

MINUTE ITEM

This Calendar Item No. 27  
was approved as Minute Item  
No. 27 by the State Lands  
Commission by a vote of 2  
0 at its 3/2/92  
meeting.

CALENDAR ITEM

27

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03/02/92

W 40595 PRC 7621

Willard

Kruger

APPROVE A NEGOTIATED SUBSURFACE (NO SURFACE USE)  
GEOTHERMAL RESOURCES LEASE,  
IMPERIAL COUNTY

APPLICANT:

Magma Power Company  
11770 Bernardo Plaza Court, Suite 366  
San Diego, California 92128

AREA, TYPE LAND, AND LOCATION:

Approximately 80 acres of one-half mineral interest State  
proprietary land described as S1/2NW1/4 of Section 26, T11S  
R13E, SBM and situated within the Hazard Tract Unit of the  
Imperial Wildlife Management Area approximately five miles  
southwest of Niland, California.

LAND USE:

The subject parcel is within the Imperial Wildlife  
Management Area at the south end of Salton Sea. There shall  
be no surface use of the leased land for any purpose to a  
depth of 500 feet.

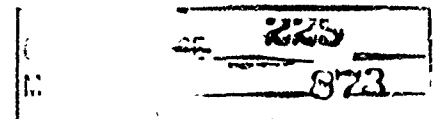
Adjacent to the subject parcel are privately owned lands  
included within the Elmore Geothermal Unit. Geothermal  
wells, completed within the subsurface underlying the  
subject parcel, will be directionally drilled from these  
adjacent private lands. If the lease is approved, the  
leased land will become part of the Elmore Geothermal Unit  
and the State will immediately share in revenue produced  
under the unit.

TERMS OF PROPOSED LEASE:

Primary term:

Ten (10) years effective March 1, 1992, and for so long  
as geothermal resources are produced in commercial  
quantities.

Within 30 days of the effective date of this lease, the  
Lessee shall furnish and maintain, until released by



the State, a bond in the sum of \$50,000 to guarantee performance of terms and conditions of the lease. At the option of the State, Lessee shall procure and maintain public liability, property damage, or other insurance for the benefit of the State, in an amount satisfactory to the State.

**ROYALTIES AND RENTAL:**

The Lessee shall pay to the State royalties on geothermal resources produced, utilized, saved, or sold from the leased lands in the amount of ten percent (10%) of the gross revenue, exclusive of charges approved by the State, made or incurred, with respect to transmission or other services or processes, received from the sale of steam, brine from which no minerals have been extracted and associated gases at the point of delivery to the purchaser. A royalty of five percent (5%) of the gross revenue received from the sale of mineral products or chemical compounds recovered from geothermal fluids in the first marketable form as to each such mineral product or chemical compound. Annual rental of \$1.00 per acre shall be payable in advance for each year, or fraction of year, that this lease is in effect.

Additionally, the Lessee has agreed that, if at any time during the primary term of the lease, Lessee acquires a lease on any private or public lands within the Elmore Geothermal Unit, which shall contain a greater royalty or rental payment than is provided by this lease, Lessee will revise the terms of this lease so as to afford the State equal terms.

The existing Elmore Geothermal Unit encompasses approximately 800 acres within sections 26, 27, 34, and 35. If this lease is approved by the Commission, the total acreage in the unit would be approximately 880 of which the additional acreage would be approximately nine percent (9%). Since the State's mineral interest is fifty percent (50%) of the additional acreage, the effective State interest would be four and one-half percent (4.5%).

**DRILLING REQUIREMENT:**

With the addition of the leased land into the existing Elmore Geothermal Unit, the Lessee shall be deemed to have fully developed the leased lands, and that any continuous drilling requirements will be satisfied.

**PREREQUISITE CONDITIONS, FEES, AND EXPENSES:**

Filing fee, processing costs, and the first year's rental have been paid by the Applicant.

**STATUTORY AND OTHER REFERENCES:**

A. P.R.C.: Div. 6, Parts 1 and 2.

B. Cal. Code Regs.: Title 2, Section 2000.

**AB 884:**

N/A.

**OTHER PERTINENT INFORMATION:**

1. CEQA Guidelines Section 15378(a)(3) identifies the issuance of a lease as a "project". However, there will be no surface use of the leased land for any purpose. As such, the site of any environmental effects from geothermal resource development shall occur on adjacent private lands of the Elmore Geothermal Project area within Imperial County. Therefore, Imperial County functioned as Lead Agency for the project pursuant to CEQA Guidelines Section 15366.

The Imperial County Planning Department approved the Elmore Geothermal Project on March 25, 1987 determining that this project will not have a significant effect on the environment. CEQA Initial Study #1813-87 was completed for this project, and the Salton Sea Master Environmental Impact Report (SCH# 80102409) was utilized as the primary CEQA document reference.

2. Geothermal resource development within the State lands, including directional drilling from the adjacent private lands, shall have prior written approval by the State. Any development shall be performed subject to the provisions of this lease, the P.R.C., and applicable State regulations. This lease and operations under it shall be consistent with the principle of multiple use of public lands and resources as provided in Section 6906 of the P.R.C.
3. The leased land is within the Hazard Tract Unit of the Imperial Wildlife Management Area. This unit was developed by the State Department of Fish and Game (DFG) for the purpose of maintaining wildlife habitat. The U.S. Fish and Wildlife Service operates and

maintains the habitat for DFG. Imperial County's Conditional Use Permit No. 9007-87 contains specific conditions which require wildlife monitoring and noise abatement and specify a time window when drilling may not occur near the Alamo River or the wildlife refuge areas. In addition, the County has indicated that its findings, pursuant to the Salton Sea Master EIR, contain monitoring requirements for the development of each geothermal field within the Salton Sea KGRA.

**EXHIBITS:**

- A. Land Description.
- B. Location Map.
- C. Imperial County CEQA Findings

**IT IS RECOMMENDED THAT THE COMMISSION:**

1. FIND THAT THE COUNTY OF IMPERIAL, AS CEQA LEAD AGENCY, HAS DETERMINED THAT THE SALTON SEA MASTER EIR (SCH# 80102409) DISCUSSES, IN A MANNER WHICH COMPLIES WITH THE REQUIREMENTS OF CEQA, THE IMPACTS WHICH MAY RESULT FROM THE PROPOSED PROJECT.
2. FIND THAT THE COMMISSION HAS REVIEWED AND CONSIDERED THE INFORMATION CONTAINED THEREIN.
3. ADOPT THE CEQA FINDINGS MADE BY THE COUNTY OF IMPERIAL, PURSUANT TO THE SALTON SEA MASTER EIR (EXHIBIT "C").
4. DETERMINE THAT THE IMPACTS WHICH MAY RESULT FROM THE PROJECT, AS PROPOSED, ARE UNDER THE JURISDICTION OF IMPERIAL COUNTY AND OTHER RESPONSIBLE AGENCIES AS IDENTIFIED IN THE CEQA FINDINGS, AND THAT THIS PROJECT WILL NOT HAVE A SIGNIFICANT EFFECT ON LANDS UNDER THE JURISDICTION OF THE STATE LANDS COMMISSION.
5. AUTHORIZE ISSUANCE OF A NEGOTIATED SUBSURFACE (NO SURFACE USE) GEOTHERMAL RESOURCES LEASE TO MAGMA POWER COMPANY OF SAN DIEGO, CALIFORNIA, FOR A PRIMARY TERM OF TEN YEARS, EFFECTIVE MARCH 1, 1992, IN ACCORDANCE WITH P.R.C. SECTIONS 6901 AND 6905.



**EXHIBIT "A"**

W 40595

**LAND DESCRIPTION**

A parcel of State-owned land in Imperial County, California, more directly described as the South one-half (S 1/2 ) of the Northwest one-quarter ( NW 1/4 ) of Section 26, Township 11 South, Range 13 East, San Bernardino Base and Meridian.

**END OF DESCRIPTION**

**PREPARED JANUARY, 1992 BY LLB**

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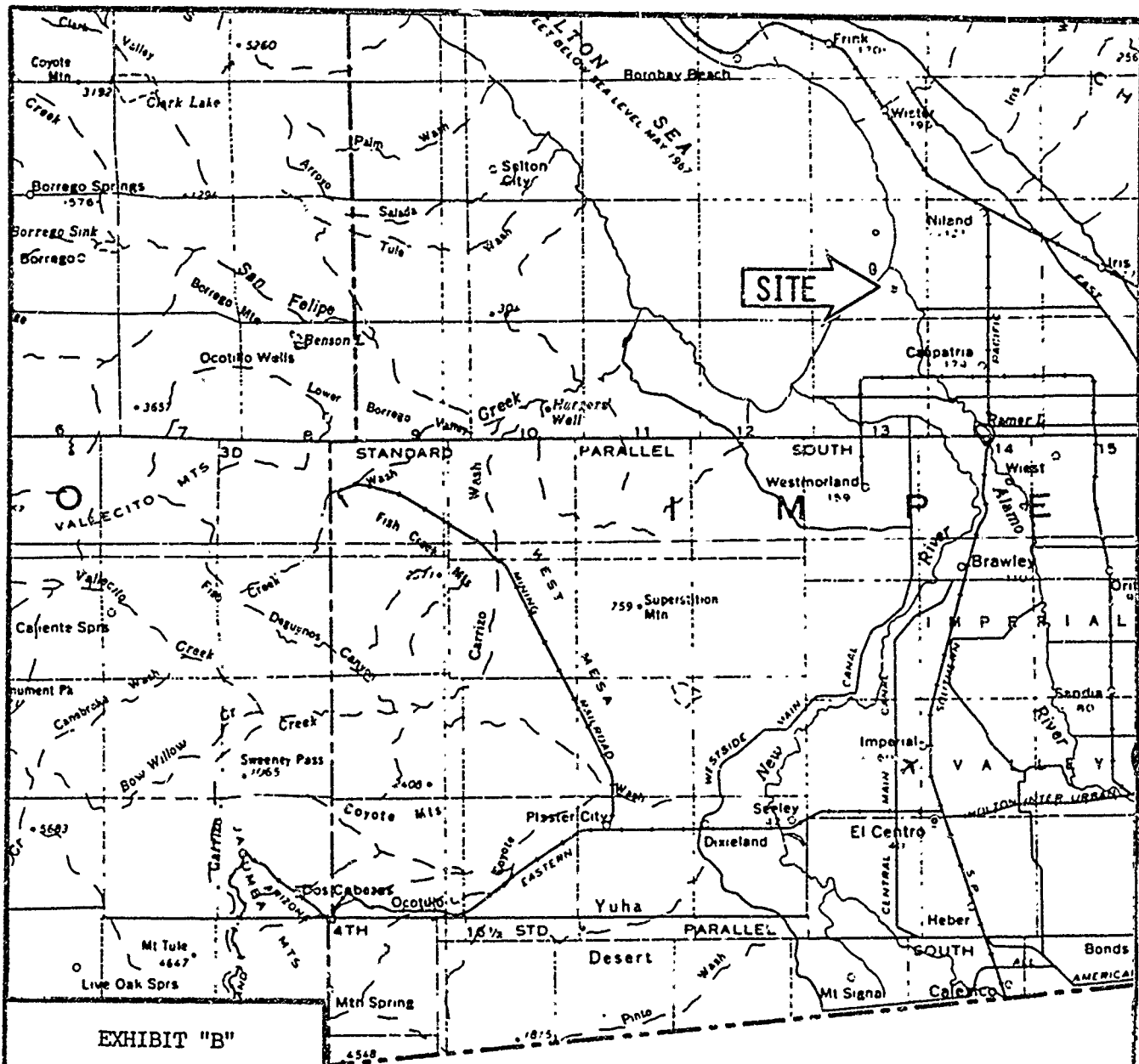


EXHIBIT "B"  
W 40595



X I C

EXHIBIT C

1 RESOLUTION ADOPTING FINDINGS AND  
2 STATEMENT OF OVERRIDING CONSIDERATIONS  
3 FOR EXPANSION OF GEOTHERMAL OVERLAY ZONE  
4 IN THE SALTON SEA ANOMALY

4 WHEREAS, following a public hearing held on May 5,  
5 1982, the Board of Supervisors determined to expand the  
6 existing geothermal overlay zone ("G-Zone") in the Salton  
7 Sea Anomaly from 20,000 acres to 111,444 acres, including  
8 offshore areas of the Salton Sea as well as onshore lands  
9 and encompassing most of the federally designated Salton Sea  
10 Known Geothermal Resource Area ("KGRA"), plus 5,000 additional  
11 acres adjacent to and east of said existing KGRA ("the G-  
12 Zone expansion"), and on May 11, 1982, enacted County of  
13 Imperial Ordinance No. 813 to so expand the G-Zone; and

14 WHEREAS, based on the record, and prior to taking such  
15 action, the Board also determined the G-Zone expansion was  
16 consistent with the County's General Plan, certified the  
17 "Final Salton Sea Anomaly Master Environmental Impact Report"  
18 ("MEIR"), and adopted findings and a statement of overriding  
19 considerations pertaining thereto; and

20 WHEREAS, in addition to testimony from staff, residents,  
21 property owners and industry representatives, the Board  
22 considered testimony and arguments of state agencies and the  
23 Imperial Irrigation District summarized, in part, as follows:

24 (1) The State Department of Fish & Game argued the  
25 MEIR was insufficient for not properly documenting certain  
26 environmental impacts, mitigation and alternatives; and,  
27 said Department opposed the zoning expansion, particularly  
28 in offshore areas.

1 (2) The State Department of Water Resources urged  
2 development of a comprehensive water management plan to  
3 determine the most advantageous water allocation scheme for  
4 the Salton Sea area.

