GIS IN GEOTHERMAL INDUSTRY
(OLKARIA-KENYA)

KenGen

BY
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GEOSPATIAL WORLD FORUM

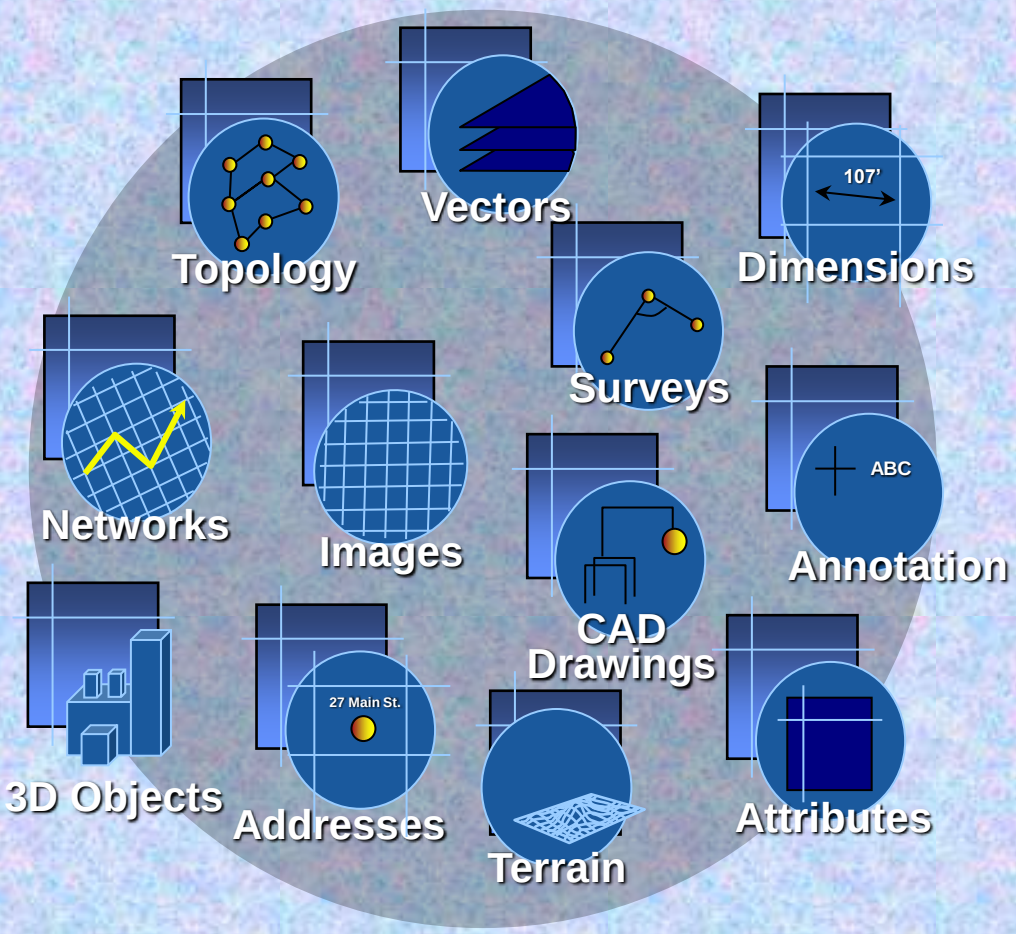
24TH MAY 2016

OLKARIA SITE MAP

