CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

ORDER NO. 87-34

WASTE DISCHARGE REQUIREMENTS
FOR
ORMAT SYSTEMS, INC.
19.95 MW (GROSS) MODULAR BINARY POWER PLANT
AND GEOTHERMAL WELL FIELD
EAST MESA KNOWN GEOTHERMAL RESOURCE AREA (KGRA)
Imperial County

The California Regional Water Quality Control Board, Colorado River Basin Region, finds that:

1. Ormat Systems, Inc. (hereinafter also referred to as the discharger), 500 Dermody Way, Sparks, Nevada 89431, submitted a Report of Waste Discharge dated December 23, 1986.

2. The discharger proposes to construct a 19.95 MW (gross) modular binary power plant and to develop an associated geothermal well field in the East Mesa KGRA in Section 1, T16S, R16E, and Sections 5 and 6, T16S, R17E, SBB&M. The power plant would be constructed on a 9-acre sites in Section 6.

3. The proposed Project (Ormesa II Project) will be located within the southernmost portion of the area of operations of Waste Discharge Order No. 86-19 previously issued to Ormesa Geothermal for exploration and development well drilling and testing, and the construction and operation of a 30 MW (gross) binary electric generation facility essentially identical to the proposed Ormesa II Project.

4. The proposed Ormesa II Project will also be located within the area of operations of the Department of Energy (DOE) Geothermal Test facility, currently existing on Section 6, T16S, R17E, SBB&M, and subject to previous Waste Discharge Order No. 77-46. Three DOE wells, Wells No. 6-1, No. 6-2, and No. 5-1, currently exist within the area of operations.

5. The selection of geothermal well sites to be drilled and developed are dependent upon the results of proposed testing programs. Well locations identified by the discharger as probable locations are as follows:

replaced by 89-065

Well No. (Section 1, T16S, R16E, SBB&M)

83-1

Well No. (Sections 5 and 6, T16S, R17E, SBB&M)

31-6	18-5
33-6	31-5
66-6	61-5
72-6	64-5
14-5	88-5

6. The Water Quality Control Plan for the Colorado River Basin Region of California was adopted on November 14, 1984. The Basin Plan contains water quality objectives for the Imperial Hydrologic Unit.

7. Geothermal fluids in this portion of the East Mesa KGRA are known to have a Total Dissolved Solids concentration range of 1,600 mg/l to 15,000 mg/l. The fluid does not contain any constituents at levels, either in the fluid or in concentrated salt cake, which are classified as hazardous by the Department of Health Services, Toxic Substances Control Division, in accordance with California Administrative Code, Title 22, Chapter 30, Article 11, Section 66699.

   Reference:

   1. Report titled, "A Study to Determine the Environmental Effects of an Accidental Release of Hydrothermal Fluids on the East Mesa Ecosystem", Bureau of Reclamation, dated April 10, 1978.

   2. Other numerous sources, copies of which are available for review in the office of the Regional Board.

8. Production flow testing fluids would be discharged to lined storage basins, adjacent to the well heads, for temporary storage. These fluids would subsequently be removed and used on access roads, well pads, or other developed project locations for dust control and/or filtered and injected to the subsurface.

9. A mud pit, capable of containing the expected discharge of drilling mud and cuttings, would be constructed at each well site. Also, a lined storage basin capable of temporarily containing geothermal fluids from well cleanout, testing and start-up operations, including a two (2) foot freeboard, would be constructed at each well site.

10. The discharger plans to utilize liquid pentane as the hydrocarbon working fluid.

11. Shallow ground water produced from Water Well 1 located near the SW corner of Section 30, T15S, R17E, SBB&M has a reported Total Dissolved Solids (TDS) concentration of 1,600 mg/l.

12. Two shallow ponds, each approximately five acres in size, are located within the southeast quarter of the southwest quarter of Section 6, T16S, R17E, SBB&M, and immediately south just into Section 7, T16S, R17E, SBB&M. The Imperial Irrigation District's Highline Canal is located approximately 1 3/4 miles west of the proposed power plant site.

13. Mechanical draft cooling towers would be built at the power plant in one battery containing six cells. These cooling towers would be erected on a concrete basin which would be used for cooling water storage.

14. The geothermal fluid injection system would consist of injection pumps, distributing piping, injection well metering facilities, and other components necessary to dispose of the geothermal liquid from the power plant. Geothermal fluid treatment is not part of the geothermal fluid injection system at this time.

15. The Board has notified the discharger and interested agencies and persons of its intent to prescribe Waste Discharge Requirements for the proposed discharge.

