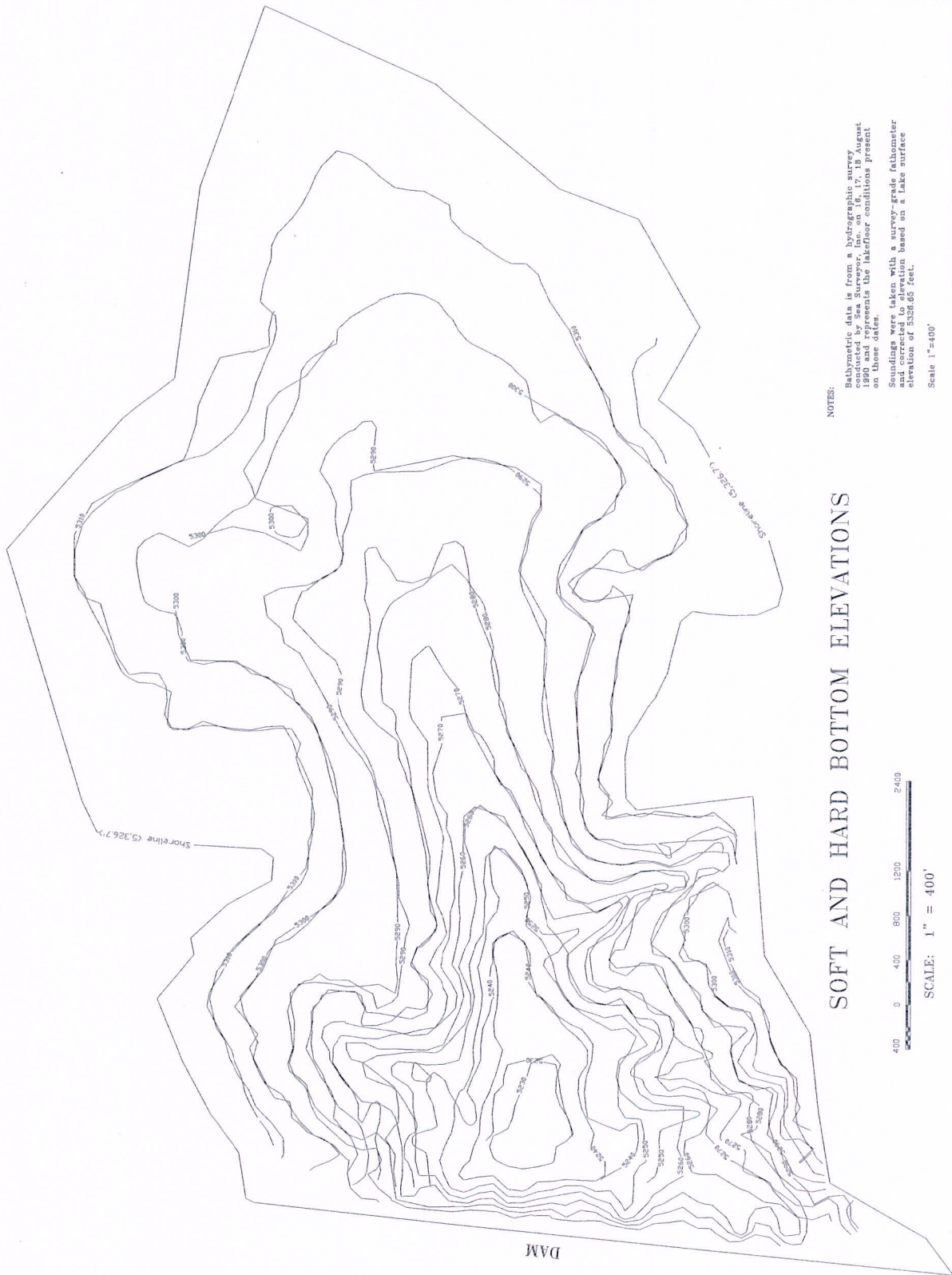
[Pinnacle_West_Logo] [cid:image006.jpg@01D045F6.8B5CCAD0]

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Nr. 12420 153.01

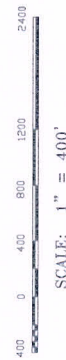




NOTES:

Bathymetric data is from a hydrographic survey conducted by Sea Surveyor, Inc. on 16, 17, 18 August 1962. The data was corrected for tidal conditions present on those dates.
 Soundings were taken with a survey-grade fathometer and corrected to elevation based on a Lake surface elevation of 5326.65 feet.
 Scale 1"=400'

SOFT AND HARD BOTTOM ELEVATIONS



APS DWG. NO.: FC-C-17-PSC-100003-62
Sea Surveyor, Inc.
 Precision Marine Surveying
 for the Engineering Community
 4576 East Second Street, Ste. C
 Benicia, CA 94510 (707) 746-1853

