DASS Thermal – Typical Well (For Information Only)

Licensed by Space Engine Systems to DASS CAN-K Pumps

The DASS Thermal system for replacing the standard SAGD, cyclic steam injection, and other downhole heating processes is a revolutionary technology that is significantly more economical and reduces environmental impacts related to bitumen extraction.

By directing exhaust gas from turbine engines downhole, the thermal energy required to enable production is available at a fraction of the cost. Water can be added into the well to create steam downhole to assist in increasing bitumen mobility. Alternatively, exhaust gases can be partially injected into the reservoir, with or without water, to provide the required thermal energy.

Well Properties:

Below are the basic assumptions used for well properties.

Oil Production Rate	100 m^3/day	629 bbl/d
Liner Size	0.229 m	9 in
Supply Line Size	0.152 m	6 in
Return Line Size	Annulus	
Total Measured Depth	1100 m	3609 ft
Heat Injection	5.5 MW	18.8 MMBtu/hr

The resulting exhaust requirements are well within physical limits:

Exhaust Supply Pressure	3 MPa	440 psi
Exhaust Supply Temperature	800 °C	1472 °F
Exhaust Return Temperature at Surface	300 °C	572 °F

Applications:

Applicable in deep or shallow vertical, slanted or horizontal wells

Can be used in existing SAGD or Cyclic Steam or other new wells

Wide temperature range

Avoid coking by gradual heating if required

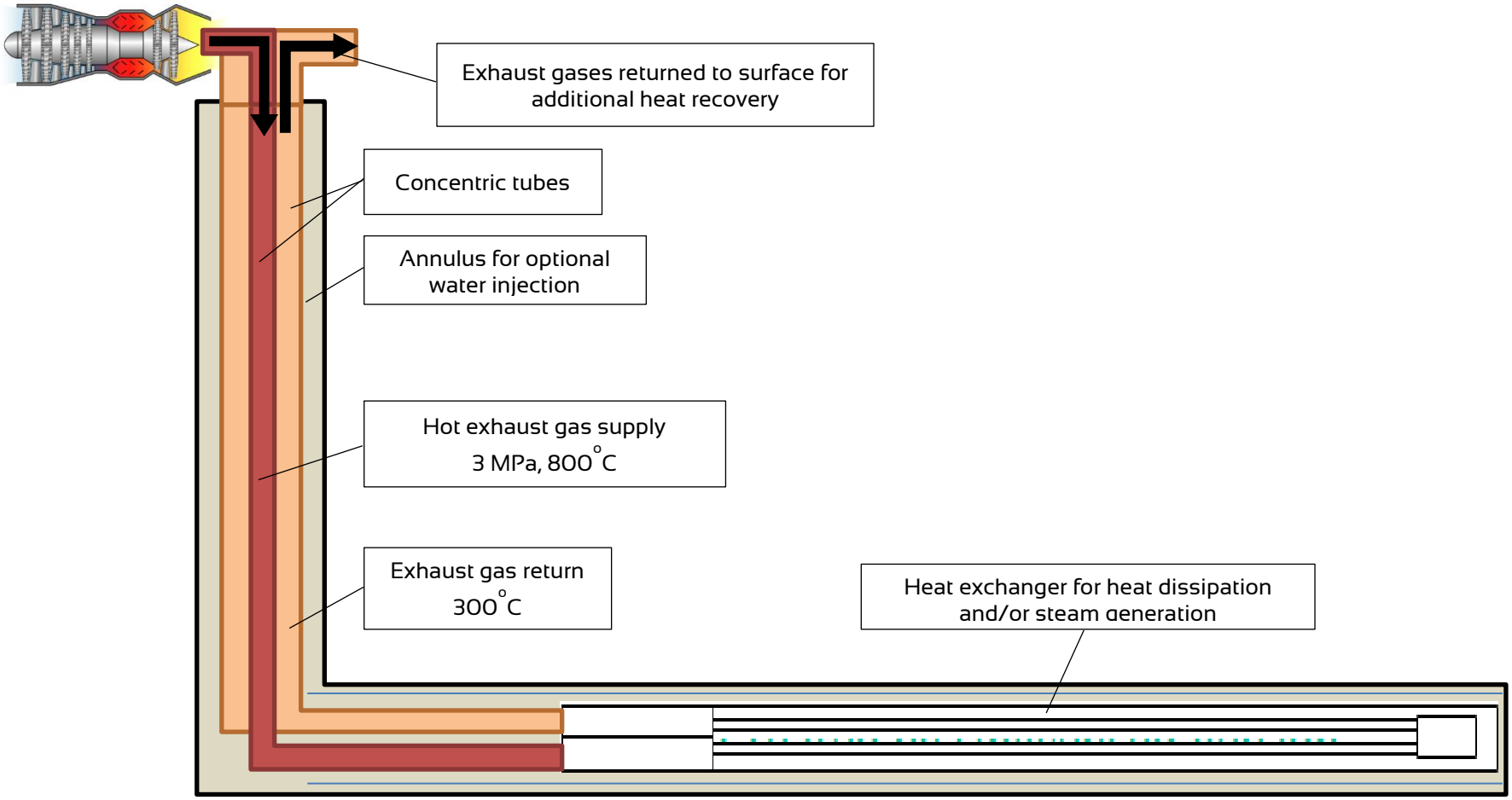
Inexpensive heat generation system

From 1 MW to 300 MW heat injection using existing technologies

Phone: 780-426-4800
Fax: 780-426-3044
www.can-k.com
An ISO 9001 & AS 9100C Company
#345 14032-23 Ave NW
Edmonton AB, T6R 3L