16. The Board in a public meeting heard and considered all comments pertaining to the discharge.

17. The Regional Board approved on March 18, 1987 Negative Declaration SCH# 87021821, for this project in accordance with the California Environmental Quality Act and State Guidelines.

IT IS HEREBY ORDERED, Ormat Sytems, Inc. shall comply with the following:

A. Discharge Specifications

1. Neither the treatment nor the discharge of wastes shall create a pollution or a nuisance as defined in Division 7 of the California Water Code.

2. Geothermal cleanout fluid and geothermal test fluid shall be discharged for temporary storage into either:

   (a) Earthern basins with a minimum six inch thickness of clay lining having a coefficient of permeability of 1×10^{-6} cm/sec or less. Clay lining shall be defined as: at least 30 percent of the material, by weight, passing a No. 200 U.S Standard Sieve; or

   (b) Earthern basins lined with a plastic liner of not less than 40 mil thickness; or

   (c) Metal or other type containers as approved by the Executive Officer.

   All such basins or containers shall be protected and maintained to ensure their effectiveness.

These fluids shall be removed within 30 days, and discharged by subsurface injection or neutralized, as necessary, and spread without ponding on adjacent project operational property which is owned or controlled by the discharger, or a waste management unit approved by the Regional Board.

3. A minimum freeboard of at least two (2) feet shall be maintained at each temporary lined storage basin.

4. Fluids discharged by subsurface injection shall be injected below the fracture pressure of the receiving aquifer and of the confining layer immediately above the receiving aquifer.

5. Fluids discharged by subsurface injection shall not be injected into any subsurface aquifer which has a TDS concentration of less than 10,000 mg/l, unless the TDS concentration of the injection water is less than or equal to that of the receiving water or the discharger can demonstrate to the satisfaction of the Executive Officer that injection into said zone will not pose a threat to water quality.

6. Solids which may accumulate in the concrete cooling tower basin shall be removed and trucked to a disposal site acceptable to the Regional Board.

7. Prior to the disposal of any materials removed from the temporary storage basins other than by subsurface injection or surface discharge to access roads, well pads, or other developed project locations, the discharger shall inform the Executive Officer concerning the nature and volume of the materials and the proposed location of disposal.

8. Drilling mud and cuttings shall be discharged into lined temporary storage basins unless the discharger can demonstrate to the satisfaction of the Executive Officer that the drilling mud and cuttings are nontoxic. Nontoxic drilling mud and cuttings may be discharged into earthen temporary storage reserve basins (i.e. mud pits). The nontoxic residual drilling mud and cuttings discharged to the reserve basins shall be neutralized, as necessary, and spread on adjacent property which is owned or controlled by the discharger, or removed to a waste management unit approved by the Regional Board to receive such waste.

9. Final disposal of residual wastes and cleanup of containment basins and reserve basins shall be accomplished upon abandonment or closure of operations to the satisfaction of the Executive Officer. Lack of construction or operational activity on site for a period of one (1) year shall constitute abandonment for the purposes of this Order.

B. Provisions

1. The discharger shall comply with the "Monitoring and Reporting Program No. 87-34", and future revisions thereto, as specified by the Executive Officer.

2. At least ten days prior to the discharge of any material into a temporary lined storage basin, the discharger shall submit to the Regional Board a report signed by a California Registered Civil Engineer or a Certified Engineering Geologist advising the Executive Officer that the temporary lined storage basin and attendant facilities are constructed to meet the requirements of this Order.

3. The discharger shall submit to the Board, at least 30 days prior to commencement of operation at each well, a written report on the proposed method and estimated costs of cleanup and closure of each well site in a manner that will not adversely affect water quality.

4. This Order does not authorize violation of any federal, state, or local laws or regulations.

I, Arthur Swajian, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, Colorado River Basin Region, on March 18, 1987.

Arthur Swajian
Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

MONITORING AND REPORTING PROGRAM NO. 87-34
FOR
ORMAT SYSTEMS, INC.
19.95 MW (GROSS) MODULAR BINARY POWER PLANT
AND GEOTHERMAL WELL FIELD
EAST MESA KNOWN GEOTHERMAL RESOURCE AREA (KGRA)
Imperial County

Location of Discharge: Section 1, T16S, R16E, SBB&M
Sections 5 and 6, T16S, R17E, SBB&M

MONITORING

Ormesa Geothermal shall report monitoring data to the Regional Board in accordance with the following schedule:

1. The discharger shall submit to the Board, at least 30 days prior to commencement of operation at each well, a written report on the proposed method and estimated costs of cleanup and closure of each well site in accordance with requirements of Order No. 87-34.