5 (3) The State Energy Commission concluded the MEIR was  
6 sufficient for the zoning expansion and emphasized the  
7 County retains the ability to evaluate individual development  
8 projects and to require mitigation through the local permitting  
9 process. The Energy Commission supported the zoning expansion  
10 and noted geothermal energy is a "preferred energy source."

11 (4) The State Division of Oil and Gas found the MEIR  
12 sufficient for its intended purposes and its representatives  
13 opined no detrimental subsidence can be expected as a  
14 direct result of full field development of the Salton Sea  
15 Anomaly.

16 (5) Imperial Irrigation District representatives  
17 emphasized its responsibility for water management at the  
18 Salton Sea and noted the District owns substantial offshore  
19 lands which are potentially suitable for geothermal development.  
20 The District favored the zoning expansion; and

21 WHEREAS, in a subsequent legal challenge, the Imperial  
22 County Superior Court found, although, the MEIR is legally  
23 adequate and that the General Plan of the County of Imperial  
24 is legally adequate and County of Imperial Ordinance No. 813  
25 was consistent with said General Plan, that the findings  
26 adopted by the Board were legally inadequate because the  
27 Board of Supervisors did not, in the written findings adopted,  
28 address and resolve issues raised by the MEIR, and adopt

1 findings as to each such issue, and ordered the Board to set  
2 aside and annul Ordinance No. 813 and the accompanying  
3 resolution adopting findings and the statement of overriding  
4 considerations; and

5 WHEREAS, on May 3, 1983, by Minute Order No. 14, the  
6 Board rescinded its approval of Ordinance No. 813 and the  
7 accompanying resolution of May 11, 1982, adopting findings  
8 and a statement of overriding considerations, and set a new  
9 hearing to consider adoption of new findings and enactment  
10 of a new ordinance to replace the rescinded Ordinance No.  
11 813; and

12 WHEREAS, said hearing was subsequently cancelled at the  
13 request of staff and interested parties to allow for additional  
14 time for the preparation, circulation and review of such new  
15 findings, and, on this date, a new public hearing has been  
16 held before the Board of Supervisors at which the Board has  
17 reconsidered the previously established record, including  
18 the transcript of its previous hearing of May 5, 1982, as  
19 well as the new, more comprehensive findings prepared by  
20 staff for this hearing, the Board also has considered the  
21 written and public comments of interested agencies and  
22 parties as elicited from the circulation for review of  
23 proposed new findings as prepared by staff and as provided  
24 at this new hearing this date, the Board also finds and  
25 certifies as indicated in more detail hereinbelow, that the  
26 MEIR has been prepared in compliance with the provisions of  
27 the California Environmental Quality Act ("CEQA") and the  
28 State Guidelines pertaining thereto, and the Board herein



1 deems it appropriate to adopt these expanded findings which  
2 more fully reflect the Board's rationale for approving the  
3 expansion of the Salton Sea G-Zone, and, based thereon,  
4 herein determines to adopt Ordinance No. \_\_\_\_\_, enclosed  
5 herewith, expanding the G-Zone in the Salton Sea Anomaly;

6 NOW THEREFORE BE IT RESOLVED, the Board of Supervisors  
7 hereby adopts findings and a statement of overriding considerations  
8 in support of its decision to grant the G-Zone expansion as  
9 follows:

10 I. PROJECT STATEMENT

11 The project herein discussed consists of expansion of  
12 the existing geothermal overlay zone in the Salton Sea  
13 Anomaly from approximately 26,000 acres (including approximately  
14 6,000 acres recently so zoned in the Niland area of the  
15 County) to approximately 111,444 acres. After expansion,  
16 fifty-four percent of the G-Zone will consist of offshore  
17 portions of the Salton Sea, a large portion of which is  
18 under management and control of the Bureau of Land Management.\*  
19 The onshore portion of the expanded zone will contain the  
20 environmentally sensitive Salton Sea National Wildlife  
21 Refuge, Wister Waterfowl Management Area and riparian habitat  
22 along the New and Alamo Rivers.

23 The Salton Sea Anomaly is the largest of the anomalies  
24 in the Imperial Valley. It is marked by geothermal resources  
25

26 \*Federal lands in the Salton Sea are already subject to  
27 gas and mineral leases. Further, leases for geothermal  
28 resource exploration and development were issued for federal  
lands within the KGRA during the pendency of the challenge  
to the rezone.



1 at a shallow depth (2,000 to 10,000 feet) with high temperatures.  
2 However, geothermal fluids produced in the area contain high  
3 levels of salinity.

4 The Salton Sea Anomaly Master Environmental Impact  
5 Report contemplates the development of from 300 to 4,000  
6 megawatts ("MW") of geothermal energy over a thirty-year  
7 period in both onshore and offshore portions of the anomaly.  
8 Offshore development is not expected to occur until several  
9 years after onshore development is underway. The most  
10 probable scenario is for the development of 1,400 MW by the  
11 year 2010. The MEIR reports that, by 1985, five power  
12 plants will exist generating a total of 187 MW, assumes  
13 between 1985 and 1990 an additional 16 power plants each  
14 with 50 MW capacity will be built, although the possibility  
15 exists that 100 MW plants might be built instead; and assumes  
16 additional 50 MW or 100 MW plants will produce a total of  
17 1,400 MWs by the year 2010. If only 50 MW plants are built,  
18 these assumptions indicate the KGRA will contain 27 power  
19 plants by the year 2010.

20 The G-Zone expansion will permit the County to accept  
21 and process applications for geothermal production facilities.  
22 Actual approval of a production facility requires issuance  
23 of a production permit by the County; further site specific  
24 environmental review will occur before such a permit issues.  
25 Conditions imposed in production permits will be designed to  
26 mitigate environmental impacts.

## 27 II. CONSISTENCY WITH GENERAL PLAN

28 The County's General Plan recognizes commercially

1 viable geothermal anomalies in various zones may be the  
2 subject of geothermal "overlay" zoning, such as with the G-  
3 Zone, but that the actual right to develop geothermal resources  
4 must depend on issuance of production permit entitlements.

5 The Salton Sea Anomaly is recognized by the County's Geothermal  
6 Element to the General Plan in particular, as an area where  
7 geothermal resources may be commercially developed.

8       The Geothermal Element to Imperial County's General  
9 Plan ("Geothermal Element") provides that the County shall  
10 "[p]ermit geothermal development in areas classified as  
11 within a Geothermal Overlay Zone and allow production activities  
12 by Conditional Use Permit containing performance standards."

13       Other elements of Imperial County's General Plan set  
14 forth goals and objectives for geothermal development in  
15 Imperial County as follows: to "[e]ncourage the exploration  
16 for and development of new sources of geothermal energy"  
17 (Open Space Element, p. 21); to "[p]rovide for the maximum  
18 feasible development of geothermal energy, water, and minerals  
19 while assuring the maintenance of environmental quality"  
20 (Conservation Element, p. 69.); to "[e]ncourage development  
21 of geothermal energy. . . consistent with environmental  
22 protection and the preservation of productive agricultural  
23 lands" (Open Space Element, p. 43); to "[e]ncourage the  
24 exploration and development of geothermal resources by  
25 public and private organizations consistent with protection  
26 of environmental values" (Conservation Element, p. 78); to  
27 "[p]articipate in and promote a program to develop and  
28 centralize data relevant to geothermal resources for the

1 purpose of providing long-range direction based on reliable  
2 technical information" (Conservation Element, p. 78); and  
3 "to encourage exploration and development projects in order  
4 to increase the store of knowledge surrounding this useful  
5 resource" (Ultimate Land Use Plan, p. 31).

6 The Geothermal Element also states "the area to be  
7 zoned should be large enough to encompass the area anticipated  
8 for ultimate development in accordance with the master plan  
9 submitted by the operator" (Geo. El., p. 64).

10 Accordingly, based on the foregoing, the Board of  
11 Supervisors determines that the G-Zone expansion is consistent  
12 with the County's General Plan.

13 III. THE MASTER ENVIRONMENTAL IMPACT REPORT--CONSIDERATIONS  
14 AND FINDINGS.

15 A. CEQA CONSIDERATIONS.

16 The Board of Supervisors finds and herein certifies  
17 that the Salton Sea Anomaly Master Environmental Impact  
18 Report ("MEIR") was completed in compliance with the California  
19 Environmental Quality Act ("CEQA") and the State Guidelines  
20 pertaining thereto, to address the impacts which could  
21 result from overlaying the entire Salton Sea anomaly with a  
22 G-Zone. It was reviewed and considered by the Board prior  
23 to approval of the zoning expansion. The zoning expansion  
24 in the Salton Anomaly does not, per se, authorize geothermal  
25 production activities in the area, but establishes grounds  
26 for prospective developers to submit applications for production  
27 projects in the area so rezoned. Although the proposed  
28 rezoning does not cause any direct environmental impact, it

1 creates the opportunity for new geothermal projects which  
2 can cause environmental impacts.

3 The MEIR identified all environmental impacts which  
4 could be expected to occur as a result of large-scale geothermal  
5 development of the rezoned area. In addition, testimony  
6 before the Board further refined the knowledge about the  
7 impacts. Geothermal development has the potential to create  
8 the following impacts, if no mitigation is required:

- 9 Geology 1. Induce seismicity changes (MEIR, p. 3.1-13)  
10 2. Induce subsidence (MEIR, p. 3.1-16)  
11 3. Induce erosion (MEIR, p. 3.1-19)  
12 4. Suffer damage from seismicity, fault ruptures,  
13 and soil liquefaction and settlement (MEIR,  
14 pp. 3.1-15, 3.1-16, 3.1-18)
- 15 Hydrology 5. Pollute near-surface groundwaters (MEIR,  
16 p. 3.2-22)  
17 6. Compete for and consume surface or ground  
18 waters (MEIR, pp. 3.2-30, 3.2-41)  
19 7. Induce changes in Salton Sea level and  
20 salinity (MEIR, pp. 3.2-31; 3.6-42)  
21 8. Pollute surface waters and land with spills  
22 of geothermal fluids (MEIR, pp. 3.2-35,  
23 3.2-37, 3.8-48, 3.8-49)  
24 9. Degrade surface water quality in agricultural  
25 waste water drains (MEIR, p. 3.2-37)  
26 10. Suffer damage from flooding due to the rising  
27 level of the Salton Sea (MEIR, p. 3.2-39)

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1 Climatology

- 2 11. Increase local relative humidity (MEIR  
3 p. 3.3-9)  
4 12. Create visible plumes and fogging (MEIR,  
5 p. 3.3-9)

6 Air Quality

- 7 13. Create dust and air emissions from construction  
8 (MEIR, p. 3.4-7)  
9 14. Raise ambient hydrogen sulfide levels in  
10 the air (MEIR, p. 3.4-13)  
11 15. Emit other non-H<sub>2</sub>S air pollutants (MEIR,  
12 p. 3.4-21)  
13 16. Emit drift droplets into the air which  
14 could ultimately pollute land and water,  
15 or be inhaled by humans or animals (MEIR,  
16 pp. 3.4-22, 3.8-49)

17 Acoustical

- 18 17. Increase noise during construction and  
19 operations (MEIR, p. 3.5-13)

20 Biological

- 21 18. Cause some loss of nonagricultural vegetation  
22 (MEIR, p. 3.6-34)  
23 19. Remove or alter wildlife habitat or render  
24 sensitive habitats such as refuges less  
25 attractive to wildlife (MEIR, p. 3.6-34)  
26 20. Adversely impact avian resources due to  
27 habitat loss, noise, or spills, and increase  
28 transmission line bird mortalities



1 (MEIR, p. 3.6-39)

2 21. Create impacts to aquatic resources due  
3 to use of irrigation tail water for cooling  
4 resulting in potential increased salinity  
5 of the Salton Sea as well as fluctuations  
6 of the level of the Sea, create loss of  
7 habitat and water quality deterioration  
8 due to offshore geothermal development.  
9 (MEIR, p. 3.6-42).

10 Cultural

11 22. Damage archeological sites (MEIR, p. 3.7-3)

12 Land Use

13 23. Remove arable land from agricultural  
14 production (MEIR p. 3.8-41)

15 24. Remove or impair gravel mining resources  
16 (MEIR, p. 3.8-45)

17 25. Reduce recreation potential (MEIR, p. 3.8-50)

18 26. Conflict with some other County goals,  
19 policies and programs (MEIR, p.3.8-42)

20 27. Conflict with urban or residential use of  
21 the area (MEIR, p. 3.8-52)

22 28. Create solid waste traffic load (MEIR,  
23 p. 3.8-52)

24 29. Increase traffic (MEIR, p. 3.8-53)

25 Socio-economics

26 30. Increase population (MEIR, p. 3.9-22)

27 31. Increase employment (MEIR, p. 3.9-25)

28 32. Temporarily create a housing shortage (MEIR,



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p. 3.9-29)

33. Increase demands for government services  
(MEIR, p. 3.9-31)

34. Increase property tax receipts by the  
County (MEIR, p. 3.9-32)

Visual 35. Modify the visual environment in the area  
(MEIR, pp. 3.10-8 to 3.10-13)

Subjects identified as "key" issues were numbers 2, 6,  
8, 15, 16, 19, 20, 21, 25 and 30 (MEIR, Chapter 3.11).

The MEIR concluded that some of the 35 impacts were  
significant and unavoidable. After consideration of the  
MEIR and testimony received in public hearings, the Board  
finds that changes or alterations will be required for or  
incorporated into future geothermal developments which will  
avoid the significant environmental effects or mitigate such  
effects to insignificant levels. These findings are summarized  
hereinbelow.

