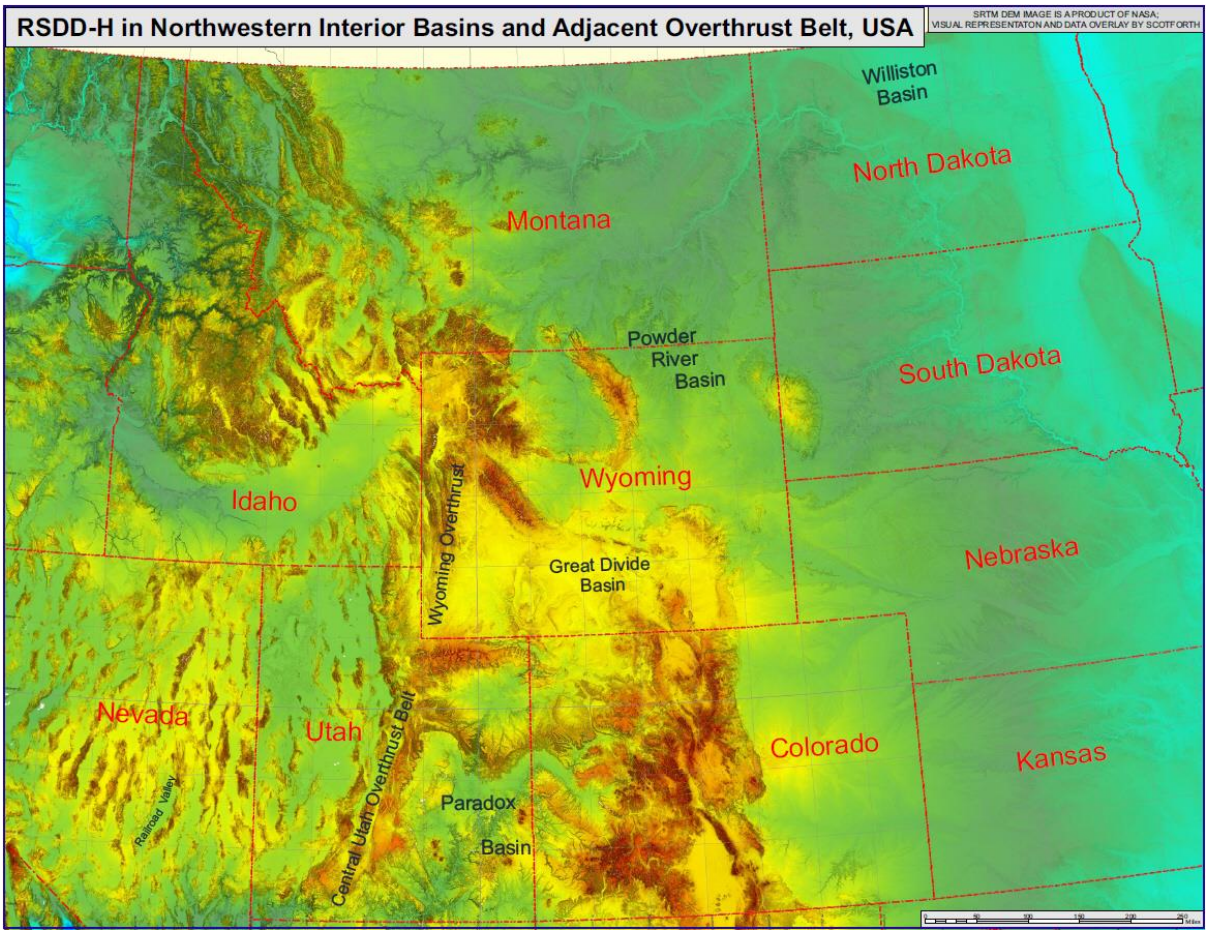
Hydrocarbons in the Northwestern Interior Basins and Adjacent Overthrust Belt, USA

Scotforth has studied various parts of the USA from as early as 2000. In the early years Alaska was the primary focus– both the North Slope and the onshore Cook Inlet basins. More recently, it has placed attention increasingly on the Lower 48 with studies of the Cordilleran Deformed Belt and the Interior Basins of Montana, Wyoming, Utah, North Dakota and Nevada.

Scotforth is now excited to recognise:

- **We have identified for drilling many excellent conventional petroleum prospects in these States**
- **These range from giant new field discovery targets in under-explored districts right down to "40 acre" single well pool targets in long-explored and heavily drilled basins**
- **Our prospect book is large, growing and calibrated to RSDD-H observed known oil and gasfields; we will identify many more new targets**
- **The stealth land-banking capacity of RSDD-H across this prospect book is immense**
- **The opportunity to engage in prospect drill-outs for new discoveries is uniquely low risk.**



Scotforth is now exploring various parts of these illustrated districts with US business allies.

RSDD-H Regional Context, Surveying Capacity and Exploration Implications

A broad sweep of completed RSDD-H projects and ongoing R&D in this large region includes large area-wide reconnaissance mapping of under-explored frontiers, licence / lease ranking prospectivity appraisals in proven basins and detailed prospect mapping in more mature exploration venues.

Following intensive R&D examination most districts are now in Scotforth's good to very good surveyability categories and locally even better.

All of these studies now point to a high level of RSDD-H prospectivity effectiveness in these basins and play districts. Many known fields and pools display good to excellent RSDD-H response anomalies (Hydrocarbon Lead Indicators or "HLIs") across diverse geology, landscape and ecosystems. **This adds surveying confidence and indicates strongly that identified nearby analogous HLIs are actually low risk hydrocarbon prospects and leads – new inventory for future discoveries and/or field and pool extensions.**

This capacity is further under-pinned by the achieved overall improvements in RSDD-H processing world-wide over the years and in Scotforth's ever-deepening Know-How of preferred processing algorithms for specific terrains. Higher resolution HLI mapping and more effective prospect determination is now possible in more survey areas than ever before.

Here in this north-western part of the Lower 48, the rich industry and geological open file databanks of the numerous State Oil and Gas and Geological authorities provide a deep body of "Conventional Lead Indicator" ("CLI") petroleum habitat evidence. By using both HLI and CLI data sets, objective and often incisive exploration risk and petroleum resource potential modelling is now possible for many areas. **This combined approach should result in much enhanced finding rates, reduced exploration write-offs and ultimately greater value creation for investors and HLI-led explorers.**

Opportunities are clear and numerous. Many of these are not recognised by competitors or industry as a whole. Where historic drilling success rates have been as low as 7.5 to 10% (e.g. Powder River Basin) Scotforth can now increase these to comfortably more than 50% and in high confidence survey areas to 70+% - the levels it is now witnessing for its HLI mapping world-wide in good survey and data terrains (see separate Brief: RSDD-H Performance Statistics, June 2016)**.**

RSDD-H based strategic guidance and highly focused HLI-led exploration here can result in excellent discovery rates and major reserves additions at much reduced finding costs. The case for new investment today in HLI high-graded lands is appealing, particularly as $50/bbl market conditions are profitable for the expected finding rates and costs. **Moreover, the timing is perfect for low cost implementation of value-capturing lease acquisition programs.**

This RSDD-H based prospectivity guidance can stop the long-running multi-million dollar investor and industry bleed from poorly focused exploration programmes. Their inappropriate land, seismic and dry holes expenditures can be effectively curtailed and the resulting available funds successfully re-directed.

