Licence Relinquishment Report

PEDL57 Partial Relinquishment

1. Licence information

This report has been prepared in support of a partial relinquishment of PEDL57.

We can confirm that all permissions to publish this report have been obtained.

Licence reference	PEDL57
Award round	8th
Round type	Onshore
Block Reference	SJ84b

2. Licence Synopsis

Licence status	Extant (Third term)
Licence start date	18 March 1998
Initial Term End Date	17 March 2004
Second Term End Date	17 March 2009
Licence End Date	17 March 2029
Licence Administrator	Regent Park Energy Ltd
Licence Administrator Parent Group	Infinis Energy
Licensee(s)	Regent Park Energy Ltd
Licensee(s) Parent Group	Infinis Energy

PEDL57 consists of one Block (SJ84b), covering an area of 25km^2 in Trentham, Stoke on Trent (Fig. 1).

Block SJ84b is bounded by the following coordinates (specified using British National Grid):

	Easting	Northing
NW corner	SJ 8500	SJ 4500
NE corner	SJ 9000	SJ 4500
SW corner	SJ 8500	SJ 4000
SE corner	SJ 9000	SJ 4000

Partial relinquishment of the Block will reduce the retained area to 2km^2, with the new Block bounded by the following coordinates (specified using British National Grid):

	Easting	Northing
NW corner	SJ 8800	SJ 4300
NE corner	SJ 8900	SJ 4300
SW corner	SJ 8800	SJ 4100
SE corner	SJ 8900	SJ 4100

Regent Park Energy Limited (Regent Park) is the sole licensee. Infinis Energy Management Limited acquired Regent Parks parent company, Alkane Energy Ltd, in April 2018. Alkane now operates as a wholly owned subsidiary of Infinis Energy Management Limited.

3. Work Programme Summary

Initial term working obligations under PEDL57 were to:

1. vent test the Hem Heath mine within one year of the award of the licence
2. drill one coal bed methane well within 3 years of the award of the licence
3. drill one additional coal bed methane well within 6 years of the award of the licence, contingent upon the results of the first well

Vent testing was completed in line with the work programme obligations and passive monitoring of the site confirmed a lifespan of up to nine years based on an annual extraction rate of 9.8Mm^3.

No wells have been drilled within the licence area as the existing mine shaft (Hem Heath No. 1 shaft) was subsequently sealed and repurposed for the extraction of the gas from the mine.

4. Prospectivity Update

The prospect was Coal Mine Methane (CMM) at the former Hem Heath Colliery, off Sir Stanley Mathews Way, Trentham Lakes, Trentham, Stoke on Trent.

The Hem Heath coal mine was worked in ten coal seams and the geology and geological structure of the area is well documented by means of the standard mine plans which record all relevant mining and geological data. It was therefore considered of no value to conduct any seismic surveys of the area.

The original shaft sinking began in 1924 and was deepened when the colliery was modernised in 1950. A second shaft was sunk during this modernisation. The colliery worked in a total of ten different seams. The mine complex (having merged with Florence Colliery in 1974 to become Trentham superpit) finally closed in 1996. Of the seams in the gas recovery model, the Great Row workings are at the shallowest at 380m below ground level and the deepest workings are in the Bowling Alley seam at depths of around 1100m below ground level.

5. Resource and Risk Summary

MHA Petroleum Consultants of Lakewood, Colorado, USA generated estimates of the gas supply attributable to the mine workings. The evaluation utilised accepted engineering and reservoir modelling techniques developed and validated in the conventional oil, gas and coal bed methane sectors of the international petroleum industry.

In 2008, the volume of recoverable methane remaining within the Hem Heath footprint was estimated to be in the region of 93Mm^3. Assuming an annual extraction rate of 2.45Mm3 per MW, this gave a total energy reserve of approximately 38MWyrs. MHA therefore gave the 4MW Hem Heath project an estimated life expectancy of around 9.5 years.

The Field Development Plan from April 2008 assumed that extraction of gas and the generation of electricity would be carried out 24 hours per day and the initial rate of production was expected to plateau at around 1200Nm3/hr. This would be sufficient for the generation of 4MWh/h of electricity.

MHA estimated that the Hem Heath site could sustain its design capacity rate (4MWh/h) for approximately eight years. Subsequent passive monitoring of the site confirmed a lifespan of up to nine years at 4MWh/h based on an annual extraction rate of 9.8Mm^3.

The production of electricity at Hem Heath from mines gas ceased in June 2017 by which time gas volumes had depleted to levels insufficient to sustain commercial generation.

6. Conclusions

Block SJ84b covers an area of 25km^2, which is being reduced to 2km^2. Contained within this reduced area are the retained gas utilisation compound (consisting of engines and associated extraction and processing equipment) and the coal authority shaft (Hem Heath 1).

The production of electricity at Hem Heath from mines gas started in 2008 and carried on until June 2017 by which time gas volumes had depleted to levels insufficient to sustain commercial generation. Investigations identified a collapse at the bottom of the shaft which is considered to have restricted flow from the mine. As the mine is not flooded and gas extraction and utilisation equipment has been retained on site (within the retained Block), mine gas recovery rates will be monitored and should they recover to sufficient levels, consideration will be given to resuming operation of the generation plant.

There are no obligations relating to the Hem Heath shaft under the licence and there are no other wells associated with these relinquished licence areas.

7. Clearance

The NSTA is free to publish the Report and that all 3rd party ownership rights (on any contained data and/or interpretations) have been considered and appropriately cleared for publication purposes.

8. Maps and Figures

Fig. 1: Licenced areas (pre-relinquishment red and post-relinquishment orange)