

**BEFORE THE NEW MEXICO OIL CONSERVATION DIVISION**

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**APPLICATION OF LOS LOBOS RENEWABLE  
POWER, LLC TO PLACE GEOTHERMAL WELLS  
LDG-55-7 AND LDG 53-7 ON INJECTION IN  
SECTION 7, TOWNSHIP 25 SOUTH, RANGE 19  
WEST, NMPM, HIDALGO COUNTY, NEW MEXICO**

**Case No. 14948**

**LOS LOBOS' AMENDED PROPOSED  
FINDINGS OF FACT AND CONCLUSIONS OF LAW**

Los Lobos Renewable Power, LLC ("Los Lobos"), by and through its attorney Michelle Henrie, LLC, hereby submits Amended Proposed Findings of Fact and Conclusions of Law in connection with the hearing before the Oil Conservation Commission (Commission) commencing on March 19, 2013, and continuing to March 20, March 26, and April 16, 2013.

**Proposed Findings**

1. Los Lobos is developing a utility-scale binary (two closed loops) geothermal power facility to provide base-load renewable electricity to Public Service Company of New Mexico (PNM).
2. On or about December 13, 2012, Los Lobos submitted applications to the Oil Conservation Division (OCD) to place two geothermal wells (wells LDG 55-7 and LDG 53-7) on injection for well testing and potential future re-injection of geothermal fluids. The form of these applications was a Form G-112 packet, pursuant to the geothermal Rules set forth at 19.14 NMAC, specifically 19.14.93.8 NMAC, which Rules were promulgated pursuant to the Geothermal Resources Conservation Act, NMSA 1978 §§ 71-5-1 through 71-5-24, and consistent with prior Los Lobos' applications to allow reinjection of geothermal fluids. Los

Lobos did not make any request pursuant to the Water Quality Control Act or the Water Quality Control Regulations. Los Lobos did not make any request relating to—and neither the Commission nor OCD has any authority relating to—water rights.

3. Well LDG 55-7, a well that has been in existence since 1985, is located in Unit J, 2390 FSL and 2412 FEL, Section 7, Township 25 South, Range 19 West, Hidalgo County, New Mexico. Well LDG 53-7, completed in November 2011, is located in Unit G, 1525 feet FNL and 2228 feet FEL Section 7, Township 25 South, Range 19 West, Hidalgo County, New Mexico.

4. Each Los Lobos G-112 application contains (1) a plat showing the location of the proposed injection/disposal well and the location of all other wells within a radius of one mile from said well, and indicating the perforated or open-hole interval in each said well, together with the ownership of all geothermal leases within said one-mile radius; (2) the log of the proposed injection well, if available; and (3) a diagrammatic sketch of the proposed injection well showing casing strings, including diameters and setting depths, quantities used and tops of cement, perforated or open-hole interval, tubing strings, including diameters and setting depths, and the type and location of packers, if any.

5. Each Los Lobos G-112 application (without the above attachments) was sent to all other geothermal lease owners within a one-half mile radius of the proposed injection well.

6. OCD stated in its Pre-Hearing Statement, Amended Pre-Hearing Statement, and Second Amended Pre-Hearing Statement that “The Division does not oppose the Application.” OCD proposed draft Conditions of Approval and tendered the same to the parties on March 13, 2013. These draft Conditions of Approval were filed with the Commission as Exhibits A and B of OCD’s Second Amended Pre-Hearing Statement.

7. AmeriCulture, Inc. (AmeriCulture), wrote a letter to OCD dated December 26, 2012, regarding the pending G-112 applications. The letter protested the use of either well LDG 55-7 or well LDG 53-7 as injection wells. The protest asserted that AmeriCulture's State Well No. 1 is in direct hydraulic connection with the production interval in well LDG-55-7 and references an October 2000 pump test and observation data from well LDG-55-7. The protest regarding well LDG 53-7 asserted a possibility of migration of disposed geothermal power plant "fluids" to one or more of AmeriCulture's production wells.

8. OCD's Director, pursuant to 19.14.93.9 NMAC, scheduled a Hearing Examiner hearing on January 24, 2013. The hearing was initially postponed to allow Los Lobos' hydrologist to be present at the hearing, and was then continued to February 21, 2013, to allow AmeriCulture's new counsel time to prepare. Los Lobos then applied for the matter to be heard directly by the Commission, and the matter was set for the Commission hearing on March 19, 2013. Notice of the hearing was issued on February 20, 2013. Notice was posted on OCD's website and published in the Hidalgo Herald.

9. AmeriCulture's Pre-Hearing Statement, filed on March 13, 2013, acknowledges that a prior 2008/2009 OCD hearing (Case No. 14246) involved "the exact same geothermal power facility project before the Commission at this hearing." AmeriCulture participated in the 2008/2009 OCD hearing, represented both by Mr. Damon Seawright, AmeriCulture's president, and Mr. Jim Witcher, AmeriCulture's hydrologist. Issues addressed and ruled on at that hearing include cooling tower fluids, mixing of different aquifer sources, "quenching" the shallow outflow plume, and thermal breakthrough of cold water.

