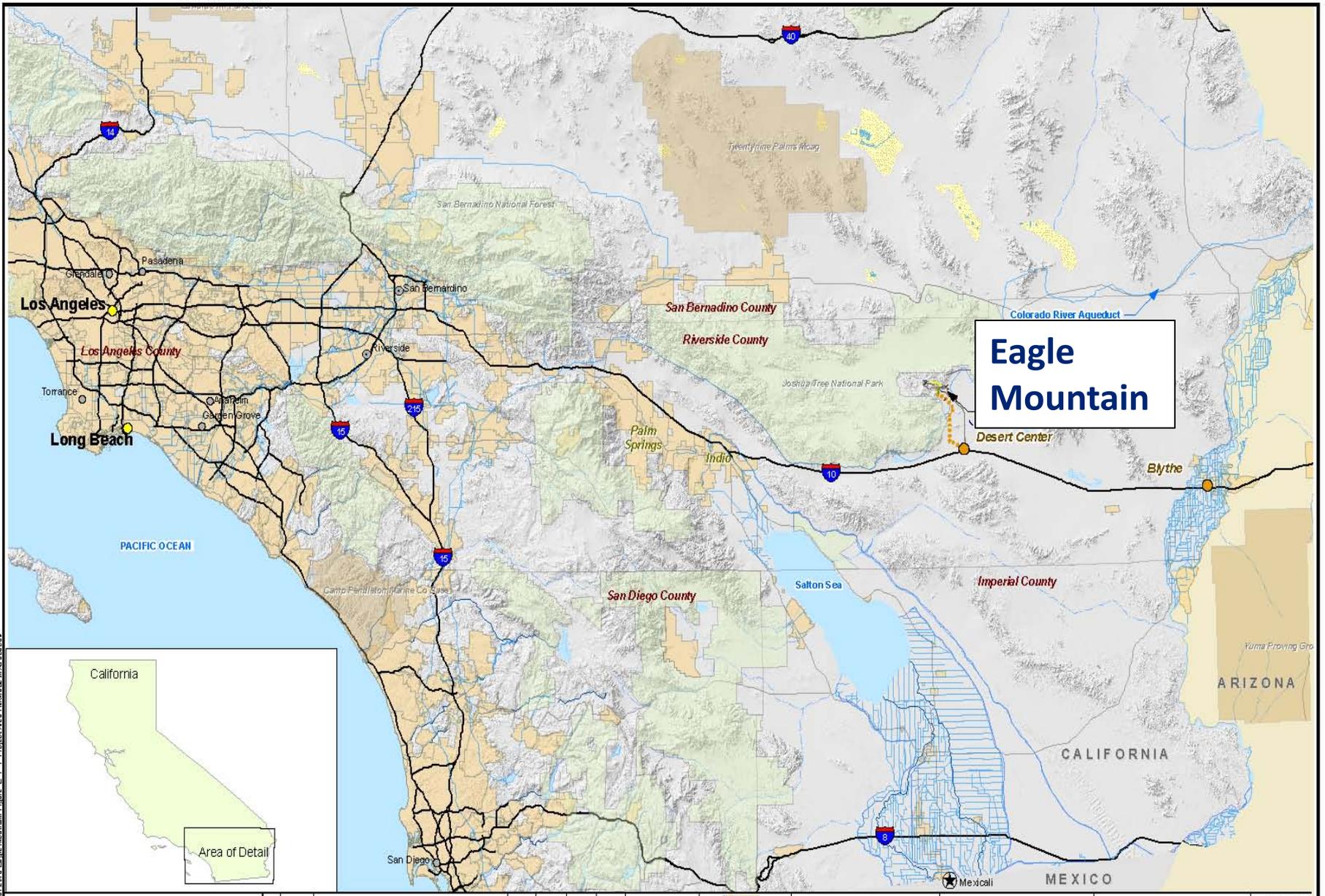




Eagle Crest
Energy Company

Environmental Review of the Eagle Mountain Pumped Storage Project

November 2012



Eagle Mountain



NO.	DATE	ISSUE/REVISION	DES	DRN	CHK	APP



EAGLE CREST ENERGY COMPANY
 GEI PROJECT 080-473

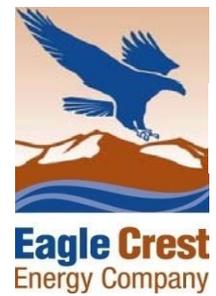
EAGLE MOUNTAIN PUMPED STORAGE PROJECT

VICINITY MAP

FIGURE 1-1
 April 2009

C:\GEP\PROJECTS\080-473\010 Eagle Mountain Storage Project - E-1-1_Vicinity Area - Microsoft Excel 030509