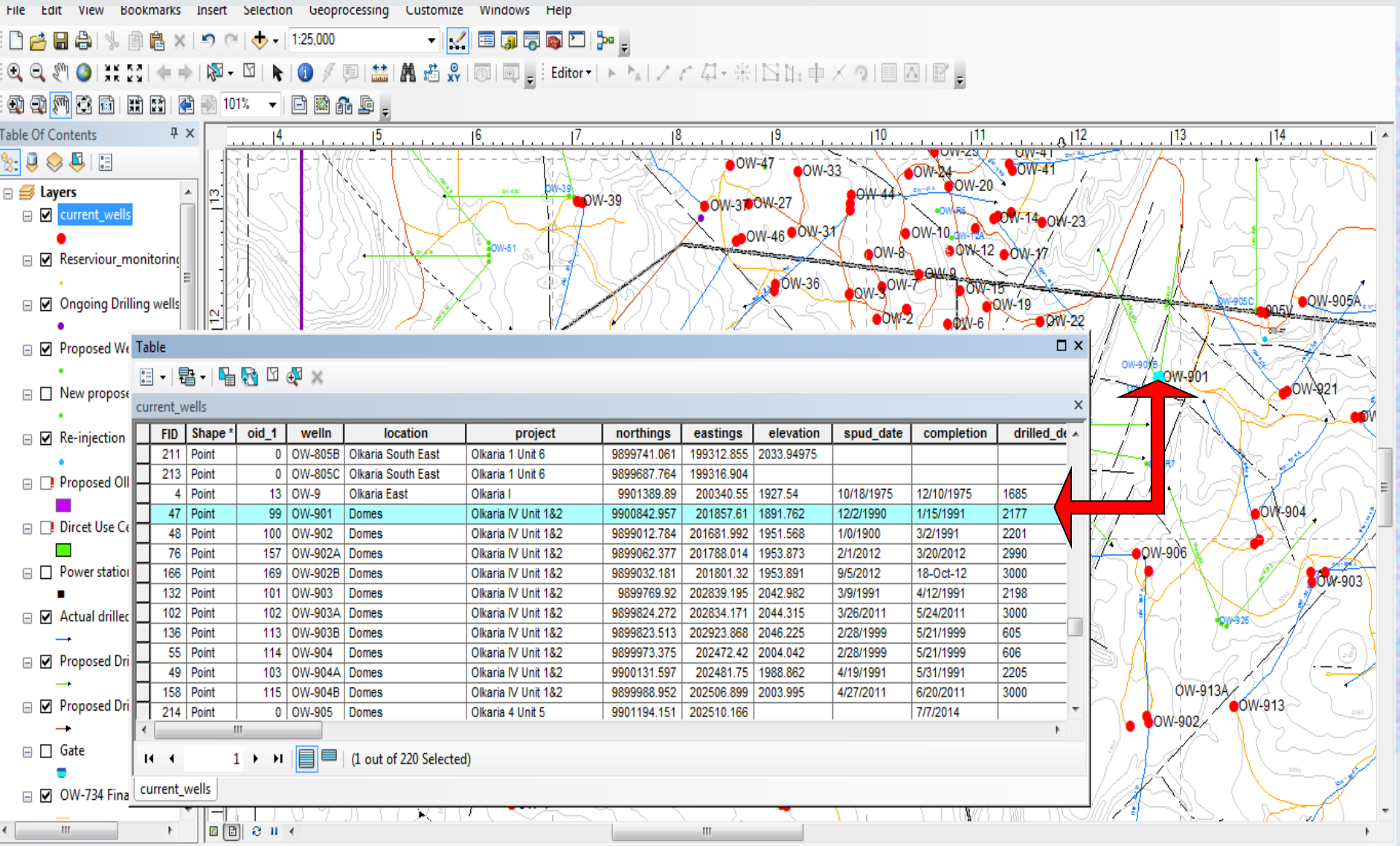
Olkaria, KenGen Concessional Area

GIS AND DATA ORGANIZATION

- Geology
- Wells
- Geochemistry
- Geology
- Geophysics
- PowerStation
- Steam pipes
- Water pipelines
- Terrain



