



UNITED STATES
DEPARTMENT OF THE INTERIOR

GL03080

1045

GEOLOGICAL SURVEY
Area Geothermal Supervisor's Office
Conservation Division, MS 92
345 Middlefield Road
Menlo Park, CA 94025

DEC 5 1977

Memorandum

To: Interested Parties

From: ^{Acting} Area Geothermal Supervisor

Subject: Plans of Operation for Development, Injection and Utilization,
Republic Geothermal, Inc., Federal Leases CA-966, CA-1903,
East Mesa KGRA, Imperial County, California
Ref: 1760 CA-966 POO for Development, POO for Injection EA#99
1760 CA-966 POO for Utilization EA#100

Republic Geothermal, Inc. has submitted three Plans of Operation, in accordance with 30CFR 270.34, for the development of the geothermal resource, including production and injection wells, pipelines and attendant facilities, and the construction of a 10 Megawatt power plant for the production of electricity in the East Mesa KGRA, Imperial County, California. Copies of the Plans are enclosed for your review and files.

A field inspection was held on October 25, 1977 by the Geothermal Environmental Advisory Panel to inspect the proposed location. Therefore, no additional inspection will be scheduled at this time. You are encouraged, however, to visit the site at your own convenience. Further guidance can be provided by Mr. Bernie Moroz, Reno District Geothermal Supervisor (Tel: (702) 784-5676; FTS 470-5676). All who elect to visit the site should contact the above office and further, advise the El Centro Area Office, Bureau of Land Management when they propose to be there.

Environmental Analyses (EA#99 for the Plans of Development and Injection, and EA#100 for the Plan of Utilization) will be prepared by the Office of the Area Geothermal Supervisor. All comments regarding the proposed Plans must be received no later than December 23, 1977 by:

Area Geothermal Supervisor
Conservation Division
U.S. Geological Survey
345 Middlefield Road, MS 92
Menlo Park, California 94025
Tel: (415) 323-8111 Ext. 2848
FTS 467-2848

We urge you to send written commentary and will appreciate hearing from you even if you are of the opinion that the existing regulations, lease terms, and operational orders provide adequate environmental protection. Further, we solicit your comments and suggestions on the proposed action even though you were not able to participate in the inspection. All comments will be given serious consideration in the preparation of the environmental analyses and any subsequent conditions of approval thereafter.

Draft Environmental Analyses (EA#99, Development and Injection, and EA#100, Utilization) will be sent to Interested Parties for review and comment. Both EA's and all three Plans will be reviewed by the Geothermal Environmental Advisory Panel prior to finalization. Interested Parties will be informed where and when the GEAP public meeting will be convened.

The surface management agency, lessee, GEAP, USFWS will be furnished copies of the final Environmental Analyses. Other Interested Parties will not receive a copy of the final EA unless such parties comment on the proposed action or request a copy of the particular EA under the Freedom of Information Act. Copies of Environmental Analyses are available for inspection during normal business hours at the Area Geothermal Supervisor's Office, the Reno District Geothermal Supervisor's Office, and the Bureau of Land Management Offices in Riverside and El Centro, California.

Barry A Boudreau

INTERESTED PARTIES EA #99 & #100
REPUBLIC GEOTHERMAL, INC.,
Plans of Operation for Development, Injection, and Utilization
Federal Leases CA-966, CA-1903
East Mesa KGRA
Imperial County, California

USGS-Conservation Division
Attn: Bernie Moroz
District Geothermal Supervisor
63 Keystone Ave., Suite 102
Reno, NV 89503
(702) 784-5676
FTS: 470-5676

U.S. Bureau of Land Management
El Centro Resource Area
Attn: David Mari
333 South Waterman
El Centro, CA 92243
(714) 352-5842
FTS: 894-2451

USGS-Conservation Division
Conservation Manager, Western Region
Attn: Environmental Staff
345 Middlefield Road, MS 80
Menlo Park, CA 94025
(415) 323-8111, Ext. 2093
FTS: 467-2093

U.S. Bureau of Land Management
Geothermal Specialist
Attn: Theodore W. Holland
Denver Federal Center, Bldg. 50 (D-310)
Denver, CO 80225
(303) 234-5098
FTS: 234-5098