To provide evidence for this espoused RSDD-H prospecting confidence in this region a series of **RSDD-H processed satellite images** is provided hereafter to illustrate some typical RSDD-H spectral "footprints" (or "HLIs") of both

- known fields in a number of these US petroleum provinces and
- first sighting of a number of newly discovered, low risk HLI-identified analogous prospects – largely not yet recognised by industry.

Most displays are RSDD-H "Iso-photo Density" images or "IPDs" in which the prospective (anomalous response) areas are represented by the hot orange/ black colours and the low prospectivity areas (weak to no anomalous response) are "cool" pale yellow through green to blue and white.

One or two displays are contour maps of measured values of relative brightness response – "spectral intensity displays" or "RBU" maps.

These RBU maps (Relative Brightness Units) are incisive. They provide both the overall size and quality of HLI prospects / leads and their internal RBU characteristics. This detailed prospect analysis capacity is increasingly used to identify the number and quality rank of possible drilling locations within them, leading to more effective drilling choices and reduced risk of drilling ineffective or marginal tests.

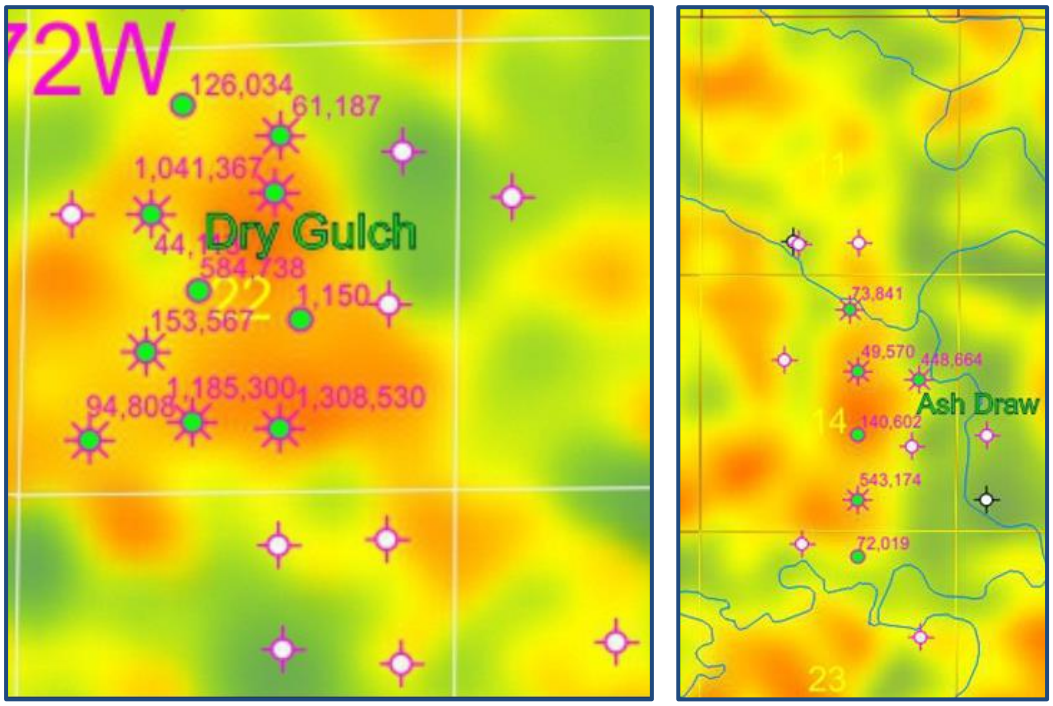
The example set or "gallery" includes images from:

- **Powder River Basin**
- **Paradox Basin**
- **Williston Basin**
- **Railroad Valley Basin**
- **Great Divide Basin**
- **Utah and Wyoming Overthrust**.

SFL 22nd June 2016

Powder River Basin, Wyoming and Montana:

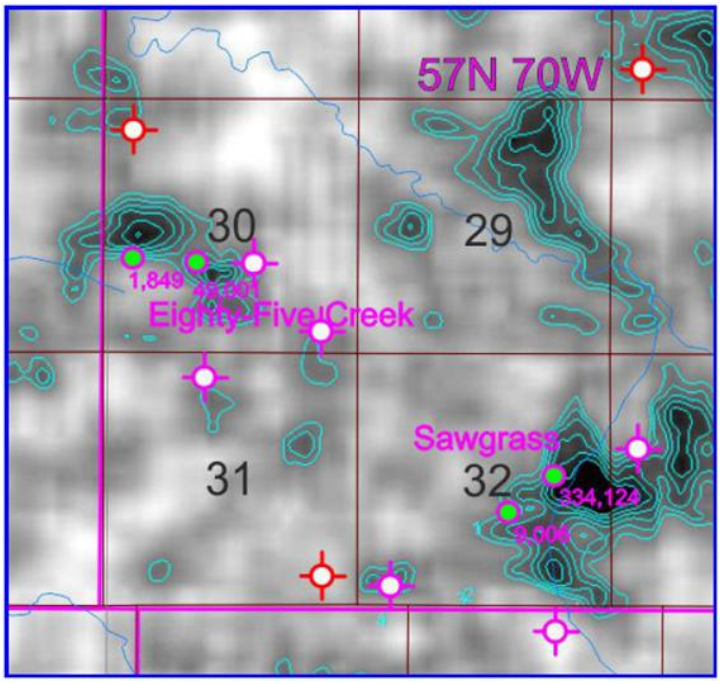
This major producing province has had a low historic exploration drilling success ratio. HLI mapping with RSDD-H now indicates substantial remaining potential that can be drilled out at much enhanced success rates.



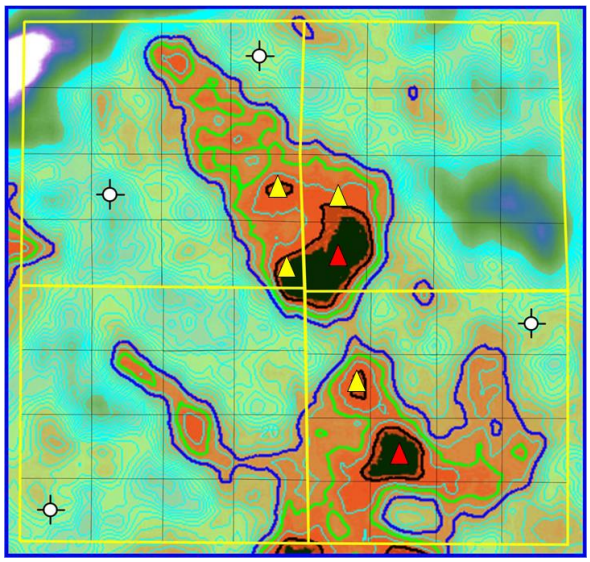
Two central PRB multi-well fields –Dry Gulch (ca. 5million barrels) and Ash Draw (ca. 1.3million barrels) in RSDD-H Iso-photo Density mode ("IPDs").