B. ENVIRONMENTAL IMPACT FINDINGS

GEOLOGY

In General

Each site-specific project will have changes or alterations  
required for or incorporated into it by the County of Imperial  
to mitigate or avoid its potential significant geological  
impacts, as discussed hereinbelow. Therefore, geothermal  
projects constructed in the G-Zone expansion will not have a  
significantly adverse effect on geology in Imperial County.

1. Significant Effect: Geothermal production and  
injection well field operations conducted within the G-Zone

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1 have the potential to induce alterations in the existing  
2 seismic activity (MEIR, p. 3.1-15).

3       Statement of Facts: The Geothermal Element to the  
4 General Plan of Imperial County states that "the County  
5 shall require producers to participate in any seismic monitoring  
6 established a seismic monitoring program and has required  
7 other geothermal production project permittees within the  
8 County to participate in the County's program, submit a plan  
9 for approval by Imperial County's Public Works Department,  
10 implement the plan as approved, and, if evidence of detrimental  
11 seismicity induced by the project is indicated, change  
12 operations as appropriate to mitigate the detrimental seismicity.

13       Imperial Valley is a naturally seismic area. However,  
14 there is little reason to expect that fluid injection will  
15 cause significant expansion of seismic activity in the  
16 Salton Sea area (MEIR, p. 3.1-15). However, if evidence  
17 becomes available that development is anticipated to affect  
18 the natural seismic activity, geothermal developers will be  
19 required to participate in any seismic monitoring network  
20 which may be established for the purpose of providing background  
21 data on seismic occurrence (Geo. El., p. 59; MEIR, p. 3.1-  
22 15). The Imperial County Public Works Department is responsible  
23 for preparing and enforcing permit conditions relating to  
24 the monitoring of seismic networks (Geo. El., p. 68).  
25 Baseline data is being accumulated by Lawrence Livermore  
26 Laboratories. The County will require that each developer  
27 submit an acceptable seismic monitoring program from which  
28 data will be compared to the baseline data. If monitoring

1 programs indicate a statistically significant change in  
2 seismic activity which is attributable to geothermal projects,  
3 the County will consider measures to be imposed upon developers  
4 which control production and injection activities (MEIR, p.  
5 3.1-21). In addition, geothermal production permits granted  
6 for site-specific projects will carry a condition which  
7 provides the County with authority to revoke the permit if  
8 the permittee violates conditions of the permit and does not  
9 cure the violation, given reasonable notice and opportunity  
10 (see "Other Specific Conditions" section of geothermal  
11 production permits issued by Imperial County in the last 5  
12 years).

13 Imperial County will consider and may require all these  
14 mitigation measures of each geothermal production project  
15 proposed within this zone unless the subsequent, project-  
16 specific environmental document prepared for each project  
17 identifies mitigation measures which may be more appropriate  
18 or identifies that the impact is not significant and mitigation  
19 is not appropriate. The MEIR (p. 3.1-21) states that the  
20 above-indicated mitigation measures will probably never be  
21 necessary.

22 Finding: Imperial County will require for or incorporate  
23 into each site-specific project proposed within this zone  
24 changes or alterations which mitigate or avoid the significant  
25 environmental effects identified hereinabove.

26 Statement of Facts: The California Division of Oil and  
27 Gas ("CDOG") is required by law to ensure that geothermal  
28 wells are operated in such a manner as to safeguard life,

1 health, property and the public welfare. Should evidence of  
2 detrimental seismicity induced by project operations be  
3 indicated by the monitoring program, the CDOG can and should  
4 require, in consultation with Imperial County, those changes  
5 in geothermal well operations within its responsibility and  
6 jurisdiction as appropriate to mitigate the negative impacts.

7 Finding: Changes or alterations required to mitigate  
8 or avoid the significant environmental effects of detrimental  
9 seismicity of any geothermal production project proposed  
10 within this zone may also be within the responsibility and  
11 jurisdiction of another public agency (the CDOG), and such  
12 changes can and should be adopted, to the extent of its  
13 responsibility and jurisdiction, by such other agency.

14 2. Significant Effect: Naturally-occurring subsidence in  
15 Imperial Valley may accelerate due to geothermal fluid withdraw  
16 resulting from geothermal production activity (MEIR, p. 3.1-17).

17 Statement of Facts: The County will require participation  
18 by geothermal developers in the existing subsidence monitoring  
19 network when site-specific studies indicate such participation  
20 is necessary (MEIR, p. 3.1-22). The Imperial County Public  
21 Works Department is responsible for preparing and enforcing  
22 permit conditions relating to the monitoring of subsidence  
23 detection networks, and production permits issued by the  
24 County will require operators to monitor subsidence detection  
25 networks (Geo. El., p. 68). It is also responsible for  
26 monitoring the review of reinjection plans by CDOG, and for  
27 requesting subsidence analyses for proposals other than for  
28 total reinjection of geothermal brine.

1 In order to fully mitigate the potential subsidence due  
2 to geothermal fluid withdrawal, Imperial County standards  
3 require reinjection of all geothermal fluids extracted from  
4 irrigated areas of the County or from any area that could  
5 directly impact those irrigated lands (Geo. El., p. 58).  
6 Applications for deviation from this policy are to be submitted  
7 to CDOG for review and findings prior to County consideration.  
8 If detrimental subsidence is detected attributable to geothermal  
9 production, the CDOG will devise an amelioration program  
10 (Geo. El., pp. 58-59). Such a program may consider an  
11 increase in the required injection, altered injection depths,  
12 releveling of drains, canals and land surfaces, other restoration  
13 or correction of the surface effects of subsidence, changes  
14 in field operations, or reduction or total cessation of  
15 geothermal production. Imperial County has required these  
16 mitigation measures of geothermal production projects within  
17 the County, and these measures are identified as being  
18 appropriate to any geothermal production project (MEIR, p.  
19 3.1-22).

20 Imperial County will consider and may require all these  
21 mitigation measures of each geothermal production project  
22 proposed within this zone unless the subsequent, project-  
23 specific environmental document prepared for each project  
24 identifies mitigation measures which may be more appropriate  
25 or identifies that the impact is not significant and mitigation  
26 is not appropriate.

27 Finding: Imperial County will require for or incorporate  
28 into each site-specific project proposed within this zone



1 changes or alterations which mitigate or avoid the significant  
2 environmental effects identified hereinabove.

3       Statement of Facts: The CDOG is required to ensure  
4 that geothermal wells are operated in such a manner as to  
5 safeguard life, health, property and the public welfare.  
6 The CDOG requires the installation and monitoring of subsidence  
7 bench marks for all wells that will be tested or produced.  
8 If evidence of detrimental subsidence induced by project  
9 operations is indicated by the required monitoring, the CDOG  
10 can and should, in consultation with Imperial County, require  
11 those changes in operations within its responsibility and  
12 jurisdiction as appropriate to prevent detrimental subsidence.  
13 These changes could include increasing the amount of injected  
14 fluid, altering injection well locations or spacing, altering  
15 production well locations or spacing, or decreasing the  
16 quantity of geothermal fluid withdrawn from the reservoir.

17       Finding: Changes or alterations required to mitigate  
18 or avoid the significant environmental effects of detrimental  
19 subsidence of any geothermal production project proposed  
20 within this zone are within the responsibility and jurisdiction  
21 of another public agency (the CDOG), and such changes or  
22 alterations can and should be adopted, to the extent of its  
23 responsibility and jurisdiction, by such other agency.

24       3. Significant Effect: Although the MEIR found no  
25 potential for significant erosion or slope stability impacts  
26 (with the possible exception of gully erosion around the  
27 Alamo River banks), drainage control and devices such as  
28 energy dissipators and gunite lining of gullies are recommended

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1 (MEIR, p. 3.1-22).

2 Statement of Facts: These mitigation measures will be  
3 considered on a case-by-case basis as projects are proposed  
4 which are expected to impact these gullys. The County, to  
5 the extent feasible for specific projects, may require that  
6 facilities be located away from river channels where possible  
7 and that drainage be designed to avoid concentrating run-off  
8 in gullys.

9 4. Significant Effects:

10 a. Seismic Groundshaking.

11 Any geothermal production project constructed in  
12 the G-Zone will likely be subject to at least one occurrence  
13 of significant seismic groundshaking, which could lead to  
14 structural collapse, during the probable thirty-year life of  
15 that project (MEIR, p.3.1-13).

16 Statement of Facts: Imperial County has required the  
17 following mitigation measures of other geothermal projects  
18 within the County: (1) geothermal production projects be  
19 built in accordance with the County building code requirements  
20 of the Uniform Building Code, as adopted by the County,  
21 applicable to "Seismic Zone 4"; (2) all structures and  
22 facilities be designed in accordance with the publication  
23 entitled "Recommended Lateral Force Requirements and Commentary  
24 by the Structural Engineers Association of California"; and  
25 (3) the structural components of the facility be reviewed  
26 and approved by a structural engineer licensed in the State  
27 of California. The MEIR (p. 3.1-20) states that implementation  
28 of these mitigation measures would provide reasonable assurance

1 that structures and facilities would safely withstand the  
2 most severe earthquake predicted.

3 Imperial County will consider and may require all these  
4 mitigation measures of each geothermal production project  
5 proposed within this zone unless the subsequent, project-  
6 specific environmental document prepared for each project  
7 identifies mitigation measures which may be more appropriate  
8 or identifies that the impact is not significant and mitigation  
9 is not appropriate.

10 Finding: Imperial County will require for or incorporate  
11 into each site-specific project proposed within this zone  
12 changes or alterations which mitigate or avoid the significant  
13 environmental effects identified hereinabove.

14 The above-discussed requirements, in fact, will mitigate  
15 this particular impact to a level of insignificance.

16 b. Fault Ruptures.

17 There is the potential for ground rupture along  
18 several potentially active faults within the proposed G-Zone  
19 which could cause moderate to severe damage to any geothermal  
20 production facility constructed over the fault trace (MEIR,  
21 p. 3.1-16).

22 Statement of Facts: Imperial County has required that  
23 other geothermal production projects within the County  
24 conduct a geotechnical investigation, including trenching to  
25 locate fault traces, at each proposed geothermal production  
26 facility site. The MEIR (p. 3.1-21) also suggests that  
27 should any faults be discovered, the project be designed to  
28 avoid placing structures on or across the fault traces, that

1 minimum setback distances be established by a licensed  
2 engineering geologist experienced with mitigating the effects  
3 of fault displacement, that well sites be placed to minimize  
4 the possibility of drilling through a fault plane, where  
5 such a plane lies less than 1,300' in depth, and that berms  
6 be constructed around each well pad.

7 Imperial County will consider and may require all these  
8 mitigation measures of each geothermal production project  
9 proposed within this zone unless the subsequent, project-  
10 specific environmental document prepared for each project  
11 identifies mitigation measures which may be more appropriate  
12 or identifies that the impact is not significant and mitigation  
13 is not appropriate.

14 Finding: Imperial County will require for or incorporate  
15 into each site-specific project proposed within this zone  
16 changes or alterations which mitigate or avoid the significant  
17 environmental effects identified hereinabove.

18 c. Soil Liquefaction and Settlement.

19 Potential soil liquefaction and differential  
20 settlement conditions may exist throughout the G-Zone area  
21 (MEIR, p. 3.1-18).

22 Statement of Facts: If a potential for liquefaction or  
23 settlement is identified during site-specific studies,  
24 appropriate soil preparation and foundation design will be  
25 required (MEIR, p. 3.1-22). Imperial County has required  
26 those mitigation measures identified in the MEIR of other  
27 geothermal production projects within the County. These  
28 include the requirements that all geothermal production

1 projects undertake a program of soil investigations by  
2 qualified personnel at the applicant's expense to identify  
3 specific areas subject to liquefaction, expansiveness, and  
4 corrosive characteristics, and that the soil preparation and  
5 foundation design measures contained within such report be  
6 implemented as appropriate.

7 Imperial County will consider and may require all these  
8 mitigation measures of each geothermal production project  
9 proposed within this zone unless the subsequent, project-  
10 specific environmental document prepared for each project  
11 identifies mitigation measures which may be more appropriate  
12 or identifies that the impact is not significant and mitigation  
13 is not appropriate.

14 Finding: Imperial County will require for or incorporate  
15 into each site-specific project proposed within this zone  
16 changes or alterations which mitigate or avoid the significant  
17 environmental effects identified hereinabove.

18 HYDROLOGY

19 In General

20 Each site-specific project will have changes or alterations  
21 required for or incorporated into it by the County to mitigate  
22 or avoid its significant hydrological impacts, as discussed  
23 hereinbelow. The G-Zone expansion, in and of itself, will  
24 not have a significantly adverse effect on hydrology in  
25 Imperial County.

26 5. Significant Effect: Geothermal production projects  
27 could degrade the quality of groundwater within the G-Zone  
28 through the migration of geothermal fluids injected underground,

1 geothermal fluids spilled at the land surface, leakage from  
2 brine holding ponds and drilling fluid sumps, and leaching  
3 from solid waste disposal and storage areas (MEIR, p. 3.2-  
4 21).

5       Statement of Facts: Since quality of groundwaters in  
6 the Salton Sea area is generally very poor, the effect of  
7 pollution even, if it were to occur, would be minimal (MEIR,  
8 p. 3.2-23). Still, to isolate geothermal fluids from these  
9 waters, ponds holding geothermal fluids should be lined with  
10 materials which will prevent fluid escape. Also injection  
11 wells may require monitoring in areas where near-surface  
12 groundwaters are usable and could be impacted (MEIR, pp.  
13 3.2-40, 41). Imperial County has required other geothermal  
14 production projects within the County to implement the  
15 following mitigation measures identified in the MEIR (p.  
16 3.2-40) designed to reduce the potential for, and extent of,  
17 groundwater contamination: berming around power plants and  
18 well pads; development of emergency containment plans;  
19 lining of basins so that permeability does not exceed  $1 \times 10^{-6}$   
20 cm/sec; and off-site disposal of solid geothermal wastes  
21 only to an approved facility designed to prevent contamination  
22 of groundwater. The MEIR (p. 3.2-40) also recommends that  
23 the quality of groundwater be monitored by sampling agricultural  
24 drainage sumps.