USGS-Conservation Division
Attn: Henry Cullins
Area Geologist, Pacific Area
345 Middlefield Road, MS 80
Menlo Park, CA 94025
(415) 323-8111, Ext. 2563
FTS: 467-2563

U.S. Fish and Wildlife Service
Office of Biological Services
Attn: L.A. Mehrhoff
Geothermal Advisor - Region I
4620 Overland Road, Room 210
Boise, Idaho 83705
(208) 834-1931
FTS: 554-1931

Geothermal Environmental Adv. Panel
Attn: Max Crittenden, Chairman
345 Middlefield Road, MS 75
Menlo Park, CA 94025
(415) 323-8111, Ext. 2317
FTS: 467-2317

U.S. Fish and Wildlife Service
Attn: Felix Smith
2800 Cottage Way, R. E-2727
Sacramento, CA 95825
(916) 484-4731
FTS: 468-4731

U.S. Bureau of Land Management
State Director
Federal Office Bldg.
2800 Cottage Way, Rm. E-2841
Sacramento, CA 95825
(916) 484-4676
FTS: 468-4676

U.S. Bureau of Reclamation, Region 3
Attn: Wayne Fernelius
P.O. Box 427
Boulder City, NV 89005
(702) 293-8553
FTS: 598-8553

U.S. Bureau of Land Management
Attn: Gary Hillier, District Manager
1695 Spruce St.
Riverside, CA 92507
(714) 787-1462
FTS: 796-1462

U.S. Department of Energy
Div. of Geothermal Energy, 3rd Floor
Attn: A.G. Follett
20 Massachusetts Ave., NW
Washington, D.C. 20545
(202) 376-1690
FTS: 376-1690

Interested Parties for EA#'s 99, 100

U.S. Environmental Protection Agency
Environmental Monitoring & Support Lab
Attn: Michael O'Connell
P.O. Box 15027
Las Vegas, NV 89114
(702) 736-2969
FTS: 595-2969

Imperial Irrigation District
Attn: Helen French
1285 Broadway
El Centro, CA 92243
(714) 352-1991

AMAX Exploration
Attn: Larry Hall
4704 Harlan Street
Denver, CO 80212
(303) 433-6151

Anadarko Production Company
Attn: John Syptak
P.O. Box 1330
Houston, TX 77001
(713) 526-5421

Calif. Energy Company, Inc.
Attn: Paul V. Storm
P.O. Box 3909
Santa Rosa, CA 95402
(707) 526-1000

Chevron USA, Inc.
Attn: J.G. Turner/P. Smith
P.O. Box 3722
San Francisco, CA 94119
(415) 894-2726

Dresser Industries
MAGCOBAR Division
Attn: Jim Fox
475 17th Street, Suite 1600
Denver, CO 80202

Earth Science Laboratory
University of Utah Research Institute
Research Park
391 Chipeta Way
Salt Lake City, UT 84108
(801) 581-5226

Energy and Natural Resources Consultants
Attn: Richard Jodry
P.O. Box 941
Richardson, TX 75080

Geothermal Power Corp.
Attn: Frank G. Metcalfe
P.O. Box 1186
Novato, CA 94947
(415) 897-7833

State of California
Dept. of Fish & Game
Attn: Don Lollock
1416 Ninth St.
Sacramento, CA 95814
(916) 455-1383
FTS: 465-1383

State of California
Div. of Oil & Gas
Attn: Don Lande
5199 E. Pacific Coast Hwy., Suite 309
North Long Beach, CA 90804
(213) 590-5311

State of California
Dept. of Parks & Recreation
State Resources Agency
Attn: Knox Mellon, SHPO
P.O. Box 2390
Sacramento, CA 95811
(916) 445-2358

State of California
Calif. Regional Water Quality Board
Colorado River Basin Region
Attn: Arthur Swajian
73271 Highway 111, Suite 21
Palm Desert, CA 92260
(714) 346-7491

State of California
Water Resources Control Board
Attn: Alvin Franks
P.O. Box 100
Sacramento, CA 95801
(916) 322-4548

Imperial County Planning Board
Attn: Richard Mitchell
Imperial County Planning Director
County Services Building
940 Main St.
El Centro, CA 92243
(714) 352-8184

Interested Parties for EA#'s 99, 100.