10. Los Lobos presented evidence that its proposal is in the interest of conservation and will prevent waste. Los Lobos proposes to reinject all water produced for geothermal power plant operations into the same geothermal reservoir from which it was produced, unlike current and prior users of the Lightning Dock resource who surface dispose(d) the resource rather than re-injecting it to reheat and be used again. Los Lobos presented testimony that if its field testing reveals that there is, in fact, a structural “boundary” between the proposed production wells and injection wells, it would be financially imprudent to build the geothermal power facility project using the proposed configuration of production wells and injection wells. Los Lobos also presented a report from John Shomaker & Associates, Inc., that, during pump and injection testing in 2012, water levels had reached, or nearly reached, equilibrium by the end of the test.

11. Los Lobos presented evidence that its proposal protects correlative rights. Under the principle of correlative rights, and New Mexico’s geothermal statutes and Rules, all lease holders and mineral owners have a right to develop the resource in proportion to their corresponding acreage. At this point in time, there is no conclusive evidence of the exact amount of total recoverable geothermal resources in the reservoir. There is conclusive evidence, however, that the amount of mineral acreage leased by Los Lobos (more than 2500 acres) far exceeds the leased and shared mineral acreage held by AmeriCulture (10+15 acres), and that the recoverable geothermal resources are not confined to AmeriCulture’s property (the 10+15 acres).

12. Los Lobos presented evidence that well LDG 53-7 and well LDG 55-7 are cased, cemented, and equipped in such a manner that there will be no danger to any natural resource (including geothermal resources, useable underground water supplies, and surface resources) and that OCD has accepted the logs for these wells.

13. Los Lobos presented evidence that even if AmeriCulture's State Well No. 1 is in direct hydraulic connection with the production interval in well LDG-55-7, injection into well LDG-55-7 is unlikely to create any significant drawdown or effects at AmeriCulture's State Well No. 1.

14. Los Lobos presented evidence that it no longer plans to build a water-cooled cooling tower. Regardless of whether it does or not, the issue of cooling tower "chemicals" was already addressed at the 2008/2009 hearing and the resulting Discharge Permit expressly addresses sampling and mitigation measures.

15. Los Lobos presented evidence of consistent concentrations of analytes from the geothermal fluid flow intervals in LDG 45-7, LDG 53-7, and LDG 55-7, and demonstrated that analyte concentrations are not substantially different from those in the shallow alluvial wells within the geothermal fluid up-flow area, such as AmeriCulture's wells.

16. Los Lobos presented evidence that the geothermal fluid production zone in LDG 53-7 and LDG 55-7 is the same, and that the geothermal fluid flow intervals occur in the same geological formations and are not directly connected to the alluvial aquifer at 400 feet bgs in AmeriCulture's State Well No. 1.

#### **Proposed Conclusions**

1. The Commission has jurisdiction over this matter.
2. The matter was properly noticed.

3. This matter was properly brought pursuant to the Geothermal Resources Conservation Act, NMSA 1978 §§ 71-5-1 through 71-5-24, and the geothermal Rules set forth at 19.14 NMAC, specifically 19.14.93.8 NMAC.

4. Neither the Commission nor OCD is required to hear or decide this matter pursuant to the Water Quality Control Act or the Water Quality Control Regulations. In 2012, Los Lobos did not make any application requesting the Commission or OCD to take any action under the Water Quality Control Act or the Water Quality Control Regulations. By contrast, in 2008, Los Lobos did make such a request when it specifically applied for a Discharge Permit to satisfy its lender. Los Lobos' request made sense at the time because neither Los Lobos nor OCD had the knowledge about the Lightning Dock geothermal resource that they now have after having drilled five wells. OCD's actions issuing a Discharge Permit are not inconsistent with statutes or regulations, specifically NMSA 1978 § 74-6-12(G) (the Water Quality Act does not apply to activity subject to Commission authority pursuant to laws conferring power on the Commission to prevent or abate water pollution); and NMSA 1978 § 71-5-8(M) (the Geothermal Resources Conservation Act) grants authority to regulate the disposition of geothermal resources in such a manner that will afford reasonable protection against contamination of fresh water. The 2009 Discharge Permit, having been issued and not appealed, is final and remains in effect.

5. Los Lobos' form G-112 was properly noticed to all other geothermal lease owners as required by 19.14.93.8 NMAC.

6. Los Lobos' proposal is in the interest of conservation and will prevent waste.

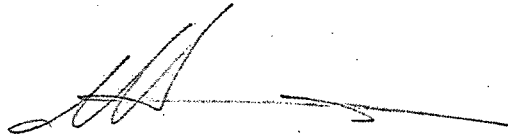
7. Los Lobos' proposal will protect correlative rights.

8. Wells LDG 53-7 and LDG 55-7 are cased, cemented, and equipped in such a manner that there will be no danger to any natural resource, including geothermal resources, useable underground water supplies, and surface resources.