2. At least ten (10) days prior to the discharge of any materials into a temporary storage basin or other container, the discharger shall submit to the Regional Board a report signed by a California Registered Civil Engineer advising the Executive Officer that the temporary storage basin and attendant facilities are constructed to meet the requirements contained in Board Order No. 87-34.

3. The discharger shall submit a monthly report containing the following information:

Constituents	Units	Reporting Frequency
a. Volume of discharges contained in each temporary storage basin.	Gallons	Monthly
b. Total dissolved solids concentration of waste fluid injected into each injection well.	mg/l	Monthly
c. Total dissolved solids concentration of ground water contained in strata proposed to receive waste fluid injection	mg/l	At least 10 days prior to commencement of injection

4. Immediate reporting of any accidental spillage or release of waste material, and immediate measures being taken to correct same and to limit detrimental effects.

5. Report of completion of removal of all geothermal waste from temporary storage basins within one week following completion of work.

6. At least ten days prior to destruction of each temporary storage basin, the discharger shall request a Regional Board staff inspection and approval of the cleanup procedures.

REPORTING

Except for Items 1 and 2, above, the monitoring program shall be implemented immediately upon commencement of discharge at each site.

Monthly reports shall be submitted to the Regional Board by the 15th day of the following month. Reports for Item 5 (above) shall be forwarded immediately and shall be preceded by phone communication to the Regional Board's office. Phone No. (619) 346-7491. Copies of the reports submitted to the Board pursuant to the Monitoring and Reporting Program shall be maintained at the operations site, and shall also be made available to staff of the Regional Board upon request.

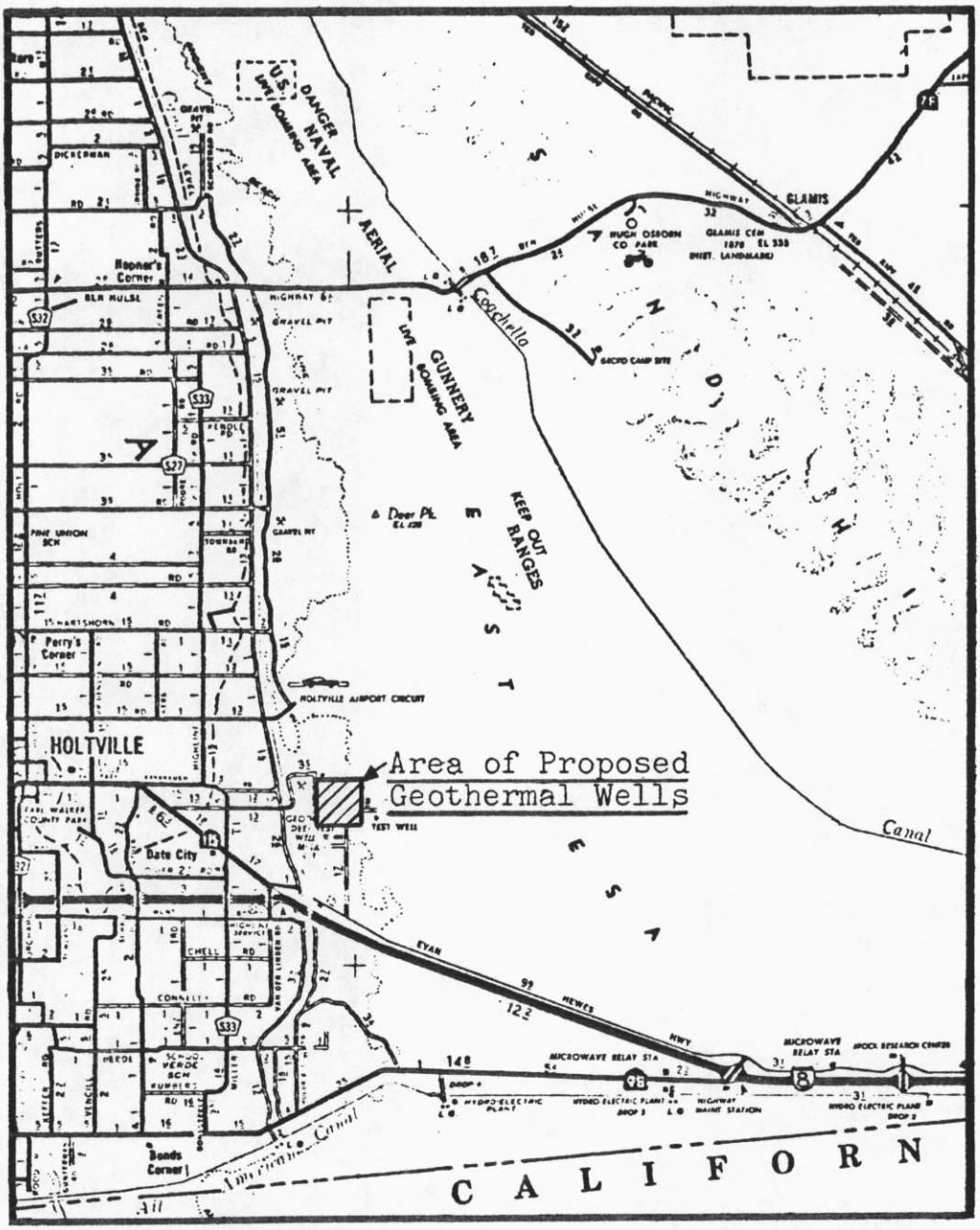
Mail reports to:

California Regional Water Quality Control Board
Colorado River Basin Region
73-271 Highway 111, Suite 21
Palm Desert, CA 92260

Ordered By: Arthur Unger
Executive Officer

March 18, 1987
Date

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD - 7

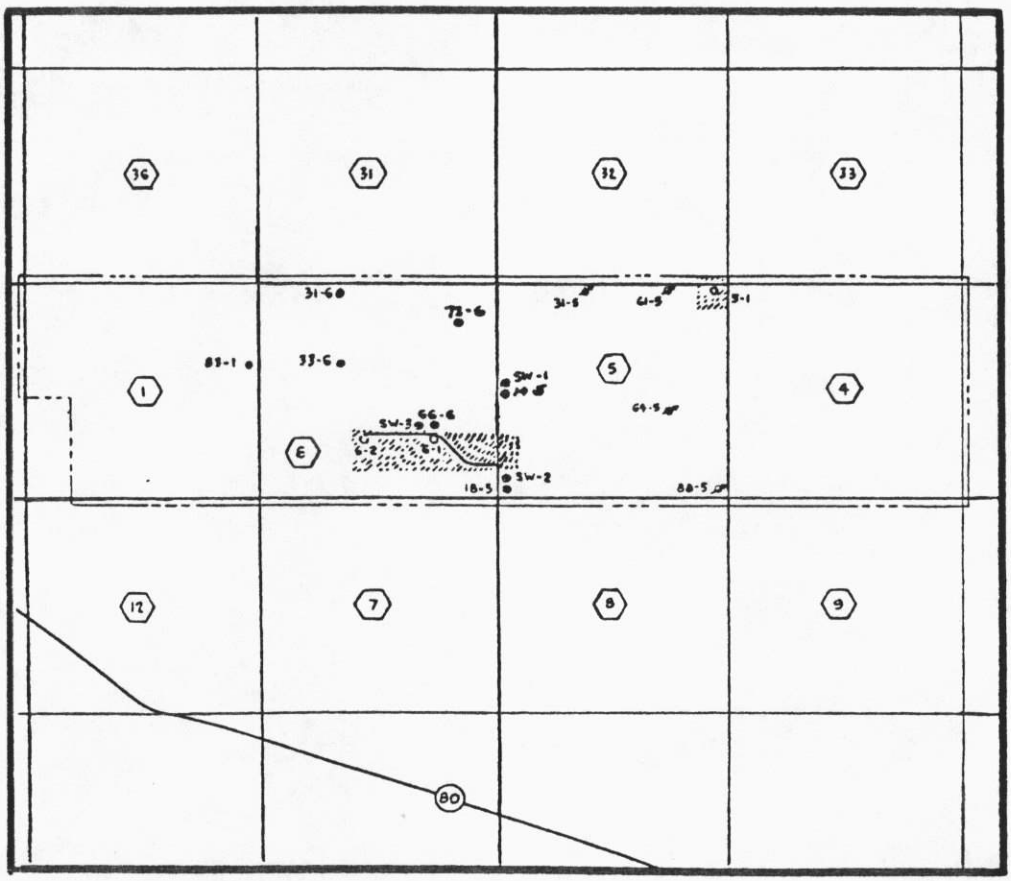


ATTACHMENT A

SITE MAP

ORMAT SYSTEMS, INC.
19.95 MW (GROSS) MODULAR BINARY POWER PLANT
AND GEOTHERMAL WELL FIELD
EAST MESA KNOWN GEOTHERMAL RESOURCE AREA (KGRA)
Imperial County

Order No. 87-34



N

Scale:
1" = 4.5 mi.