GeothermEx, Inc.
Attn: James B. Koenig
901 Mendocino Ave.
Berkeley, CA 94707
(415) 524-9242

Getty Oil Company
Attn: Dan W. Sparks
P.O. Box 5237
Bakersfield, CA 93308
(805) 399-2961

Gulf Mineral Resources Co.
Exploration Department
Attn: E.W. Westrick
1720 S. Bellaire St.
Denver, CO 80222
(303) 758-1700

Hydro-Search, Inc.
Attn: Virgil Wilhite
333 Flint St.
Reno, NV 89501
(702) 322-4173

ICF, Inc.
Attn: Doug Fried
1990 M Street, NW
Washington, D.C. 20036
(202) 785-3440

Mr. Clyde E. Kuhn
2207 Carroll St., Apt. 3
Oakland, CA 94606
(415) 451-3714

Lawrence Livermore Laboratory
Attn: Dave Snoeberger
Box 808, Mail Code L-523
Livermore, CA 94550
(415) 447-1100
FTS: 457-5501

Magma Power Company
Attn: Dick Foss/Tom Hinrichs
631 S. Witmer St.
Los Angeles, CA 90017
(213) 483-2285

Mr. Jack McNamera
Law Center, Room 422
University of Southern California
Los Angeles, CA 90007
(213) 741-7569

Occidental Geothermal, Inc.
Attn: B.J. Wyant
5000 Stockdale Highway
Bakersfield, CA 93309
(805) 327-7351

Phillips Petroleum Company
Attn: R.L. Wright
P.O. Box 752
Del Mar, CA 92014
(714) 755-0131

Republic Geothermal, Inc.
Attn: Dwight Carey
P.O. Box 3388
Santa Fe Springs, CA 90670
(213) 945-3661

Republic Geothermal, Inc.
Attn: J.L. Sheidenberger
2544 Cleveland Avenue
Santa Rosa, CA 95401
(707) 527-7755

San Diego Gas & Electric Co.
Attn: Larry Grogan/J.M. Nugent
P.O. Box 1831
San Diego, CA 92112
(714) 232-4252, Ext. 1715/1903

Sunoco Energy Development Co.
Attn: C.T. Clark, Jr.
12700 Park Central Pl., Suite 1500
Dallas, TX 75251
(214) 233-2600, Ext. 515

Thermal Power Company
Attn: K.R. Davis
601 California Street
San Francisco, CA 94108
(415) 981-5700

Union Oil Company of California
Geothermal Division
Attn: Neil J. Stefanides
Union Oil Center, Box 7600
Los Angeles, CA 90051
(213) 486-7740

REPUBLIC GEOTHERMAL, INC.

11823 EAST BLAUSON AVENUE, SUITE ONE
SANTA FE SPRINGS, CALIFORNIA 90670

TIMOTHY M. EVANS
VICE PRESIDENT - LAND

(213) 698-2255

October 31, 1977

Area Geothermal Supervisor
U. S. Geological Survey
Conservation Division MS-92
345 Middlefield Road
Menlo Park, California 94025

Attention: Mr. Dave Bickmore

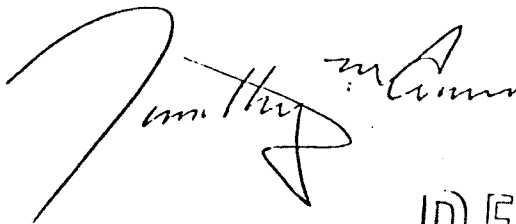
Gentlemen:

In response to your request, please be advised that Republic does not consider any information enclosed in our recently submitted Plans of Operation, Development and Injection, to be proprietary data. Since Republic has been awarded a Federal Geothermal Loan Guaranty to aid in development of our East Mesa leases, almost all information related to the project has been previously made public or will be considered public in the near future.

As discussed, the situation regarding Republic's East Mesa leases is unique due to the loan guaranty. Future Plans of Operation submitted by Republic to the USGS-AGS for East Mesa leases, or any other leases, may contain either proprietary information or less complete information than we have been able to supply for the Plans referenced above.

Thank you for your attention to this matter. If you have any questions, please do not hesitate to contact me or my staff.