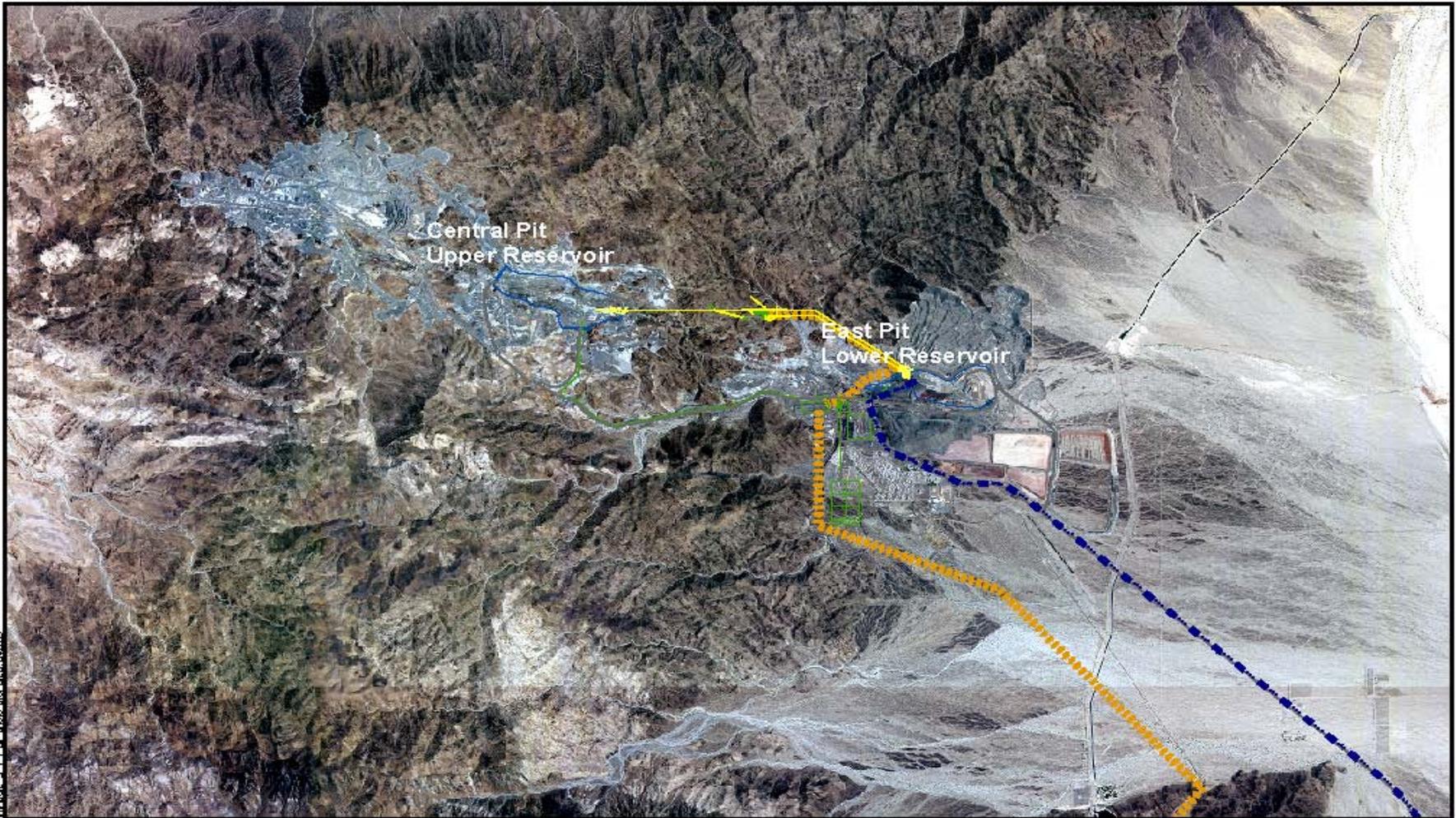
Eagle Mountain Pumped Storage is:



- **A 1,300 MW electricity storage project in southern California**
- **Brownfield development and closed loop system**
 - **Location in previously mined lands**
 - **No existing aquatic habitat ▶ no fish or aquatic / riparian habitat**
 - **Remote low-population location ▶ no recreational users**
- **Adjacent to a major southern California transmission corridor with regional wind and solar power development**

An aerial photograph of a desert valley. The foreground and middle ground are dominated by a grid of agricultural fields, some of which are dark, suggesting they are actively cultivated. A prominent, long, narrow, light-colored feature, likely a well field or a canal, runs diagonally across the center of the image. The background shows a vast, flat desert landscape extending to a range of low mountains under a clear blue sky.