LEGEND

- Production Well (to be drilled)
- Injector Well (to be drilled)
- Sweetwater Well (to be drilled)
- Ormesa II Boundary
- USDOE Mesa Production Well (Existing)
- Department of Energy Area

ATTACHMENT B

ORMAT SYSTEMS, INC.
19.95 MW (GROSS) MODULAR BINARY POWER PLANT
AND GEOTHERMAL WELL FIELD
EAST MESA KNOWN GEOTHERMAL RESOURCE AREA (KGRA)
Imperial County

Order No. 87-34

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

INITIAL STUDY

SCH NO. 87021821

FOR

ORDER NO. 87-34

FOR

ORMAT SYSTEMS, INC.
19.95 MW (GROSS) MODULAR BINARY POWER PLANT
AND GEOTHERMAL WELL FIELD
EAST MESA KNOWN GEOTHERMAL RESOURCE AREA (KGRA)
Imperial County

CONTENTS

I. Description of Project

Ormat Systems, Inc. proposes to construct and operate a 19.95 MW (gross) modular binary power plant and geothermal well field development project on a Federal geothermal lease located on the East Mesa KGRA, Imperial County. The geothermal well field will utilize approximately 35 acres within Section 1 of T16S, R16E, and Sections 6 and 5 of T16S, R17E, SBB&M, and the power plant will be constructed on about 9 acres in one of two alternative locations in the SW¼ of Section 6, T16S, R17E, SBB&M.

The proposed Ormesa II Project consists of drilling, testing, construction, and operation of a geothermal production and injection well field; construction and operation of the related production and injection pipeline systems and surface facilities; and the construction and operation of a 19.95 MW (gross) binary electric power generation facility.

The geothermal well field will consist of up to seven (7) production wells and four (4) injection wells equipped with pumps, valves, controls, gathering and distribution pipelines and related electrical distribution lines. The geothermal fluid pumped from the geothermal production wells will be piped into the electrical generation facility. These production pipelines will be located adjacent to the access roads which lead to each geothermal production well. Electrical distribution lines will also be constructed next to the access roads to supply power to the production wellhead pumps. After the heat is extracted from the geothermal fluid in the binary utilization facility, the cooled fluid will be directed from the power plant, via surface pipelines constructed adjacent to the access roads, to injection wells to be injected into the geothermal reservoir.

The electrical generation facility will be comprised of 20 individual Ormat Energy Converters (OECs). Each OEC includes an evaporator/preheater, condenser, turbine, generator, motive fluid cycle pump, various control and safety valves, switches and pressure gauges, and complete internal piping connections. The individual OECs are interconnected in a two-level cascading configuration to maximize the overall efficiency of the power plant.

Approximately 3.5×10^{-6} lbs/hr of geothermal fluid at approximately 335°F will be delivered to the power plant. The fluid will be distributed to each OEC, where it will evaporate pentane, the working fluid, in a heat exchanger. The resulting vapor will power the binary turbine-generators. Cooling water for each of the OECs will be supplied from cooling towers. The cooling tower blowdown will either be piped west to the Imperial Irrigation District (IID) drain system and discharged; commingled with the spent geothermal fluid and injected into the geothermal injection reservoir; or injected into the geothermal reservoir via one or more dedicated wells. The required cooling tower makeup water will be obtained from either; up to three (3) shallow ground water wells to be drilled within the area of operations, or agricultural irrigation water obtained from the IID's East Highline Canal.

The project's net output of electricity will be sold under contract to the Southern California Edison Company (SCE). The energy produced from each OEC will be fed through each generator's breaker to the dedicated step-up transformer and connected via a common 13.8 kV bus to the group 13.8/92 kV main step-up transformer. Each main transformer is connected through a 92 kV circuit breaker and disconnector to the common 92 kV IID transmission system via approximately ¼ mile of new transmission line where the electricity is then wheeled to the SCE grid.

Environmental Setting

The vicinity in the area of proposed operations is a desert environment dominated by creosote bush vegetational community and wildlife habitat. Various exploratory and developmental geothermal resource projects are in existence or proposed in the area including the nearly identical 30 MW (gross) Ormesa Geothermal modular binary power plant and geothermal well field project located approximately two miles north; the 10 MW (gross) Magma Power Company binary power plant and geothermal well field located about one mile south; and the U.S. Department of Energy Geothermal Component Test Facility located immediately adjacent. The proposed Ormesa II Project lies entirely within the area of operations approved by the California Regional Water Quality Control Board, Colorado River Basin Region for the Ormesa Geothermal Project in Waste Discharge Order No. 86-19 (SCH No. 86022622).