GIS and Data Organization



FID	Shape *	oid_1	welln	location	project	northings	eastings	elevation	spud_date	completion	drilled_de
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213	Point	0	OW-805C	Olkaria South East	Olkaria 1 Unit 6	9899687.764	199316.904				
4	Point	13	OW-9	Olkaria East	Olkaria I	9901389.89	200340.55	1927.54	10/18/1975	12/10/1975	1685
47	Point	99	OW-901	Domes	Olkaria IV Unit 1&2	9900842.957	201857.61	1891.762	12/2/1990	1/15/1991	2177
48	Point	100	OW-902	Domes	Olkaria IV Unit 1&2	9899012.784	201681.992	1951.568	1/0/1900	3/2/1991	2201
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166	Point	169	OW-902B	Domes	Olkaria IV Unit 1&2	9899032.181	201801.32	1953.891	9/5/2012	18-Oct-12	3000
132	Point	101	OW-903	Domes	Olkaria IV Unit 1&2	9899769.92	202839.195	2042.982	3/9/1991	4/12/1991	2198
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49	Point	103	OW-904A	Domes	Olkaria IV Unit 1&2	9900131.597	202481.75	1988.862	4/19/1991	5/31/1991	2205
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214	Point	0	OW-905	Domes	Olkaria 4 Unit 5	9901194.151	202510.166			7/7/2014	

GIS IN RESOURCE ASSESSMENT

Geological Surface Exploration

Geochemical & Reservoir modelling

Geophysical Exploration & Analysis

Resource Modelling and Management

GEOTHERMAL ENVIROMENT AND GIS

Change Detection and Monitoring

Project Stakeholder Engagement

Environmental Monitoring and Management

Promotion of Social Afforestation

Safety & Quality Management systems

GIS FOR PROJECT INFRASTRUCTURE

Site preparation and access roads- Drilling Operations

Civil works for project Operations

Infrastructure Management

Civil equipment maintenance

GEOCOLLABORATION

Surface and Sub-Surface Exploration

Drilling Technology

Reservoir

Power Plant Management

PRIMARY LINKS

- GIS users
- Kenya Geothermal Project
- Staff Login

Home

Olkaria I Power Station was the first geothermal power plant in Africa. The 45 MW plant was commissioned in three phases and has three units each generating 15MW of electricity. The first unit was commissioned in June 1981, the second and third units in November 1982 and March 1985, respectively.

To date, a total of 33 wells have been drilled for the station. Thirty one of these are currently connected to the power station while two of these are retired. One well is currently being used for fluid-injection. The turbines are direct condensing 4-stage running with an inlet steam pressure of 3 bars at temperatures of 112oC and steam consumption of 6.2 t/h/MW. The plant has had an average availability factor of over 95 per cent from commissioning. The power generated is connected to the national grid via a 132kV transmission line.


Olkaria Web GIS
User account

WEB GIS IN GEOTHERMAL-LOGIN PORTAL

Geospatial Property Management System (GeoPro)

One of the biggest costs to an organization, second only to human resources, is asset and facilities management. If these are managed well, an organization can reduce its overall business costs through more efficient maintenance, managing space more effectively, and locating and using resources in the most efficient manner.

To do this effectively especially for a large company like KenGen, it is important to understand where real property, such as offices, power stations, Geothermal wells, warehouses, pipelines, computers, and desks, are located. KenGen is the largest power producer in Kenya having various power generating stations across the country.

In most of the cases land where the organization's offices and installments are is owned by the organization. Using geographic information system (GIS) software to manage these vast amounts of property gives users a more accurate reflection of real-world circumstances and allows the organization to make better business decisions.