9. Los Lobos' forms G-112 to place Wells LDG 53-7 and LDG 55-7 on injection shall be and hereby are approved, with Conditions of Approval as discussed at hearing, with an order effecting the same.

Respectfully Submitted,

MICHELLE HENRIE, LLC

A handwritten signature in black ink, appearing to be 'MH', followed by a long horizontal line extending to the right.

Michelle Henrie  
P.O. Box 7035  
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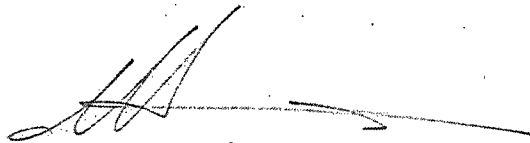
**CERTIFICATE OF SERVICE**

I hereby certify that a true and correct copy of the foregoing Amended Proposed Findings of Fact and Conclusions of Law was e-mailed to the following on April 11th, 2013:

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Dated this 11th day of April, 2013.

A handwritten signature in black ink, appearing to read 'MH', followed by a long horizontal line extending to the right.

Michelle Henrie



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WEST, NMPM, HIDALGO COUNTY, NEW MEXICO

Case No. 14948

**MEMORANDUM IN SUPPORT OF**  
**LOS LOBOS' PROPOSED CHANGES TO CONDITIONS OF APPROVAL**

On March 13, 2013, the Oil Conservation Division filed draft Conditions of Approval with the Oil Conservation Commission as Exhibits A and B of its Second Amended Pre-Hearing Statement and tendered the same to the undersigned and to AmeriCulture's attorney, Mr. Charles Lakins.<sup>1</sup> Los Lobos Renewable Power presented redline comments to the draft Conditions of Approval at the hearing on March 26, 2013. AmeriCulture's reaction to these comments indicated several things.

First, AmeriCulture's attorney, Mr. Lakins, stated that the March 26, 2013, hearing was the first he had heard that anything more than a test was being proposed. Los Lobos, however, reminds the Commission that notice for this hearing clearly stated the application seeks "to place two proposed geothermal injection wells (Wells 53-7 and 55-7) on injection for well testing and potential future re-injection of geothermal waters." This proceeding, therefore, has always been about more than just testing. The undersigned further represents to the Commission that this issue has been discussed with AmeriCulture's president and hydrologist (January 18, 2013, at the OCD office) and with AmeriCulture's attorney and hydrologist (February 28, 2013, at AMEC).

Los Lobos cannot afford to bifurcate the approval process. It is already going to be extremely difficult to complete construction in time to meet the federal Section 1603 deadline, as Mr. Chuck Smiley (Los Lobos' site manager) testified at hearing, and a bifurcated approval process would jeopardize continuation of the project.

Second, AmeriCulture's reaction to the draft Conditions of Approval illustrates the highly technical nature of the Conditions of Approval. If AmeriCulture's geothermal wells were operated pursuant to the Geothermal Regulations, 19.14 NMAC et seq., then, reasonably, AmeriCulture would be familiar with the technical requirements and in a better position to comment. However, having no familiarity with the annual temperature and pressure tests required by 19.14.62.8 NMAC, or the EPA Mechanical Integrity Testing (MIT) testing requirements pursuant to 19.15.26.11 NMAC, or monitoring wells generally, or even whether OCD as a matter of practices witnesses MIT tests (it does not), etc., AmeriCulture is not in a position to credibly comment on the draft Conditions of Approval. Further, Los Lobos finds no authority in statute or regulations authorizing a third party project opponent to comment on draft Conditions of Approval and is concerned about establishing a precedent whereby a third party can comment upon future Conditions of Approval for which it did not apply .

Third, the hearing was not tailored to the draft Conditions of Approval. There are provisions in the draft Conditions of Approval that are not supported by any evidence in the Record (as discussed more below). It would be more appropriate for the Commission to conclude the hearing process and delegate the determination of appropriate Conditions of Approval to OCD staff.

Should the Commission choose to incorporate the draft Conditions of Approval in its Order, though, Los Lobos provides the following comments in support of the redline comments

it tendered at hearing on March 26, 2013, which changes are reflected below in red font. Please know that "GTHT-01" as used below, refers to Los Lobos' Discharge Permit. Please also realize that Los Lobos' redline does not reflect all its comments: the redline reflects what Los Lobos could work with, given their need to move forward quickly. The comments below include jurisdictional and other concerns that Los Lobos raises in order to preserve these issues in the event of an appeal.

**(1) G-104 Form:** The operator shall submit a final G-104 Form with all other associated G-Form information (i.e., G-105, G-106 and G-107) with required logs and well test information (19.14.55.8 NMAC) for this G-112 submittal (19.14.63 NMAC and 19.14.93 NMAC) to OCD for approval prior to Injection into Well 53-07/55-07.

Los Lobos has already complied with Condition No. 1, which is materially similar to Condition No. 1 for approval of injection into Well 45-7 and Condition No. 3 for approval of injection into Well 63-7.