In both cases the accumulations have generated mappable spectral footprints at surface – stronger over the larger pool of Dry Gulch. Nearby dry holes locate on no-anomalous surface response areas – "off-anomaly". Invariably marginal situations exist and "shows" are often encountered there. Core HLI locations are always set as the preferred initial prospect testing targets.

This approach could have avoided 8 or 9 dry holes alone at Dry Gulch and 5 or 6 at Ash Draw – possibly $10+ million of write-off.



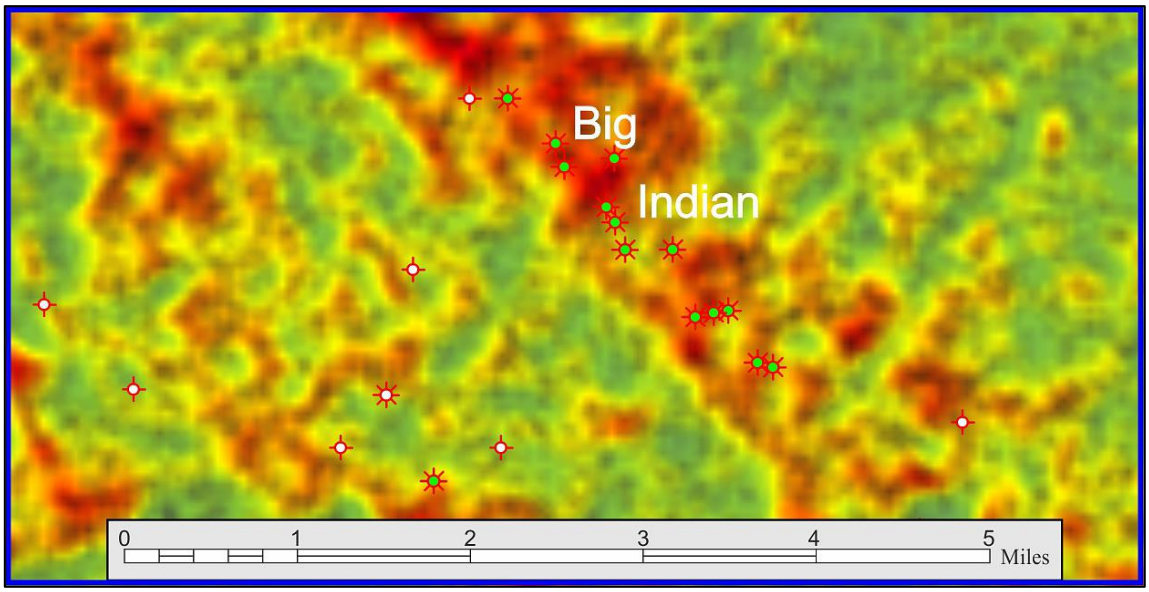
Two contrasting image displays of PRB fields – the large Shippy Field in central PRB and the much smaller Sawgrass field plus satellite outliers in northern PRB. The Shippy IPD example provides excellent fit of hydrocarbons and HLIs (hot orange) and of dry holes / non-anomalous response areas (green). At Sawgrass, the spectral intensity RBU contour map highlights the ability of RSDD-H to pinpoint optimal drilling locations down to the level of the intra-section "40s" regulatory well spacing units. **It is surprising how seldom historic wells actually tested the best locations. Indeed in PRB with historic success rates of little more than 10% very few "dry" CLI prospects actually penetrated HLI prospects at all.**



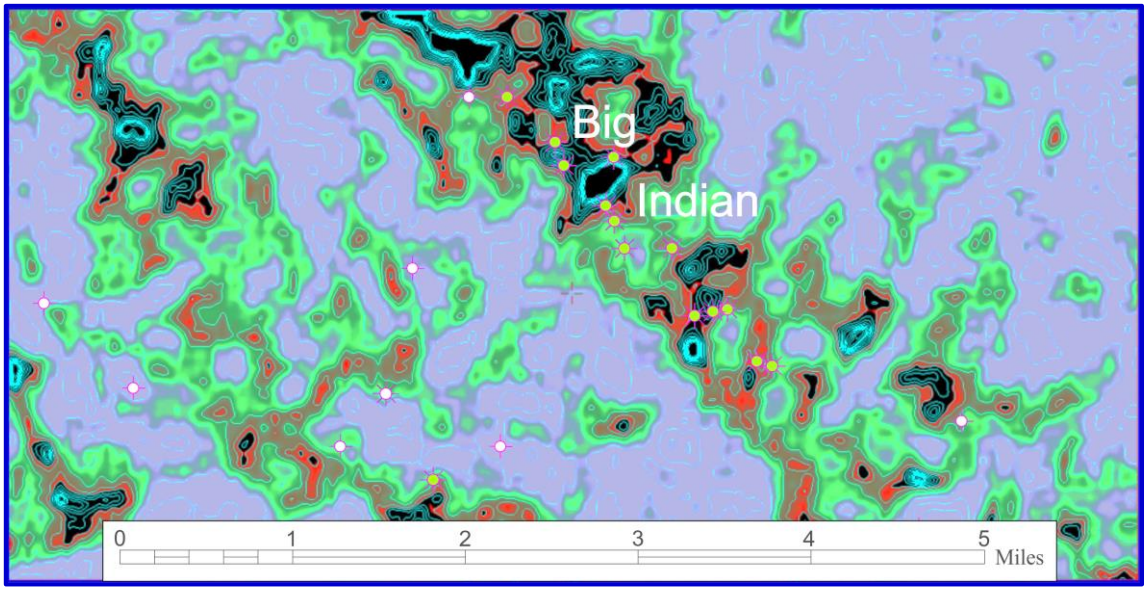
RBU Map of a four Section, 2 prospects PRB play (unrisked 0.5 to 2+MM barrels). Both are multi-well potential prospects – optimal first test well locations (red triangles), follow-up preferred initial step-out locations (yellow triangles). Note the D&As off-HLI anomaly.

Paradox Basin, Utah and Colorado:

This basin contains excellent fields and proven reserves but is also now indicating with RSDD-H that further substantial prospectivtiy remains and large fields are yet to be discovered.

