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September 27, 2005

Ms. Cathy Wolff-White
U.S. Department of the Interior
Bureau of Land Management
2610 Sweetwater Avenue
Lake Havasu City, AZ 86406

Subject: Biological Resources Completion Report for Interim Measures No. 3: Topock
Compressor Station Expanded Groundwater Extraction and Treatment System
Pacific Gas and Electric Company, Topock Project

Dear Ms. Wolff-White:

This letter transmits the *Biological Resources Completion Report for Interim Measures No. 3: Topock Compressor Station Expanded Groundwater Extraction and Treatment System*. This report was prepared in conformance with Condition No. 23 of the BLM Action Memo signed September 17, 2004, and includes information on the effectiveness and practicality of the mitigation measures, as well as information on survey and monitoring activities, observed listed species, and the actual acreage disturbed by the project.

If you have any questions, please do not hesitate to contact me at (805) 546-5243.

Sincerely,

Cc: Mark Howell/BLM
Norman Shopay/DTSC

Biological Resources Completion Report for Interim Measures No. 3: Topock Compressor Station Expanded Groundwater Extraction and Treatment System

Needles, California

Prepared for
United States Bureau of Land Management

on behalf of
Pacific Gas and Electric Company

September 2005



CH2MHILL

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Acronyms and Abbreviations

BLM	United States Bureau of Land Management
BOR	United States Bureau of Reclamation
CDFG	California Department of Fish and Game
CFR	Code of Federal Regulations
Cr(T)	total chromium
Cr(VI)	hexavalent chromium
CWA	Clean Water Act
DTSC	California Department of Toxic Substances Control
FCR	field contact representative
FESA	Federal Endangered Species Act
GIS	geographic information system
GPS	global positioning system
HDPE	high- density polyethylene
IM	Interim Measure
msl	mean sea level
MW	monitoring well
MWD	Metropolitan Water District of Southern California
No.	number
PE	potential extraction well
PG&E	Pacific Gas and Electric Company
RO	reverse osmosis
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SWPPP	Storm Water Pollution Prevention Plan
USACE	United States Army Corps of Engineers
USC	United States Code
USFWS	United States Fish and Wildlife Service

1.0 Introduction

Pacific Gas and Electric Company (PG&E) is addressing chromium in groundwater at the Topock Compressor Station under the oversight of the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC). In a letter dated June 30, 2004, DTSC directed PG&E to implement Interim Measures (IM) for hydraulic control of the plume boundaries in the Colorado River floodplain and management of extracted groundwater. The groundwater extraction, treatment, and injection systems collectively are referred to as Interim Measure No. 3 (IM No. 3). The IM No. 3 project components include a groundwater extraction system, groundwater treatment plant, piping to convey the water from the extraction wells to the treatment facility, and an injection well field for the discharge of treated groundwater.

Recognizing the time-critical nature of its directive, DTSC prepared a California Environmental Quality Act Notice of Exemption pursuant to §21080(b)(4) of the Public Resources Code for the IM No. 3 project. Also, the United States Bureau of Land Management (BLM) authorized PG&E to conduct time-critical removal actions by two Action Memoranda, dated March 3, 2004 and May 20, 2004, issued pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. §§9601 et seq.

The purpose of this report is to fulfill Condition 26 of the BLM Lake Havasu Field Office Wildlife and Threatened and Endangered Species Stipulations for the IM3 Project (Appendix A). This Condition states that within 60 days of completion of construction activities, the field contact representative (FCR) and biologist will prepare a brief report documenting the effectiveness and practicality of the minimization measures and making recommendations for modifying the measures to enhance species protection. The report also provides information on survey and monitoring activities, observed listed species, and the actual acreage used by the project. With a construction completion date of July 28, 2005, this completion report has been prepared for submittal to BLM by September 28, 2005.

1.1 Regional Environmental Setting

The project site is located near Needles, California. Agriculture and public lands along the surrounding landscape dominate the area. Access to the project site is via I-40 that links Barstow, California and Topock, Arizona. The project site is bordered to the east by the Colorado River, to the north by Historic Route 66, to the south by the railroad and I-40, and to the west by the Sacramento Mountains. Topography is abrupt, rising from around 450 feet above mean sea level (msl) at the Colorado River to over 1,200 feet above msl within one mile to the south and southwest. Slopes encountered west of the river reflect a series of ancient river terraces.

1.2 Project Location

The project site includes the 100-acre property owned by PG&E (San Bernardino County Assessor's Parcel No. 650-151-06). Surrounding land is also owned and managed by a number of federal and regional agencies including the BLM, United States Fish and Wildlife Service (USFWS), United States Bureau of Land Management (BOR), and San Bernardino County. The general vicinity of the project site is depicted in Figure 1 of Appendix B.

2.0 Project Description

The project consisted of several elements which include well installation, piping and conveyance, treatment facilities, and management of the treated water. The treatment facility is a closed system. Therefore, untreated water is not exposed to the environment that may potentially impact biological resources.

Access to the site is available from the Park Moabi Road interchange with Interstate 40. Internal portions of the project site are accessed from the east at the intersection of Park Moabi Road and old Route 66. These existing access roads also served as the main piping and conveyance alignment.

Each project element is described in the following sections. The project site and associated facilities are depicted in Figure 2 of Appendix B.

2.1 Drilling and Investigation Activities

The IM No. 3 project included drilling and well installations on BLM-managed property. Activities included the installation of a new extraction well to support the existing pumping operations and monitoring wells for further characterization of chromium concentrations in groundwater. These wells were addressed in a separate report entitled *Land Area Subject to Groundwater Well Installation Biological Resource Monitoring – Completion Report Topock Project Site Needles, California* (CH2M HILL, 2005b). This report was submitted to the agencies in April 2005.