**Chuckwalla Valley east of Desert Center, former County Airport
in area of proposed well field. (Note former and active farm
lands.)**



SOURCE: USDA FSA, Aerial
 Photography Field Office;
 County image mosaic for
 Riverside, CA (2005)



Eagle Mountain Pumped Storage
 Eagle Mountain, California



AERIAL OVERVIEW
 OF PROJECT SITE

Eagle Crest Energy Company

Project 080473

April 2009

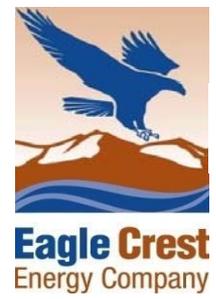
Figure 3.1-1

Central Project Area – Eagle Mountain Mine

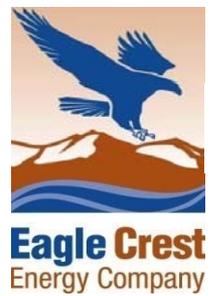
Lower Reservoir



Upper Reservoir

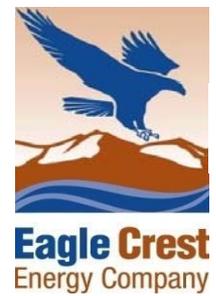


Federal Environmental Review Process



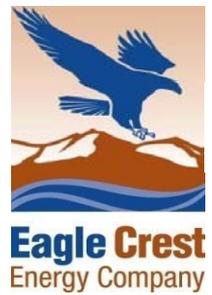
- **Pre-Application Document Dec 2007**
 - **60 Day Comment Period**
- **Preliminary Permit Application March 2008**
 - **60 Day Comment Period**
- **Joint Meeting and Site Visit – April 2008**
- **ECE files Draft License Application June 2008**
 - **60 Day Comment Period**
- **Scoping and Site Visit – January 2009**
 - **60 day Comment Period**
- **ECE files Final License Application June 2009**

Federal Environmental Review Process - 2



- FERC invites additional study requests and cooperating agencies – July 2009
 - **45 Day Comment Period**
- FERC Submits Additional Information Request to ECE July 2009
- FERC Requests Clarifications from ECE – November 2009
- Ready for Environmental Analysis – Jan. 2010
 - **60 Day Comment Period**
- Draft EIS issued January 2011
 - **60 Day Comment Period**
- **Public Comment Meetings - February 2011**
- Final EIS issued January 2012

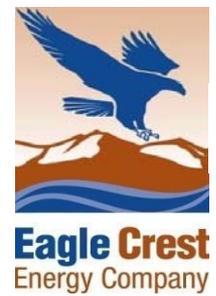
State Environmental Review Process



State Water Board Lead Agency

- Application for Water Quality Certification filed 2009
- Scoping and Site Visit – January 2009
 - 60 Day Comment Period
- Draft EIR issued July 2010
 - 75 Day Comment Period
- Draft Water Quality Certification Issued July 2012
 - 30 Day Comment Period
- Draft Final 401 Water Quality Cert expected December 2012
 - 15 Day Comment Period