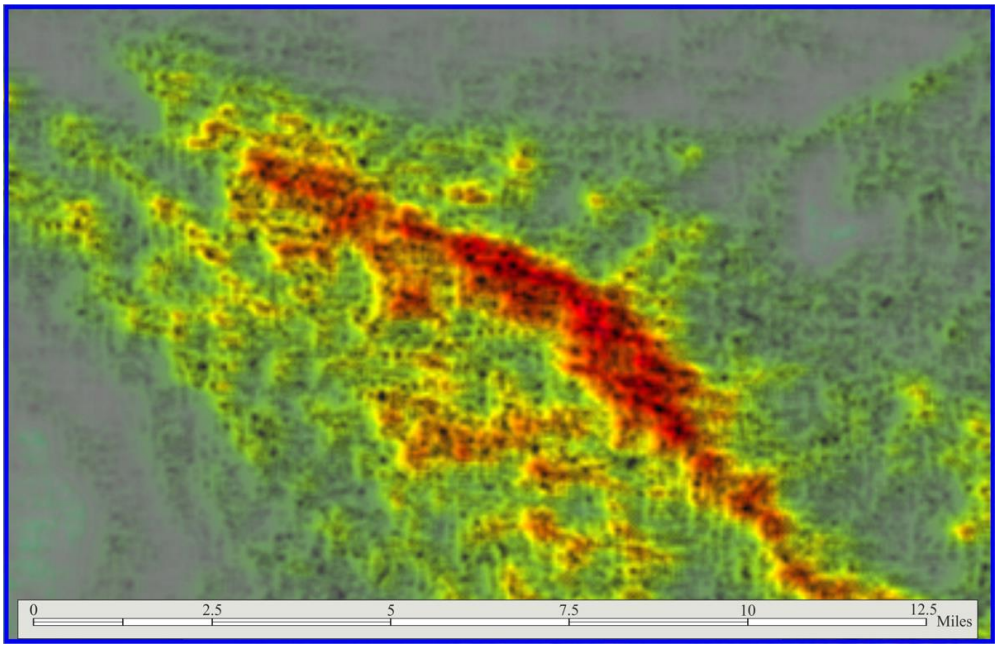


Big Indian Gasfield displaying as a powerful "gross" HLI target area under IPD processing



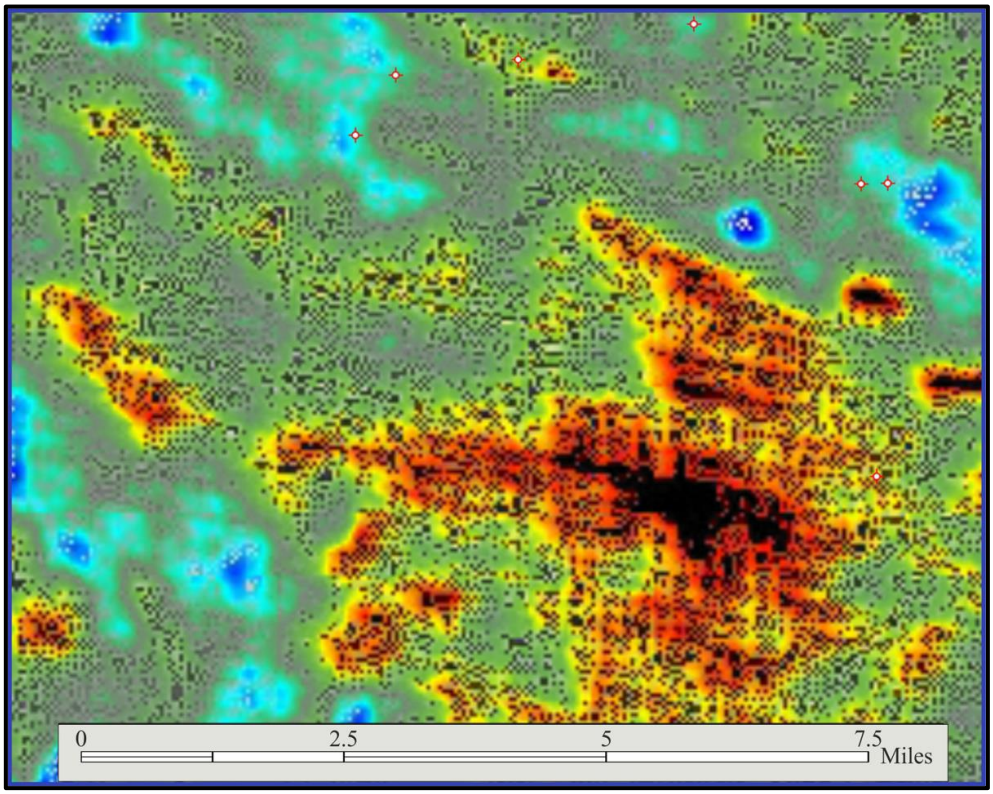
Big Indian Gasfield displaying as a series of RBU mapped "net" prospect target sub-areas

This combination IPD and RBU mapping not only sets out the general prospective trend and main features but also pinpoints expected optimal drilling target locations within. On this RSDD-H imaging there appear to be further drilling potential both "in-field" and on newly identified prospects and leads. Note also the better than 80/20 ratios of producers and D&As to their respective "on/off" HLI locations.



A newly identified, elongated Paradox Basin Exploration Focus Area ("EFA"). This highly prospective trend – essentially undrilled – is surrounded by widespread Low Prospectivity terrains.

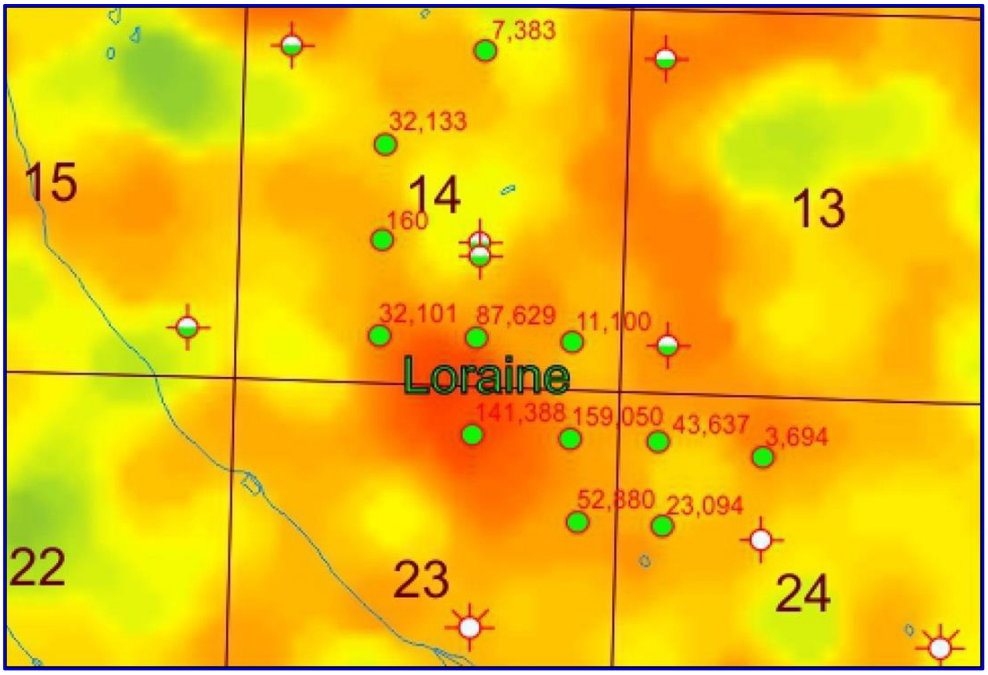
Higher resolution RSDD-H surveying and RBU mapping will determine individual prospect targets suitable for oil and gas leasing and progression to drilling. Lower rank areas will be discarded without further expenditure or investment effort.