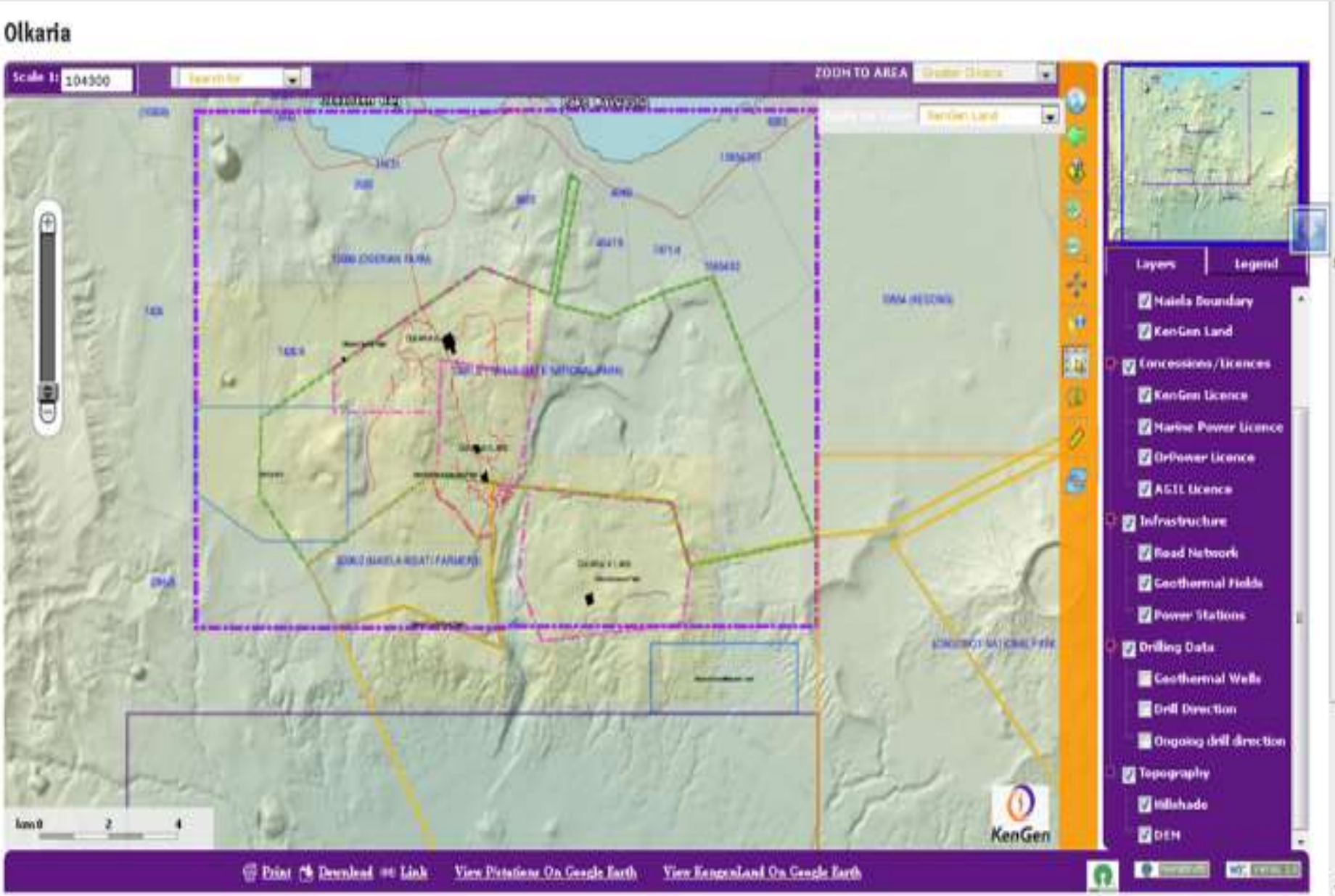
Photos on flickr

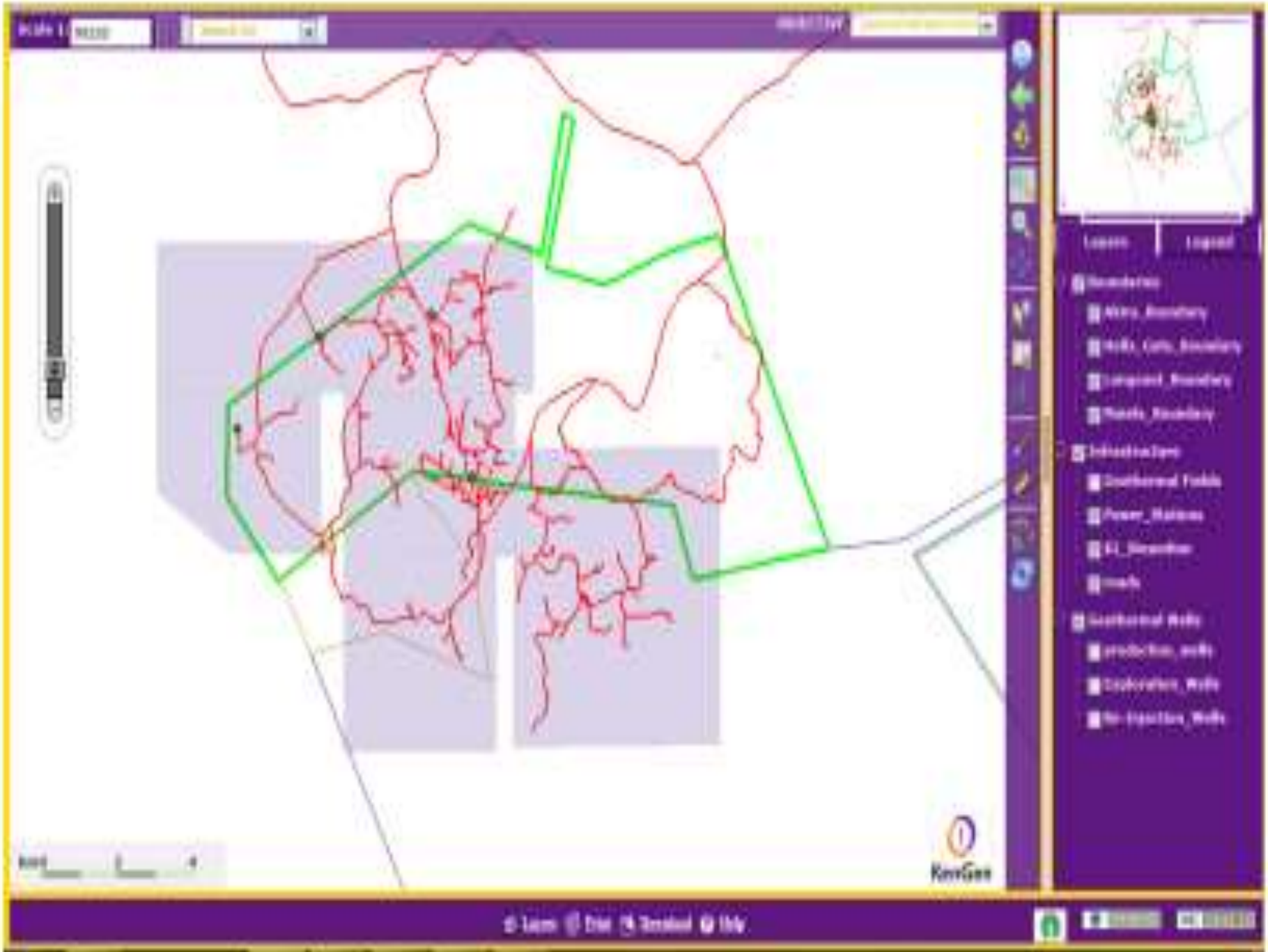
Property Office

- Site Admin
- Log out
- Entries RSS
- Comments RSS
- WordPress.org

[Edit]