**(2) Water Quality Sampling Plan:** The operator shall provide a water quality sampling plan (plan) to OCD for approval prior to injecting any produced geothermal fluid into Well 53-07/55-07. The operator shall comply with OCD's approved ASTM sample procedure(s) with environmental water quality sampling and analytical laboratory testing that complies with EPA Quality Assurance/Quality Control (QA/QC) and Data Quality Objectives (DQOs).

The operator shall sample for the constituents specified in Tables 1 through 3 of its Discharge Permit (GTHT-01) using the specified methods. The operator shall collect environmental water quality samples from Production Well 45-07 before, during and just before the end of well testing. Injection Well 53-07/55-07 shall be sampled before and immediately at the end of well testing. During Production Well 45-07 well testing, the operator shall collect a sample and notify the OCD within 24-hours of discovery whenever daily production well field testing water quality parameters (i.e., temperature, oxidation/reduction, pH and Specific Conductivity) vary by +/- 25%. The operator shall request permission from each water supply well owner (see Table 3 of GTHT-01 to allow the operator to conduct water quality testing, including the analytes and methods specified in Tables 1 through 3, water quality analyte suites, and monitor well static water-levels during testing to help assess the capacity of the reservoir to sustain production of geothermal fluids for the extraction of heat and any heat loss observed during well testing.

Los Lobos does not propose any changes to Condition No. 2. This sampling will help reaffirm background water quality conditions for the sampled wells. Los Lobos points out,

however, that it is unclear how water quality sampling will “help assess the capacity of the reservoir to sustain production of geothermal fluids for the extraction of heat” and equally unclear how this issue is even within OCD’s oversight. Condition No. 2 is similar to, but more detailed than, Condition No. 5 for approval of injection into Well 45-7 and Condition No. 4 for approval of injection into Well 63-7.

**(3) Water Quality Sample Method:** When sampling for WQCC DP parameters, the operator shall sample any Production Well ~~45-07~~, Injection Well 53-07/55-07, and Water Supply Wells utilizing ASTM E-947-83 (Standard Specification for Sampling Single-Phase Geothermal Liquid or Steam for Purposes of Chemical Analysis) whenever possible.

These Conditions of Approval will attach to the G-112 Forms for Well 55-7 and Well 53-7, which are Los Lobos’ Exhibit 2. Once approved, the G-112 form allows the well to be “Placed on Injection”. Los Lobos believed that the proposed Condition No. 3 was probably intended to apply to sampling that takes place at any production well that injects into Well 55-7 and Well 53-7, not just to Well 45-7. Condition No. 3 (i.e., requiring ASTM E-947-83) is similar to Condition No. 5 for approval of injection into Well 45-7.

**(4) Water Quality Monitoring Parameters:** The operator shall monitor for the analyte suites listed in Tables 1 through 3 as specified in Condition of Approval 2 (COA 2) above. The operator shall assess the potential for the effluent from any Production Well ~~45-07~~ into Injection Well 53-07/55-07 to adversely affect ground water quality at any place of withdrawal for the present or reasonably foreseeable future in water supply wells located within one-half mile from Injection Well 53-07/55-07. OCD may require the operator to implement corrective action(s) if water quality exceeds the greater of the WQCC ground water standards specified at 20.6.2.3103 NMAC or background at any place of withdrawal of ground water for the present or reasonably foreseeable future use. The operator shall conduct operations in such manner so as to protect fresh water and in a manner consistent with the requirements specified in GTHT-01.

Condition No. 4 includes language from the Water Quality Control Regulations (20.6.2 NMAC). With this condition as well, Los Lobos believed it was probably intended to apply to effluent from any production well that injects into Well 55-7 and Well 53-7, not just to Well 45-

7. Condition No. 4 is similar to Condition No. 2 for approval of injection into Well 45-7. For Well 63-7, Condition No. 5 referenced applicable portions of the Water Quality Control Regulations.

**(5) Water Quality Background:** The operator shall obtain ground water quality data from ~~any~~ Production Well 45-07 and Injection Wells 53-7/55-7 as specified in COAs 2 through 4 to help determine background geothermal reservoir water quality conditions.

With this condition as well, Los Lobos believed it was probably intended to require water quality data from any production well that injects into Well 55-7 and Well 53-7, not just to Well 45-7.

This Condition includes concepts and requirements that are similar to the preceding Conditions.

It was not included in prior permits approving injections.

**(6) Correlative Rights:** The operator shall monitor the geothermal reservoir for sustainable production well capacity for the long-term extraction of heat to efficiently produce power, prevent waste and protect correlative rights of nearby geothermal lease owners sharing the reservoir. The operator shall implement commercially reasonable efficient geothermal engineering power generation design, operations, and environmental best management practices to address applicable regulations and to prevent pollution.

Los Lobos believes that “commercial reasonableness” needs to be a limitation on this Condition No. 6. Los Lobos notes, for example, that a literal reading of Condition No. 6 would require a water cooling tower because it is the most “efficient geothermal engineering power generation design.” Condition No. 6 is similar to, but more detailed than, Condition No. 3 for approval of injection into Well 45-7.

