

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 1×10^{-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 probably 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 (H₂S) can cause
25 odors around geothermal projects. Since H₂S 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 H₂S 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 H₂S 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

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 H₂S monitoring program to determine
6 source contributions and dispersal patterns if H₂S 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 H₂S 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-H₂S 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.

28 /

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. 3.6-33 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