25       Imperial County will consider and may require all these  
26 mitigation measures of each geothermal production project  
27 proposed within this zone unless the subsequent, project-  
28 specific environmental document prepared for each project



1 identifies mitigation measures which may be more appropriate  
2 or identifies that the impact is not significant and mitigation  
3 is not appropriate.

4 Finding: Imperial County will require for or incorporate  
5 into each site-specific project proposed within this zone  
6 changes or alterations which mitigate or avoid the significant  
7 environmental effects identified hereinabove.

8 Statement of Facts: In addition to County requirements,  
9 geothermal developments must comply with all State-mandated  
10 underground injection control measures to protect beneficial  
11 or potable water aquifers. The California Regional Water  
12 Control Board, Colorado River Basin Region ("CRWQCB") is  
13 responsible for protecting water quality within the Colorado  
14 River Basin Region of California. California law requires  
15 that the CRWQCB evaluate the issuance of either a Waste  
16 Discharge Order or a National Pollution Discharge Elimination  
17 System Permit for each geothermal production project, and  
18 the CRWQCB can and should require, in consultation with  
19 Imperial County, those mitigation measures within its  
20 responsibility and jurisdiction as appropriate to allow the  
21 construction and operation of brine holding ponds and drilling  
22 fluid sumps and the disposal of solid waste in such a way as  
23 to prevent significant degradation to groundwater. These  
24 mitigation measures may include, but not be limited too,  
25 those listed in the MEIR (p. 3.2-40) and listed above.

26 The CDOG may also have certain responsibility and  
27 jurisdiction for preventing groundwater quality degradation,  
28 and can and should require, in consultation with Imperial



1 County, and to the extent of its responsibility and jurisdiction,  
2 that the geothermal production and injection well fields be  
3 operated and monitored in such a way as to prevent significant  
4 degradation to groundwater, including requiring mitigation  
5 measures as described in the MEIR (p. 3.2-40).

6 Finding: Changes or alterations required to mitigation  
7 or avoid the significant environmental effects identified  
8 hereinabove are within the responsibility and jurisdiction  
9 of other public agencies (the CRWQCB and/or the CDOG), and  
10 such changes can and should be adopted, to the extent of  
11 their responsibilities and jurisdiction, by such other  
12 agencies.

13 6. Significant Effect: Water which may be necessary for some  
14 geothermal production projects for certain operations (primarily  
15 cooling water and/or injection makeup water) could be  
16 obtained from any one or a combination of sources, some of which  
17 could have potentially significant impacts to various water-  
18 dependent resources, including, but not limited to, wildlife  
19 habitat and Salton Sea level and and salinity.

20 Statement of Facts: The MEIR anticipates a water need  
21 of approximately 84,000 acre feet annually (AFA), from development  
22 of 1,400 MW of geothermal electricity generation. If all of  
23 this usage was from external 'canal water', blowdown would be about  
24 24,000 AFA for a net water usage of 60,000 AFA (MEIR, p. 3.11-3).

25 'Canal' water is not now nor ever has been diverted from  
26 the Colorado River for the designated purpose of sustaining  
27 the Salton Sea or its tributary rivers and drains. Imperial  
28 Irrigation District (IID) recent annual usage has been about

1 2,800,000 AFA with approximately 1,100,000 flowing into the  
2 Salton Sea as drainage, tailwater, and spills. In its Water  
3 Rights Decision 1600 of June 1984, the State Water Resources  
4 Control Board found that IID could conserve 438,000 AFA of  
5 which at least 200,000 AFA would be a decrease in flow to  
6 the Salton Sea. By Resolution 8-84 of January 23, 1984, IID  
7 established the goal to reduce flow to the Salton Sea by 100,000  
8 AFA and specifically invited the geothermal industry to make  
9 proposals for the beneficial use of such 'conserved' water.

10 The use of 'canal' water by geothermal facilities will  
11 not reduce the flow of water to the Salton Sea. In the past, and  
12 as was considered in the MEIR, more water than was specifically  
13 allocated to some beneficial uses has been diverted from the  
14 Colorado River and found its way to the Salton Sea. The  
15 MEIR assumed that geothermal usage would draw on the existing  
16 flow and thus reduce it. The statement in the MEIR (p. 3.2-42)  
17 that, 'it appears unlikely that potential impacts due solely  
18 to development of geothermal energy in the Salton Sea Anomaly  
19 can be adequately mitigated unless a comprehensive water  
20 management plan is undertaken,' was predicated upon that  
21 excess flow of water. The 'management plan' would have been  
22 primarily for the purpose of managing that excess flow (of  
23 between 200,000 and 400,000 AFA). The Water Rights Decision  
24 1600, and the related decisions currently being made as a  
25 result by the agencies with proper water responsibilities,  
26 constitutes in substantial measure the 'water management  
27 plan.' The implementation of that plan essentially eliminates  
28 the water usage impacts identified by the MEIR.

1 Diversion of excess water does not seem probable in  
2 the future. Any 'canal' water allocated to geothermal usage in  
3 the future will be water that has been diverted for that  
4 purpose and would not otherwise have entered the system, and  
5 will not reduce the flow to the Salton Sea nor reduce that  
6 available to agriculture or other uses. Such water used by  
7 geothermal (like all other uses of Colorado River water in  
8 the valley) would have the incidental benefits of increasing  
9 the generation of hydro electricity by IID (environmentally the  
10 most benign and the least expensive) and (like agricultural  
11 and municipal uses) would increase the flow of water to the  
12 Salton Sea via the discharge of cooling tower blowdown. At  
13 the maximum usage cited above, the blowdown discharge to the drain  
14 system and the sea would be 24,000 AFA, a flow that would not  
15 otherwise exist.

16 Use of drain or river water implies use of water that  
17 already has been diverted from the Colorado River into the  
18 system for some other beneficial use and would flow to the  
19 Salton Sea if not used by geothermal. If drain water were  
20 used, the blowdown probably would be injected rather than  
21 discharged to the drain system because of its high dissolved  
22 solids.

23 The use of Salton Sea water is possible for facilities  
24 near the sea. Other than the extra fluid lines and intake/discharge  
25 structures, the use of Salton Sea water for cooling would have  
26 no detrimental impacts.

27 But, the use of either the Salton Sea or drain water for  
28 cooling tower and/or injection will require expensive water

1 treatment. Although several facilities may be constructed  
2 which will use Salton Sea or drain water, it is not reasonable  
3 for the foreseeable future to anticipate many such facilities, nor  
4 significant usage of these water sources. If these were the  
5 only available sources of water, the more probable anticipation  
6 would be that the facility would be uneconomical and would not  
7 be built. The State Water Resources Board found (p. 55 of  
8 Decision 1600) that: ". . . conservation of existing supplies  
9 of fresh water provides the best source of water for local  
10 geothermal development.'

11 The MEIR (p. 3.11-11) indicates that "condensate" may be  
12 the best source of cooling water. In such cases, the effect on  
13 the external water system will be negligible.

14 In any event, the clear mandate of the State Water Resources  
15 Control Board Water Rights Decision 1600 is that IID must reduce  
16 flow to the Salton Sea of at least 200,000 AFA and possibly up  
17 to 400,000 AFA. It is even reasonable to expect that a condition  
18 of IID for providing water to a geothermal facility might be  
19 that the facility not discharge its blowdown to the drainage  
20 system.

21 In summary, the potentially significant impacts to wildlife  
22 habitat and the Salton Sea level and salinity addressed in the  
23 MEIR as possibly being contributed to by geothermal development  
24 through the use of water now is being mandated by the Water  
25 Rights Decision 1600.

26 And finally, as shown in the more recently certified South  
27 Brawley Geothermal Overlay Zone EIR (Table 3.2-8 and p. 71), the  
28 water usage impacts of valley-wide geothermal development will

1 be minor whatever the usage, and any detrimental effects on  
2 the Salton Sea will occur without any geothermal development.

3 Finding: Imperial County will require for or incorporate  
4 into each site specific project proposed, changes or alterations  
5 which mitigate or avoid any significant environmental effects  
6 identified by the environmental documentation prepared for each  
7 specific project which result from water usage by that project.  
8 But, because of the operation of law and requirements of  
9 other governmental agencies regarding water usage, and the  
10 speculative and improbable nature of events necessary for a  
11 significant project specific or cumulative effect to be  
12 caused by geothermal development, Imperial County finds, pursuant  
13 to CEQA Guidelines Section 15145, that in fact, the 'potentially  
14 significant' water usage impact cannot be established.

15 7. Significant Effects: The level and salinity of  
16 the Salton Sea are functions of the interplay of a complex  
17 mosaic of natural phenomena, water users, sources and practices.  
18 Geothermal development at the Salton Sea may grow to be one  
19 of these users if water is needed to bring projects to 100%  
20 injection.

21 Statement of Facts: As discussed in the statements of  
22 fact and the findings relating to Significant Effect No. 6,  
23 above, coordination of water development for geothermal use  
24 with other water management activities in the Salton Sea  
25 area can contribute to ameliorating the rising salinity and  
26 sea level (MEIR, p. 3.2-41). Although completion of a  
27 comprehensive water management plan for the Salton Sea area  
28 is not a necessary precondition for expansion of the G-Zone



1 or for geothermal development, the County encourages the  
2 responsible state agencies to invite affected agencies,  
3 groups, companies and individuals to participate in developing  
4 a comprehensive water management plan. This effort should  
5 include agencies and groups from federal, state, regional  
6 and local levels. It is infeasible at this time to require  
7 mitigation measures regarding the level and salinity of the  
8 Salton Sea. At the appropriate time, the County will consider,  
9 on a site-specific basis, which mitigation measures and  
10 alternatives should be employed for each individual project.

11 Finding: Specific economic, social, or other considerations  
12 make infeasible the specific mitigation measure herein  
13 identified in the MEIR (i.e., the completion of a comprehensive  
14 water management plan).

15 8. Significant Effects: The MEIR (p. 3.2-35) identifies  
16 that large geothermal fluid spills, which could occur during  
17 the operation of geothermal production projects within the  
18 G-Zone, could result in degradation of surface waters,  
19 including canals, drains, the Alamo River, and the Salton  
20 Sea.

21 Statement of Facts: Imperial County has required the  
22 following mitigation measures, as identified in the MEIR (p.  
23 3.2-42), of other geothermal projects within the County: 1)  
24 a system of pressure and flow sensing devices and regular  
25 inspection of all geothermal fluid lines which is capable of  
26 detecting leaks and spills; 2) the plant site and well pads  
27 be graded and constructed so that any spills are diverted  
28 into overflow brine ponds or storage basins; 3) additional

1 precautions, such as extra heavy pipe, block valves, or  
2 automatic injection pump shut-off and check valve systems,  
3 be installed at any drain, canal, or other water crossings  
4 as necessary; and 4) any geothermal production project  
5 permittee develop an emergency and disaster plan to reduce  
6 the extent and severity of any major fluid spill. The MEIR  
7 (p. 3.2-43) also identifies that "lined ditches beneath  
8 pipelines could possibly be used for some containment of  
9 some pipeline spills; however, concerns have been raised  
10 regarding the applicability of this method in all situations."  
11 Mechanical protective devices (such as berms at power plants,  
12 lined evaporation basins, lined ditches beneath pipelines,  
13 and heavier or double-walled pipes) can reduce the risk of  
14 spill occurrence if applied in some site-specific circumstances  
15 (MEIR, pp. 3.2-42, 43).

16 Imperial County will consider and may require all these  
17 mitigation measures of each geothermal production project  
18 proposed within this zone unless the subsequent, project-  
19 specific environmental document prepared for each project  
20 identifies mitigation measures which may be more appropriate  
21 or identifies that the impact is not significant and mitigation  
22 is not appropriate.

23 Finding: Imperial County will require for or incorporate  
24 into each site-specific project proposed within this zone  
25 changes or alterations which mitigate or avoid the significant  
26 environmental effects identified hereinabove.

27 Statement of Facts: The CRWQCB can and should require,  
28 in consultation with Imperial County, measures within their

1 responsibility and jurisdiction as appropriate to protect  
2 surface water quality to minimize the potential for geothermal  
3 fluids to accidentally enter any canals, drainage channels,  
4 or drains which could provide flow to the Salton Sea.  
5 Specifically, they should require, as recommended in the  
6 MEIR (p. 3.2-44), that a water quality monitoring program be  
7 instituted and maintained.

8       Finding: Changes or alterations required to mitigate  
9 or avoid the significant environmental effects identified  
10 hereinabove are within the responsibility and jurisdiction  
11 of another public agency (the CRWQCB), and such changes can  
12 and should be adopted, to the extent of its responsibility  
13 and jurisdiction, by such other agency.

14       9. Significant Effect: The MEIR (p. 3.2-37) identifies  
15 that cooling water blowdown discharge to agricultural waste  
16 water drains could result in surface water quality degradation  
17 in these drains.

18       Statement of Facts: The CRWQCB requires a National  
19 Pollution Discharge Elimination System Permit prior to the  
20 discharge of any waste fluid to a drain or other water  
21 course. The CRWQCB can and should require, in consultation  
22 with Imperial County, conditions in any such approved permit  
23 appropriate to prevent significant water quality degradation,  
24 especially that, as identified in the MEIR (p. 3.2-43), any  
25 such blowdown discharge contain no toxic materials.