LAKE MORGAN, NEW MEXICO
 Four Corners Steam Electric Station

KEY:
 — Soft Bottom Contour Lines
 — Hard Bottom Contour Lines

Arizona Public Service Co.
 Fruitland, New Mexico

PWT
 PACIFIC WESTERN TECHNOLOGIES, LTD.
 2000 N. CENTRAL AVENUE, SUITE 100
 DENVER, COLORADO 80202
 PHONE: (303) 733-1100
 FAX: (303) 733-1101
 WWW.PWT.COM

GENERAL NOTES:
 THIS MAP WAS DERIVED FROM A 1:50,000 METRIC PHOTOGRAPHIC AERIAL RECONNAISSANCE ACQUIRED IN 1994. THIS MAP COMPARES WITH MATERIAL PREVIOUSLY PREPARED FOR THE ARIZONA PUBLIC SERVICE COMPANY. SPACING CONTROL DATA USED WITH THE INTERPOLATED POINTS WITHIN EACH THE MAPPING IS BASED ON THE SPACING CONTROL DATA PROVIDED BY ARIZONA PUBLIC SERVICE COMPANY.

SCALE: 1" = 500'
 GRAPHIC SCALE: 0 100 200 FEET

1	2	3	4
5	6	7	8

SHEET INDEX

TOPOGRAPHIC MAP
 ASH POND/REGENERATION POND AREAS
 FOUR CORNERS STEAM ELECTRIC STATION
 PORTLAND, NEW MEXICO
 ARIZONA PUBLIC SERVICE COMPANY