WEB MAP – GEOTHERMAL RESOURCE MAP




Layers
Legend
Boundaries
Wards_Boundary
Wards_Cells_Boundary
Component_Boundary
Wards_Boundary
Infrastructure
Geothermal Fields
Power_Stations
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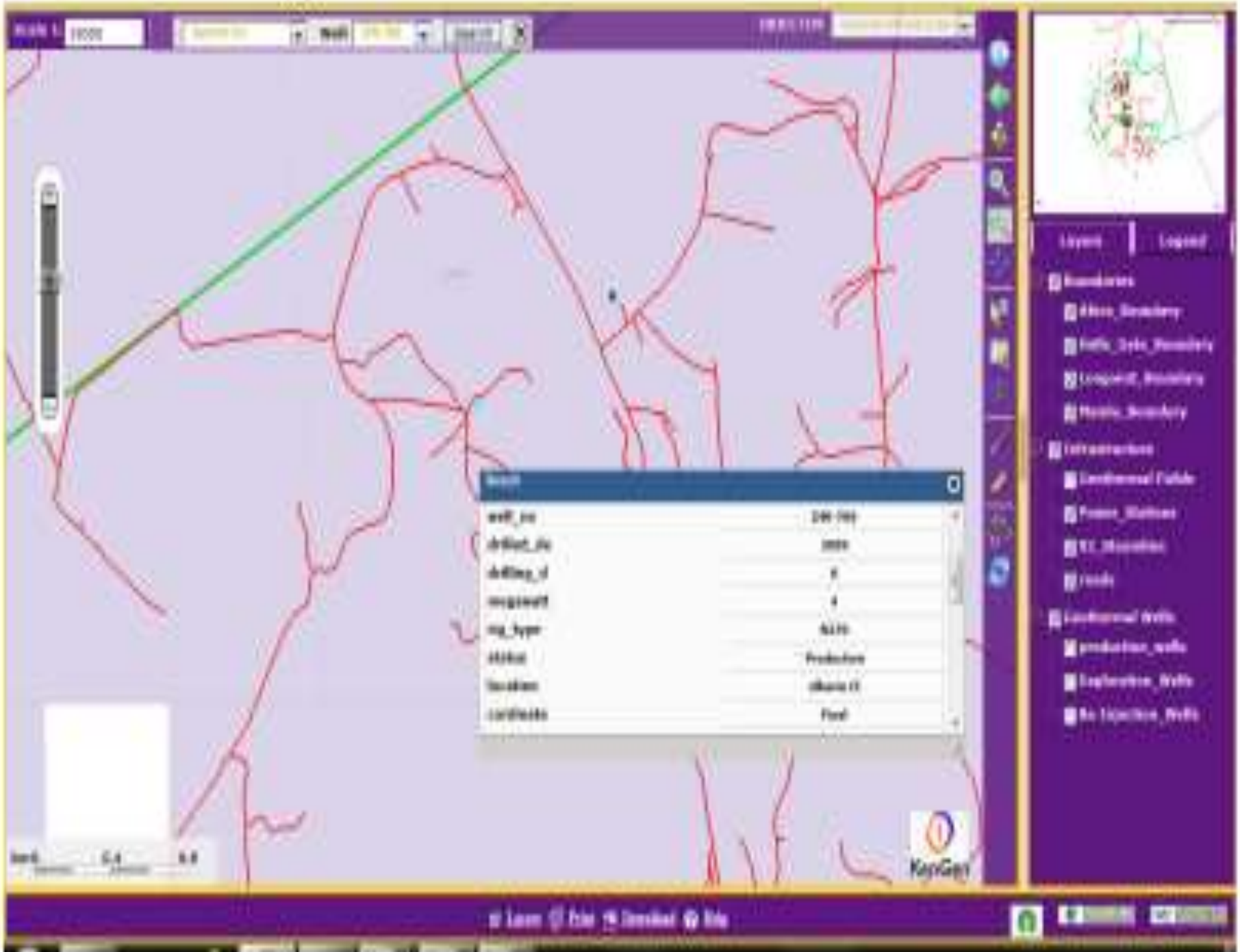
roads
Geothermal Wells
production_wells
Exploration_Wells
Re-Injection_Wells
KenGen