**(7) Geothermal Waste:** The operator shall minimize geothermal waste of heat from geothermal reservoir fluids treated and/or stored at surface, and prevent the reinjection of ~~unfiltered high turbidity~~ cooled geothermal reservoir fluids ~~treated and/or stored at surface~~ back into the reservoir. “Geothermal Waste” includes the inefficient, excessive, or improper management of reservoir thermal fluid production, use, or dissipation of geothermal fluid heat (e.g., transporting or storage methods that cause or tend to cause unnecessary surface heat loss of the geothermal resource, and/or reinjection of cooled reservoir fluids back into the geothermal reservoir resulting in inefficient and/or decreased geothermal reservoir temperature(s)). In addition, the operator shall not locate, space, construct, equip, operate, produce, or vent any well in a manner that results or tends to result in unnecessary heat

**and/or evaporative losses or in reducing the ultimate economic recovery of geothermal resources.**

Condition No. 7 applies to testing, which is the only time that geothermal fluids would be held at the surface (by contrast, during plant operations, all produced geothermal fluid will be reinjected quickly after the heat is withdrawn; the geothermal fluid will never leave the pipe). Los Lobos provided testimony at hearing that the concern within the geothermal industry has to do with reinjection of high-turbidity water. Condition No. 7 is new. It was not included in prior permits approving injections. Los Lobos queries why OCD would change the definition of "Waste" specifically for these permits, since the Geothermal Regulations define "Waste" at 19.14.1.7(GG) NMAC and the Geothermal Resources Conservation Act defines "Waste" at 71-5-5 NMSA.

**(8) Water Evaporation: The operator shall accurately monitor and estimate evaporation losses (See COA 12) to the water resource(s) including, all geothermal production fluid evaporative losses from surface fluid management operations to ensure that its water rights are adequate to replace the net loss of the ground water resources due to its surface fluid management operations. Surface fluid management operations may include annual production well testing, well work over, repair, maintenance, and/or anytime geothermal reservoir fluids are exposed to ambient air conditions.**

**The operator shall monitor the in-flow/out-flow rate(s) and fluid level in ponds/pits to maintain adequate free board, prevent overflow, and to detect leaks and spills. The operator shall record evaporation fluid loss volumes and shall total cumulative losses from in ponds/pits at least daily during well testing. The operator shall report pond/pit volumes daily to OCD during well testing.**

**The operator shall report to OCD when evaporative losses from surface management of produced geothermal fluids exceed the operator's available water rights during well testing and/or during geothermal operations. This may constitute a "Resource Impairment" determination by OCD. OCD may require the operator to submit a "Water Replacement Plan" (See COA 12) to resolve the situation. The operator shall conduct annual production well testing as specified in GTHT-1. Operator shall provide information on ~~to verify that the size and extent of the geothermal reservoir as specified in GTHT-1. has the capacity to produce geothermal fluids at the 250 degree Fahrenheit bottom hole temperature and that geothermal fluids production is sustainable during production to prevent termination of the OCD project permit(s) (See Section 14).~~**

Condition No. 8 also applies to testing, which is the only time that geothermal fluids would be held at the surface. With regard to the first paragraph of Condition No. 8, Los Lobos

doubts this requirement is within the jurisdiction of OCD. Los Lobos suggested the change to the first paragraph because, as written, “surface fluid management operations” would be limited to the enumerated list and because all “well tests,” not just “annual well tests” require geothermal fluids to be held at the surface. This paragraph is new and was not included in prior permits approving injections. As previously mentioned, this paragraph may be outside OCD’s jurisdiction.

With regard to the second paragraph of Condition No. 8, Los Lobos suggests a clarifying addition. This paragraph is similar to, but more detailed than, Condition No. 4 for approval of injection into Well 45-7.

With regard to the third paragraph of Condition No. 8, Los Lobos again doubts the first two sentences are within the jurisdiction of OCD: water rights management and determination of impairment are squarely within the jurisdiction of the State Engineer’s Office. Nowhere do the Geothermal Regulations or the Geothermal Resources Conservation Act authorize OCD to make a “Resource Impairment” determination. “Impairment” is legal term and a legal conclusion. During the 2012 Legislative Session, 71-5-2.1(B) NMSA (attached as Exhibit A) was expressly and carefully crafted with input from the Energy Mineral and Natural Resources Department and from the State Engineer’s Office. The statute represents a careful respect for the lines of jurisdiction. The statute clearly reserves to the State Engineer’s Office the determination of whether ground water rights will be impaired and whether a “plan of replacement” (also a legal term) is required.

