The Economics and Implementation of EGS

Stimulation Technology: Economics and Application

May 2015

What is EGS?

How does it relate to Stimulation?

What are the different forms of stimulation?

Innovation1: AltaRockTZIM Technology

ChallengeLow flow per EGS well Need >75 l/s, >1200 gpm Solution:

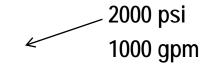
Multizone Stimulation and TZIMs

Innovation 3: Stimulation pumps

Challenge:

Solution:

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Pump curves for HP Mode

Economics

Two Scenarios for Improving Geothermal Economics with Stimulation

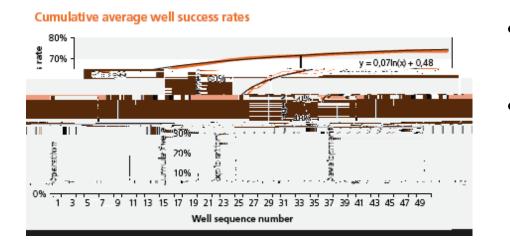
Infield Stimulation for Improving Existing Projects

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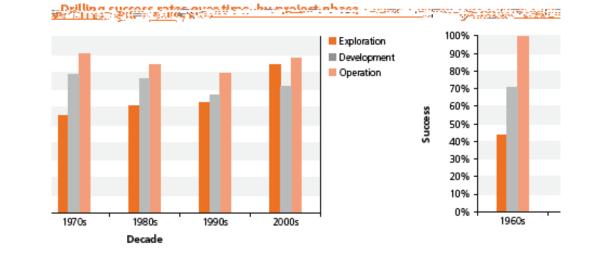
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Dry Hole Risk in Geothermal



Drilling success has improved over time, but not by much.

We aren't getting much better at exploration.



Sensitivity Analysis of the Impact of Stimulation on New Geothermal Development in the Basin and Range

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Cost Comparison for Basin and Range Project With and Without

Cost Comparison for Basin and Range Project With and Without Stimulation: Moderate Initial Productivity/Injectivity

Field Testing

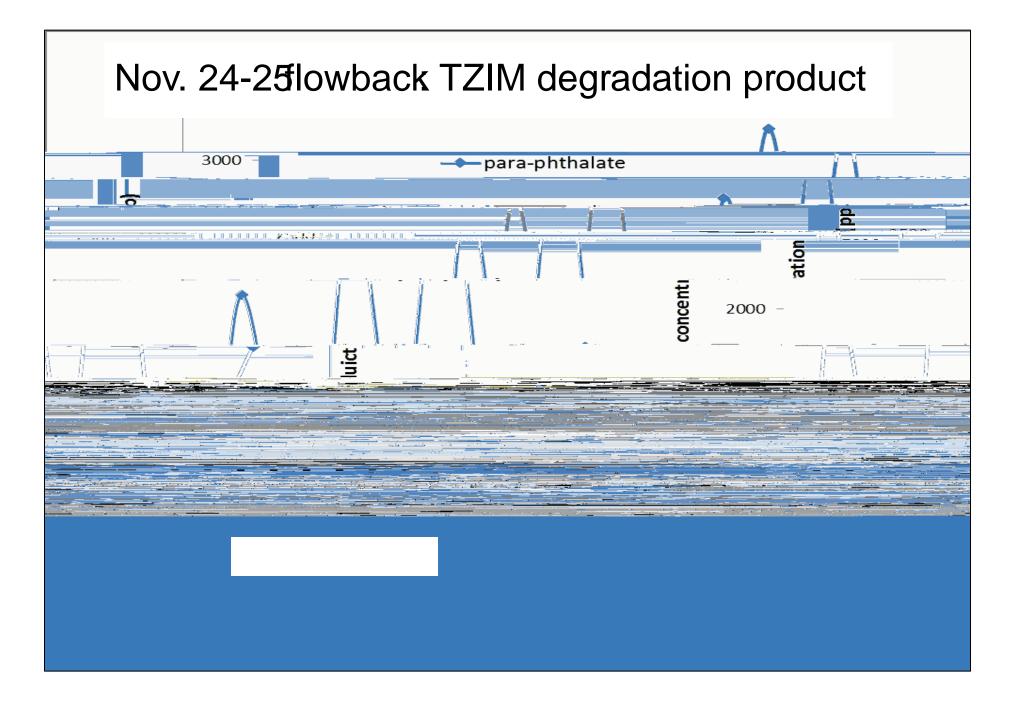
2015 Stimulation Summary

Gillian FoulgeMoment Tensor Locations

LBNL Repocations

List of event catalogs and their relative weights

Catalog	Number of Events	Weight
ISTI Original Locations		
LBNL Hanppicked Locations		
LBNL Relative Relocations		
Foulger MT Locations		



Derivative Analysis of Pressure fall-off

Conclusion

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