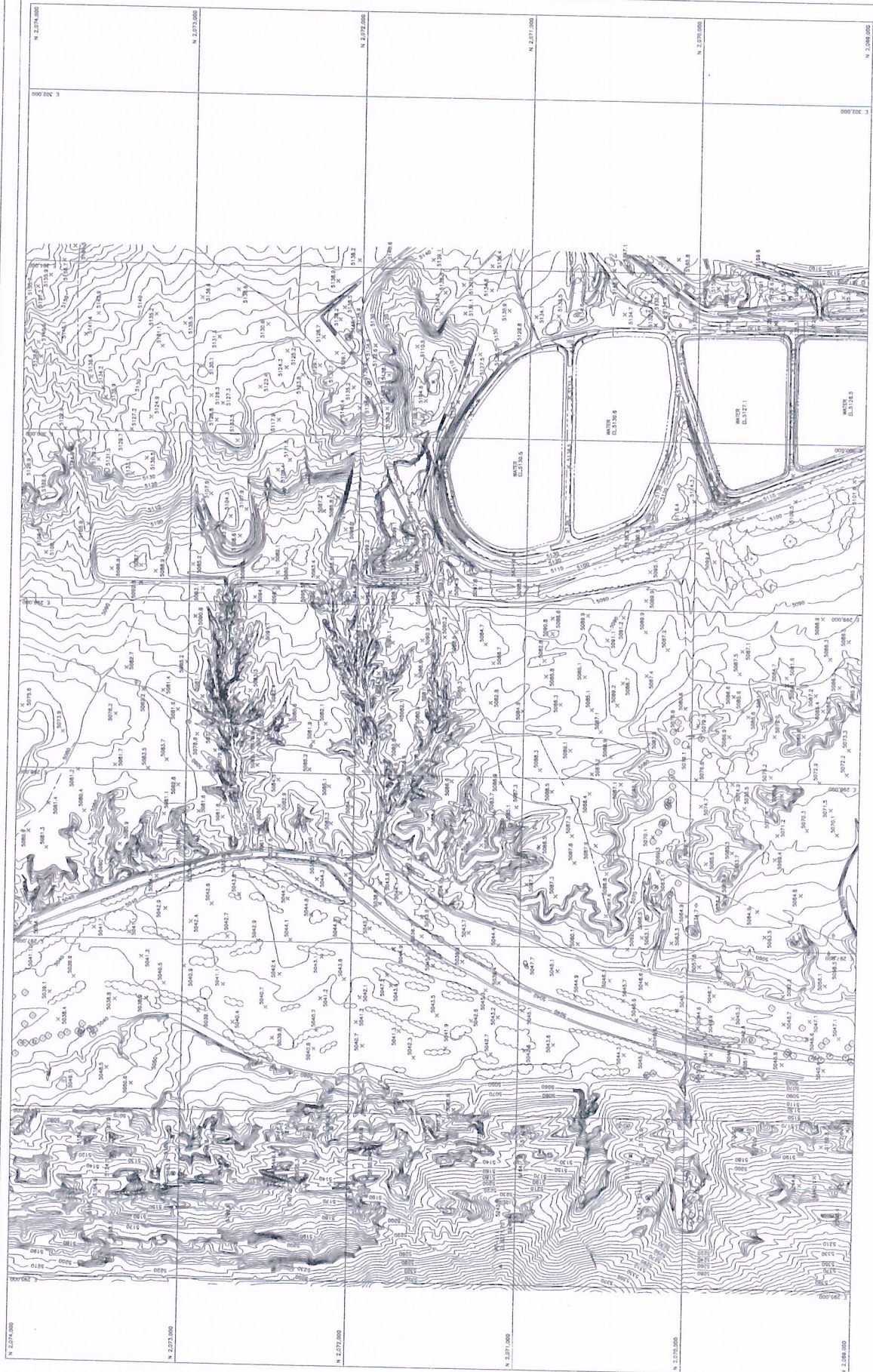


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TOPOGRAPHIC MAP
 #2014 - CORNERS AS
 PREPARED BY
 MICHAEL HUBBARD, S.E.

SCALE
 1" = 100'
 1" = 100'





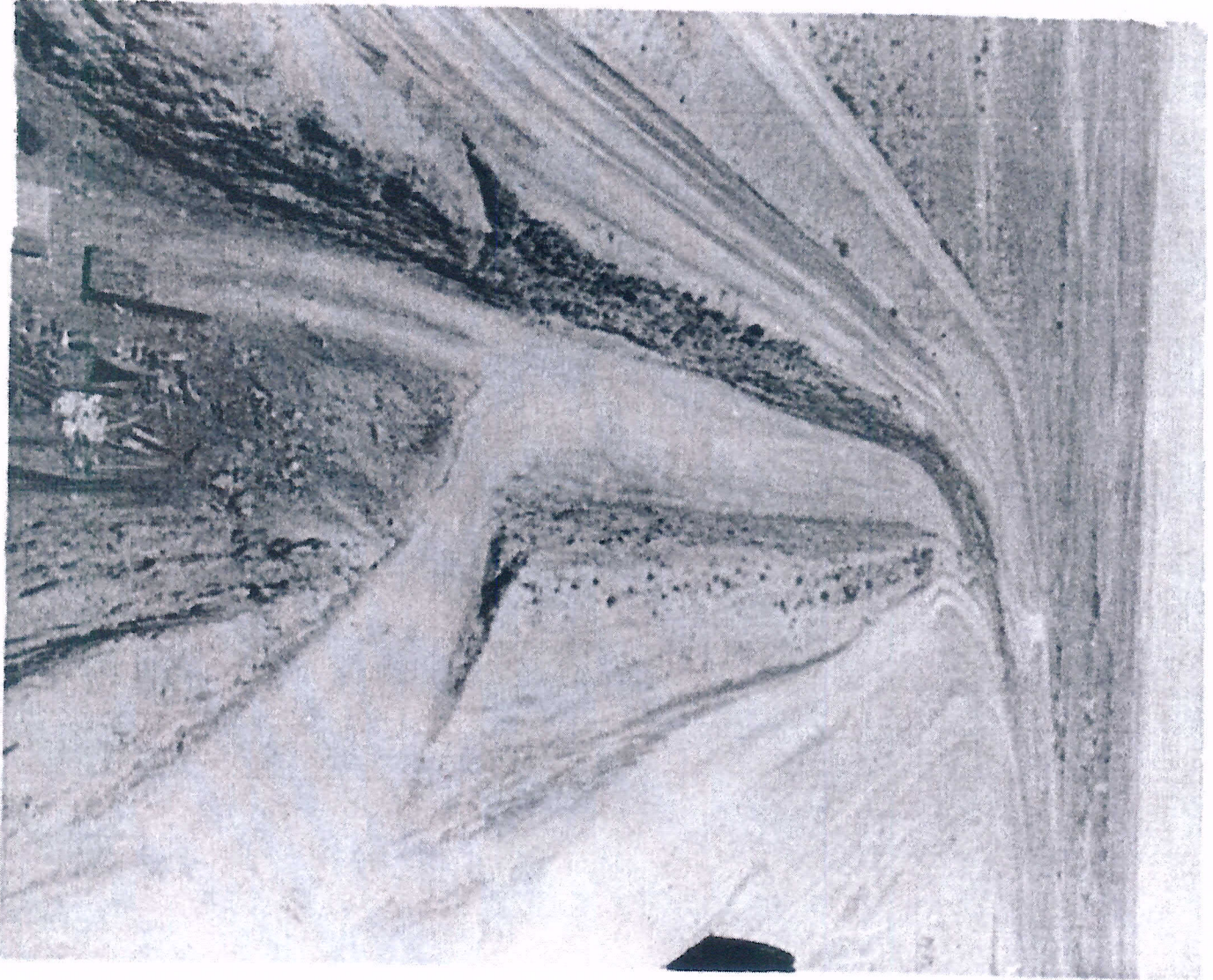
TOPOGRAPHIC MAP
 OF
 FOUR CORNERS STEAM ELECTRIC STATION
 PREPARED FOR
 ARIZONA PUBLIC SERVICE