Further within the third paragraph of Condition No. 8, the last sentence is without foundation. Los Lobos nowhere finds in the Geothermal Regulations or the Geothermal

Resources Conservation Act any requirement for Los Lobos to verify that “the geothermal reservoir has the capacity to produce geothermal fluids at the 250 degree Fahrenheit bottom-hole temperature and that geothermal fluids production is sustainable during production.” Los Lobos nowhere finds that OCD has made a similar capacity/sustainability requirement of any other geothermal user. As Los Lobos testified at hearing, its business model requires sustainability. OCD should not be second-guessing Los Lobos’ business decisions. If Los Lobos proceeds, it is because Los Lobos has determined—using its proprietary and trade secret data, and its professionals’ judgment—that the geothermal reservoir has capacity and the project will be sustainable. In addition, the reference to 250° F makes no sense. 250° F is a dividing line between State Engineer Office jurisdiction and OCD jurisdiction per 71-5-2.1(A) NMSA (attached as Exhibit A). The last sentence of the third paragraph of Condition No. 8 basically requires Los Lobos to prove to OCD that the State Engineer’s Office does not have jurisdiction because the geothermal fluids are over 250° F. It is outside OCD’s purview whether the State Engineer’s Office does or does not have jurisdiction. Los Lobos has already presented that showing to the State Engineer’s Office due to their requirements per statutory jurisdiction. Further, neither the Geothermal Regulations nor the Geothermal Resources Conservation Act require “bottom-hole temperature” assessments. OCD should not effectuate rulemaking via permit conditions.

A final comment regarding this third paragraph to Condition No. 8 is that it is new, and not included in prior permits approving injections. As previously suggested, this paragraph may be outside of OCD’s jurisdiction.

**(9) Mechanical Integrity Testing Initial Reporting: The operator shall submit an initial G-103 Sundry Notice for an injection well Mechanical Integrity Test (MIT) before initial**



injection into Injection Well 53-07/55-07 to be witnessed and approved by the OCD, and OCD shall be given an opportunity to witness the MIT.

The operator shall ensure that the UIC Class V Geothermal Injection Well 53-07/55-07, MITs performed subsequent to well work over, unless it occurs after the 4th year, since the last EPA MIT, shall not disrupt the 5-year MIT schedule. In general, the well shall be tested every 5-years regardless of well work over MITs conducted between the required EPA MIT 5-year MIT schedule. The operator may proceed at its own risk when attempting to perform an MIT with external equipment on the well head, i.e., BOPE, which could be the cause of a well MIT failure.

With regard to Condition No. 9, Los Lobos proposed to give OCD the option to witness the MIT tests. OCD agreed with this change at the hearing, but also wanted to add (and Los Lobos agrees): “and OCD shall be given three business days prior notice and an opportunity to witness the MIT.” Condition No. 6 is similar to Condition Nos. 6 and 8 for approval of injection into Well 45-7.

**(10) Mechanical Integrity Testing Subsequent Reporting:** The operator shall submit a subsequent G-103 Sundry Notice to report MIT results for OCD approval in accordance with COA 9 above and prior to injection into Well 55-07 (19.14.54.8C(2) NMAC).

If OCD does not witness the MIT, the Operator shall submit the original MIT chart with required information, test type, witness signatures, and chart recorder calibration information with MIT chart for approval prior to injecting into a well. This submittal shall start of the OCD Underground Injection Control (UIC) Program 5-Year MIT injection well monitoring schedule. The operator shall file a G-103 Sundry Notice in a timely manner whenever an injection well is no longer needed as an injection well. OCD may modify GTHT-01 when this occurs. The operator shall submit a new G-112 Form shall be filed with the OCD for approval if the same well is needed for use as an injection well at a later date. OCD may again modify GTLT-01 if this occurs.

For injection wells under completion, the operator may submit a Cement Bond Log (CBL) and Casing Integrity Test (CIT) performed during and/or after Well 53-07/55-07 completion to the OCD attached to a “Subsequent” G-103 Form to satisfy the MIT requirement prior to injection into Injection Well 53-07/55-07.

Condition No. 10 is similar to, but more detailed than, Condition No. 7 for approval of injection into Well 45-7. Los Lobos has no objections to this Condition.

**(11) OCD Discharge Permit (GTHT-001):** The operator shall ensure that any OCD approved G-104 and G-112 Permits shall also comply with the terms and conditions of GTHT-01. The operator shall request a minor “Modification” to the permit for any changes to its permit to include any new and/or removed existing UIC Class V Geothermal injection/disposal well(s)

prior to commercial power production operations and/or as needed at least 30-days in advanced of plans for OCD approval.

Los Lobos presented testimony at the hearing establishing how OCD has previously handled changes of well locations. Los Lobos' first injection well was originally planned to be located at the 10-acre parcel assigned a Kettleman grid number of "51" within Section 7, (i.e., the well was described as Well 51-7). After drilling Wells 47-7 and 53-7, this first injection well was subsequently designed for a different location, permitted through the G-112 process for that different location, and drilled in the 10-acre parcel assigned a Kettleman grid number of "63" within Section 7 (i.e., the well was described as Well 63-7). Los Lobos originally bonded for a well at the 51-7 location. The bond was transferred to the 63-7 location and accepted by OCD. This course of permitting is what Los Lobos understands to be a "minor" modification to the Discharge Permit, consistent with OCD established practice. Condition No. 11 is new.