2.2 Piping and Conveyance System

The piping and conveyance alignment for the project followed existing access roads and was designed to avoid or minimize impacts to natural resources. The piping and conveyance system for IM No. 3 consists of the following:

- Influent lines are double-contained high-density polyethylene (HDPE), and effluent lines are single-contained HDPE.
- Underground influent and effluent piping and electrical conduit exist between the MW-20 bench and the PG&E treatment facility. Influent piping conveys extracted untreated groundwater to the treatment facility. Effluent piping conveys reverse osmosis (RO) brine back to the monitoring well (MW)-20 bench from the treatment facility.
- Aboveground effluent piping and electrical conduit exist between the treatment facility and injection well field. The piping and conduit were placed aboveground along the northern shoulder of old Route 66 to avoid any potential impacts to this historic roadway.

2.2.1 Piping between the MW-20 Bench and Treatment Facility

This portion of the water conveyance system delivers (1) untreated water from the extraction wells on the MW-20 bench to the treatment facility; and (2) RO brine and treated water (as needed) from the treatment facility back to the MW-20 bench. From the MW-20 bench to the PG&E treatment facility, piping and electrical conduit were buried in a trench located within a pre-existing approximately 12-foot-wide graded access road. Two subsurface influent pipelines and two subsurface effluent pipelines were placed in a common trench running between the MW-20 bench and treatment facility. The trench was excavated approximately 700 feet north of the MW-20 bench along the eastern shoulder of Park Moabi Road. At this point, a trench was cut across Park Moabi Road to the eastern dirt access road. By following this existing access road, the alignment of the conveyance system avoids an abandoned segment of old Route 66. The trench was constructed approximately 1,700 feet on BLM land within this existing access road. The trench then crossed onto Parcel 650-151-06, and was routed to the treatment facility location. Trenching along the existing roadway avoided and minimized potential impacts to natural resources.

2.2.2 Piping between the Treatment Facility and the Injection Well Fields

Piping was installed to deliver treated water from the PG&E treatment facility to the injection well field. From the PG&E treatment facility, treated water will be pumped through a 4-inch diameter single wall pipeline that has been jacked and bored beneath old Route 66 from the south to the north shoulder. Along the north shoulder of old Route 66, the pipe was constructed in an aboveground alignment to the injection well fields. The aboveground alignment was constructed in order to minimize disturbance to old Route 66.

2.3 Grading and Construction-Related Activities

In support of the treatment facility, well installation, and pipeline construction activities, PG&E has performed grading and other construction-related activities which include the following:

- Improve existing access roads and place road base material to finish the surface
- Perform earth work involving cut and fill activities for the treatment facility and temporary staging and parking area
- Trench and install conveyance pipeline and electrical conduit
- Construct treatment facility and provide electrical supply
- Install culverts at wash crossings
- Place rip-rap and other material to control soil erosion at the treatment facility and along the access road
- As further protection of Historic Route 66, a fabric and gravel blanket was placed over the roadway – this blanket was not included as IM-3 construction use because it is mitigation and the blanket is removable.

3.0 Regulations and Stipulations

3.1 Federal Regulations and Standards

The following are the various federal and state regulations and policies, provided here for general information purposes.

- Federal Endangered Species Act (FESA), including the coordination requirement of Section 7 (16 USC §§1531 *et seq.*; 50 Code of Federal Regulations [CFR] Part 402). Section 9 of FESA prohibits the “take” of species federally listed as threatened or endangered. “Take” is further defined to include any harm or harassment, including significant habitat modification or degradation that could potentially kill or injure wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. “Take” incidental to otherwise lawful activities can be authorized under Section 7 of FESA, where a federal agency is involved.
- Migratory Bird Treaty Act (16 USC 703-712; 50 CFR 10). The federal Migratory Bird Treaty Act prohibits the “take” of migratory birds, unless permitted. The definition of ‘take’, as defined by 50 CFR 10.12, means to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound kill, trap, capture, or collect migratory birds (or parts thereof).

3.2 State Regulations and Standards

- California Endangered Species Act (California Fish and Game Code §§2050 *et seq.*). Section 2050 of the California Fish and Game Code prohibits any activities that would jeopardize or “take” a species listed as threatened or endangered within the state. CDFG Code §86 ‘Take’ is defined as hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill. Projects that have the potential to impact species listed as threatened or endangered by the state might require an Incidental Take Permit from the California Department of Fish and Game (CDFG) under Section 2081 of the Fish and Game code.
- CDFG Code 1600 – Streambed Alteration Agreements (California Fish and Game Code §1600). Section 1600 of the Fish and Game Code regulates the alteration of the bed, bank, or channel of a stream, river, or lake, including dry washes. Generally, CDFG asserts jurisdiction up to the top of significant bank cuts or to the outside of any riparian vegetation associated with a water course. Activities that have the potential to affect jurisdictional areas can be authorized through issuance of a Streambed Alteration Agreement (SAA).
- California Fully-protected Wildlife Species Provisions (California Fish and Game Code §§3511, 4700, 5050, and 5515). These provisions prohibit the taking of fully-protected birds, mammals, amphibians, and fish.

- Birds of Prey Protection Provision (California Fish and Game Code § 3503.5). This provision prohibits the taking of birds of prey, including any birds of the order Falconiformes or Strigiformes, and including nests or eggs of such birds.

4.0 Awareness Training

Awareness training focused on the desert tortoise and southwestern willow flycatcher for activities in the upland and floodplain project areas, respectively. CH2M HILL provided training to all onsite personnel prior to initiating work activities. New personnel were identified at safety meetings each morning before work. Training included a discussion of species description, habitat, natural history, threats, protection under the Endangered Species Act(s), potential penalties, current survey findings, management, and protection measures. Appropriate measures identified in the BLM Action Memoranda were reviewed with staff. Attendance was documented on sign-in sheets which are provided in Appendix C.