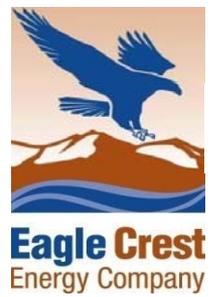
Key Elements of License Application



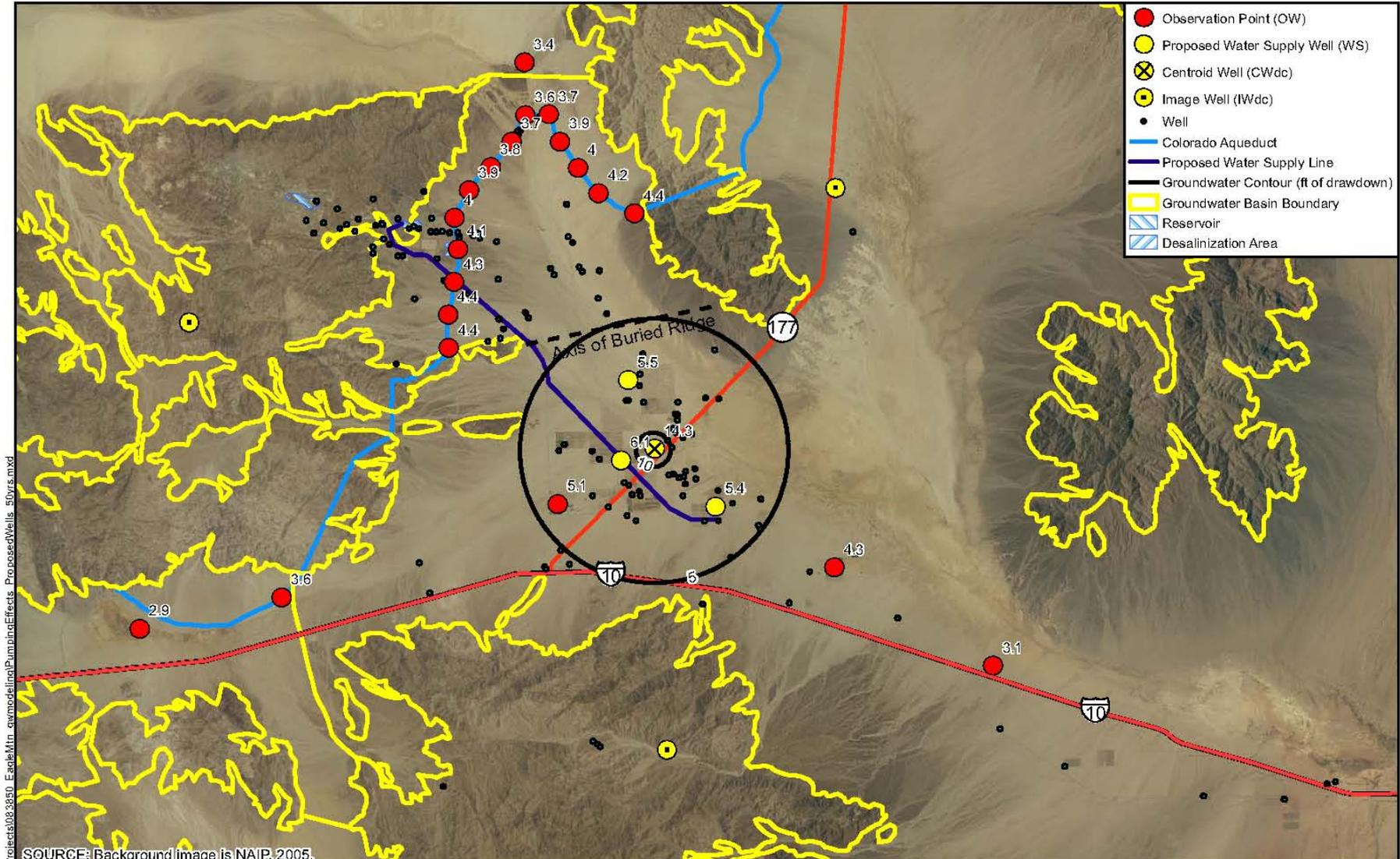
- **Seven major exhibits, including project description, operation and resource utilization, schedule, costs and financing, environmental assessment, supporting design report, and project boundary**
- **Environmental assessment includes:**
 - Purpose and need
 - Proposed action and alternatives
 - Environmental analysis, with proposed mitigation
 - Developmental analysis
 - Biological assessment for desert tortoise
 - Revegetation plan, predator control and monitoring plan, bighorn sheep report
 - Erosion control plan
 - Water supply technical memorandum with groundwater modeling
 - Seepage modeling technical memo



Key Environmental Issues: Water Supply



- Groundwater from 3 wells in general area of old airport.
- Aquifer storage estimated to be over 9,000,000 acre-feet.
- Over 600 feet of saturated sediments
- Groundwater modeling indicates 9-inches water table drawdown over 50-years for basin as a whole.
- Drawdown of up to 10 feet at one-mile from the well.



- Observation Point (OW)
- Proposed Water Supply Well (WS)
- ⊗ Centroid Well (CWdc)
- Image Well (IWdc)
- Well
- Colorado Aqueduct
- Proposed Water Supply Line
- Groundwater Contour (ft of drawdown)
- Groundwater Basin Boundary
- ▭ Reservoir
- ▭ Desalination Area

SOURCE: Background image is NAIP, 2005.