Layers
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Boundaries
Infrastructure
Geothermal Wells
Production_Wells
Exploration_Wells
Re-Injection_Wells
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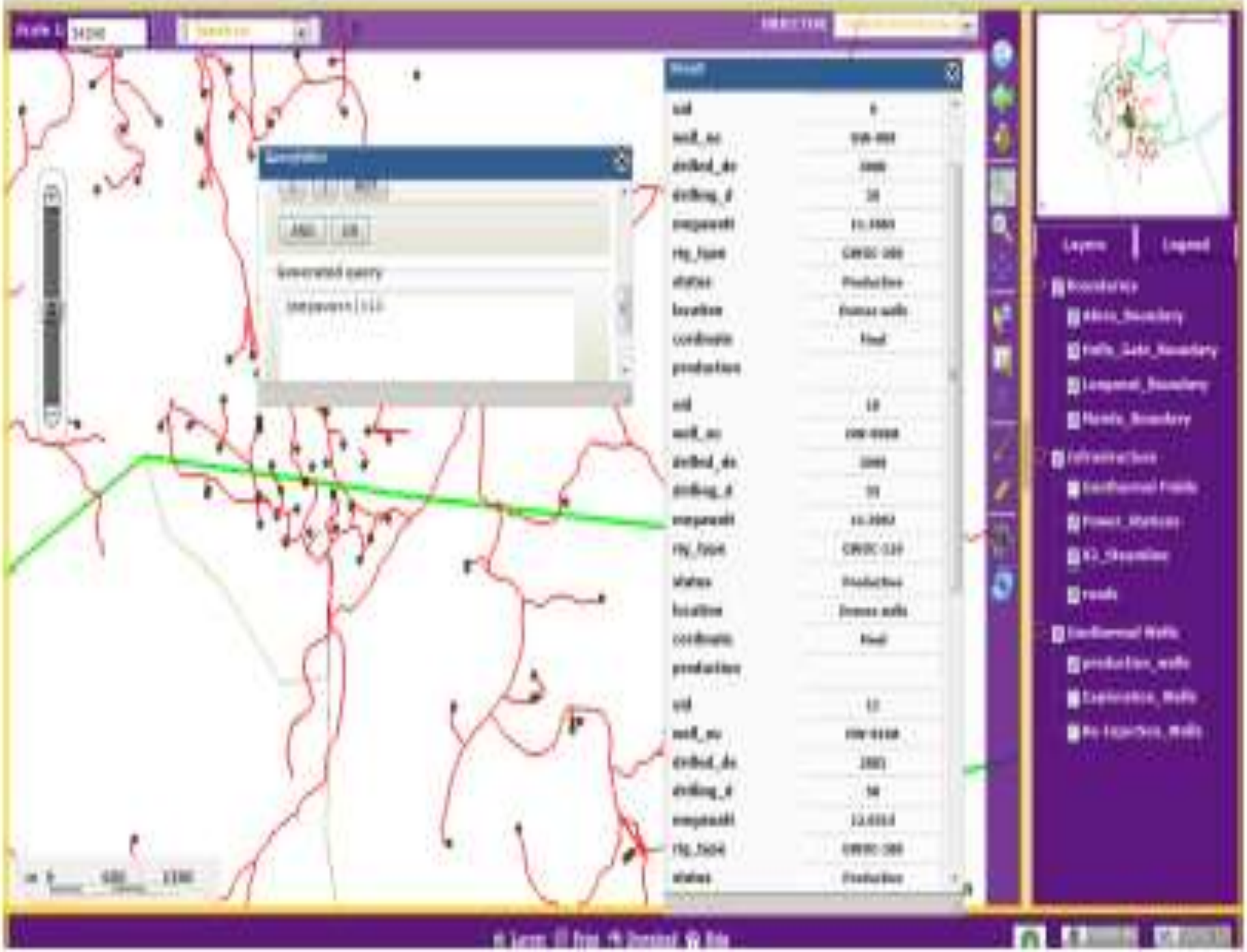