5.0 Pre-Activity Surveys

Prior to activity, sites were surveyed for sensitive resources. No live desert tortoises or southwestern willow flycatchers were observed during the pre-activity surveys. In accordance with the BLM stipulations, sensitive vegetation was excavated from the project footprint and transplanted away from construction activity. The transplanted vegetation was identified to species, an identification (ID) number was assigned, a Global Positioning System (GPS) unit (Trimble Geo XT) was used to document the relocation site, the site was distinguished between public (BLM) and private (PG&E) land, and the survival status was determined (Table 1). The locations of the transplanted vegetation with the corresponding ID number may be found in Appendix E. The vegetation that did not survive will be replaced during future restoration activities. Flora and fauna observed during the pre-activity surveys and construction monitoring are listed below in Table 2.

TABLE 1
Status of Vegetation Transplanted During Construction Activities

Common Name	Scientific Name	ID#	Coordinates	Public/Private Land	Survive (Y/N)
Cat claw	<i>Acacia greggii</i>	CC-1	N:2103083.272 E: 7615600.188	Public	N
Palo Verde	<i>Cercidium microphyllum</i>	PV-1	N:2102808.147 E:7615864.244	Public	N
Palo Verde	<i>Cercidium microphyllum</i>	PV-2	N: 2103484.261 E: 7614625.225	Private	N
Cooper's wolfberry	<i>Lycium cooperi</i>	CW-1	N: 2103491.398 E: 7614625.139	Private	N
Cooper's wolfberry	<i>Lycium cooperi</i>	CW-2	N: 2103526.425 E: 7614611.02	Private	N
Smoke tree	<i>Dalea spinosa</i>	ST-1	N: 2103432.649 E: 7614688.521	Private	N
Beavertail cactus	<i>Opuntia basilaris</i>	BC-1	N:2102372.404 E:7615171.547	Public	Y
Beavertail cactus	<i>Opuntia basilaris</i>	BC-2	N: 2102327.454 E:7615177.267	Public	Y
Beavertail cactus	<i>Opuntia basilaris</i>	BC-3	N: 2103112.973 E: 7614254.654	Private	Y
Beavertail cactus	<i>Opuntia basilaris</i>	BC-4	N: 2102771.881 E: 7613785.76	Private	Y
Beavertail cactus	<i>Opuntia basilaris</i>	BC-5	N: 2102941.523 E: 7613685.225	Private	Y
Beavertail cactus	<i>Opuntia basilaris</i>	BC-6	N: 2102975.585 E: 7613685.451	Private	Y

TABLE 1
Status of Vegetation Transplanted During Construction Activities

Common Name	Scientific Name	ID#	Coordinates	Public/Private Land	Survive (Y/N)
Beavertail cactus	<i>Opuntia basilaris</i>	BC-7	N: 2103273.655 E: 7613730.519	Private	Y
Beavertail cactus	<i>Opuntia basilaris</i>	BC-8	N: 2103353.723 E: 7613756.595	Private	Y
Beavertail cactus	<i>Opuntia basilaris</i>	BC-9	N: 2103120.718 E: 7613828.897	Private	Y
Beavertail cactus	<i>Opuntia basilaris</i>	BC-10	N: 2103006.292 E: 7613766.775	Private	Y
Beavertail cactus	<i>Opuntia basilaris</i>	BC-11	N: 2102932.932 E: 7613724.44	Private	Y
Beavertail cactus	<i>Opuntia basilaris</i>	BC-12	N: 2102914.762 E: 7613375.512	Public	Y
Jumping cholla	<i>Opuntia bigelovii</i>	C-1	N: 2102843.966 E: 7613949.319	Public	Y

TABLE 2
List of Observed Plants and Wildlife Incidental to Pre-activity Surveys and Daily Monitoring

Common Name	Scientific Name
Plants	
Allscale saltbush	<i>Atriplex polycarpa</i>
Beavertail cactus	<i>Opuntia basilaris</i>
Brittlebush	<i>Encelia farinosa</i>
Burrobush	<i>Ambrosia dumosa</i>
Catclaw	<i>Acacia greggii</i>
Creosote bush	<i>Larrea tridentata</i>
Dalea	<i>Dalea mollisma</i>
Desert trumpet	<i>Eriogonum inflatum</i>
Fishhook cactus	<i>Mammillaria</i> sp.
Honey mesquite	<i>Prosopis glandulosa</i>
Jumping cholla	<i>Opuntia bigelovii</i>
Lycium	<i>Lycium</i> sp.
Ocotillo	<i>Fouquieria splendens</i>
Palo verde	<i>Cercidium</i> sp
Saltcedar	<i>Tamarix</i> sp
Screwbean mesquite	<i>Prosopis pubescens</i>

TABLE 2
List of Observed Plants and Wildlife Incidental to Pre-activity Surveys and Daily Monitoring