Respectfully,



TME:TJN:dej

RECEIVED

NOV 1977
AREA GEOTHERMAL SUPERVISOR'S OFFICE
CONSERVATION DIVISION
U.S. GEOLOGICAL SURVEY
MENLO PARK, CALIFORNIA

FC
USGS
AGSS
Memo
CA
Imp. Co.
7/27/78



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Area Geothermal Supervisor's Office
Conservation Division, MS 92
345 Middlefield Road
Menlo Park, CA 94025

*Recess
control file*

JUL 27 1978

Memorandum

To: INTERESTED PARTIES
From: ^{Acting} Area Geothermal Supervisor

Appendix B

Subject: Draft Environmental Analysis Prepared on Republic Geothermal, Inc.'s Proposed Plans of Utilization, Development, and Injection, East Mesa KGRA, Imperial County, California

A Draft Environmental Analysis (EA #99-100) was prepared by this office on Republic Geothermal, Inc.'s (RGI) Plans of Utilization, Development, and Injection. These plans address the proposed construction, operation, and associated field development of a 10-MW power plant on RGI's Federal leases at East Mesa, California. This EA was sent to Interested Parties (IP) under the cover memorandum of July 6, 1978.

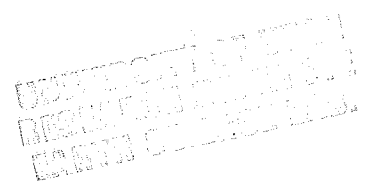
Those IPs who received the plans under the December 5, 1977 cover memorandum were not supplied with the plans in the EA. You have been identified as a recipient of EA #99-100 which does not contain the plans.

Unfortunately, Appendix B of the EA (Coordination and Correspondence Appendix) appears to have been inadvertently left out of the EAs that do not contain the plans.

So that your copy of EA #99-100 may be complete, please find enclosed Appendix B.

Barry A Boudreau

Enclosure



APPENDIX B
COORDINATION AND CORRESPONDENCE



UNITED STATES
DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY
Area Geothermal Supervisor's Office
Conservation Division, MS 92
345 Middlefield Road
Menlo Park, CA 94025

DEC 5 1977

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23

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Conservation Division
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Barry A. Boudreau

10/01/77

INTERESTED PARTIES EA #99 & #100
REPUBLIC GEOTHERMAL, INC.
Plans of Operation for Development, Injection, and Utilization
Federal Leases CA-966, CA-1903
East Mesa KGRA
Imperial County, California

USGS-Conservation Division
Attn: Bernie Moroz
District Geothermal Supervisor
63 Keystone Ave., Suite 102
Reno, NV 89503
(702) 784-5676
FTS: 470-5676

USGS-Conservation Division
Conservation Manager, Western Region
Attn: Environmental Staff
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Geothermal Environmental Adv. Panel
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345 Middlefield Road, MS 75
Menlo Park, CA 94025
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U.S. Bureau of Land Management
State Director
Federal Office Bldg.
2800 Cottage Way, Rm. E-2841
Sacramento, CA 95825
(916) 484-4676
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U.S. Bureau of Land Management
Attn: Gary Hillier, District Manager
1695 Spruce St.
Riverside, CA 92507
(714) 787-1462
FTS: 796-1462

Reading File 101-02

Subj. File 1760 (2403-01a) CA-966 POD EA#99

1760 (2403-01a) CA-966 POI EA# 99

1760 (2403-01a) CA-966 POU EA#100

ENV EA/99, 100

ENG

OPE - Example Book

OPE - Workbook

U.S. Bureau of Land Management
El Centro Resource Area
Attn: David Mari
333 South Waterman
El Centro, CA 92243
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FTS: 894-2451

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U.S. Bureau of Reclamation, Region 3
Attn: Wayne Fernelius
P.O. Box 427
Boulder City, NV 89005
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FTS: 598-8553

U.S. Department of Energy
Div. of Geothermal Energy, 3rd Floor
Attn: A.G. Follett
20 Massachusetts Ave., NW
Washington, D.C. 20545
(202) 376-1690
FTS: 376-1690

Interested Parties for EA//a 99, 100.