26       Finding: Changes or alterations required to mitigate  
27 or avoid the significant environmental effects identified  
28 hereinabove are within the responsibility and jurisdiction

1 of another public agency (the CRWQCB), and such changes can  
2 and should be adopted, to the extent of its responsibility  
3 and jurisdiction, by such other agency.

4 10. Significant Effect: Flooding is a hazard faced by  
5 all facilities located adjacent to the Salton Sea, due to  
6 the rising level of the Sea.

7 Statement of Facts: Two steps may reduce the risk of  
8 flooding: raise the facilities above the Salton Sea level,  
9 or increase the height and resistance of the surrounding  
10 protective levees (MEIR, p. 3.2-45). Since geothermal  
11 developers will undoubtedly want to protect their investment,  
12 they will normally undertake one or both of these actions  
13 without County direction. If they do not, one or both of  
14 these undertakings will be required as permit conditions.

15 Finding: Imperial County will require for or incorporate  
16 into each site-specific project proposed within this zone  
17 changes or alterations which mitigate or avoid the significant  
18 environmental effects identified hereinabove.

19 CLIMATOLOGY

20 In General

21 Each site-specific project will have changes or alterations  
22 incorporated into it to mitigate its climatological impacts.  
23 Therefore geothermal development in the G-Zone expansion  
24 will not have a significantly adverse effect on climatology  
25 in Imperial County.

26 11. Significant Effect/Statement of Facts/Finding:  
27 Localized humidity increases (from evaporation from cooling  
28 towers) have shown only beneficial changes on plant growth.

1 Therefore no mitigation is desirable.

2 12. Significant Effect: On a few days per year in the  
3 Imperial Valley, meteorologic conditions are conducive to  
4 fogging.

5 Statement of Facts: Orientation of the cooling towers  
6 with the axis parallel to the highest winds may minimize  
7 this problem (MEIR, p. 3.3-9). However, this reduces the  
8 efficiency of the cooling tower. Therefore, this requirement  
9 will be considered on a site-specific basis.

10 Finding: Imperial County will require for or incorporate  
11 into each site-specific project proposed within this zone  
12 changes or alterations which mitigate or avoid the significant  
13 environmental effects identified hereinabove.

14 AIR QUALITY

15 In General

16 Each site-specific project will have changes or alterations  
17 incorporated into it to mitigate its air quality impacts.  
18 Therefore geothermal development in the G-Zone expansion  
19 will not have a significantly adverse effect on air quality  
20 in Imperial County.

21 - 13. Significant Effects: The MEIR (p. 3.4-8) identifies  
22 that fugitive dust from soil-disturbing activities could  
23 produce a temporary but significant increase in the already  
24 significant dust problems of the Imperial Valley.

25 Statement of Facts: Imperial County has required those  
26 mitigation measures identified in the MEIR (p. 3.4-26) of  
27 other geothermal production projects within the County:  
28 that fugitive dust emissions be controlled by applying dust



1 control measures (such as watering, clean gravel, or application  
2 of soil stabilizers or oil) to access roads, well pads, and  
3 the plant site area; enforcing reduced speed travel on  
4 unpaved roadways; and limiting public access to well sites  
5 and other unpaved areas.

6 Imperial County will consider and may require all these  
7 mitigation measures of each geothermal production project  
8 proposed within this zone unless the subsequent, project-  
9 specific environmental document prepared for each project  
10 identifies mitigation measures which may be more appropriate  
11 or identifies that the impact is not significant and mitigation  
12 is not appropriate.

13 Finding: Imperial County will require for or incorporate  
14 into each site-specific project proposed within this zone  
15 changes or alterations which mitigate or avoid the significant  
16 environmental effects identified hereinabove.

17 14. Significant Effects: The MEIR (p. 3.4-13) identifies  
18 that hydrogen sulfide emissions from geothermal power plants  
19 built within the G-Zone and in adjacent areas may create an  
20 adverse odor nuisance downwind from individual power plants  
21 and could, in combination, raise hydrogen sulfide levels to  
22 cause violations of the California hydrogen sulfide ambient  
23 air quality standard.

24 Statement of Facts: Hydrogen sulfide (H<sub>2</sub>S) can cause  
25 odors around geothermal projects. Since H<sub>2</sub>S travels with  
26 the wind, power plants should not be lined up parallel with  
27 principal wind directions, and projects should be located  
28 sufficiently far from populated areas to prevent exceeding

1 the state ambient H<sub>2</sub>S standard in those areas. The MEIR (p.  
2 3.4-27) states that power plants should be sited within the  
3 zone so as to reduce the potential for overlap of hydrogen  
4 sulfide pollution plumes and sited so as to be at least 0.6  
5 miles from populated and other sensitive areas. Imperial  
6 County has also required other geothermal production projects  
7 within the County to be designed with a system of hydrogen  
8 sulfide control approved by the Imperial County Air Pollution  
9 Control District ("ICAPCD") and that all harmful or noxious  
10 emissions and odors be controlled so that State standards  
11 are not exceeded nor public nuisances created.

12 / The County, to the extent feasible for specific projects,  
13 may require that future siting efforts avoid lining up power  
14 plants along major wind axes, that all plants be sited  
15 sufficiently removed from populated and sensitive areas, and  
16 that ambient H<sub>2</sub>S levels be monitored near plants to determine  
17 if air standards are being violated and thus require supplemental  
18 abatement.

19 Imperial County will consider and may require all these  
20 mitigation measures of each geothermal production project  
21 proposed within this zone unless the subsequent, project-  
22 specific environmental document prepared for each project  
23 identifies mitigation measures which may be more appropriate  
24 or identifies that the impact is not significant and mitigation  
25 is not appropriate.

26 Finding: Imperial County will require for or incorporate  
27 into each site-specific project proposed within this zone  
28 changes or alterations which mitigate or avoid the significant

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1 environmental effects identified hereinabove.

2 statement of Facts: The ICAPCD requires that any  
3 proponent of a geothermal production project obtain an  
4 approved Authority to Construct prior to commencing operations.  
5 The ICAPCD may require an H<sub>2</sub>S monitoring program to determine  
6 source contributions and dispersal patterns if H<sub>2</sub>S begins to  
7 become a problem. Abatement devices and techniques will be  
8 required by the ICAPCD permits on new projects on a case-by-  
9 case basis if the State ambient H<sub>2</sub>S standard will be exceeded  
10 (MEIR, p. 3.4-27). The ICAPCD is responsible for review of  
11 applicability of regulations to geothermal projects (Geo.  
12 El., p. 69), and for approval of geothermal projects according  
13 to the Rules and Regulations of the ICAPCD. The ICAPCD can  
14 and should require, in consultation with Imperial County,  
15 and to the extent of its responsibility and jurisdiction,  
16 those mitigation measures identified in the MEIR (p. 3.4-  
17 27): monitoring of ambient hydrogen sulfide levels near  
18 plants to determine if air standards are being violated;  
19 geothermal production projects to be designed so that hydrogen  
20 sulfide abatement equipment can be retrofitted should it  
21 prove necessary; and geothermal production projects to  
22 retrofit supplemental hydrogen sulfide abatement equipment,  
23 if necessary.

24 Finding: Changes or alterations required to mitigate  
25 or avoid the significant environmental effects identified  
26 hereinabove are within the responsibility and jurisdiction  
27 of another public agency (the ICAPCD), and such changes can  
28 and should be adopted, to the extent of its responsibility

1 and jurisdiction, by such other agency.

2 15. Significant Effect/Statement of Facts/Finding:

3 Predicted concentration of non-H<sub>2</sub>S gaseous emissions are so  
4 far below health standards that their impacts will be negligible  
5 (MEIR, p. 3.4-22).

6 16. Significant Effect: The MEIR (p. 3.4-22) identifies  
7 that operation of cooling towers or other cooling devices  
8 could generate solid materials which enter the atmosphere  
9 via drift droplets which could: (1) remain suspended in the  
10 atmosphere for long periods and contribute to the Imperial  
11 Valley's already high particulate levels; (2) result in  
12 concentrated saline droplets being deposited on nearby  
13 agricultural lands; and (3) result in other materials,  
14 either added to the cooling water or contained within the  
15 geothermal steam, being deposited on nearby agricultural  
16 lands or inhaled by humans or animals.

17 Statement of Facts: The MEIR (p. 3.4-27) states that  
18 to mitigate the impacts of drift droplets, geothermal production  
19 projects constructed within the zone should: (1) utilize  
20 cooling towers with high drift elimination efficiency; (2)  
21 orient cooling towers along the axis of maximum wind speeds  
22 to reduce downwash potential; (3) organize plant layouts to  
23 site cooling towers away from adjacent fields to prevent  
24 deposition of heavy splash droplets; and (4) monitor cooling  
25 water chemistry.

26 Imperial County will consider and may require all these  
27 mitigation measures of each geothermal production project  
28 proposed within this zone unless the subsequent, project-

1 specific environmental document prepared for each project  
2 identifies mitigation measures which may be more appropriate  
3 or identifies that the impact is not significant and mitigation  
4 is not appropriate.

5 Finding: Imperial County will require for or incorporate  
6 into each site-specific project proposed within this zone  
7 changes or alterations which mitigate or avoid the significant  
8 environmental effects identified hereinabove.

9 Statement of Facts: The ICAPCD, through its Authority  
10 to Construct permit procedure, can and should require, in  
11 consultation with Imperial County, and to the extent of its  
12 responsibility and jurisdiction, that the mitigation measures  
13 identified in the MEIR and described above are implemented  
14 to reduce the negative impacts of cooling tower drift.

15 Finding: Changes or alterations required to mitigate  
16 or avoid the significant environmental effects identified  
17 hereinabove are within the responsibility and jurisdiction  
18 of another public agency (the ICAPCD), and such changes can  
19 and should be adopted, to the extent of its responsibility  
20 and jurisdiction, by such other agency.

21 ACOUSTICAL

22 In General

23 Each site-specific project will have changes or alterations  
24 incorporated into it to mitigate its acoustical impacts.  
25 Therefore geothermal development in the G-Zone expansion  
26 will not have a significantly adverse effect on the acoustical  
27 environment in Imperial County.

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1           17. Significant Effect: The MEIR (p. 3.5-12) indicates  
2 that geothermal wellsite preparation, well drilling, well  
3 clean out and flow testing, power plant construction, and  
4 power plant operations will all contribute to an increase in  
5 ambient noise conditions, may be considered an irritant by  
6 local residents, and could be disruptive to wildlife.

7           Statement of Facts: Noise is a very site-specific,  
8 localized impact. It will be mitigated by a combination of  
9 siting, orientation, operational and mechanical control  
10 measures. The short-term, dispersed nature of combustion  
11 sources during construction (drilling rig, diesel engines,  
12 etc.) makes their impacts insignificant (MEIR, p. 3.4-26).  
13 Imperial County's "Terms, Conditions, Standards and Application  
14 Procedures for Initial Geothermal Development" require that  
15 any geothermal production project comply with Class I drilling  
16 and production noise standards as stated in that document.  
17 Imperial County will apply such terms, conditions, and  
18 standards to reduce the impact of geothermal projects.  
19 Imperial County has also required the following additional  
20 noise control measures, which are identified in the MEIR (p.  
21 3.5-37) of other geothermal productic projects within the  
22 County: hospital-type mufflers on all diesel equipment used  
23 within 1000 feet of any residence; mufflers on all well  
24 venting and testing equipment used within 1000 feet of any  
25 residence; limiting the hours of heavy truck traffic, well  
26 site preparation, and pipe racking within 1000 feet of any  
27 residence; in-line mufflers or rock mufflers to reduce power  
28 plant steam venting noise; blowoff silencers on noncondensable

1 gas vent stacks; shielding of the turbine/generator and  
2 condensor/air ejector; limiting the hours of hydroblaster  
3 use when used within 1000 feet of a residence; and limiting  
4 the daily or annual periods for drilling or testing of wells  
5 when located within 1000 feet of any sensitive wildlife  
6 areas.

7 Imperial County will consider and may require all the  
8 above-indicated mitigation measures of each geothermal  
9 production project proposed within this zone unless the  
10 subsequent, project-specific environmental document prepared  
11 for each project identifies mitigation measures which may be  
12 more appropriate or identifies that the impact is not  
13 significant and mitigation is not appropriate.

14 Finding: Imperial County will require for or incorporate  
15 into each site-specific project proposed within this zone  
16 changes or alterations which mitigate or avoid the significant  
17 environmental effects identified hereinabove.

18 BIOLOGICAL IMPACTS

19 In General

20 Each site-specific project will have changes or alterations  
21 incorporated into it to mitigate its biological impacts.  
22 Therefore geothermal development in the expanded G-Zone will  
23 not have a significantly adverse effect on the biological  
24 environment in Imperial County.

25 18. Significant Effect: The MEIR (p. 3.6-34) identifies  
26 that some loss of nonagricultural vegetation could occur  
27 from the construction of power plants, well pads, and other  
28 geothermal production facilities, in addition to the potential

1 loss of vegetation due to geothermal fluid spills and deposition  
2 of cooling water salt droplets.

3 Statement of Facts: The MEIR (p. 3.6-49) states that  
4 geothermal production project facilities proposed within the  
5 zone should be oriented away from the Desert Microphyll  
6 Woodland, Creosote Scrub, and other sensitive vegetation  
7 communities within the zone, and that site-specific springtime  
8 surveys should be conducted within these areas in order to  
9 determine the presence of sensitive plant species.

10 Imperial County will consider and may require all these  
11 mitigation measures of each geothermal production project  
12 proposed within this zone unless the subsequent, project-  
13 specific environmental document prepared for each project  
14 identifies mitigation measures which may be more appropriate  
15 or identifies that the impact is not significant and mitigation  
16 is not appropriate.