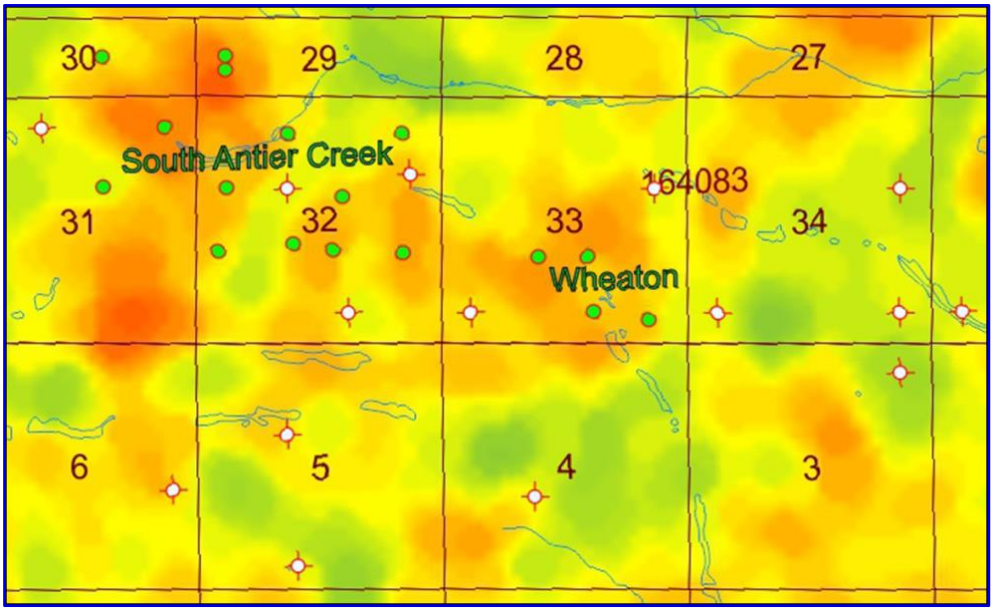
A further untested large prospective Paradox Basin EFA awaiting highly-focused exploration.

Williston Basin, North Dakota:

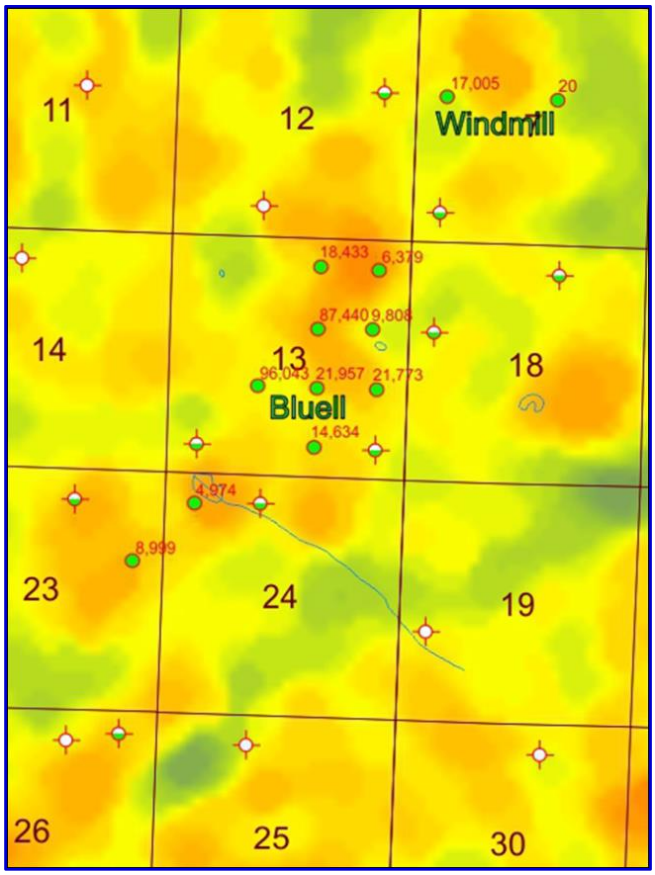
Beyond the Bakken oil shale frac play district there are numerous shallow conventional black oil HLI prospects emerging under RSDD-H surveying. These new prospects range from single "40s" tests to "multi-40s" features that could hold several million barrels recoverable. This prospect inventory is under-pinned by HLI detection of the known fields and the high percentage of existing D&As in non- HLI locations. High success is predicted.



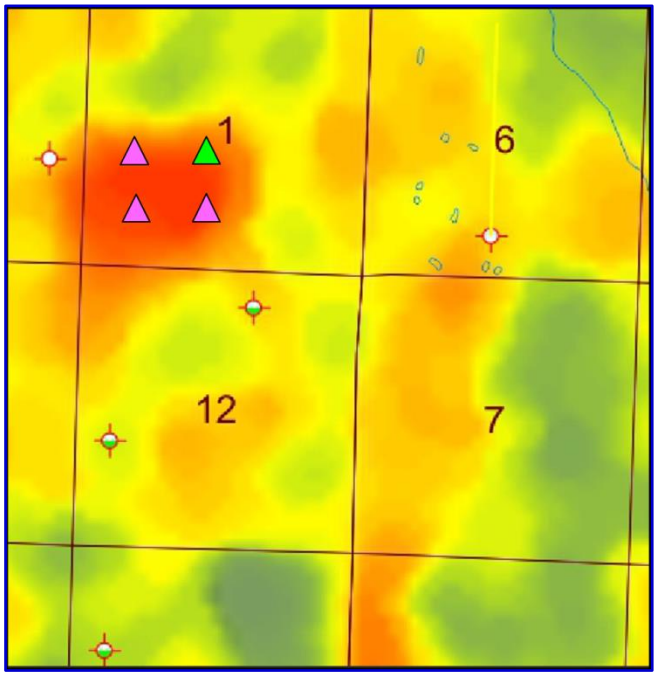
Loraine Oilfield: EUR 650,000 barrels



South Antler Creek: EUR 850,000 barrels Wheaton: EUR 100,000 barrels



Bluell: EUR 385,000 barrels and Windmill: EUR 26,000 barrels

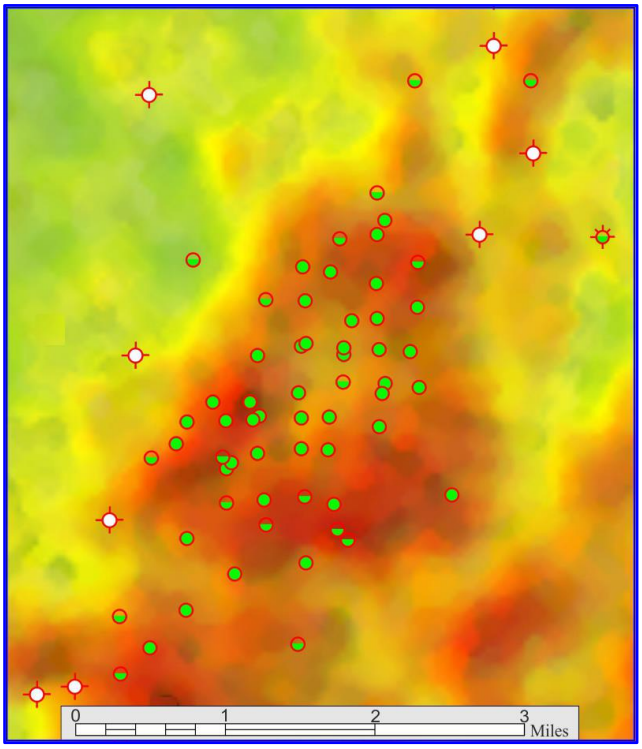


New four well quarter section prospect on high intensity HLI anomaly. Gross unrisked potential petroleum resources ca. 1 million barrels.