The East Highline Canal is about one and one-half miles west of the project site and the agricultural portion of the Imperial Valley is immediately west of the canal. The incorporated community of Holtville is the nearest populated area and is about seven (7) miles northwest of the project site. Imperial County, through its Geothermal Element, has recognized and approved the East Mesa as a probable area of geothermal resource development.

III. Environmental Impacts

	YES	MAYBE	NO
1. Earth. Will the proposal result in:			
a. Unstable earth conditions or in changes in geologic substructures?	___	___	X
b. Disruptions, displacements, compaction or overcovering of the soil?	X*	___	___
c. Change in topography or ground surface relief features?	X*	___	___
d. The destruction, covering or modification of any unique geological or physical features?	___	___	X
e. Any increase in wind or water erosion of soils, either on or off the site?	___	X*	___
f. Changes in deposition or erosion of beach sands, or changes in siltation, depositions or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet or lake?	___	___	X
g. Exposure of people or property to geologic hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards?	___	X*	___
2. Air. Will the proposal result in:			
a. Substantial air emissions or deterioration of ambient air quality?	___	X*	___
b. The creation of objectionable odors?	___	X*	___
c. Alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally?	___	___	X

* See Part IV

	YES	MAYBE	NO
3. Water. Will the proposal result in:			
a. Changes in currents, or the course or direction of water movements, in either marine or fresh water?	___	___	X
b. Change in absorption rates, drainage pattern, or the rate and amount of surface water runoff?	___	___	X
c. Alterations to the course or flow of flood waters?	___	___	X
d. Change in the amount of surface water in any water body?	___	X*	___
e. Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity?	X*	___	___
f. Alteration of the direction or rate of flow of ground waters?	___	X*	___
g. Change in quantity of ground waters, either through direct additions or withdrawals, or through interception of the aquifer by cuts or excavations?	___	X*	___
h. Substantial reduction in the amount of water otherwise available for public water supplies?	___	___	X
i. Exposure of people or property to water related hazards such as flooding or tidal waves?	___	___	X
4. Plant Life. Will the proposal result in:			
a. Change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, microflora and aquatic plants)?	___	___	X
b. Reduction of numbers of any unique, rare or endangered species of plants?	___	X*	___

* See Part IV

	YES	MAYBE	NO
c. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?	___	___	X
d. Reduction in acreage of any agricultural crop?	___	___	X
5. Animal Life. Will the proposal result in:			
a. Change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, insects or microfauna)?	___	___	X
b. Reduction of the numbers of any unique, rare or endangered species of animals?	___	X*	___
c. Introduction of new species of animals into an area, or result in barrier to the migration or movement of animals?	___	___	X
d. Deterioration to existing fish or wildlife habitat?	X*	___	___
6. Noise. Will the proposal result in:			
a. Increases in existing noise levels?	X*	___	___
b. Exposure of people to severe noise levels?	___	___	X
7. Light and Glare. Will the proposal produce new light or glare?	___	___	X
8. Land Use. Will the proposal result in a substantial alteration of the present or planned land use of an area?	___	___	X
9. Natural Resources. Will the proposal result in:			
a. Increase in the rate of use of any natural resources?	X*	___	___
b. Substantial depletion of any nonrenewable resource?	___	___	X

* See Part IV

	YES	MAYBE	NO
10. Risk of Upset. Does the proposal involve a risk of an explosion or the release of hazardous substances (including, but not limited to, oil, pesticides, chemicals or radiation) in the event of an accident or upset condition?	___	X*	___
11. Population. Will the proposal alter the location, distribution, density or growth rate of the human population of an area?	___	___	X
12. Housing. Will the proposal affect existing housing, or create a demand for additional housing?	___	___	X
13. Transportation/Circulation. Will the proposal result in:			
a. Generation of substantial additional vehicular movement?	___	___	X
b. Effects on existing parking facilities, or demand for new parking?	___	___	X
c. Substanial impact upon existing transportation systems?	___	___	X
d. Alterations to present patterns of circulation or movement of people and/or goods?	___	___	X
e. Alterations to waterborne, rail or air traffic?	___	___	X
f. Increase in traffic hazards to motor vehicles, bicyclists or pedestrians?	___	___	X
14. Public Services. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas:			
a. Fire protection?	___	___	X
b. Police protection?	___	___	X
c. Schools?	___	___	X