GeothermEx, Inc.
Attn: James B. Koenig
901 Mendocino Ave.
Berkeley, CA 94707
(415) 524-9242

Getty Oil Company
Attn: Dan W. Sparks
P.O. Box 5237
Bakersfield, CA 93308
(805) 399-2961

Gulf Mineral Resources Co.
Exploration Department
Attn: E.W. Westrick
1720 S. Bellaire St.
Denver, CO 80222
(303) 758-1700

Hydro-Search, Inc.
Attn: Virgil Wilhite
333 Flint St.
Reno, NV 89501
(702) 322-4173

ICF, Inc.
Attn: Doug Fried
1990 M Street, NW
Washington, D.C. 20036
(202) 785-3440

Mr. Clyde E. Kuhn
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Oakland, CA 94606
(415) 451-3714

Lawrence Livermore Laboratory
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Livermore, CA 94550
(415) 447-1100
TS: 457-5501

Gamma Power Company
Attn: Dick Foss/Tom Hinrichs
631 S. Witmer St.
Los Angeles, CA 90017
(213) 483-2285

Mr. Jack McNamera
Law Center, Room 422
University of Southern California
Los Angeles, CA 90007
(213) 741-7569

Occidental Geothermal, Inc.
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5000 Stockdale Highway
Bakersfield, CA 93309
(805) 327-7351

Phillips Petroleum Company
Attn: R.L. Wright
P.O. Box 752
Del Mar, CA 92014
(714) 755-0131

Republic Geothermal, Inc.
Attn: Dwight Carey
P.O. Box 3388
Santa Fe Springs, CA 90670
(213) 945-3661

Republic Geothermal, Inc.
Attn: J.L. Sheidenberger
2544 Cleveland Avenue
Santa Rosa, CA 95401
(707) 527-7755

San Diego Gas & Electric Co.
Attn: Larry Grogan/J.M. Nugent
P.O. Box 1831
San Diego, CA 92112
(714) 232-4252, Ext. 1715/1903

Sunoco Energy Development Co.
Attn: C.T. Clark, Jr.
12700 Park Central Pl., Suite 1500
Dallas, TX 75251
(214) 233-2600, Ext. 515

Thermal Power Company
Attn: K.R. Davis
601 California Street
San Francisco, CA 94108
(415) 981-5700

Union Oil Company of California
Geothermal Division
Attn: Neil J. Stefanides
Union Oil Center, Box 7600
Los Angeles, CA 90051
(213) 486-7740

USGS-Subsidence Research
Attn: Ben Lofgren
Federal Bldg., Rm W2528
2800 Cottage Way
Sacramento, CA 95825

Interested Parties for EA//s 99, 100.

U.S. Environmental Protection Agency
Environmental Monitoring & Support Lab
Attn: Michael O'Connell
P.O. Box 15027
Las Vegas, NV 89114
(702) 736-2969
FTS: 595-2969

State of California
Dept. of Fish & Game
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1416 Ninth St.
Sacramento, CA 95814
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State of California
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Attn: Don Lande
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Dept. of Parks & Recreation
State Resources Agency
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Sacramento, CA 95811
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State of California
Calif. Regional Water Quality Board
Colorado River Basin Region
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Palm Desert, CA 92260
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State of California
Water Resources Control Board
Attn: Alvin Franks
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Imperial Irrigation District
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P.O. Box 941
Richardson, TX 75080

Geothermal Power Corp.
Attn: Frank G. Metcalfe
P.O. Box 1186
Novato, CA 94947
(415) 897-7832

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—
COLORADO RIVER BASIN REGION

73-271 Highway 111, Suite 21
Palm Desert, CA 92260
Phone No. (714) 346-7491



December 19, 1977

Area Geothermal Supervisor
Conservation Division
U.S. Geological Survey
345 Middlefield Road, MS 92
Menlo Park, CA 94025

Re: Waste Discharge Requirements for Republic Geothermal Wells
and 10 Megawatt Power Plant in the East Mesa Area

The Regional Board staff has reviewed the proposed Plans of Republic Geothermal for geothermal production and injection wells and a 10 megawatt power plant in the East Mesa Area of Imperial County. Concerning the geothermal wells, the Board has adopted waste discharge requirements in Order Nos. 75-48 and 76-35 for all the Republic Geothermal wells designated on the Vicinity Map. In regard to the proposed 10 Megawatt power plant, we will request Republic Geothermal to supply a complete description of the project, which should provide the proposed method and location of discharge of cooling tower blow-down water, so that we can prescribe appropriate waste discharge requirements.