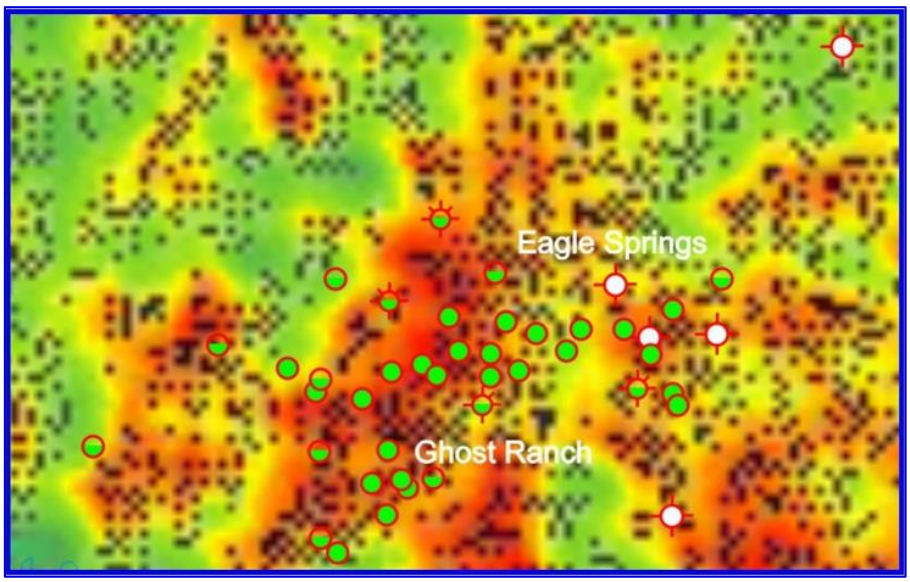
First well test (green triangle) plus three possible step-out "40s" locations (magenta triangles). Nearby D&As and "oil show" wells in marginal and off-anomaly locations.

Railroad Valley Nevada:

This is an enigmatic province – having proven difficult to succeed and grow from its long proven fields using conventional exploration methods ("CLIs"). RSDD-H mapping observes the known fields and has identified analogous new low risk HLI prospects that are yet to be tested – fields of the future. An expected RSDD-H "discovery breakthrough" district.