* See Part IV

	YES	MAYBE	NO
d. Parks or other recreational facilities?	___	___	X
e. Maintenance of public facilities, including roads?	___	___	X
f. Other governmental services?	___	___	X
15. Energy. Will the proposal result in:			
a. Use of substantial amounts of fuel or energy?	___	___	X
b. Substantial increase in demand upon existing sources of energy, or require the development of new sources of energy?	___	___	X
16. Utilities. Will the proposal result in a need for new systems, or substantial alterations to the following utilities:			
a. Power or natural gas?	___	___	X
b. Communications systems?	___	___	X
c. Water?	___	___	X
d. Sewer or septic tanks?	___	___	X
e. Storm water drainage?	___	___	X
f. Solid waste and disposal?	___	___	X
17. Human Health. Will the proposal result in:			
a. Creation of any health hazard or potential health hazard (excluding mental health)?	___	___	X
b. Exposure of people to potential health hazards?	___	___	X
18. Aesthetics. Will the proposal result in the obstruction of any scenic vista or view open to the public, or will the proposal result in the creation of an aesthetically offensive site open to public view?	___	___	X

* See Part IV

	YES	MAYBE	NO
19. Recreation. Will the proposal result in an impact upon the quality or quantity of existing recreational opportunities?	___	___	X
20. Archeological/Historical. Will the proposal result in an alteration of a significant archeological or historial site, structure, object or building?	___	___	X
21. Mandatory Findings of Significance.			
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	___	___	X
b. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definitive period of time while long-term impacts will endure well into the future.)	___	___	X
c. Does the project have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environment is significant.)	___	_	X
d. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	___	___	X

* See Part IV

IV Discussion of Environmental Evaluation (as asterisked on previous pages)

Earth

1.b. During power plant, well pad, and sump construction, it will be necessary to displace several acres of sandy soil and to cover the site(s) with sufficient materials (clay or gravel) to provide suitable soil base for access.

1.c. As much as forty-five (45) acres will be graded flat with a maximum topographic modification of about three (3) to ten (10) feet, which is not expected to result in significant effects on the environment.

1.e. During construction of the site, newly exposed soils may be susceptible to wind erosion. According to Ormat, this will be mitigated by watering the exposed areas during contruction and during periods of significant vehicular traffic.

1.g. Both induced seismicity and subsidence are recognized to be potentially associated with geothermal production activities. Federal requirements for baseline and operational monitoring should provide adequate identification of potential problems.

Air

2.a. Noncondensable gases in the geothermal fluids produced at East Mesa have, to date, shown very low concentrations of hydrogen sulfide, ammonia, and nonmethane hydrocarbons. Neither national nor state ambient air quality standards should be expected to be exceeded as a result of emissions from the proposed operations. In addition, drilling operations may create temporary dust emissions.

2.b. Hydrogen sulfide is a malodorous emission associated with geothermal fluids. To date, only minute concentrations of hydrogen sulfide have been detected at East Mesa wells. The proposed operations are remote from the human environment and no significant malodors are anticipated.

Water

3.d. A change in surface water flow in the East Highline Canal may occur through increased seepage due to ground water withdrawals. However if IID/BLM find such a change, the BLM has indicated that they may require Ormat to reduce ground water withdrawal rates, relocate its ground water wells, or use canal water for the cooling towers. Presently, no agreement exists for the use of canal water.

Discharge of approximately 300 gallons per minute (480 acre feet per year) of cooling tower blowdown to the IID drain system has the potential to increase the level of the Salton Sea. However, with a current surface area of 245,000 acre feet, this volume of discharge would result in a maxiumum elevation increase of 0.02 inches per year (0.6 inches over the life of the project), which is not considered significant.

3.e Ormat proposes to discharge a maximum of 300 gallons per minute of 4,000 ppm dissolved solids concentration cooling tower blowdown into the IID drain system. This will result in some alteration in the chemical and physical characteristics of the waters in the drains in the immediate vicinity of the discharge. The degree of alteration of these characteristics has been limited to levels set by the CRWQCB, to protect the resources which utilize the waters in the drain system.

3.f.&g. Once the ground water wells begin flowing, there may be a reduction in the available ground water supply. It has been estimated that the upper aquifer has risen between 15-30 feet since 1965. The existing ground water study anticipates that the aquifer will be lowered by a "few tens of feet", Ormat, 1986.