Pumped Storage Project
Eagle Mountain, CA

Eagle Crest Energy Company

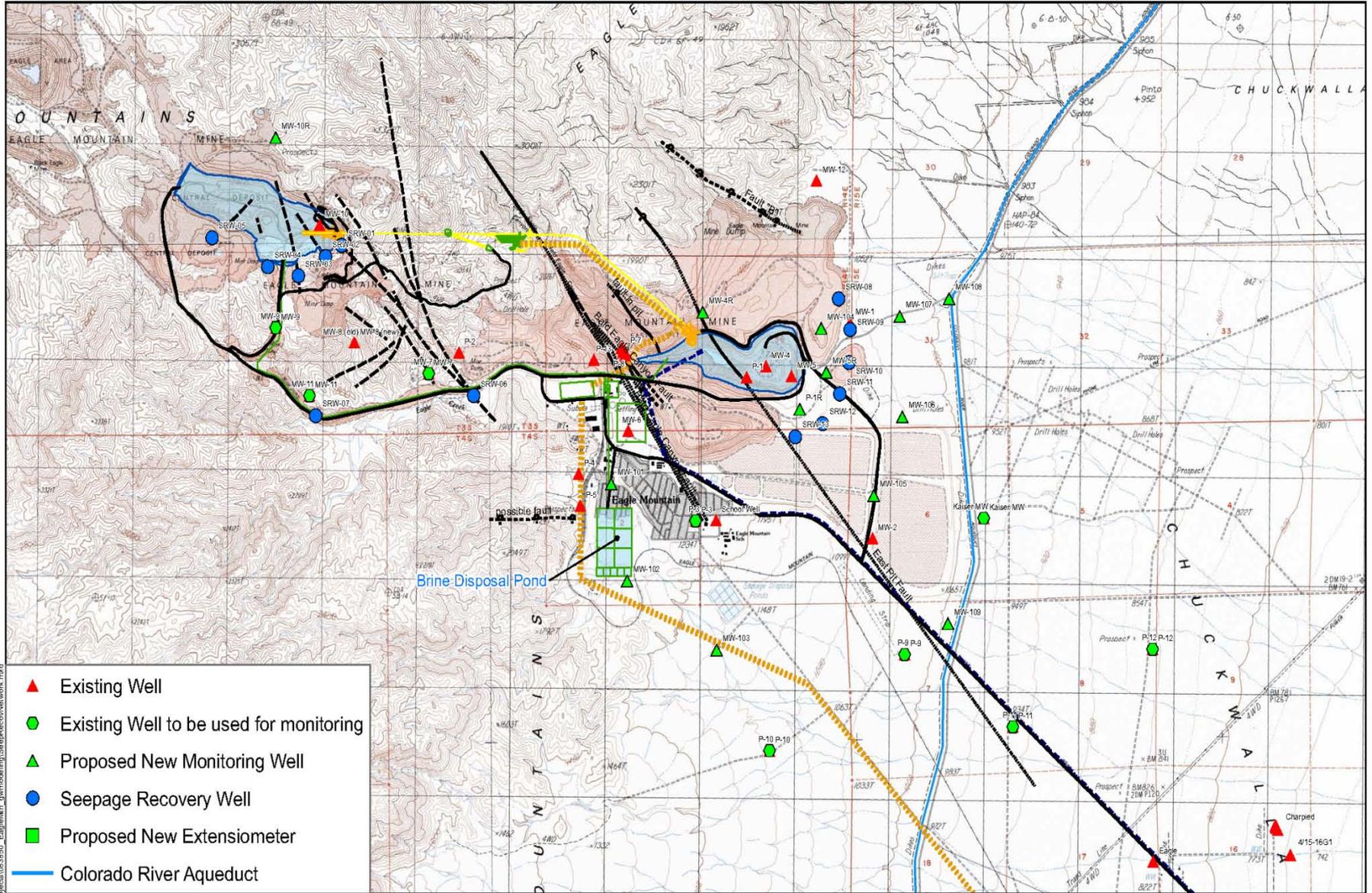


**DRAWDOWN AFTER 50 YEARS
OF PROJECT OPERATION**

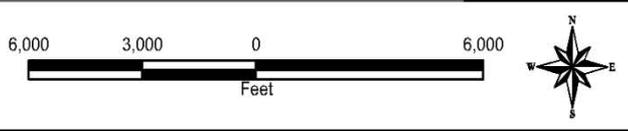
MAY 2009 FIGURE 14

6-May-09 S:\GIS\Projects\08-3850_EagleMtn_cawmodeling\PumpingEffects_ProposedWells_50yrs.mxd

- **Evaporation from reservoirs would increase salinity over time.**
- **Water quality protection measures:**
 - Seepage control lining in reservoirs.
 - RO treatment system to maintain water quality in reservoirs.
 - Monitoring and pump-back recovery wells to capture seepage.