Common Name	Scientific Name
Smoke tree	<i>Dalea spinosa</i>
Spineflower	<i>Chorizanthe</i> sp.
Sweetbush	<i>Bebbia juncea</i>
Reptiles	
Desert tortoise (carcass)	<i>Gopherus agassizii</i>
Coachwhip	<i>Masticophis flagellum</i>
Desert iguana	<i>Dipsosaurus dorsalis</i>
Sagebrush lizard	<i>Sceloporus graciosus</i>
Side-blotched lizard	<i>Uta stansburiana</i>
Western diamondback rattlesnake	<i>Crotalus atrox</i>
Western patchnose snake	<i>Salvadora hexalepus</i>
Western whiptail	<i>Cnemidophorus tigris</i>
Birds	
Abert's towhee	<i>Pipilo aberti</i>
American coot	<i>Fulica americana</i>
American kestrel	<i>Falco sparverius</i>
American white pelican	<i>Pelicanus erythrorhynchos</i>
Anna's hummingbird	<i>Calypte anna</i>
Ash-throated flycatcher	<i>Myiarchus cinerascens</i>
Bewick's wren	<i>Thryomanes bewickii</i>
Black-necked stilt	<i>Himantopus mexicanus</i>
Black phoebe	<i>Sayornis nigricans</i>
Blue-gray gnatcatcher	<i>Polioptila caerulea</i>
Brewer's blackbird	<i>Euphagus cyanocephalus</i>
Canada goose	<i>Branta canadensis</i>
Canyon wren	<i>Catherpes mexicanus</i>
Clark's grebe	<i>Aechmophorus clarkia</i>
Cliff swallow	<i>Hirundo pyrrhonota</i>
Common moorhen	<i>Gallinula chloropus</i>
Common poorwill	<i>Phalaenoptilus nuttallii</i>
Common raven	<i>Corvus corax</i>
Cooper's hawk	<i>Accipiter cooperii</i>

TABLE 2
List of Observed Plants and Wildlife Incidental to Pre-activity Surveys and Daily Monitoring

Common Name	Scientific Name
Double-crested cormorant	<i>Phalacrocorax auritus</i>
Gambel's quail	<i>Callipepla gambelii</i>
Great-blue heron	<i>Ardea herodias</i>
Great egret	<i>Ardea alba</i>
Great-tailed grackle	<i>Quiscalus mexicanus</i>
Greater roadrunner	<i>Geococcyx californianus</i>
Killdeer	<i>Charadrius vociferus</i>
Lesser nighthawk	<i>Chordeiles acutipennis</i>
Loggerhead shrike	<i>Lanius ludovicianus</i>
Marbled godwit	<i>Imosa fedoa</i>
Mourning dove	<i>Zenaida macroura</i>
Northern harrier	<i>Circus cyaneus</i>
Northern mockingbird	<i>Mimus polyglottos</i>
Northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>
Phainopepla	<i>Phainopepla nitens</i>
Rock dove	<i>Columba livia</i>
Snowy egret	<i>Egretta thula</i>
Turkey vulture	<i>Cathartes aura</i>
Verdin	<i>Auriparus flaviceps</i>
Violet-green swallow	<i>Tachycineta thalassina</i>
Western bluebird	<i>Sialia mexicana</i>
Mammals	
Black-tailed hare	<i>Lepus californicus</i>
Cottontail rabbit	<i>Sylvilagus audubonii</i>
Raccoon	<i>Procyon lotor</i>
Coyote	<i>Canis latrans</i>
Desert woodrat	<i>Neotoma lepida</i>
Northern river otter	<i>Lutra canadensis</i>
White-tailed antelope squirrel	<i>Ammospermophilus leucurus</i>

6.0 Compliance Monitoring

Biologists were onsite full-time during all construction and ground disturbing activity to ensure compliance with BLM stipulations. The first day of full-time monitoring started on September 27, 2004 and was completed on July 27, 2005. A standardized field form was completed on a daily basis. Two incidents were reported and resolved:

- On December 6, 2004, excavated soils from trenching activities were placed into Bat Cave Wash and a small unnamed wash to the west. The Storm Water Pollution Prevention Plan (SWPPP) was reviewed and it was determined that the placement of soil stockpiles into any wash was not acceptable. The construction manager and construction personnel were briefed on the appropriate placement of the soil stockpiles. By December 10, 2004, both spoil piles were removed from the washes and placed at least 50-feet from washes in compliance with the SWPPP.
- On March 19, 2005, a crew from the City of Needles (the local electric utility) came to the project area to work on their electric facilities. The project contractors believed that the City's work would be done in the City's right-of-way. The project biological monitors, who were regularly on-site on weekdays and were available on weekends, were not informed that work would be done on Saturday March 19, 2005. Biologists were not on site on March 19 when the City's crew worked on their electrical facilities. The City's crew drove on roads, when available, to accomplish this work, and also went off-road to get to the City's facilities. As a result, several native plants such as creosote bush, saltbush and beavertail cactus were affected. There were no observable direct impacts to wildlife. The City of Needles was contacted and briefed on the appropriate procedures for any future visits. Also, corrective action measures including replacement, revegetation and protection have been proposed.

All activities occurring within the project site have been documented on Daily Construction Monitoring Logs (Appendix D).

7.0 Land Use

To assess the area of use associated with IM-3, a survey using Global Positioning System (GPS) technology was conducted to delineate the sub-areas subject to ground-use construction activities. Such activities include grading associated with the IM-3 treatment plant, staging area, injection wells, conveyance piping, monitoring wells, and access roads (Figure 3 of Appendix B).

Various past activities have resulted in previous disturbance of the area where the IM-3 construction is occurring. The area is traversed by a major railway line, several gas pipelines, historic U.S. Route 66, and the National Old Trails Highway. Portions of the area were disturbed by a former gravel quarry, roadside debris piles, World War II era military training exercises, and a former roadhouse/restaurant adjacent to the IM-3 project site boundary. During design of the IM-3 facilities, much care was taken to utilize these previously disturbed areas wherever possible. Trenching was routed along existing roadways and pipeline right of ways. The treatment plant and staging area were located in the area previously disturbed by gravel quarrying during the construction of the former U.S. Route 66 Highway. To minimize disturbance of that historic roadway pursuant to the requirements of BLM, above-ground piping was installed to convey treated water from the treatment plant to the injection wells. As further protection of that resource, a fabric and gravel blanket was placed over the historic roadway. In calculating the areas used by the IM-3 construction, previously disturbed ground was distinguished from ground that did not appear to be disturbed previously.