~~(12) Water Replacement Plan (WRP): The operator shall furnish OCD information sufficient to demonstrate that its proposed plan(s) and/or any modified plan(s) of operation will not result in a "diversion" of ground water beyond water rights owned or leased by the operator, and that water temperature at the location from which the water will be produced is greater than 250 degree Fahrenheit bottom hole temperature. Bottom hole temperature shall mean the highest temperature measured in the well or bore hole, and is normally attained directly adjacent to the producing zone, and commonly at or near the bottom of the borehole.~~

~~This information shall include the information specified by The Office of the State Engineer (OSE) and shall be submitted to the OCD in order that OSE may render an opinion inclusive of a reasonable share of reservoir production and/or rate, allocation and/or equitable apportionment of ground water (to the operator) as can be practically determined (practically produced without waste, that is substantially in proportion to the quantity of recoverable geothermal resources under the landowner/leaseholder property relative to the total recoverable geothermal resources in the geothermal reservoir system) for the OCD pursuant to NMSA 1978 Section 71-5-2.1 as to whether a "Water Replacement Plan(s)-WRP" is necessary based on available water rights and planned extraction and injection operations.~~

~~In the event that OSE (a) opines that a WRP is necessary, (b) declines to opine, or (c) the temperature of produced water is less than 250 degree Fahrenheit, in which case, all Production Well 45-07 operations (and/or all applicable project production well locations) shall be subject to OSE Jurisdiction. The operator shall also continue to comply with all applicable OCD Jurisdictions.~~

Los Lobos deleted Condition No. 12 for reasons that have been stated, in part, in connection with Condition No. 8. This Condition effectively rewrites 71-5-2.1(B) NMSA (which is attached as Exhibit A). Under the statute, which was carefully crafted with the involvement of both the Office of the State Engineer and the Energy Minerals and Natural Resources Department, the question before the State Engineer's Office is whether "any existing ground water rights may be impaired". This is the question the State Engineer's Office agreed to consider and the question that the Legislature chose to ask: whether "any existing ground water rights may be impaired". Condition No. 12 goes beyond the bounds of that question.

The first paragraph of Condition No. 12 requires Los Lobos to prove a negative (i.e., to demonstrate that its proposed plan(s) and/or any modified plan(s) of operation will not result in a "diversion" of ground water beyond water rights owned or leased by the operator). It misuses a legal term: "diversion." The whole point of the statute is that diversion is allowed without a water right if the statutory conditions are met. Under water law, "diversion" is distinguished from "consumptive use." In the statute, the concept of "consumptive use" is instead worded "no net depletion to the source." OCD should not be rewriting the statute and has no authority to do so. The words of the statute are deliberate and were selected to allow the State Engineer's Office to do a specific job. The second half of the first sentence basically requires Los Lobos to prove to OCD that the State Engineer's Office does not have jurisdiction because the geothermal fluids are over 250° F. It is not within OCD's purview as to whether the State Engineer's Office does or does not have jurisdiction. Los Lobos has already made that demonstration to the State Engineer's Office as per their requirements because, per the statute, it is within their jurisdiction per the statute. Further, as previously stated, neither the Geothermal Regulations nor the Geothermal Resources Conservation Act require "bottom-hole temperature" assessments. It is

an administrative stretch for OCD to be defining (in a permit, no less) how the State Engineer's Office will determine whether it has jurisdiction.

The second paragraph of Condition 12 goes so far it assigns new duties to the State Engineer's Office. Instead of asking, as the statute does, whether "any existing ground water rights may be impaired," Condition No. 12 asks OSE to "render an opinion inclusive of a reasonable share of reservoir production and/or rate, allocation and/or equitable apportionment of ground water (to the operator) as can be practically determined (practically produced without waste, that is substantially in proportion to the quantity of recoverable geothermal resources under the landowner/leaseholder property relative to the total recoverable geothermal resources in the geothermal reservoir system) for the OCD." At hearing, OCD agreed that this paragraph was unlawful and should be stricken.

The third paragraph of Condition 12 is similarly unlawful. OCD has no power to dictate the scope of the State Engineer's jurisdiction. OCD proposes that "In the event that OSE (a) opines that a WRP is necessary, (b) declines to opine, or (c) the temperature of produced water is less than 250 degree Fahrenheit, in which case, all Production Well 45-07 operations (and/or all applicable project production well locations) shall be subject to OSE Jurisdiction." This is outrageous. It is also in defiance of what the Legislature wrote into statute. The Legislature did not say that State Engineer jurisdiction triggered upon any of these events. The Legislature said that the State Engineer's Office would consider one question: whether "any existing ground water rights may be impaired." If and only if the answer is yes, the Legislature designated one course of action to follow: "If the state engineer determines that the information provided is sufficient to render an opinion, and it is the opinion of the state engineer that any existing ground water rights may be impaired, then the division, upon receipt of the opinion of the state engineer,

shall require the owner or operator to submit to the division a plan of replacement with regard to any existing ground water rights that are likely to be impaired.” The Legislature did not say that the answer to the question, indeed, whether the question is answerable, triggers State Engineer jurisdiction. If any agency is going to make a jurisdictional analysis about the State Engineer’s Office and, in so doing, go way beyond the express dictates of the Legislature, shouldn’t it be the State Engineer’s Office?