15-May-2010 8:54:58 PM S:\GIS\Projects\0819950_EagleMtn_gamonitoring\0819950\Network.mxd



Pumped Storage Project
Eagle Mountain, California

Eagle Crest Energy Company

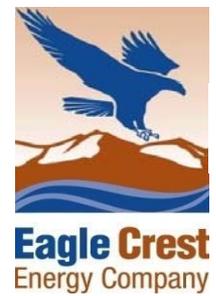


MITIGATION AND MONITORING NETWORK

APRIL 2009

FIGURE 3.3.3-18

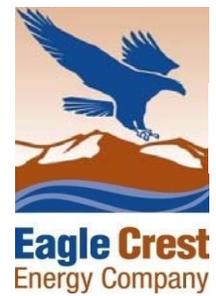
Key Environmental Issues – Wildlife



60 Special-Status Species Considered

- Coachella Valley Milkvetch
- Desert Tortoise
- American Peregrine Falcon
- Gila Woodpecker
- Nelson's Bighorn Sheep
- Mohave Fringe-toed Lizard
- Burrowing Owl
- Golden Eagle

Current Situation



Central Project Area

Highly disturbed

Potential for some biological resources not previously disturbed by mining activities or that have regenerated naturally

Transmission Line

Adjacent to existing transmission line(s) and some agricultural/ruderal areas

Water Pipeline

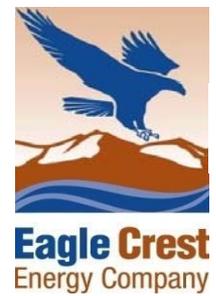
Disturbed (largely ruderal) and native habitats