Data collected during the GPS survey was imported into the geographic information system (GIS) maintained for the IM-3 project. Polygons were defined for each sub-area used as a result of IM-3 construction activities. In addition, polygons were defined for those areas determined to be previously disturbed. The acreage of each of the polygons was determined, and the total (net) area of use resulting from IM-3 was calculated by subtracting the previously disturbed acreage from the gross acreage used during IM-3 construction.

The assessment of IM-3 ground use also includes an estimate of use associated with IM-3 compliance monitoring wells. Four compliance monitoring wells were installed in the vicinity of the eastern injection well field. Access routes were provided to three of the four compliance monitoring wells. These are not constructed roadways, but rather just tracks of vehicles driving over the ground surface, and are included as “used area”. In addition, the area used for installation of a potential extraction well (PE-1) was calculated and included.

Table 3 summarizes the total area of use related to IM-3. Sub-totals are provided for each sub-area associated with IM-3 (e.g., treatment plant site, staging area, injection well areas, etc.). The summary table provides sub-totals for private (PG&E) and public (BLM) lands to reflect land ownership. The total area used includes all areas used by the construction activities, regardless of the prior condition of the ground. Also shown in the table is the area of ground that did not appear to be significantly disturbed previously and which was used by the construction activities.

TABLE 3
Ground Use Associated with IM-3

IM-3 Sub-Area	Public Land		Private Land		Total Public and Private Land
	Total Area Used by IM-3 (acres)	Previously Undisturbed Ground ¹ Used by IM-3 (acres)	Total Area Used by IM-3 (acres)	Previously Undisturbed Ground ¹ Used by IM-3 (acres)	Previously Undisturbed Ground Used by IM-3 (acres)
West Mesa	NA	NA	0.57	0.33	0.33
East Mesa	0.15	0.11	1.28	0.84	0.95
Staging Area	NA	NA	0.95	0.16	0.16
Treatment Facility	NA	NA	1.11	0.38	0.38
Pipeline Trench ²	1.91	0.84	0.89	0.51	1.36
Compliance Monitoring Wells and PE-1	0.37	0.22	0.72	0.72	0.94
Total	2.43	1.17	5.52	2.94	4.11

Notes:

NA – Not Applicable

¹ Does not include acreage affected by prior ground-disturbing activities unrelated to IM-3 (e.g., roadways, pipelines, etc.). Land noted as being “previously undisturbed” did not appear to be disturbed at the time of the construction of IM-3, but, in fact, may have been subject to prior disturbance.

² The acreage calculation for the pipeline trench includes the area used during improvement of the eastern access road.

The total area of use resulting from construction of the IM-3 facilities is approximately 8.0 acres. Of these 8.0 acres, approximately 3.9 acres are on ground that was previously disturbed. Thus, the net area of ground which was used, and which did not appear to be disturbed previously, is about 4.1 acres. Approximately 1.2 acres of such area is located on public (BLM) land and 2.9 acres are located on private (PG&E) land.

Post-construction photographs were taken from the identical photo point locations identified in the photo index prepared for the report entitled *Final Biological Resources Investigations for Interim Measures No. 3: Topock Compressor Station Expanded Groundwater Extraction and Treatment System San Bernardino County, California* (CH2M HILL, 2004). Photographs documenting pre- and post-IM3 conditions and the photo index are presented in Appendix E.

8.0 Conclusion

Construction of IM-3 facilities was approved by the county, state and federal regulatory agencies. In conformance with BLM's stipulations, preconstruction surveys were conducted of all areas subject to construction use. Under the terms of the BLM approval, all construction work was conducted in areas where significant biological resources were not present. In addition, appropriate physical barriers were placed and construction activities were continuously monitored by qualified professional staff to ensure the protection of nearby biological resources.

The minimization measures were effective and met the requirements of the BLM. There are no recommendations for modifying the measures to enhance species protection. The project was conducted under a determination of "no effect"; in compliance with this determination, there was no "take" of any listed species.

9.0 References

CH2M HILL. 2004. *Final Biological Resources Investigations for Interim Measures No. 3: Topock Compressor Station Expanded Groundwater Extraction and Treatment System San Bernardino County, California*. September.

_____. 2005a. *Work Plan for Special Status Species Survey within the Area of Potential Effect (APE), Topock Compressor Station, Needles, California*. March.

_____. 2005b. *Land Area Subject to Groundwater Well Installation Biological Resources Monitoring – Completion Report Topock Project Site, Needles, California*. April.

U.S. Bureau of Land Management. 2000. *Biological Opinion for Maintenance Activities on the Pacific Gas and Electric Company Gas Pipeline System in the California Desert (6840, CA-063.50) (1-8-99-F-71)*.

_____. 2004. *Action Memorandum for the Time Critical Removal Action No. 3, Pacific Gas and Electric Topock Compressor Facility*. September.

U.S. Fish and Wildlife Service. 2000. *Biological Opinion for Maintenance Activities on the Pacific Gas and Electric Company Gas Pipeline System in the California Desert (6840, CA-063.50) (1-8-99-F-71)*.