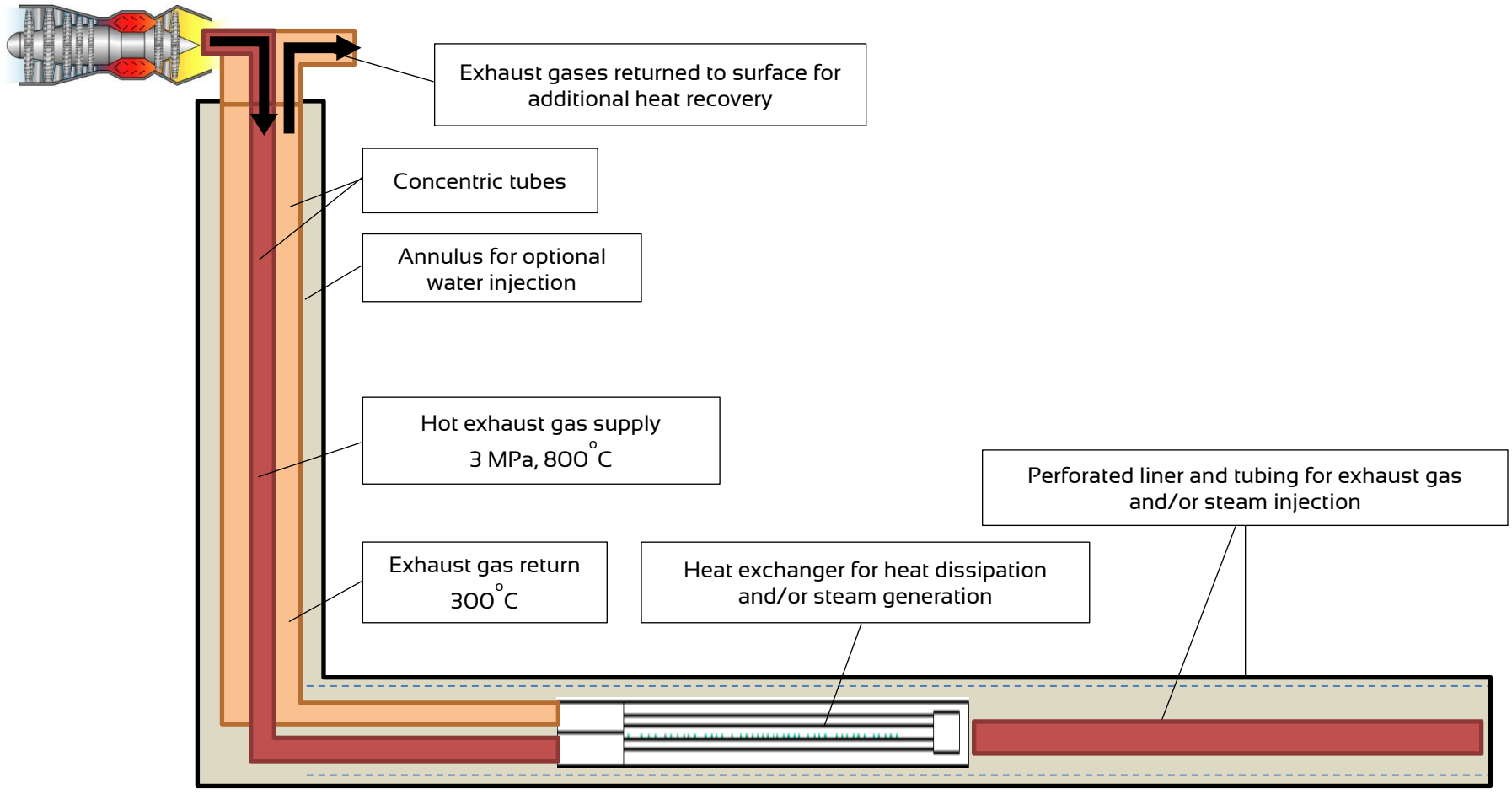
DASS THERMAL SYSTEM: CASE 1

Complete recirculation of exhaust gases with optional water/steam injection



DASS THERMAL SYSTEM: CASE 2

Partial recirculation (up to 50%) of exhaust gases with optional water/steam injection



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DASS THERMAL SYSTEM: CASE 3

Up to 100% injection of exhaust gases with optional water/steam injection