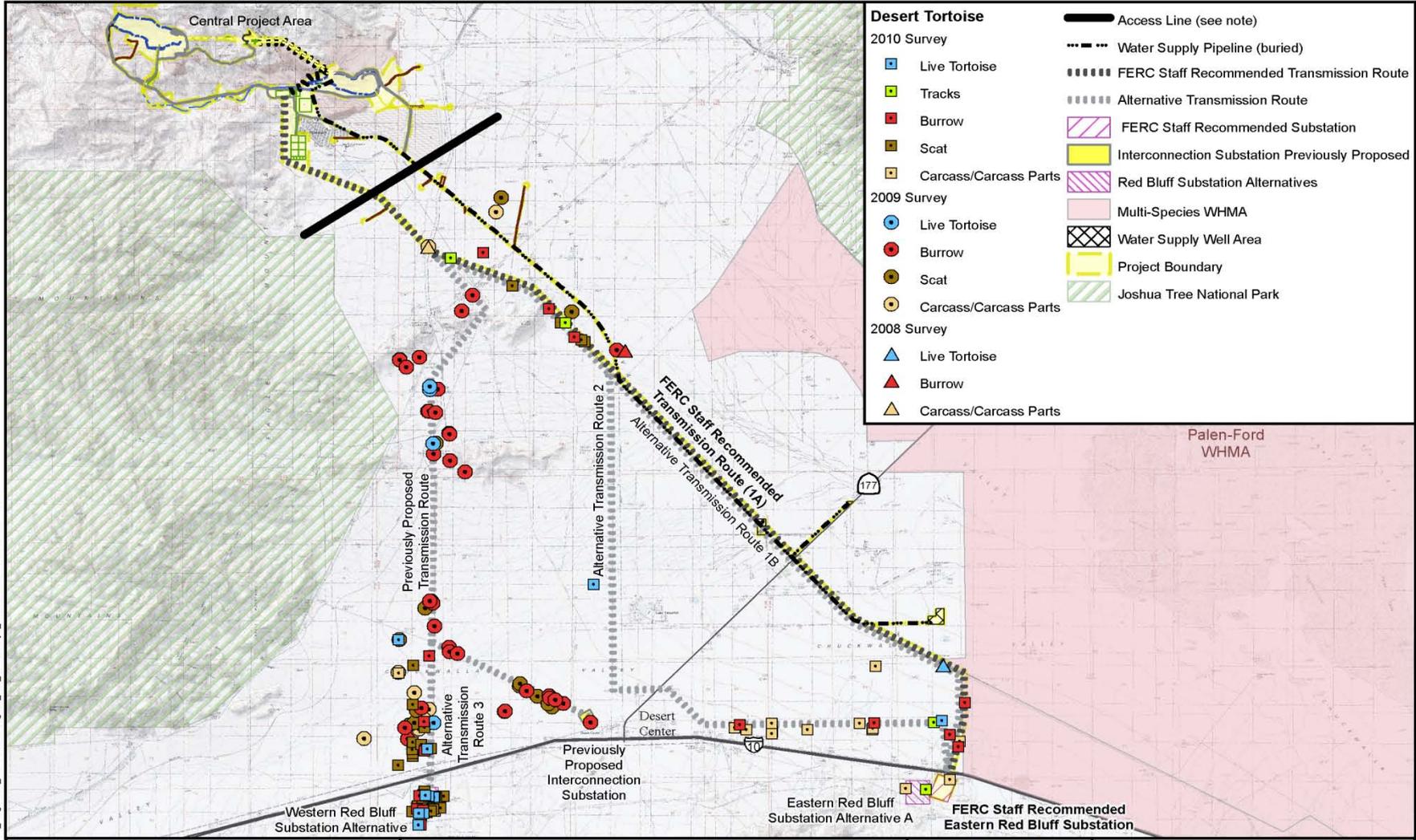




Studies Conducted – Wildlife



- **Literature review & aerial photo analysis**
- **Protocol level desert tortoise surveys**
 - **2009 and 2010**
- **Sensitive species surveys – plants and animals**
 - **Three years 2008, 2009, 2010**
- **Aerial surveys – golden eagles**



NOTE: Mapping northwest of Access Line is based on aerial photographs and ground views rather than direct site access.



Eagle Mountain Pumped Storage Project
Eagle Mountain, California

Eagle Crest Energy Company

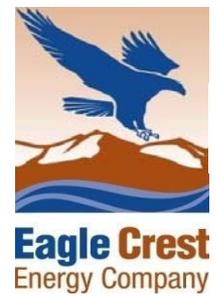


RESULTS OF SPECIAL
BIOLOGICAL RESOURCES
SURVEYS IN 2008, 2009, 2010:
DESERT TORTOISE

February 2011 Figure 4-3

24-Feb-2011 Z:\Projects\080472_Eagle Mtn_from Denver\Figure_4-3_BioSurveys_DesertTortoise2010.mxd SET

Project Mitigation



GENERAL

Comprehensive mitigation and monitoring plan

Worker Environmental Awareness Program

Approved Project Biologist (Authorized Biologist)

Pre-construction surveys – plants, reptiles, amphibians, breeding birds, raptors, mammals; avoidance and removal as necessary and practical

Desert Tortoise Compensation Plan

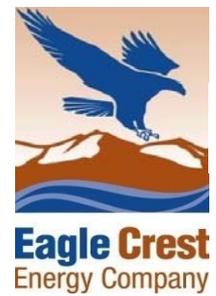
Predator Monitoring and Control Plan

Revegetation Plan

Invasive Species Monitoring and Control Plan

Avian Protection Plan

Project Mitigation, Continued



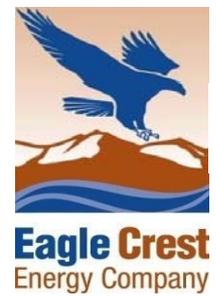
DESERT TORTOISE

- Desert tortoise exclusion fencing
- Pre-construction surveys and clearance surveys
- Construction monitoring
- Desert Tortoise Translocation and Relocation Plan
- Raven Monitoring and Control Program
- Habitat Compensation

OTHER SPECIAL-STATUS SPECIES

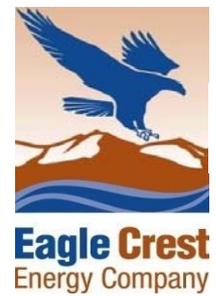
- Burrowing owl surveys and mitigation/compensation
- Nelson's bighorn sheep – fencing and water development
- Bats – surveys; mitigation plan
- Special habitats – compensation
- Migratory Birds – evaporation pond mitigation and/or monitoring plan

Endangered Species Consultation – Desert Tortoise



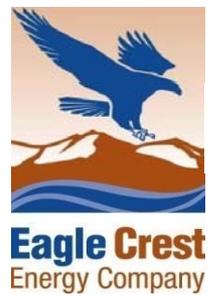
- Draft Biological Assessment prepared by Eagle Crest Energy June 2009
- Revised Draft Biological Assessment prepared by ECE - Feb. 2011
- FERC prepared Biological Assessment - April 2011
- Biological Opinion issued by U.S Fish and Wildlife Service – April 2012
 - BLM declined participation in formal consultation
 - Re-consultation will be required for BLM ROW
- Consistency Determination issued by California Fish and Game – May 2012