A handwritten signature in cursive script that reads "Arthur Swajian".

ARTHUR SWAJIAN
Executive Officer

CS/plm

RECEIVED

DEC 22 1977

AREA GEOTHERMAL SUPERVISOR'S OFFICE
CONSERVATION DIVISION
U.S. GEOLOGICAL SURVEY
MENLO PARK, CALIFORNIA

REPUBLIC GEOTHERMAL, INC.

11823 EAST SLAUSON AVENUE, SUITE ONE
SANTA FE SPRINGS, CALIFORNIA 90670

MOTHY M. EVANS
CE PRESIDENT - LAND

(213) 698-2255

October 31, 1977

Area Geothermal Supervisor
U. S. Geological Survey
Conservation Division MS-92
345 Middlefield Road
Menlo Park, California 94025

Attention: Mr. Dave Bickmore

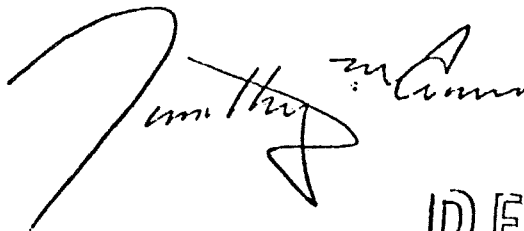
Gentlemen:

In response to your request, please be advised that Republic does not consider any information enclosed in our recently submitted Plans of Operation, Development and Injection, to be proprietary data. Since Republic has been awarded a Federal Geothermal Loan Guaranty to aid in development of our East Mesa leases, almost all information related to the project has been previously made public or will be considered public in the near future.

As discussed, the situation regarding Republic's East Mesa leases is unique due to the loan guaranty. Future Plans of Operation submitted by Republic to the USGS-AGS for East Mesa leases, or any other leases, may contain either proprietary information or less complete information than we have been able to supply for the Plans referenced above.

Thank you for your attention to this matter. If you have any questions, please do not hesitate to contact me or my staff.

Respectfully,



TME:TJN:dej

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AREA GEOTHERMAL SUPERVISOR'S OFFICE
CONSERVATION DIVISION
U.S. GEOLOGICAL SURVEY
MENLO PARK, CALIFORNIA

2207 Carroll Street
Apartment 3
Oakland, California 94606
(415) 451-3714
19 December 1977

Area Geothermal Supervisor's
Office
U.S. Geological Survey
Conservation Division
345 Middlefield Road, MS 92
Menlo Park, California 94025

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AREA GEOTHERMAL SUPERVISOR'S OFFICE
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U.S. GEOLOGICAL SURVEY
MENLO PARK, CALIFORNIA

Dear Mr. Stone:

Thank you for a copy of Republic Geothermal's Plans of Operation for Development, Injection and Utilization, Federal Leases CA-966 and CA-1903, East Mesa KGRA, Imperial County, California.

As indicated in my letter of 19 October 1977 reviewing Republic Geothermal's Plan of Operation for an Environmental Baseline Study of these same leaseholds, cultural resources and related non-cultural features and remains important to understanding past human activity should be inventoried as other baseline data is acquired in compliance with Section 106 of the National Historic Preservation Act (NHPA) and Sections 2(a) and (b) of Executive Order (EO) 11593. Once the subject area has been completely inventoried for cultural values, these resources can then be assessed for National Register eligibility in accordance with 36 CFR Part 800 prior to the time any decision is made to proceed with the details of the project. In the process of such data gathering and procedural compliance, a mitigation and monitoring program for cultural resources and related values, of register eligibility and noneligibility alike, can be developed for application at the appropriate stages of project execution, thereby obviating the need to make time consuming and repetitious decisions on a case by case basis at each and every phase of project activity.