Condition No. 12 is new. It does not appear in any other permit. It’s inclusion in injection well permits is not reasonable because injections do not pose any threat to existing ground water rights, it is the production wells that pose a threat—as acknowledged by OCD’s attempt to regulate “Production Well 45-07 operations” via conditions of approval attached to injection Wells 53-7 and 55-7. Condition No. 12 must be stricken.

**(13) Applicable Regulations:** The operator shall comply with the terms and conditions of GTHT-01 , the Geothermal Resources Conservation Act (Chapter 71, Article 5 NMSA 1978, and OCD’s Geothermal Regulations (Title 19, Chapter 14 NMAC). The operator shall comply with the applicable sections of Water Quality Control Commission Regulations (20.6.2.5000 – 5006 NMAC) while any Underground Injection Control (UIC) Class V Geothermal Injection and/or Disposal Wells are being used as injection wells. The operator shall ensure that all of its geothermal field activities comply with the applicable provisions of 20.6.2 NMAC and 20.6.4 NMAC.

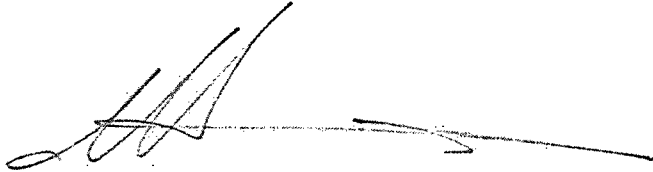
Condition No. 13 is similar to Condition No. 12 for approval of injection into Well 45-7 and Condition No. 5 for approval of injection into Well 63-7.

**(14) Termination of Injection Authority:** The operator shall comply with the above Conditions of Approval or OCD may after notice and hearing (or without notice and hearing in event of an emergency, subject to the provision of NMSA 1978 Section 71-5-17) terminate the operator’s injection permit.

Condition No. 14 is new. It has not been included previously, and it will adversely affect Los Lobos’ ability to finance the project. It is not necessary for the permits to parrot every provision contained in the Geothermal Resources Conservation Act.

Respectfully Submitted,

MICHELLE HENRIE, LLC

A handwritten signature in black ink, appearing to be 'MH' followed by a long horizontal stroke.

Michelle Henrie  
P.O. Box 7035  
Albuquerque, NM 87194  
Attorney for Lightning Dock Geothermal HI-01, LLC

**CERTIFICATE OF SERVICE**

I hereby certify that a true and correct copy of the foregoing Closing Statement was e-mailed to the following on April 11th, 2013:

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Dated this 11th day of April, 2013.

A handwritten signature in black ink, appearing to read "MH", followed by a long horizontal line extending to the right.

Michelle Henrie

## **Exhibit A**

### **71-5-2.1. Exclusion; incidental loss or extraction of heat; limited exception.**

A. When the application of potable water to a beneficial use involves the incidental loss or extraction of heat, and the water is two hundred fifty degrees Fahrenheit or less, then that heat is not a geothermal resource for which a royalty is due. In such a case, the use is not governed by laws related to geothermal resources but is simply governed by Chapter 72 NMSA 1978.

B. A permit from the state engineer is not required for the use of ground water over two hundred fifty degrees Fahrenheit as incident to the development of geothermal resources permitted pursuant to the Geothermal Resources Conservation Act when:

- (1) the use does not require any diversion of ground water; or
- (2) all diverted ground water is reinjected as soon as practicable into the same ground water source from which it was diverted, resulting in no new net depletions to the source; provided that the division shall provide to the state engineer all information available to the division regarding the proposed diversion and reinjection and shall request the opinion of the state engineer as to whether existing ground water rights sharing the same ground water source may be impaired. If the state engineer determines that the information provided is sufficient to render an opinion, and it is the opinion of the state engineer that any existing ground water rights may be impaired, then the division, upon receipt of the opinion of the state engineer, shall require the owner or operator to submit to the division a plan of replacement with regard to any existing ground water rights that are likely to be impaired. In response to a request for an opinion under this subsection, the determination by the state engineer as to whether the information provided is sufficient to render an opinion or the issuance by the state engineer of an opinion shall not constitute a decision, act or refusal to act under Section 72-2-16 NMSA 1978.

C. No ground water right is established through the use of ground water as allowed in Subsection B of this section.

D. As used in this section, "plan of replacement" means a detailed plan for the replacement of water, which may include:

- (1) the furnishing of a substitute water supply;
- (2) the modification of existing water supply facilities;
- (3) the drilling of replacement wells;
- (4) the assumption of additional operating costs;
- (5) the procurement of documentation establishing a waiver of protection by owners of affected water rights;
- (6) artificial recharge; or
- (7) any other means to avoid impairment of water rights.