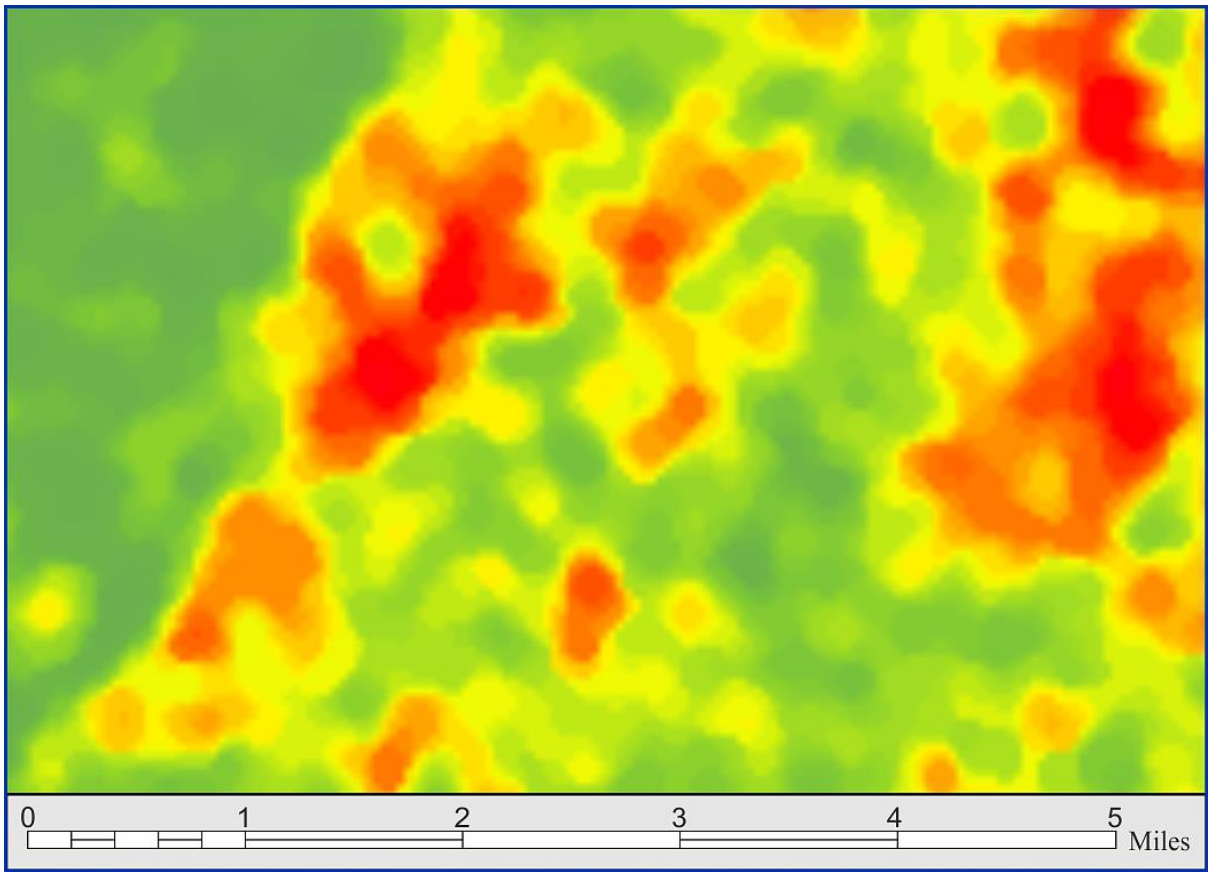


Trap Springs Oilfield: EUR 16 million barrels



Eagle Springs Oilfield: EUR 6 million barrels

Ghost Ranch Oilfield: EUR 750,000 barrels

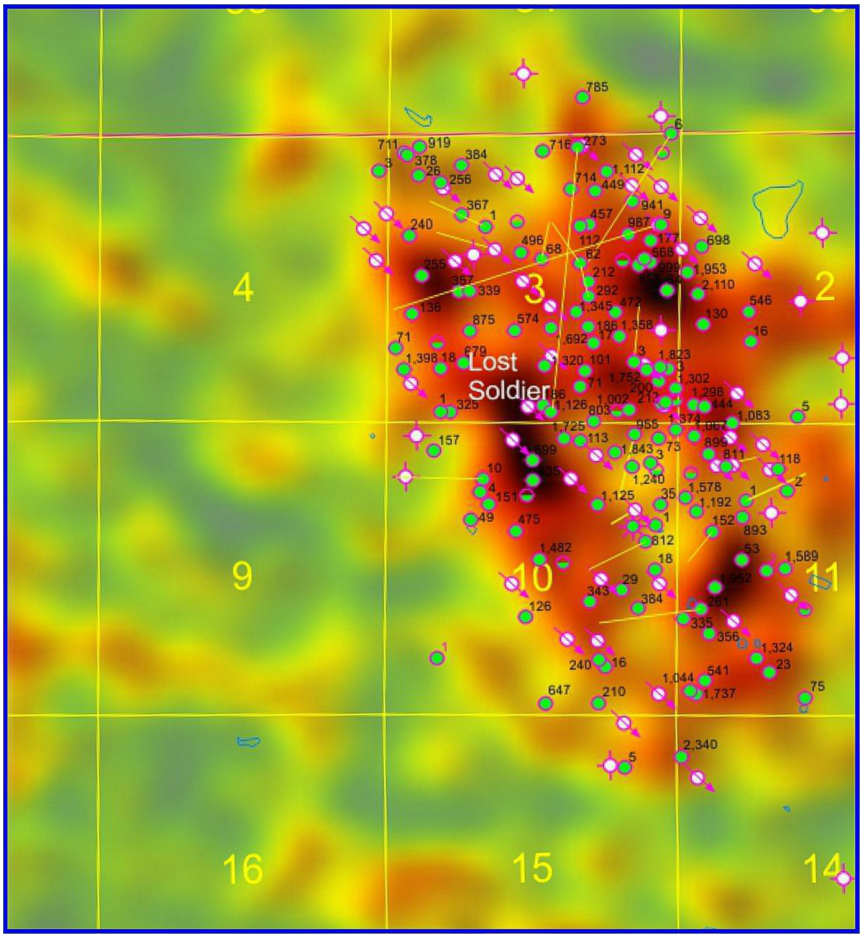


Undrilled HLI prospects in Railroad Valley – analogous to the HLI footprints observed above the known fields.

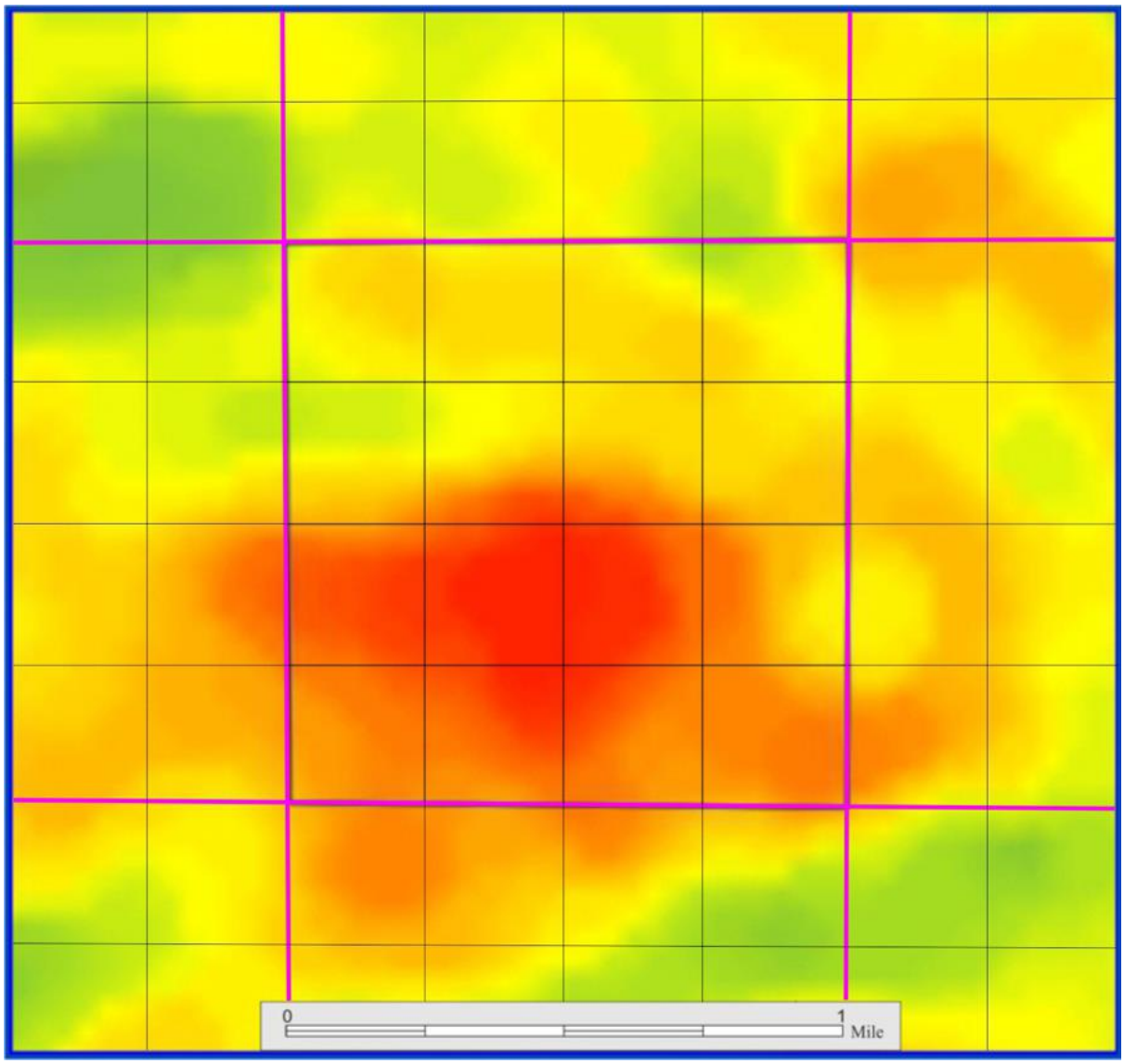
Great Divide Basin, Wyoming:

The Front Range basins of Wyoming (Bighorn, Wind River, Hanna / Great Divide and Laramie) are very much in the cradle heartland of the oil industry in the West having witnessed over one century of endeavour since the first discoveries there. These are rich petroleum habitats with large fields derived from the Permian Phosphoria oil source rocks. Many of the main fields have undergone protracted primary, secondary and advanced tertiary recovery schemes but more oil remains to exploit and RSDD-H would suggest also that new fields are yet to be discovered.

The strong, clear HLI signature of giant fields such as Lost Soldier and Wertz in the Great Divide Basin, opens the doors to a new era of low risk RSDD-H led exploration. Some excellent new discoveries are prognosed from the emerging inventory of analogous untested HLI prospects.



Lost Soldier Field, Great Divide Basin - discovered 1916; produced 275 million barrels. Now into advanced Tertiary recovery schemes… but still displaying strongly on this image from the 1970s.



New undrilled prospect displayed (IPD) on a one section grid and "40s" spacing unit graticule, Great Divide Basin. Strong HLI response highly analogous to that observed at Lost Soldier.