17 Finding: Imperial County will require for or incorporate  
18 into each site-specific project proposed within this zone  
19 changes or alterations which mitigate or avoid the significant  
20 environmental effects identified hereinabove.

21 19. Significant Effects: The MEIR (p. 3.6-36) indicates  
22 that geothermal production projects within this zone may  
23 result in a loss of wildlife habitat. The MEIR (p. 3.6-37)  
24 indicates such loss of habitat could adversely affect sensitive  
25 species, such as the Yuma Clapper Rail, the Black Rail, the  
26 Brown Pelican, and raptors. The MEIR (p. 3.6-38) indicates  
27 geothermal production project development within the northern  
28 part of the zone may have the potential to affect small

1 populations of the flat-tailed horned lizard. (For impacts  
2 on avian habitat, see No. 20; for impacts on aquatic resources,  
3 see No. 21.)

4       Statement of Facts: Onshore geothermal development  
5 will have negative effects on biological resources, and will  
6 impact principally on vegetation habitat and wildlife habitat,  
7 mainly waterfowl. The MEIR (see Figure 3.6-5, p. 3.6-29,  
8 entitled 'Habitat Sensitivity to Geothermal Development in the  
9 Study Area') indicates that approximately one-third of the  
10 acreage is in the 'major' or higher category and less than  
11 one-then of the acreage is in the 'maximum' sensitivity  
12 wildlife habitat within this zone." However, it does state  
13 (P. 3.6-49) that geothermal production projects within the  
14 zone should be oriented away from such sensitive habitat  
15 areas, as do exist, that a one-half mile buffer should be  
16 placed between sensitive areas and geothermal facilities,  
17 and that specific measures, such as noise attenuation devices  
18 or spill containment structures, may be required if these  
19 buffer zones must be encroached upon.

20       In addition, implementation of the measures described  
21 in the MEIR (p. 3.6-49) aimed at minimizing habitat loss in  
22 the small area affecting the flat-tailed horned lizard, as  
23 well as requiring site-specific biological surveys in all  
24 areas identified in the MEIR (p. 3.6-38) as potential flat-  
25 tailed horned lizard habitat should be considered.

26       In addition, Imperial County will consider and may  
27 require all these mitigation measures of each geothermal  
28 production project proposed within this Zone unless the

1 subsequent, project-specific environmental document prepared  
2 for each project identifies mitigation measures which may be  
3 more appropriate or identifies that the impact is not significant  
4 and mitigation is not appropriate.

5 Finding: Imperial County will require for or incorporate  
6 into each site-specific project proposed within this zone  
7 changes or alterations which mitigate or avoid the significant  
8 environmental effects identified hereinabove.

9 20. Significant Effect: The MEIR (pp. 3.6-38 to 3.6-  
10 42) identifies that geothermal production project development  
11 within the zone could result in impacts to avian resources  
12 as a result of habitat loss, noise, geothermal spills,  
13 aerial electric transmission lines and towers, impacts on  
14 refuges and gun clubs, and offshore geothermal facilities.  
15 In addition, transmission lines and towers will create  
16 collision potential for low-flying birds. Avian resources  
17 affected will be waterfowl, shore birds, and raptors.

18 Statement of Facts: The MEIR (P. 3.6-29 and p. 3.6-33)  
19 indicates that most of the transmission facilities to be  
20 developed as a result of geothermal development will be out of  
21 the major flyway sensitive areas, and therefore the potential  
22 for direct or indirect avian habitat loss is relatively low.  
23 In addition, there has been no demonstrated mortality resulting  
24 from existing geothermal or other development. However, the  
25 MEIR (p. 3.6-39) states that: geothermal facilities should  
26 be oriented away from refuges, gun clubs, and other sensitive  
27 habitats; that measures which minimize noise and geothermal  
28 spills in areas adjacent to these sensitive avian habitat



1 areas be implemented; and that measures to discourage or  
2 prevent avian entry into geothermal fluid storage ponds and  
3 reduce the potential for impact into aerial electric transmission  
4 lines be employed. The County, to the extent feasible for  
5 specific projects, may require that site specific studies be  
6 conducted to orient facilities away from sensitive vegetation  
7 and wildlife habitats and to avoid disturbing avian flight  
8 patterns where possible, that plants and pipelines be located  
9 at the edge of agricultural parcels and adjacent to existing  
10 roads, and that a one-half mile buffer between sensitive  
11 areas and geothermal facilities be considered for all projects.

12 / In the public hearing it was pointed out that carefully  
13 planned offshore and nearshore development may, in fact,  
14 benefit habitat and wildlife offshore. The dikes built and  
15 maintained by wildlife agencies on the southeast edge of the  
16 Salton Sea provide water impoundment and habitat for many  
17 wildfowl. Advance planning for geothermal development in or  
18 near the Sea will offer similar opportunities for more or  
19 better habitat, more fresh water availability, more recreational  
20 opportunities, and possibly a system to help reduce salinity  
21 in the Sea.

22 Therefore careful design to maximize benefits to wildlife  
23 plus other mitigation measures such as additional noise  
24 attenuation measures, spill containment structures, pond  
25 covers and transmission line siting and design should be  
26 considered for those projects near wildlife use areas. Site  
27 specific botanic studies or sensitive species studies may be  
28 required (MEIR, pg. 3.6-49 to 51) on a case-by-case basis.

1           Because power plants must be built in close proximity  
2 to geothermal wells, flexibility in siting transmission  
3 lines is limited. Minimized overhead crossing of the New  
4 and Alamo Rivers would reduce the potential for bird mortality.  
5 To further reduce the potential for avian mortality, under-  
6 grounding of transmission lines should be considered in  
7 major flight corridors such as the New and Alamo Rivers,  
8 within one mile of the shoreline and near the wildlife  
9 refuge and hunting clubs. Continuation of avian mortality  
10 and habitat studies currently being conducted by the U.S.  
11 Fish and Wildlife Service may be useful in future site  
12 specific studies for transmission line alignments (MEIR, p.  
13 3.6-51). Transmission lines will be constructed with appropriate  
14 conductor separation to minimize raptor electrocution.

15           Imperial County will consider and may require all these  
16 mitigation measures of each geothermal production project  
17 proposed within this zone unless the subsequent, project-  
18 specific environmental document prepared for each project  
19 identifies mitigation measures which may be more appropriate  
20 or identifies that the impact is not significant and mitigation  
21 is not appropriate.

22           Finding: Imperial County will require for or incorporate  
23 into each site-specific project proposed within this zone  
24 changes or alterations which mitigate or avoid the significant  
25 environmental effects identified hereinabove.

26           21. Significant Effect: The MEIR (pp. 3.6-42 to 3.6-  
27 49) identifies that aquatic resources found in the agricultural  
28 canals, drains, Alamo River, and the Salton Sea could be

1 adversely affected by either geothermal fluid spills or the  
2 extraction of surface water for geothermal operations.  
3 Offshore development could cause hydrologic and water quality  
4 deterioration in the Salton Sea. Aquatic resources adversely  
5 affected would be the sedentary species (pileworms and other  
6 invertebrates), the fishes, and algae species and resident  
7 fauna of the Salton Sea.

8 Statement of Facts: Fifty-four percent of the expanded  
9 KGRA will be in the offshore portion of the Salton Sea  
10 Anomaly. (MEIR, p. 2.2-1). The offshore is subject to the  
11 same impacts as onshore facilities; in addition, construction  
12 of islands, piers, and causeways and structures which reach  
13 high above the water level will have negative effects on  
14 rafting, feeding and aquatic habitat. (MEIR, p. 3.6-45).  
15 These impacts would be the loss of rafting areas would be  
16 partially offset by the creation of new habitat as fish and  
17 invertebrates are attracted to the newly construction islands,  
18 piers and causeways. Safety hazards may arise from the  
19 proximity of recreational users and offshore geothermal  
20 personnel, as well as boat and barge activity; however, the  
21 loss of recreational use will be partially offset by enhanced  
22 fishing if access is allowed along piers and causeways.

23 Since the Salton Sea and its rivers and wetlands are  
24 important wildlife habitat, special efforts should be made  
25 to prevent damage by spills of geothermal fluids. The MEIR  
26 (p. 3.6-51) states that geothermal wells or power plants  
27 near drains leading to the Salton Sea should be diked and  
28 fitted with blowout preventers. Also, mitigation measures

1 required to reduce the surface water quality degradation  
2 from geothermal fluid spills are equally applicable to  
3 reducing the potential for impact from these spills on  
4 aquatic resources. Selection of dredging periods for causeway  
5 construction should be responsive to the need to minimize impacts  
6 to habitat and disturbance to water-associated avitians  
7 and to prevent increasing suspended sediments among other  
8 considerations (MEIR, p. 3.6-51). Studies of aquatic ecosystems  
9 may be necessary prior to siting offshore structures (MEIR,  
10 p. 3.6-52).

11 The County, to the extent feasible for specific projects,  
12 may require limiting offshore exploratory and development  
13 activities to identified environmentally safe technologies  
14 and activities, the monitoring and study of identified  
15 impacts and development of appropriate mitigation measures  
16 to be required as specific conditions on future permits, and  
17 that priority consideration be given to placing offshore  
18 powerlines underground or underwater in the vicinity of  
19 major avian flight areas. Any geothermal production project  
20 within this zone which proposes to use significant quantities  
21 of surface water for project operations should be specifically  
22 evaluated for its impact on aquatic resources, and any  
23 comprehensive water management program undertaken for the  
24 Salton Sea, as recommended in the MEIR (p. 3.6-51), should  
25 specifically evaluate the potential impacts from water  
26 levels and salinity to aquatic resources.

27 Imperial County will consider and may require all these  
28 mitigation measures of each geothermal production project

1 proposed within this zone unless the subsequent, project-  
2 specific environmental document prepared for each project  
3 identifies mitigation measures which may be more appropriate  
4 or identifies that the impact is not significant and mitigation  
5 is not appropriate.

6 Finding: Imperial County will require for or incorporate  
7 into each site-specific project proposed within this zone  
8 changes or alterations which mitigate or avoid the significant  
9 environmental effects identified hereinabove.

10 CULTURAL RESOURCES

11 In General

12 / Each site-specific project will have changes or alterations  
13 incorporated into it to mitigate its cultural impacts.  
14 Therefore geothermal development in the expanded G-Zone  
15 will not have a significantly adverse effect on the cultural  
16 environment in Imperial County.

17 22. Significant Effect: The MEIR (p. 3.7-3) identifies  
18 that geothermal production project development within this  
19 zone could result in destruction of archaeological resources.

20 Statement of Facts: The MEIR (p. 3.7-4) states that  
21 archaeological sites should be preserved and protected  
22 primarily by avoidance. If this cannot be accomplished, the  
23 MEIR also states that site-specific archaeological investigations  
24 should be required. Imperial County has required the following  
25 of other geothermal production projects within the County:  
26 a site-specific cultural resource survey in any area where  
27 there is a potential for the discovery of archeological  
28 resources; if any unusual specimens of bone, stone, or



1 ceramic are discovered during construction, all construction  
2 affecting the discovery site shall cease until a qualified  
3 archaeologist, retained by the project permittee, reviews  
4 the specimens; and the recommendations of the archaeologist  
5 shall be complied with prior to resuming construction.

6 Imperial County will consider and may require all these  
7 mitigation measures of each geothermal production project  
8 proposed within this one unless the subsequent, project-  
9 specific environmental document prepared for each project  
10 identifies mitigation measures which may be more appropriate  
11 or identifies that the impact is not significant and mitigation  
12 is not appropriate.

13 Finding: Imperial County will require for or incorporate  
14 into each site-specific project proposed within this zone  
15 changes or alterations which mitigate or avoid the significant  
16 environmental effects identified hereinabove.

17 LAND USE

18 In General

19 Each site-specific project will have changes or alterations  
20 incorporated into it to mitigate its land use impacts.  
21 Therefore geothermal development in the expanded G-Zone will  
22 not have a significant adverse effect on land use in Imperial  
23 County.

24 23. Significant Effect: The MEIR (p. 3.8-45) identifies  
25 that geothermal production project development within the  
26 zone could result in direct impacts to agriculture through  
27 the displacement of a small amount of agricultural land, and  
28 also in indirect impacts to agriculture via the disruption

1 of farming activities from electric and fluid transmission  
2 line installation, traffic, and other operations.

3 Statement of Facts: The Geothermal Element to the  
4 General Plan of Imperial County states that "the County  
5 shall require that production facilities be sited in a  
6 manner designed to lessen impact on agriculture. Slant  
7 drilling may be required in irrigated areas when appropriate.  
8 Liquid transmission lines shall utilize existing easements  
9 or right of way whenever possible." While a loss of arable  
10 land cannot be completely avoided (MEIR, p. 3.8-41), careful  
11 power plant siting, directional drilling and pipeline design  
12 can reduce land consumption and minimize interference with  
13 agricultural activity (MEIR, p. 3.8-58). Transmission line  
14 construction should also be coordinated with local planning  
15 and irrigation schedules. Crop production should be allowed  
16 within right-of-way, and transmission lines should follow  
17 roads and canals when possible (MEIR, p. 3.8-58). In addition  
18 to the above, the MEIR (p. 3.8-58) identified other mitigation  
19 measures which Imperial County has required of other geothermal  
20 production projects within the County to minimize the impact  
21 of geothermal development activities on agricultural operations.  
22 These include transmission line siting and construction to  
23 avoid complication of the aerial application of agricultural  
24 materials and other agricultural activities, measures to  
25 avoid land subsidence which could disrupt the network of  
26 irrigation and drainage systems, measures to minimize the  
27 possibility of blowouts and geothermal fluid spills, and  
28 measures to minimize cooling tower drift. Imperial County

1 will consider and may require all these mitigation measures  
2 of each geothermal production project proposed within this  
3 zone unless the subsequent, project-specific environmental  
4 document prepared for each project identifies mitigation  
5 measures which may be more appropriate or identifies that  
6 the impact is not significant and mitigation is not appropriate.