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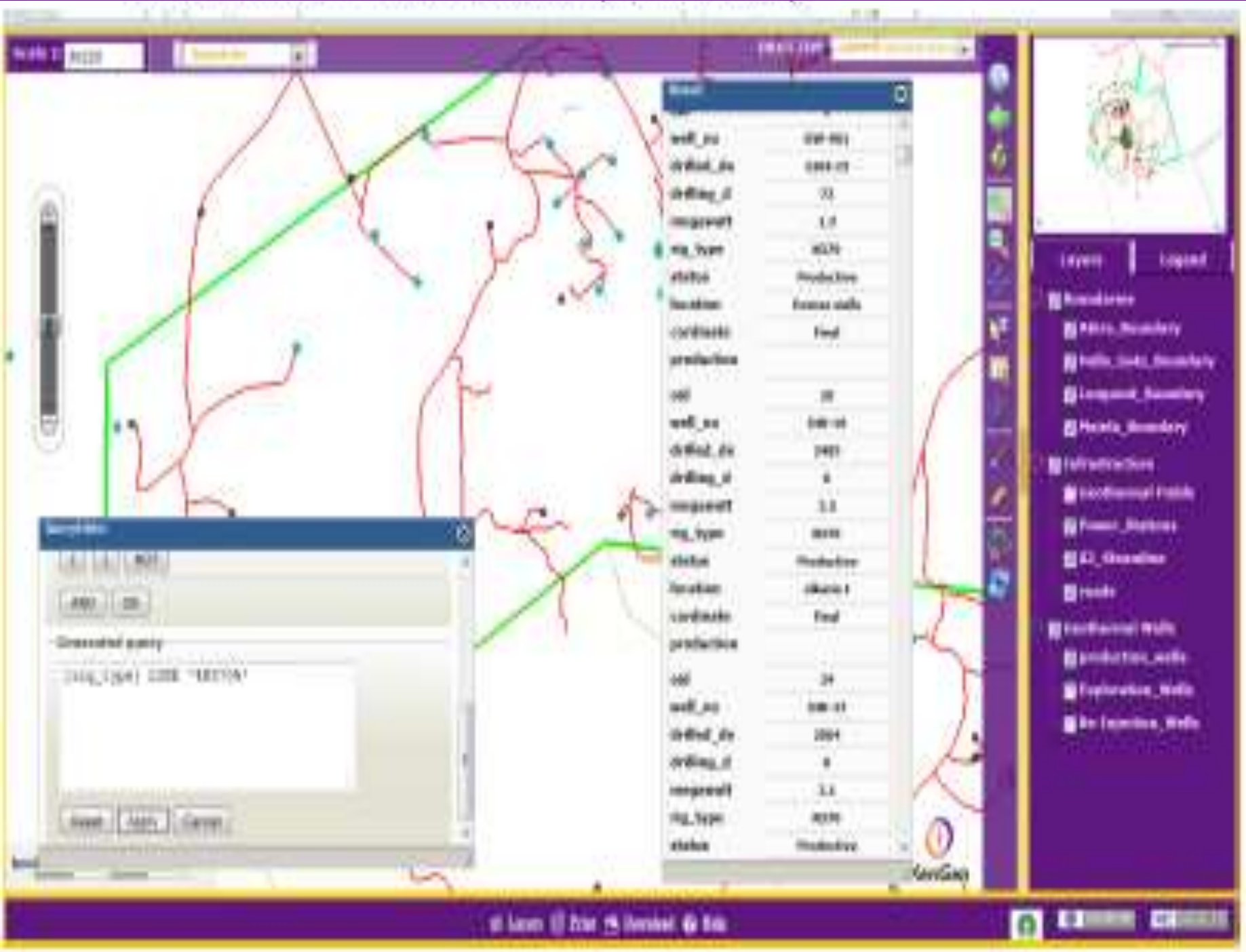
Layers
Legend
Boundaries
Infrastructure
Geothermal Wells
Generated query

BURDEN OF BUSINESS DELIVERY

SYSTEMS INTEGRATION

SAP

RIM BASE

LEAP FROG

UTILIIES REALITY MODEELING


THANK YOU