Appendix A

BLM Lake Havasu Stipulations

LAKE HAVASU FIELD OFFICE WILDLIFE
AND
THREATENED OR ENDANGERED SPECIES STIPULATIONS

1. All project activities will be conducted in a manner that avoids take of a listed species. Take is defined to include any harm or harassment, including significant habitat modification or degradation that could potentially kill or injure listed wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Should a listed species enter the project site or become harmed or killed by project activities, the project will be shut down and the USFWS, Bureau and CDFG will be consulted. Impacts to habitat will also be minimized to the maximum possible extent.
2. Listed species including the desert tortoise will not be handled or harassed. Encounters with a listed species will be reported to the CH2MHILL project and BLM Lake Havasu (Bureau) biologists. These biologists will maintain records of all listed species encountered during project activities. This information will include for each individual: the locations (narrative, vegetation type, and maps) and dates of observations; general conditions and health; any apparent injuries and state of healing; and diagnostic markings.
3. To the maximum extent possible, facilities (treatment facility, pipelines, injection wells, and access routes) will be sited within an existing right-of-way (ROW) and previously-disturbed or barren areas to limit new surface disturbance.
4. All PG&E employees and its contractors involved with the proposed project will be required to attend PG&E's threatened and endangered species education program prior to initiation of activities. New employees will receive formal, approved training prior to working on-site.
5. Existing routes of travel to and from the proposed project site will be used. Cross-country use of vehicles and equipment will be prohibited.
6. Trash and food items will be contained in closed containers and removed daily to reduce attractiveness to opportunistic predators such as common ravens (*Corvus corax*), coyotes (*Canis latrans*), and feral dogs.
7. To minimize effects, lights will be angled toward the ground, reduced in intensity to levels compatible with safety concerns, and limited in duration of usage. The hue of lighting will be that which is most compatible with and least disturbing to wildlife.
8. Employees will not bring pets to the project site.
9. Firearms will be prohibited from the proposed project site.
10. Employees will be required to check under their equipment or vehicle before it is moved. If a desert tortoise is encountered, the vehicle is not to be moved until the animal has voluntarily moved to a safe distance away from the parked vehicle.
11. Upon project completion, all unused material and equipment will be removed from the site. This condition does not apply to fenced sites.

12. Upon locating an individual of a dead or injured listed species, PG&E will make initial notification to the Bureau and US Fish and Wildlife Service (Service) within three working days of its finding. The notification must be made in writing to the Service's Division of Law Enforcement in Torrance (370 Amapola Avenue, Suite 114, Torrance, California 90501; (310) 328-1516) and by telephone and writing to the Ventura Fish and Wildlife Office (2493 Portola Road, Suite B, Ventura, California 93003; (805) 644-1766). The report will include the date and time of the finding or incident (if known), location of the carcass, a photograph, cause of death (if known), and other pertinent information. Animals injured through PG&E activities will be transported to a qualified veterinarian for treatment at the expense of PG&E. If an injured animal recovers, the CDFG and the Bureau will be contacted for final disposition of the animal.
13. The biologist will be responsible for assisting crews in compliance with the minimization measures, performing surveys in front of the crew as needed to locate and avoid listed species, and monitoring compliance. Preconstruction surveys by a biologist will be implemented for special-status wildlife species in impact areas immediately prior to initiation of ground-disturbing activities. The inspection will provide 100 percent coverage of the area within the project limits. All desert tortoise burrows and pallets outside of, but near, the project footprint will be flagged at that time so that they may be avoided during work activities. At the conclusion of work activities, all flagging will be removed.
14. Preconstruction surveys for avian nesting pairs, nests, and eggs will occur in areas proposed for any vegetation removal and active nesting areas flagged. If nesting birds are detected, vegetation removal will be avoided during the nesting season (generally February to August for most birds). All construction activity within 200 feet of active nesting areas will be prohibited until the nesting pair/young have vacated the nests.
15. Palo verde, ocotillo, mesquite, cat-claw, smoke tree, and cacti species are considered sensitive by the BLM. To the extent practicable, these species will be avoided. If avoidance is not possible, these species will be transplanted when practical. Should any of the aforementioned plants be destroyed, they will be replaced.
16. PG&E will designate a field contact representative (FCR) who will be responsible for overseeing compliance with the minimization measures. The FCR must be onsite during all construction activities. The FCR will have authority to halt all activities that are in violation of the minimization measures and/or pose a danger to listed species. The FCR will have a copy of all minimization measures when work is being conducted on the site. The FCR may be a project manager, PG&E representative, or a biologist.
17. The area of disturbance will be confined to the smallest practical area, considering topography, placement of facilities, location of burrows, nesting sites or dens, public health and safety, and other limiting factors. As needed, work area boundaries will be delineated with flagging or other marking to minimize surface disturbance associated with vehicle straying.
18. All activities will be restricted to a pre-determined corridor. If unforeseen circumstances require project expansion, the potential expanded work areas will be surveyed for listed species prior to use of the area. All appropriate minimization measures will be implemented within the expanded work areas based on the judgment of the agencies and the project

biologist. Work outside of the original ROW will proceed only after receiving written approval from the Bureau, Service and CDFG describing the exact location of the expansion.