By Lost Soldier metrics, a gross one section field could contain as much as 75 million barrels EUR. More conservatively, a net half section pool here with both "Tensleep" and "Madison" pays could host 8 producers (on 40 acres spacing) with 8 to 10 million barrels primary recoverable assuming ca. 1 to 1.25 million barrels per well in the HLI "sweetspot" core of the trap. A slightly more optimistic trap interpretation might extend to one full section with a further 8 producers of lesser individual reserves – say 500,000 barrels average per well- for a **total field potential of possibly 12 to 15 million barrels primary recoverable.** This would then also provide for substantial reserves growth through secondary recovery and/or infill drilling.

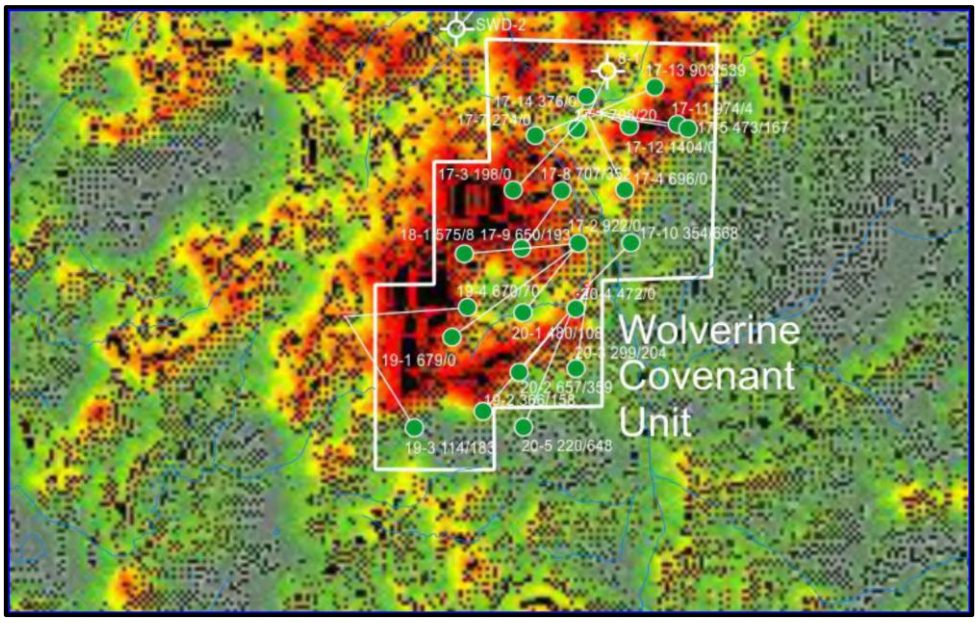
Scotforth has already identified a number of such appealing prospects in proven Great Divide basin play fairways.

Overthrust Belt of Utah and Western Wyoming:

This large Deformed Belt trend has delivered giant fields (e.g Anschutz Ranch East), numerous more modest fields (e.g. Pineview, Covenant and others) and many expensive dry holes, all based on prospects developed under the best of conventional exploration mapping with seismic and other ancillary geophysical tools. More recently, RSDD-H surveying has progressively found the spectral key to this large reserves province and is now building an excellent inventory of large, risk-reduced analogous prospects. This play fairway extends in gross geography from Western Wyoming through NE Utah and down through Central Utah.

Two RSDD-H examples illustrate simply the HLI response character of this very large exploration arena. Its applicability is now established area-wide.

(a) Covenant Oilfield: Central Utah Overthrust Belt ("CUOB")

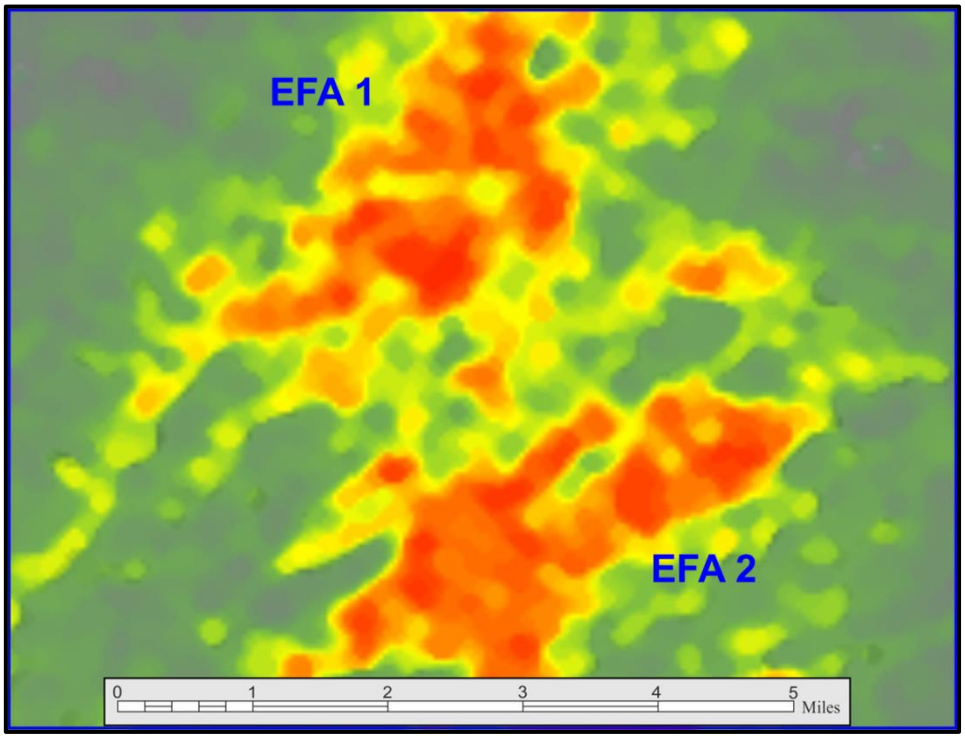


Covenant Field: EUR 50+ million barrels. This field on the Gunnison / Sevier Thrust play fairway (the only significantly commercial discovery to date on this eastern segment of the CUOB) has already produced more than 23 million barrels of oil. It has a strong HLI response that is not entirely coincidental with published seismic maps suggesting greater trap intricacy than has been detectable on seismic depth mapping.

In this "conservative" IPD display the core production wells locate centrally on the HLI. The more marginal producers locate somewhat peripheral to the core HLI area and are notably higher water:oil ratio wells, as evidenced by their production histories. A more generous processing or "upside" display would show a slightly extended gross field area.

Further field infill and pool extension possibilities appear to exist here. Note also the UT Great Eagle Fed 15-1 deep test, dry hole in a large Low Prospectivity Zone on right hand side of this image.

(b) New Exploration Focus Areas ("EFAs"), NE Utah and Western Wyoming Overthrust:



Major new EFAs in a Proven Play Fairway: This IPD highlights two new Exploration Focus Areas with prognosed multiple field discovery potential.

These could readily hold EUR 100+ million barrels based on the reserves metrics of Anschutz Ranch East and other fields in this district. RBU mapping (below) starts to specify leads and prospects within the EFAs.