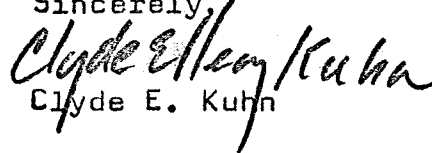
I recently received a letter from GEAP Chairman Max D. Critterden which responds in part to the recommendations outlined above with respect to cultural resource inventory and National Register evaluation. Critterden informs me that "archaeological clearance" has been obtained routinely for all disturbed areas on Republic's leaseholds including the areas now proposed as plant sites. According to Critterden, reports show that "most" of these areas are entirely devoid of prehistoric materials. Also according to Critterden, it appears that "cultural" activity

Kuhn
12/19/77

Lastly, "accepted procedures" for "archaeological clearance" practiced by the AGS's Office at the post-leasing phase of geothermal development compromises the significance of individual cultural resource values and incrementally threatens the total resources a bit at a time. Delayed and piecemeal evaluation of each cultural value separately and at different stages of the geothermal development enterprise, such as is the prevailing practice, is destructive of the scientific integrity of the whole. On the other hand, application of the Advisory Council procedures to their fullest extent at the pre-leasing phase would insure some degree of comprehensive and potentially multidisciplinary assessment of cultural resource values of a single area as a unit and would establish a meaningful basis upon which to holistically balance the significance of such resources in the context of and against any public value which might result from the development of the same area for geothermal purposes.

I do not see why the federal geothermal program should not conform to the standards and requirements of existing historic preservation statutes and the administrative regulations established to guide agencies in the fulfillment of requirements thereof.

Thank you for the opportunity to comment on this undertaking.

Sincerely,

Clyde E. Kuhn

cc: Critterden

California Energy Company, Inc.

WELLS FARGO BUILDING, SANTA ROSA, CALIFORNIA 95401 • (707) 526-1000 TWX 510-744-2088
P. O. Box 3909, Santa Rosa, California 95402

December 19, 1977

Office of the Area Geothermal Supervisor
Conservation Division, MS 92
U. S. Geological Survey
345 Middlefield Road
Menlo Park, California 94025

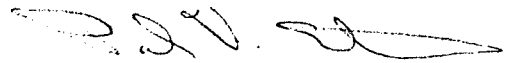
Dear Sirs:

We have reviewed the Plan of Operations submitted by Republic Geothermal, Inc. for the development of the geothermal resource, including production and injection wells, pipelines and attendant facilities, and the construction of a 10 megawatt power plant for the production of electricity in the East Mesa KGRA, Imperial County, California.

We feel Republic's Plan of Operation is in order and we have no additions or comments to make on this plan.

Thank you very much for submitting this plan for our review.

Sincerely yours,



Paul V. Storm
Vice President/Exploration

PVS/ds

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CONSERVATION DIVISION
U.S. GEOLOGICAL SURVEY
MENLO PARK, CALIFORNIA



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Conservation Division
345 Middlefield Road
Menlo Park, California 94025

December 23, 1977

Memorandum

To: Area Geothermal Supervisor
From: Conservation Manager, Western Region
Subject: Geothermal Plans of Operation for Development, Injection
and Utilization - Republic Geothermal, Inc., East Mesa,
California

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AREA GEOTHERMAL SUPERVISOR'S OFFICE
CONSERVATION DIVISION
U.S. GEOLOGICAL SURVEY
MENLO PARK, CALIFORNIA

We have subjected the above Plans of Operations to essentially two levels of review. They have been reviewed, first, for general acceptability of the overall proposal. In this regard we anticipate no obvious or unusual problems. Secondly, we have concentrated attention on the specific details of the individual elements (wells, pipelines, etc.). With respect to this more detailed level of review, we offer the following comments and suggestions:

Plan of Development -

1. The environmental assessment (EIA?) which has been contracted out by BLM should assess maximum development situations. For example, the assessment should evaluate impact of:
 - a. 5 spot injection pattern (pg. 5), even though it is anticipated that only three injection wells will be required;
 - b. Anticipated maximum number of make-up wells required in a "no influx" situation (pgs 5 & 6), rather than the minimum of 0 which could be anticipated under ideal reservoir conditions.
2. The additional specific details alluded to on page 10 of the Plan of Development and on page 9 of the Plan of Utilization are needed at this stage to ensure adequate assessment (see comments 4 and 6, below). The absence of sufficient detail, which is to be evaluated by a third party not intimately knowledgeable of our Federal environmental concerns and procedures, can result in a lower quality environmental assessment than might be prepared with more complete data.