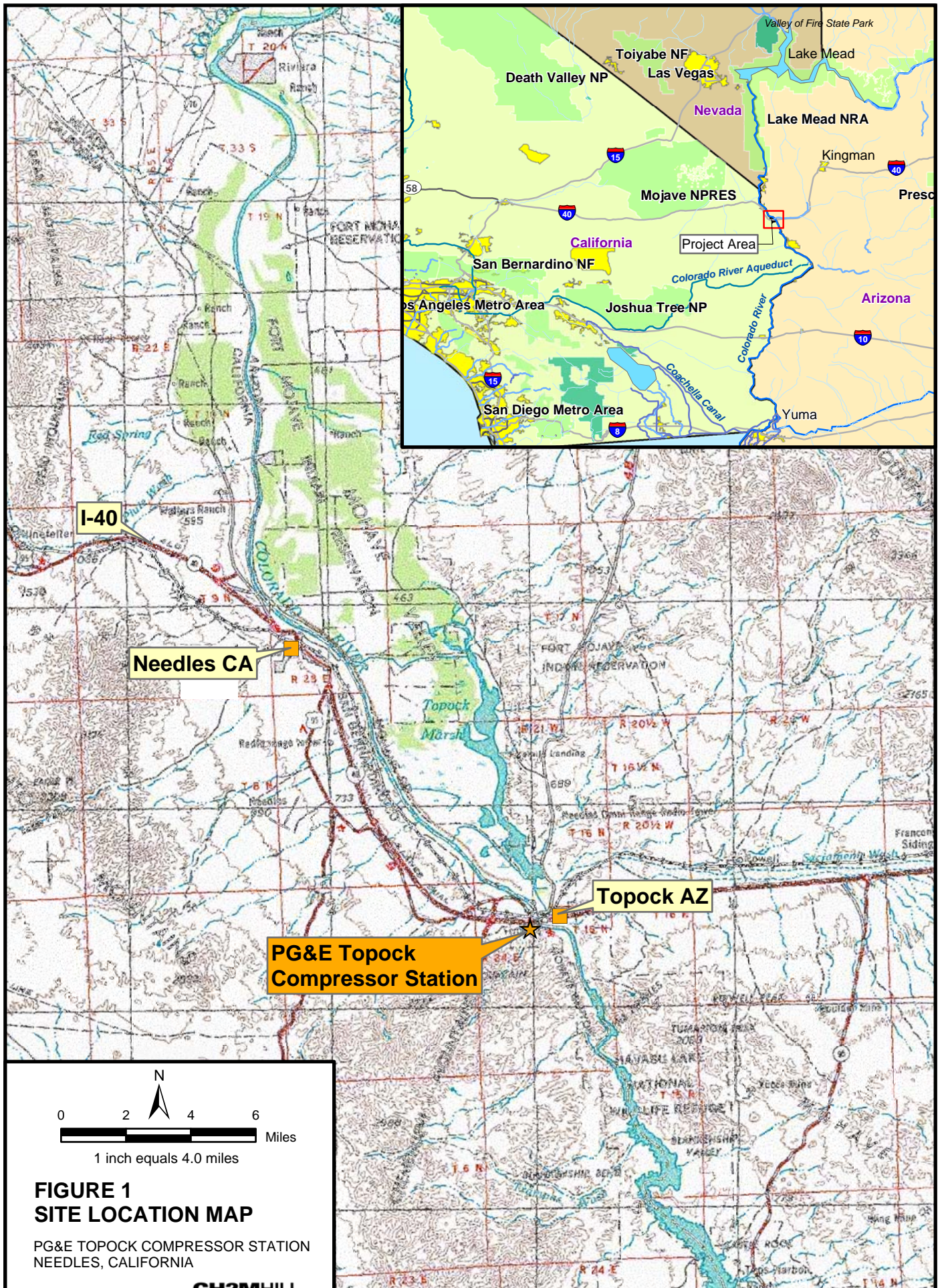
19. PG&E has the option of erecting desert tortoise fencing in lieu of inspection of open trenches. If the trench is short, personnel may monitor the trench. All open holes and trenches will be inspected for trapped desert tortoises at the beginning, middle, and end of the work day, at a minimum. During excavation of trenches or holes, earthen ramps will be provided to facilitate the escape of any wildlife species that may inadvertently become entrapped. If desert tortoises are trapped, the project biologist will be notified immediately. The desert tortoise will be allowed to escape before work continues in that location. A final inspection of the open trench segment will also be made immediately before back filling. All open pipe segments will be covered when work activity is not occurring at the site. Trenches must meet the safety requirements of the Occupational Safety and Health Administration before personnel enter open trenches to remove wildlife.
20. All construction vehicles and equipment will be periodically checked to ensure proper working condition and to ensure that there is no potential for fugitive emissions of oil, hydraulic fluid or other hazardous products. The Bureau will be informed of any hazardous spills.
21. Workers will exercise caution when traveling to and from the project area. To minimize the likelihood for vehicle strikes of listed species, speed limits when commuting to project areas on ROW roads will not exceed 20 miles per hour.
22. Intentional killing or collection of either plant or wildlife at construction sites and surrounding areas will be prohibited. The Bureau will be notified of any such occurrences.
23. The Bureau will endeavor to place the remains of intact listed species with educational or research institutions holding the appropriate state and federal permits per their instructions. If such institutions are not available or the animal's remains are in poor condition, the information noted above will be obtained and the carcass left in place. If the animal is a desert tortoise, the Bureau should consider marking the carcass in a manner that would not be toxic to other wildlife to ensure that it would not be re-recorded in the future. Arrangements regarding proper disposition of potential museum specimens will be made with the institution by the Bureau through a biologist prior to implementation of the action.
24. For emergency situations involving a pipeline leak or spill or any other immediate safety hazard, PG&E will notify the Bureau within 48 hours. As a part of this emergency response, the Bureau may require specific measures to protect listed species. During cleanup and repair, the agencies may also require measures to recover damaged habitats.
25. Once the treatment facility is no longer needed, PG&E will be required to restore disturbed areas in a manner that will assist in the re-establishment of biological values within the disturbed ROW. Methods of such restoration will include the reduction of erosion, re-spreading of the top two inches of soil, planting with appropriate native shrubs, and scattering of bladed vegetation and rocks across the ROW, depending upon the appropriateness or effectiveness in a given area.
26. Within 60 days of completion of construction activities, the FCR and biologist will prepare a brief report for the Bureau documenting the effectiveness and practicality of the

minimization measures and making recommendations for modifying the measures to enhance species protection. The report will also provide information on survey and monitoring activities, observed listed species, and the actual acreage disturbed by the project.