7 Finding: Imperial County will require for or incorporate  
8 into each site-specific project proposed within this zone  
9 changes or alterations which mitigate or avoid the significant  
10 environmental effects identified hereinabove.

11 24. Significant Effect: The MEIR (p. 3.8-43) indicates  
12 that unrestricted geothermal development within the zone  
13 could conflict with the goal of the Imperial County General  
14 Plan Conservation Element to protect significant mineral  
15 resources.

16 Statement of Facts: The MEIR (p. 3.8-43) indicates  
17 that the Conservation Element designates certain lands in  
18 the extreme northeast corner of the zone as having potential  
19 for sand and gravel resources. The MEIR (p. 3.857) also  
20 indicates that the potential conflict between protection of  
21 these resources and development of the geothermal resources  
22 can be mitigated by avoiding the siting of geothermal facilities  
23 on these lands. Imperial County will require site-specific,  
24 review of geothermal projects for interference with sand and  
25 gravel extraction.

26 Finding: Imperial County will require for or incorporate  
27 into each site-specific project proposed within this zone  
28 changes or alterations which mitigate or avoid the significant

1 environmental effects identified hereinabove.

2 25. Significant Effect: The MEIR (p. 3.3-49) identifies  
3 that geothermal development within the zone has the potential  
4 for creating adverse impacts on recreational activities by  
5 changing the ambience of the region from rural agricultural  
6 environmental and desert playground to a more urban and  
7 industrialized area, and potentially limiting the recreational  
8 opportunities now available within the area.

9 Statement of Facts: The MEIR (p. 3.8-59) states that  
10 impacts to recreation will be largely avoided by zoning  
11 areas outside the Salton Sea. However, the MEIR also indicates  
12 that certain mitigation measures, such as consolidation of  
13 power lines, wells, plants, and pipelines where feasible to  
14 minimize the disruption of recreational activities and bird  
15 fatalities and slant drilling where appropriate, would  
16 reduce impacts to recreation. The potential impacts to  
17 recreational activities in the area can best be mitigated  
18 through planning and cooperation with the California Department  
19 of Fish and Game, U.S. Fish and Wildlife Service, and local  
20 sportsmen clubs (MEIR, p. 3.8-58). The County will comply  
21 with CEQA mandates which require consultation with government  
22 agencies and interested private parties which are potentially  
23 affected by projects approved by the County as a "lead  
24 agency".

25 Imperial County will consider and may require all these  
26 mitigation measures of each geothermal production project  
27 proposed within this zone unless the subsequent, project-  
28 specific environmental document prepared for each project

1 identifies mitigation measures which may be more appropriate  
2 or identifies that the impact is not significant and mitigation  
3 is not appropriate.

4 Finding: Imperial County will require for or incorporate  
5 into each site-specific project proposed within this zone  
6 changes or alterations which mitigate or avoid the significant  
7 environmental effects identified hereinabove.

8 26. Significant Effect: The MEIR identifies some  
9 competing land uses within the G-Zone (MEIR, p. 3.8-42).

10 Statement of Facts: In any situation where different  
11 types of land use coexist within the same zone, conflicts  
12 may occur. In such instances, two solutions are discussed:  
13 either lands designated Preservation, Recreation, Rural  
14 Residential and Open Space could be avoided, by geothermal  
15 development (which may be impractical in geothermal project  
16 areas), or various County land use planning documents could  
17 be revised on a case-by-case basis (MEIR, p. 3.8-57).  
18 Therefore, geothermal projects within the G-Zone will be  
19 required to consider the effects on adjacent land uses and  
20 on the land use planning documents which affect those lands.  
21 The County may then decide how best to mitigate identified  
22 impact.

23 Finding: Imperial County will require for or incorporate  
24 into each site-specific project proposed within this zone  
25 changes or alterations which mitigate or avoid the significant  
26 environmental effects identified hereinabove.

27 27. Significant Effect: The MEIR (p. 3.8-52) identifies  
28 that geothermal development within the zone could significantly



1 impact the urban area in and around the community of Niland.

2 Statement of Facts: Imperial County's "Terms, Conditions,  
3 Standards and Application Procedures for Initial Geothermal  
4 Development" specify that wells (and, presumably, power  
5 plants) must be sited a minimum distance from residences,  
6 schools, hospitals and any other development. The MEIR (p.  
7 3.8-60) also suggests that all power plants be sited greater  
8 than 0.5 miles from the Niland sphere of influence boundary  
9 unless such development is found to be consistent with  
10 County and municipal land use plans, and that class II  
11 standards should be applied to all development within 0.5  
12 mile of urban/residential areas. Only a small portion of  
13 the proposed G-Zone is near urbanized areas. Where proposed  
14 geothermal projects approach these areas, efforts will be  
15 made to site them as far away as feasible. Where this is  
16 impossible, as discussed in the MEIR (p. 3.8-60), additional  
17 mitigation measures will be required.

18 Imperial County will consider and may require all these  
19 mitigation measures of each geothermal production project  
20 proposed within this zone unless the subsequent, project-  
21 specific environmental document prepared for each project  
22 identifies mitigation measures which may be more appropriate  
23 or identifies that the impact is not significant and mitigation  
24 is not appropriate.

25 Finding: Imperial County will require for or incorporate  
26 into each site-specific project proposed within this zone  
27 changes or alterations which mitigate or avoid the significant  
28 environmental effects identified hereinabove.

1           28. Significant Effect: The safety hazard of transporting  
2 solid waste to the existing Class II-1 disposal site, roughly  
3 six miles west of Westmorland, will exist.

4           29. Significant Effect: The MEIR (p. 3.8-52) identifies  
5 that the increased traffic on surface streets and local  
6 highways during development, construction, and operation of  
7 geothermal facilities will constitute a significant, but to  
8 a large degree temporary, adverse impact on transportation  
9 and traffic in and around the area of the zone.

10           Statement of Facts: Imperial County has required the  
11 following mitigation measures identified in the MEIR (p.  
12 3.8-61) of other geothermal production projects within the  
13 County: onsite parking facilities; a proper escort with  
14 warning signs during the transportation of oversized equipment  
15 to minimize the impacts on transportation and traffic. In  
16 addition, the MEIR (p. 3.8-60) suggested that car-pooling of  
17 drilling and construction crews, staggering work shifts to  
18 mitigate concentrations of traffic, and railroad transport  
19 of the heaviest and largest power plant components, could be  
20 required if appropriate, to mitigate traffic and transportation  
21 impacts.

22           Imperial County will consider and may require all these  
23 mitigation measures of each geothermal production project  
24 proposed within this zone unless the subsequent, project-  
25 specific environmental document prepared for each project  
26 identifies mitigation measures which may be more appropriate  
27 or identifies that the impact is not significant and mitigation  
28 is not appropriate.

1 Finding: Imperial County will require for or incorporate  
2 into each site-specific project proposed within this zone  
3 changes or alterations which mitigate or avoid the significant  
4 environmental effects identified hereinabove.

5 Statement of Facts: Future plans for improving State  
6 Routes 86 and 111 would reduce potential accident hazards.  
7 Until that takes place, the potential hazard caused by left-  
8 turning trucks to the IT disposal site on State Route 86 has  
9 been mitigated by construction of a left turn pocket at the  
10 intersection (MEIR, p. 3.8-60, 61). Improvements to State  
11 Routes 86 and 111, identified in the MEIR (p. 3.8-60), are  
12 within the responsibility and jurisdiction of the California  
13 Transportation Agency (Caltrans). Caltrans can and should  
14 undertake these actions, in consultation with Imperial  
15 County, which could significantly reduce traffic and transportation  
16 impacts from geothermal developments within the zone.

17 Finding: Changes or alterations required to mitigate  
18 or avoid the significant environmental effects identified  
19 hereinabove are within the responsibility and jurisdiction  
20 of another public agency (Caltrans), and such changes can  
21 and should be adopted, to the extent of its responsibility  
22 and jurisdiction, by such other agency.

23 SOCIOECONOMICS

24 In General

25 Each site-specific project will have changes or alterations  
26 incorporated into it to mitigate its socioeconomic impacts.  
27 Therefore geothermal development in the expanded G-Zone will  
28 not have significantly adverse socioeconomic impact in

1 Imperial County.

2 30. Effect/Statement of Facts/Findings: The MEIR  
3 points out that geothermal production projects will have the  
4 effect of increasing population (MEIR, 3.9-22). The relocating  
5 population, however, would not represent a significant  
6 population addition to the Imperial Valley because it would  
7 be relatively small, occur over a 32-year development period  
8 and would be dispersed throughout the Valley (MEIR, pp. 3.9-  
9 22, 25).

10 31. Effect/Statement of Facts/Findings: The MEIR  
11 points out that geothermal production projects will have the  
12 effect of increasing employment (MEIR, p. 3.9-25). No  
13 significant adverse employment impacts are anticipated,  
14 however (MEIR, p. 3.9-47). Indeed, increased employment is  
15 viewed as a very positive effect of geothermal development.  
16 No mitigation is desirable.

17 32. Significant Effect: The MEIR (p. 3.9-27) identifies  
18 that geothermal development in and around the zone could  
19 produce a short-term demand for temporary housing, that the  
20 existing accommodations would be inadequate to satisfy.

21 Statement of Facts: If development occurs at a too  
22 rapid pace, some provisions should be made for housing for  
23 construction crews. The MEIR (p. 3.9-47) indicates that  
24 development of temporary housing, such as a trailer park or  
25 camp to house the construction workers, or arrangements with  
26 local hotel operators for long-term leases for adequate  
27 rooms, should be considered.

28 Imperial County will consider and may require all these

1 mitigation measures of each geothermal production project  
2 proposed within this zone unless the subsequent, project-  
3 specific environmental document prepared for each project  
4 identifies mitigation measures which may be more appropriate  
5 or identifies that the impact is not significant and mitigation  
6 is not appropriate.

7 Finding: Imperial County will require for or incorporate  
8 into each site-specific project proposed within this zone  
9 changes or alterations which mitigate or avoid the significant  
10 environmental effects identified hereinabove.

11 33. Significant Effect: The MEIR (p. 3.9-32) indicates  
12 that geothermal development within the zone may have a  
13 significant impact on the Niland Fire District's ability to  
14 provide protection from natural hazards.

15 Statement of Facts: The MEIR (p. 3.9-48) states that  
16 each geothermal facility proposed within the zone should be  
17 reviewed on a project-by-project basis to determine whether:  
18 the Niland Fire District has adequate capacity to assume  
19 total responsibility; necessary funding could be provided to  
20 equip the Niland Fire District as required; joint responsibility  
21 could be shared by several fire districts; or the private  
22 developer could assume responsibility and provide patrols  
23 for developments according to state and county standards.  
24 Alternatively, the MEIR stated that consideration should be  
25 given to establishing a special assessment district.

26 Imperial County will consider and may require all these  
27 mitigation measures of each geothermal production project  
28 proposed within this zone unless the subsequent, project-



1 specific environmental document prepared for each project  
2 identifies mitigation measures which may be more appropriate  
3 or identifies that the impact is not significant and mitigation  
4 is not appropriate. \* - -

5 Finding: Imperial County will require for or incorporate  
6 into each site-specific project proposed within this zone  
7 changes or alterations which mitigate or avoid the significant  
8 environmental effects identified hereinabove.

9 34. Significant Effect/Statement of Facts/Findings:

10 The MEIR indicates that geothermal production projects will  
11 increase property tax receipts by the County (p. 3.9-32).  
12 Property tax revenues derived from the assessed value of the  
13 completed geothermal facilities constitute a long term  
14 positive fiscal impact of the proposed G-Zone (MEIR, 3.9-  
15 32). No mitigation is desirable.

16 VISUAL RESOURCES.

17 35. Significant Effect: The MEIR (p. 3.10-1) identifies  
18 that the development of 29 plants and well fields within the  
19 Geothermal Zone, coupled with anticipated development to the  
20 west, could greatly change the visual and aesthetic character  
21 of the area.

22 Statement of Facts: Imperial County has required most  
23 of the following mitigation measures identified in the MEIR  
24 (p. 3.10-13) of other geothermal projects within the County:  
25 that all expansion loops in geothermal fluid lines be horizontal  
26 except where design constraints require otherwise; that  
27 shrubs, trees and ground cover be planted and maintained to  
28 complement the appearance of the project in accordance with

1 a landscaping plan approved by the County; that all lights  
2 be directed or shielded as to as to confine any direct rays  
3 to the site and be muted to the maximum extent consistent  
4 with safety and operational necessity; that geothermal  
5 development facilities be painted or wrapped with nonreflective  
6 colors to blend in as much as possible with the surrounding  
7 terrain to the extent consistent with safety and operational  
8 necessity; and that electric transmission lines be designed  
9 and constructed so as to minimize visual impacts.

10 Imperial County will consider and may require all these  
11 mitigation measures of each geothermal production project  
12 proposed within this zone unless the subsequent, project-  
13 specific environmental document prepared for each project  
14 identifies mitigation measures which may be more appropriate  
15 or identifies that the impact is not significant and mitigation  
16 is not appropriate.

17 Finding: Imperial County will require for or incorporate  
18 into each site-specific project proposed within this zone  
19 changes or alterations which mitigate or avoid the significant  
20 environmental effects identified hereinabove.