Key Environmental Issues: Cultural Resources



- Areas around Eagle Mountain used by Gen Patton as training ground during WWII
 - 18,000 + square miles designated as a military training facility.
 - The facility prepared troops for the rigors of desert warfare
 - Numerous camps, airfields, supply depots, hospitals, firing ranges, and maneuver areas.
 - Over the two years more than 1.2 million troops were hardened for battle in the deserts of California and Arizona.
 - Evacuation hospital located near proposed transmission line
- Eagle Mountain historic mining town
- Pre-historic sites on transmission corridors (easily avoided)

Cultural Resource Consultation and Studies



- Consultation with Tribes, Native American Heritage Commission, SHPO
- Class I and Class III studies of Area of Potential Effect
- Historic Properties Management Plan
- Programmatic Agreement
- Primary concerns
 - Avoidance of several small historic sites along transmission line route
 - Mining community of Eagle Mountain, 50+ years old





36TH EVACUATION HOSPITAL (SM)

URING THE COURSE OF WORLD WAR II, MORE THAN 1,000 SQUARE MILES OF THE ARIZONA AND CALIFORNIA DESERT WERE PROTECTED BY THE U.S. ARMY AS A MILITARY TRAINING FACILITY. THE FACILITY, COMPOSED OF SEVERAL COMBAT REGIONS AND REFERRED TO AS THE INFANTRY TRAINING CENTER (ITC), WAS DESIGNATED TO PROVIDE TRAINING FOR THE INFANTRY IN THE THEATRE OF THE PACIFIC IN NORTH AFRICA, OPERATING FROM 1942-1944. THE SITE EXTENDED FROM BEYOND ITS ORIGINAL BOUNDARIES AND BECAME KNOWN AS THE CALIFORNIA-ARIZONA MANEUVER AREA (CAMA) IN 1945. SUPPORTING CAMPS WERE ESTABLISHED THROUGHOUT THE MOUNTAIN RANGES TO SUPPORT THE INFANTRY, AIRBORNE, AIRBORNE INFANTRY, AND AIRBORNE INFANTRY OVER THE TWO YEAR LIFE OF THE INFANTRY TRAINING CENTER. MORE THAN 1.1 MILLION TROOPS WERE TRAINED FOR BATTLE IN THE THEATRE OF THE PACIFIC.

LOCATED JUST TO THE NORTH ARE THE ARCHAEOLOGICAL REMAINS OF THE CONFIDENTIAL HOSPITAL CAMP. THE 36TH CONFIDENTIAL HOSPITAL WAS ESTABLISHED HERE IN 1942 AND REMAINED IN OPERATION UNTIL 1945. THE HOSPITAL WAS A COMBAT HOSPITAL THAT PROVIDED CARE TO INFANTRY AND AIRBORNE INFANTRY UNDER COMBAT CONDITIONS. THE HOSPITAL WAS LOCATED AT THE MOUNTAIN RANGES, AIRBORNE INFANTRY CAMP, CALIFORNIA, AND WAS ONE OF SEVERAL HOSPITALS THAT PROVIDED CARE TO INFANTRY AND AIRBORNE INFANTRY UNDER COMBAT CONDITIONS. THE HOSPITAL WAS ESTABLISHED AT THE MOUNTAIN RANGES, AIRBORNE INFANTRY CAMP, CALIFORNIA, AND WAS ONE OF SEVERAL HOSPITALS THAT PROVIDED CARE TO INFANTRY AND AIRBORNE INFANTRY UNDER COMBAT CONDITIONS. THE HOSPITAL WAS ESTABLISHED AT THE MOUNTAIN RANGES, AIRBORNE INFANTRY CAMP, CALIFORNIA, AND WAS ONE OF SEVERAL HOSPITALS THAT PROVIDED CARE TO INFANTRY AND AIRBORNE INFANTRY UNDER COMBAT CONDITIONS.

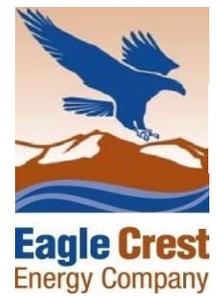


THIS HOSPITAL'S PLACEMENT TO THE
MOUNTAIN RANGES WAS MADE BY THE U.S. ARMY
IN THE MOUNTAIN RANGES OF THE ARIZONA
AND CALIFORNIA DESERT IN 1942-1944.
DURING THE LIFE OF A COMBAT HOSPITAL.



1942-1944

Next Steps



- **Water Quality Certification required prior to FERC license**
 - Anticipated early 2013
- **Post-License Compliance**
 - FERC will require continuing consultation with stakeholders throughout license period
 - Implementation of mitigation measures will require close coordination with resource agencies, including BLM

THANK YOU