Plant Life

4.b. The plant species desert buckwheat, Eriogonum deserticola, grows in the vicinity of the proposed project. This plant has been identified by the California Native Plant Society as a threatened species; however, large populations have been identified on East Mesa and the plant has subsequently been recommended for deletion from the threatened species list. The proposed operations should not remove significant populations of the species nor remove significant potential habitat from the species.

Animal Life

5.b. The flat-tailed horned lizard, Phrynosoma mcalli, is known to inhabit the East Mesa area. This lizard is identified as a Bureau of Land Management sensitive and federal candidate species. The BLM has surveyed the proposed project area for evidence of the lizard, and has determined that the proposed project should not remove significant populations of, or potential habitat from, this species.

The IID drain system (including the Alamo River and Salton Sea) is known to support small populations of two federally endangered species, the Yuma clapper rail (Rallus longirostrus yumanensis) and the desert pupfish (Cyrinodon macularius). The discharge of approximately 300 gallons per minute (480 acre feet per year) of cooling tower blowdown to the IID drain system will result in some alteration of the chemical and physical characteristics of the waters in the drains in the immediate vicinity of the discharge, but the degree of alteration has been limited by the CRWQCB, CRBR to prevent any reduction of the numbers of these species.

5.d. As much as 45 acres of wildlife habitat comprising the project site will be eliminated during the life of the project.

Noise

6.a. A temporary increase in local noise levels will occur during construction of the project. Noise levels will be maintained within guidelines specified by Federal Occupational Safety and Health Standards, and requirements of the United States Bureau of Land Management. Muffling devices will be utilized and rig engines will be equipped with mufflers. Air quality will comply with local air pollution control standards.

Natural Resources

9.a. The use of the uppermost ground water for cooling purposes has a potential to affect surface flora and fauna and may lower the upper aquifer. During operations the project would produce a substantial amount of geothermal fluid during production testing and well start-up. This fluid, if used for dust control, will be lost to the atmosphere.

Risk of Upset

10. The potential for an accidental release of geothermal fluid from a well blowout, pipeline rupture, or sump failure is possible. The potential for accidental fluid releases is mitigated by stringent equipment requirements including blowout protectors and the use of appropriate operating procedures and safety precautions.

V. Compatibility with Existing Plans and Zoning

This project is in accordance with existing County and Regional Plans, including the Water Quality Control Plan for the Colorado River Basin Region of California.

VI. Preparer's Certification

On the basis of this initial evaluation:

X I find the proposed project COULD NOT have a significant affect on the environment, and a NEGATIVE DECLARATION will be prepared.

____ I find that although the proposed project could have a significant affect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A NEGATIVE DECLARATION WILL BE PREPARED.

____ I find the proposed project MAY have a significant affect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Feb. 9, 1987
Date

Signature

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

NEGATIVE DECLARATION

SCH NO. 87021821

X Draft

____ Final

Project Title:

Ormat Systems, Inc. Ormesa II 19.95 MW (gross) Modular Binary Power Plant and Geothermal Well Field, East Mesa KGRA, Imperial County, California.

Ormat Systems, Inc. proposes to construct and operate a 19.95 MW (gross) modular binary power plant and geothermal well field development project on a Federal geothermal lease located in the center of the East Mesa Known Geothermal Resource Area (KGRA) in Imperial County. This project is nearly identical to the 30 MW (gross) Ormesa Geothermal modular binary power plant and geothermal well field located approximately two miles north. The power plant will be constructed in one of two alternative locations in the SW¼ of Section 6, T16S, R17E, SBB&M.

THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD COLORADO RIVER BASIN REGION, HAS DETERMINED THAT THE PROPOSED PROJECT WILL NOT HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT FOR THE FOLLOWING REASONS:

1. This project is in accordance with existing County and regional plans, including the Water Quality Control Plan for the Colorado River Basin Region of California.

2. No significant adverse impacts to beneficial uses of surface or ground waters as a result of changes in water quality or quantity are indicated.

3. No significant adverse impacts upon fish, wildlife, or natural vegetation are indicated.

4. No significant adverse impacts to rare or endangered species as a result of this project are indicated.

5. No significant adverse impacts on aesthetics, air quality, noise levels, land forms, or nonrenewable resources are indicated.

6. No significant secondary impacts resulting from growth inducement or limits to potential uses are indicated because of the limited effects and purposes of the project.

7. This project will not result in adverse impacts to historic or archaeological sites.

March 5, 1987
Date

Arthur Sevajian
Executive Officer