27. All areas within the proposed action area and within the potential impact of the action will be monitored semiannually during the active period for tortoise by a biologist knowledgeable of desert tortoise ecology. Surveys will be completed throughout the duration of the action to verify the presence or absence of desert tortoise and reports will be provided to the biologists in the BLM Lake Havasu Field Office on an annual basis.
28. Riparian areas surrounding the proposed action site will be surveyed for southwestern willow flycatchers according to the protocol established by the U. S. Fish and Wildlife Service. These surveys will be completed each year by a biologist permitted by the U. S. Fish and Wildlife Service to carry out flycatcher surveys until the action has been completed and all facilities have been removed. Reports will be provided to the biologists in the BLM Lake Havasu Field Office on an annual basis.

Appendix B

Figures



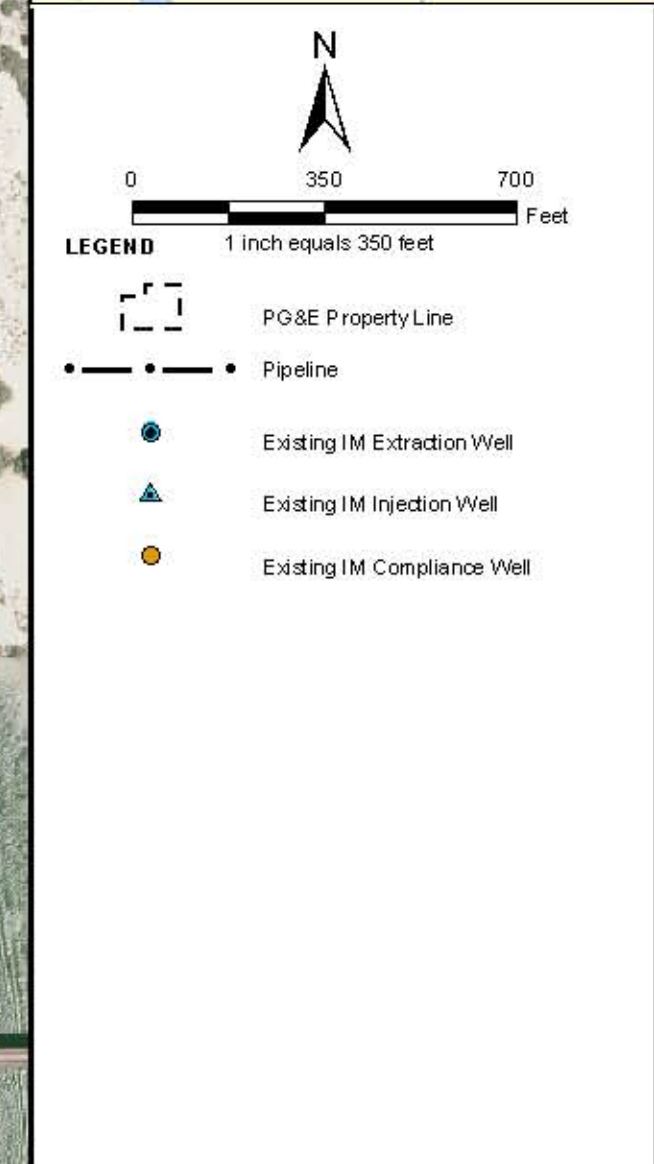
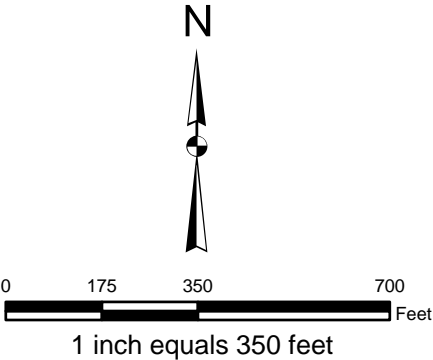
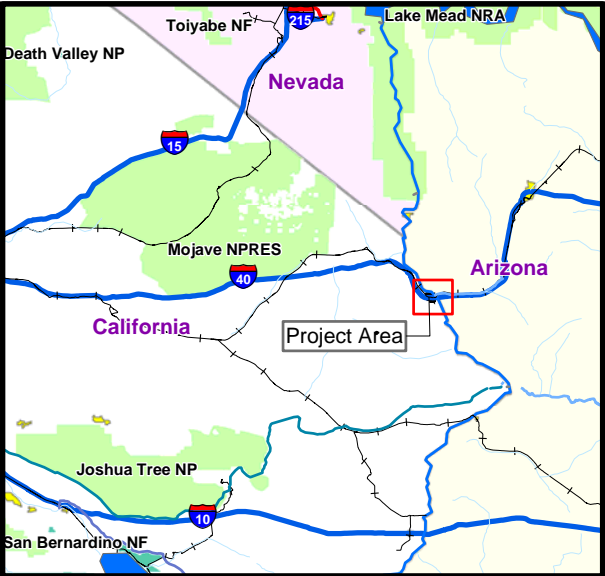


FIGURE 2
TOPOCK INTERIM MEASURES
NO.3 PROJECT
 PACIFIC GAS AND ELECTRIC COMPANY
 TOPOCK COMPRESSOR STATION



- LEGEND**
- Property Boundaries
 - Previously Disturbed Area
 - Area Used* for IM-3

*The significance of the term "use" for IM-3 means only that some activity has taken place over such land. It does NOT signify that any land has been harmed or that any other adverse effects on the land have occurred as a result of the activity.

Sources: San Bernardino County Assessor, Parcel quest, State Board of Equalization, Pacific Gas and Electric Company, and Plat maps provided by BLM.

**TOPOCK IM3 PROJECT
LAND USE MAP
JULY 2005**

PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

Appendix C

Sign In Sheets

Appendix D

Daily Monitoring Logs

Appendix E

Photodocumentation