SCALE MAP INTERVAL
 DATE OF PHOTOGRAPHY
 1" = 200'
 6/1/52

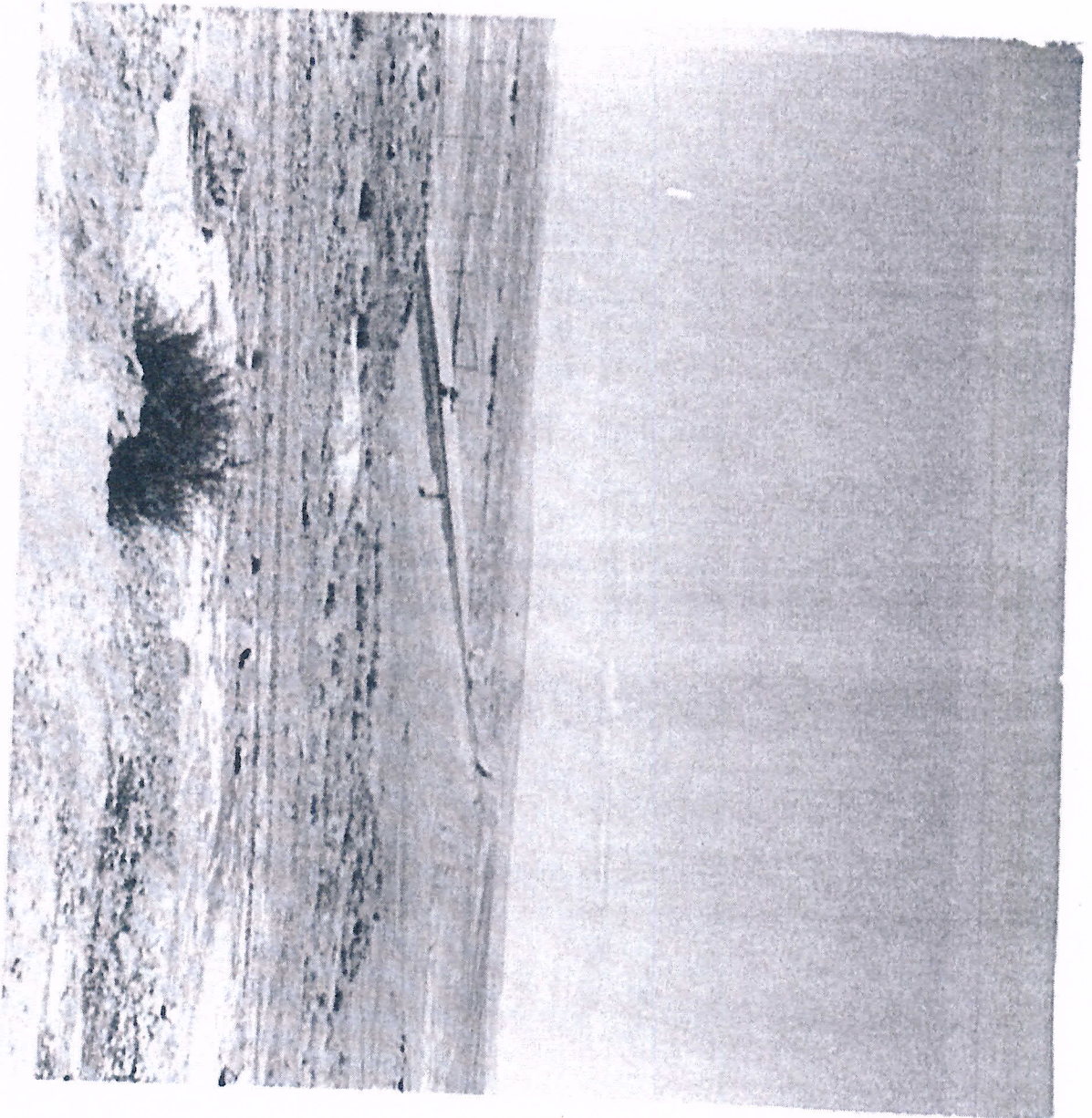




Excavation for Morgan Lake Dam. To the right of the cut (East) will become Morgan Lake. 5/17/61



Construction of cooling water discharge canal. To the left (North) will become Morgan Lake. 8/10/61



Morgan Lake Dam 73 % complete
viewed from high point. To the
right (East) will become Morgan
Lake. 8/30/61



Morgan Lake Dam 80 % complete. Left part of photo (East) will become Morgan Lake. Small pond at lower left center is likely a stock tank constructed to catch rain water for stock watering. 9/14/61