21 C. FINDINGS REGARDING  
22 CONSIDERATION OF ALTERNATIVES  
23 TO REZONING

24 In addition to the above findings and mitigation measures,  
25 the Board reviewed six basic alternatives to the proposed  
26 rezoning. They were:

27 Alternative 1. No Project (MEIR, pp. 7-1).

28 Since the existing G-Zone encompasses about 26,000

1 acres (including approximately 6,000 acres lying north, west  
2 and south of the community of Niland recently added to the  
3 pre-existing zone), there still could be substantial geothermal  
4 development even if this project of rezoning to 111,444  
5 acres were not approved. The effect of non-approval could  
6 reduce some of the expected impacts to boating, recreation,  
7 waterfowl, and aquatic biology on the Salton Sea. But by  
8 the same token, it is possible that the no project alternative  
9 could result in increased pressures for development within  
10 the existing G-Zone in order to more fully tap the heat  
11 stored in the reservoir. Similarly, even without an enlargement  
12 of the zone, geothermal developers could attempt to obtain  
13 approval in the larger area on a case-by-case basis, thus  
14 defeating the purpose of the Master EIR approach.

15 In either event, it is clear that both approval and  
16 non-approval will result in geothermal development in some  
17 of the area. Non-approval will not accomplish the goal of  
18 timely development of the large geothermal resource at the  
19 Salton Sea KGRA.

20 Alternative 2. Different Boundaries (MEIR, p. 7-2).

21 (a) Exclusion of offshore areas. This alternative  
22 would have little direct effect on any geothermal plants  
23 before 1990, because no offshore power plants are even  
24 anticipated until about that time. It would reduce the  
25 impact of development on the Sea, and allow for possible  
26 future development offshore when plans become firmer and  
27 solutions to identified problems have been better formulated.  
28 However, it would also foreclose the tapping of a large

1 portion of the geothermal reservoir which underlies portions  
2 of the Salton Sea and it is possible that this alternative  
3 would impair planning for the future orderly development of  
4 this reservoir by geothermal developers and thus delay the  
5 creation of offshore geothermal technology. Thus, a variety  
6 of opportunities for water quality, biological, and recreational  
7 enhancement might be lost by adopting this alternative.

8 (b) Selective expansion (into areas to be developed in  
9 the next 10-20 years). Figure 2.5-3 of the MEIR identifies  
10 seven such areas. This would permit the current plans of  
11 developers to be realized while limiting growth in areas not  
12 known to contain resources. However, it does not allow the  
13 flexibility necessary to developers who may discover resources  
14 in the non-G-Zone area. It prevents smooth planning. And,  
15 the goals of selective expansion can more easily, fairly and  
16 precisely be accomplished by the case-by-case consideration  
17 of each proposed project rather than blanket exclusions such  
18 as this alternative offers.

19 (c) Expansion into new KGRA area. Roughly 5120 acres  
20 of the Salton Sea KGRA were not included in this MEIR because  
21 they were added to the KGRA by the United States Geological  
22 Survey after the study began. Additional studies on this  
23 land would be necessary before it could be added to the G-  
24 Zone.

25 (d) Remove part of existing G-Overlay Zone. This  
26 could reduce impacts on some sensitive areas such as avian  
27 flyways and buffer zones, but would also remove some very  
28 promising development areas. Permit conditions can adequately

1 protect the biological and land use values while allowing  
2 development to proceed.

3 Alternative 3. Different Development Scenarios (MEIR,  
4 p. 7-4).

5 (a) Ultimate development--worst case. If 4000 MW were  
6 developed instead of 1400 MW, most of the impacts would be  
7 2-3 times greater. However, greater efforts could be made  
8 to keep impacts at an absolute minimum for each individual  
9 project, thus keeping the aggregate impact to an acceptable  
10 level.

11 (b) Different rate of development. The MEIR postulated  
12 three different growth rates: slow, medium and fast. The  
13 MEIR studies the medium rate most intensively, but all three  
14 have similar impacts in the next few years, and all three  
15 are major projects within 30 years. The same general impacts  
16 would probably eventually occur, regardless of the rate of  
17 growth. Adoption of this alternative would not prevent the  
18 impacts.

19 Alternative 4. Support System Alternatives -- Transmission  
20 Lines and Switching Facilities (MEIR, p. 7-11).

21 (a) Direct transmission via small lines. This alternative  
22 would result in more lines and more construction and operation  
23 impact than the other alternatives under consideration.

24 (b) Direct transmission via a combination of small-  
25 and mid-sized lines. The impacts would be similar to (a)  
26 above, but slightly reduced. The impacts would still be  
27 greater than the selected program.

28 /



1 (c) Direct transmission to a centralized switchyard.

2 This option would reduce the number of transmission lines  
3 and decrease the overall environmental disruption. It is  
4 also consistent with the energy conservation goals of the  
5 California Energy Commission by minimizing transmission line  
6 losses. Utilities will work with IID on determining the  
7 most efficient transmission system as the area develops.  
8 Until plant locations are known, final plans for this alternative  
9 cannot be completed.

10 Alternative 5. Offshore Alternatives (MEIR p. 7-15).

11 Various sections of the MEIR deal with this alternative.  
12 Principal variables are the evolving technologies and the  
13 various types of development which might be proposed. Man-  
14 made islands, dikes and reclamation, or steel or concrete  
15 piers are discussed. Each has advantages and drawbacks, and  
16 cannot be fully evaluated until a specific project is proposed.  
17 Therefore, the merits of this alternative cannot be determined.

18 Alternative 6. Alternative Technologies (MEIR, p. 7-  
19 15).

20 (a) Binary Conversion Cycle. This could be a feasible  
21 technology for use in the Salton Sea G-Zone. It will require  
22 an outside source of cooling water, but will inject 100% of  
23 its produced fluid. This technology reduces air emissions  
24 and the potential for subsidence over a flash plant.

25 (b) Wet-Dry Cooling Towers. These towers conserve  
26 water by cooling with air during cooler night hours, but  
27 they are very costly. If water for cooling becomes a critical  
28 factor, use of these devices, or additional dry components

1 added to existing wet towers, is possible.

2 The Board finds, pursuant to Public Resources Code  
3 Section 21081(c) that, the present impossibility of determining  
4 whether these project alternatives will be necessary to  
5 reduce or eliminate any remaining environmental effects, the  
6 lack of information as to the magnitude of remaining environmental  
7 effects for individual projects, and the future economic and  
8 technological feasibility of the alternative, make it infeasible  
9 for the Board to adopt any of these project alternatives.

10 IV. STATEMENT OF OVERRIDING CONSIDERATIONS

11 As stated above, the zoning expansion will not in  
12 itself create direct environmental consequences. Consequently,  
13 the County cannot determine whether a Statement of Overriding  
14 Considerations truly is necessary. In any event, overriding  
15 considerations justify the zoning expansion, as indicated  
16 herein.

17 The implementation of the mitigation measures as stated  
18 above in the report of Environmental Impact Findings, or  
19 such other measures as may subsequently be determined to be  
20 appropriate, substantially reduce, mitigate, or avoid nearly  
21 all of the significant, adverse impacts identified in Section  
22 III of the MEIR. However, as stated in the MEIR (p. 4-1),  
23 "Development as planned will result in unavoidable adverse  
24 impacts because complete mitigation is not possible by any  
25 reasonable means." Thus, these required mitigation measures  
26 do not fully mitigate or avoid certain of the adverse impacts  
27 indicated in the MEIR. Section IV of the MEIR describes  
28 these and other unavoidable adverse impacts which will

1 result from geothermal development.

2 Also, the measures necessary to mitigate or avoid  
3 certain significant impacts identified in Section III of the  
4 MEIR cannot or may not be implemented because changes or  
5 alterations which may be required in the project to mitigate  
6 or avoid such impacts are either within the responsibility  
7 or jurisdiction of other agencies or are infeasible due to  
8 economic, social or technological considerations. To the  
9 extent such impacts are not fully mitigated or avoided, the  
10 risk of their occurrence is outweighed by the benefits  
11 (stated in the following paragraphs) that will be derived  
12 from approval of the project.

13 In addition, the MEIR (p. 7-2) states that "It is  
14 possible that the no project alternative could result in  
15 increased pressures for geothermal development within the  
16 existing G-Overlay Zone in order to more fully tap the heat  
17 stored in the reservoir. Thus the potential for adverse  
18 environmental impacts to sensitive areas within the G-Zone  
19 could conceivably intensify if the no project alternative  
20 were implemented."

21 Two issues (#6 - water use, and #19 - wildlife habitat)  
22 were discussed extensively, both in the MEIR and the public  
23 hearings. The impacts related to these issues are not all  
24 necessarily adverse, but rather, are difficult to quantify  
25 because the type and location of geothermal development  
26 which occurs will greatly affect the impacts.

27 Approval of this zoning change does not mean these two  
28 issues are ignored. The Board feels that each of these two

1 issues can best be mitigated by coordinated development.  
2 The Board finds that, considering the benefits which can  
3 accrue to the County, as indicated hereinbelow, this zoning  
4 change should be made. The ensuing geothermal developments  
5 can then be planned carefully to improve the water use (item  
6 #6) and the wildlife habitat (item #19) in Imperial County.

7 Rather than having an unmitigatable adverse impact on  
8 these two items, geothermal development can offer positive  
9 assistance on both. Geothermal development offers many  
10 opportunities for growth, innovation and environmental  
11 enhancement in the County, and this zoning change will help  
12 those improvements to happen.

13 Therefore, the Board of Supervisors approves the expansion  
14 of the Salton Sea Anomaly G-Zone, based on the following  
15 overriding considerations:

16 1. The MEIR (p. 3.9-25) and the hearing record identify  
17 that significant economic and social benefits can accrue to  
18 the County from the approval of this project. The zoning  
19 expansion is a necessary preliminary step to actual development  
20 of geothermal resources at the Salton Sea. Such development  
21 will ultimately produce major socio-economic benefits within  
22 the County including, but not limited to: increased employment  
23 for residents, in local construction jobs for 10 years and  
24 permanent local operation jobs (MEIR, pp. 3.9-25, 26);  
25 increased property values, increased property tax revenues  
26 and increased local sales and other taxes (MEIR, pp. 3.9-31  
27 to 47), increased demand for locally available goods and  
28 services, and a more diversified industrial base (MEIR, pp.

1 3.9-26, 27).

2 2. The MEIR indicates exclusion of offshore areas  
3 from the zoning expansion could ". . . impair the pursuit of  
4 offshore planning by the geothermal developers and thus  
5 further delay the creation of offshore geothermal technology  
6 and solutions." (MEIR, p. 7-2.) It is therefore essential  
7 to approve the zoning expansion so as to give impetus for  
8 long range planning and development of necessary technologies  
9 and mitigation measures.

10 3. Most of the zoning expansion area is already  
11 designated by the Federal Government as part of the Salton  
12 Sea Known Geothermal Resource Area. Based on earlier completed  
13 environmental review, the Bureau of Land Management currently  
14 is issuing geothermal development leases within the area.  
15 The State Lands Commission has also leased substantial land  
16 for geothermal development within the subject area. It is  
17 therefore critical for the County's zoning to encompass,  
18 among other lands, those areas recognized by the State and  
19 Federal Governments as candidates for geothermal development.  
20 Such zoning by the County is necessary to foster compatible  
21 planning efforts by County, State and Federal Governments.

22 4. The MEIR emphasizes that benefits in productivity  
23 outweigh the environmental impacts: "Full field development  
24 of 1400 MW of geothermal power will represent a significant  
25 mid- to long-term benefit in productivity. Although it is  
26 presently unknown how long the resource will last, and to  
27 what extent it may be considered renewable, projections of a  
28 resource production capability of 1400 MW for at least 30



1 years have been made. While development of the Salton Sea  
2 Anomaly will constitute only a small portion of the nation's  
3 total energy needs, it does represent an important alternate  
4 energy source which could help reduce dependence on foreign  
5 energy sources. The local and regional energy benefits are  
6 clear. In this context, the project is seen as being highly  
7 beneficial." (MEIR, Section VI, page 6-1).

8 5. Impacts, such as loss of agricultural land or  
9 habitat, can best be mitigated by the coordinated development  
10 of geothermal resources. Approving this project will assist  
11 in ensuring that geothermal development can be planned  
12 carefully to improve the environment of the area, ensure the  
13 coordination of geothermal development among State and  
14 Federal agencies, and enhance the coordination of the analysis  
15 and mitigation of adverse impacts that might occur as a  
16 result of geothermal development. There may now exist, or  
17 be in development, technologies which will more effectively  
18 mitigate some of the impacts identified in the MEIR but  
19 which either are not yet sufficiently developed or are  
20 currently too costly to permit their implementation. Approval  
21 of this project will stimulate the development of these  
22 technologies and create a cost-effective market for their  
23 use, and the County has reserved the right to require implementa-  
24 of such technologies when available and feasible.

25 The above resolution was offered by Supervisor SEABOLT,  
26 seconded by Supervisor BUCHER, and passed by the  
27 affirmative roll call vote of the members of the Board of  
28 Supervisors as follows: LEGASPI, BLUME, BUCHER,



1 SEABOLT, CURIEL

2 The above resolution was adopted at a regular meeting  
3 of the Board of Supervisors of the County of Imperial,  
4 California, held on this 11th day of December,  
5 1984.

6  
7 Kathy Jones  
8 KATHY JONES, Clerk of the Board  
9 of Supervisors of the County of  
10 Imperial, State of California.

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12  
13 The foregoing instrument is a correct copy  
14 of the original on file in this office

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Kathy Jones  
Clerk of the Board of Supervisors  
County of Imperial, State of California