Plan of Injection -

3. Page 3, item b, - The following is an extension of the idea expressed in comment number 1, above. The EIA should address, conceptually, the ultimate anticipated development (48 MW power plant, 19 producing wells and 9 injection wells) with specific emphasis on, and detailed assessment of, the proposed operations associated with the 10 MW development.

4. Page 9, 2nd and 3rd paragraphs - The indication here is that Republic anticipates submitting additional detailed plans covering the proposal. This should be required only if the proposal or elements are changed. Those initially submitted should be essentially complete.


5. Page 12 inappropriately plays down the degree and relevance of seismicity in the area. Contrary to the implications of the discussion on page 12, the area is seismically active and consideration of the possibility of either natural or induced ground shaking, surface faulting or related subsidence will be an important element of an acceptable environmental analysis of the proposal (see comment 8, below).

Plan of Utilization -

6. Page 7, 1st paragraph - The cooling tower design is a significant consideration in evaluating meteorological and air quality impacts. The volume of water evaporated to the atmosphere would be expected to vary according to the number of cooling towers (1, 2, or up to 10 tower for the ultimate 48 MW development).

7. Page 7, line 19 - Believe the correct figure for excess blowdown water is 45,000 lbs. per hour rather than 41,000 lbs. per hour.

8. Exhibit C, Preliminary Geotechnical Investigation, prepared by Woodward - Clyde -- The recommendation is made on page 10 that trenching be undertaken as part of a detailed foundation investigation. Although this would undoubtedly be a fundamental procedure in any project of this magnitude, we nevertheless wish to formally endorse the trenching recommendation.


Hillary A. Oden

UNITED STATES GOVERNMENT

Memorandum

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

333 So. Waterman
El Centro, Ca. 92243

IN REPLY REFER TO:

3220
CA-966
CA-1906
C-066.28

To : Area Geothermal Supervisor

Date: JAN 4 1978

FROM : Area Manager BLM El Centro

SUBJECT: Comment on plans of Operation for Development, Injection, and Utilization which were written by Republic Geothermal on the Federal Leases CA-966, CA-1903, East Mesa, Imperial County, California.

A review of the Proposed Republic Geothermal Plans of Operation, Utilization, and Injection for the on going development of the East K.G.R.A. leases CA-966 and CA-1903 reveals that the proper environmental, ecological, hydrological and Industrial constraints are being considered and or monitored prior to adopting and approval of the final plans. The information and concern about East Mesa which we have provided previously in conjunction with the Magma EA will be of value in preparation of the EA for Republic's plans. We will provide comments on the draft EA when it is available.

David L. Mari

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JAN 9 1978

AREA GEOTHERMAL SUPERVISOR'S OFFICE
CONSERVATION DIVISION
U.S. GEOLOGICAL SURVEY
MENLO PARK, CALIFORNIA

Frederick Tornatore
445 E. Commonwealth Apt. D
Fullerton, CA 92632
714/526-5468

Mr. Jon Durham
Conservation Division
U.S. Geological Survey
345 Middlefield Road
Menlo Park, CA 94025

Dear Mr. Durham,

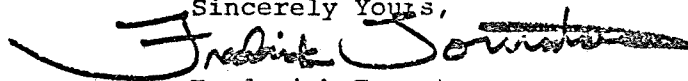
As you might remember, I worked with Atlantis Scientific of Beverly Hills, CA on the production of the Republic Geothermal 10 Mw EIR. I was extremely dismayed to learn that Republic had cancelled its contract with Imperial County to produce this EIR. After working for several months on this EIR I have come to be a very concerned individual about the proposed project and its potential environmental effects.

I now understand that USGS and BLM will be putting out an in-house Federally authored EA on Republic's project. This letter is to inform you and the USGS that I would like to be included on the list of interested parties. Furthermore, I officially request that copies of any environment documents related to Republic's projects in the East Mesa KGRA from this date forward be sent to me for my review and comment.

I would appreciate a response to this letter as soon as possible so I may be insured of my inclusion on the list of interested parties. Please address all correspondence to my above home address.

Thank you very much.

Sincerely Yours,



Frederick Tornatore

4/21/78

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APR 25 1978

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