

EA34120 Welsh Mineral Resources

[View Online](#)

[1]

A Geological Background for Planning and Development in the Afon Teifi ... - R. A. Waters, J. R. Davies, D. Wilson, J. K. Prigmore, R. M. Carruthers, B. C. Chacksfield, L. M. Coleby, J. R. Hallam, R. E. Heaven, P. R. N. Hobbs, K. J. Northmore, N. S. Robins, S. J. Self, P. Shand, P. R. Wilby, British Geological Survey - Google Books:
http://books.google.co.uk/books/about/A_Geological_Background_for_Planning_and.html?id=O2MsygAACAAJ&redir_esc=y.

[2]

A guide to mineral safeguarding in England: good practice advice:
http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&cad=rja&uact=8&ved=0CCgQFjAB&url=http%3A%2F%2Fwww.bgs.ac.uk%2Fdownloads%2Fstart.cfm%3Fiid%3D1333&ei=H6-RVPuICuOt7gaS-oCIAw&usg=AFQjCNF8jZ_slczugMWuk01J1bVYoMNUlg&sig2=zIO9OtjnpwFvQ4S_BQfQtQ&bvm=bv.82001339,d.ZGU.

[3]

A guide to sources of earth science information for planning and development - NERC Open Research Archive: <http://nora.nerc.ac.uk/3257/>.

[4]

Adlam, K.A.McL. et al. 1984. The hard-rock resources of the country around Caerphilly, South Wales: description of parts of 1:50000 geological sheets 249 and 263. HMSO.

[5]

Adlam, K.A.McL. et al. 1984. The hard-rock resources of the country around Caerphilly, South Wales: description of parts of 1:50000 geological sheets 249 and 263. HMSO.

[6]

Aggregate Safeguarding Maps of Wales:

<http://www.bgs.ac.uk/downloads/browse.cfm?sec=12&cat=219>.

[7]

Andrews, J.H. and Seymour, W.A. 1980. A history of the Ordnance Survey. Dawson.

[8]

Bevins, R.E. and National Museum of Wales 1994. A mineralogy of Wales. National Museum of Wales.

[9]

Bloodworth, A.J. et al. 2009. Digging the backyard: Mining and quarrying in the UK and their impact on future land use. Land Use Policy. 26, (Dec. 2009), S317–S325.

DOI:<https://doi.org/10.1016/j.landusepol.2009.08.022>.

[10]

Caers, J. 2011. Modeling uncertainty in the earth sciences. Wiley-Blackwell.

[11]

Coal resource appraisal maps : methodology and datasets used - NERC Open Research Archive: <http://nora.nerc.ac.uk/7456/>.

[12]

Curtis, A. et al. 2004. Geological prior information: informing science and engineering. The Geological Society.

[13]

D. J. Harrison Appraisal of High-purity Limestones in England and Wales : a Study of ... - D. J. Harrison, J. H. Hudson, B. Cannell, Great Britain. Department of the Environment, British Geological Survey. Mineral Resources Research Group - Google Books.

[14]

Duff, P.McL.D. and Rawson, P.F. 2006. Geology of England and Wales. Geological Society.

[15]

Exploration for metalliferous and related minerals in Britain: a guide:

http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCMQFjAA&url=http%3A%2F%2Fwww.bgs.ac.uk%2Fdownloads%2Fstart.cfm%3Fid%3D1318&ei=wZ6RVK6tIKLB7AbL_oDABA&usg=AFQjCNEzAH7gLfBAOXRNBiEGL3HTrvDjgw&sig2=nq-GUuKXuToYsy-CNdLmTw&bvm=bv.82001339,d.ZGU&cad=rja.

[16]

Fowler, P. and Gayer, R.A. 1999. The association between tectonic deformation, inorganic composition and coal rank in the bituminous coals from the South Wales coalfield, United Kingdom. *International Journal of Coal Geology*. 42, 1 (Dec. 1999), 1–31.
DOI:[https://doi.org/10.1016/S0166-5162\(99\)00027-0](https://doi.org/10.1016/S0166-5162(99)00027-0).

[17]

Frodsham, K. and Gayer, R.A. 1999. The impact of tectonic deformation upon coal seams in the South Wales coalfield, UK. *International Journal of Coal Geology*. 38, 3–4 (Jan. 1999), 297–332. DOI:[https://doi.org/10.1016/S0166-5162\(98\)00028-7](https://doi.org/10.1016/S0166-5162(98)00028-7).

[18]

Gayer, R. et al. 1997. Coal rank variations with depth related to major thrust detachments in the South Wales coalfield: implications for fluid flow and mineralization. Geological Society, London, Special Publications. 125, 1 (Jan. 1997), 161–178.
DOI:<https://doi.org/10.1144/GSL.SP.1997.125.01.13>.

[19]

Gayer, R. et al. 1998. Fluid migration and coal-rank development in foreland basins.

DOI:[https://doi.org/10.1130/0091-7613\(1998\)026<0679:FMACRD>2.3.CO;2](https://doi.org/10.1130/0091-7613(1998)026<0679:FMACRD>2.3.CO;2)

Geological mapping in the evaluation of structurally controlled gold veins: A case study from the Dolgellau goldbelt, north Wales, United Kingdom - Document Summary:
<http://www.onemine.org/search/summary.cfm/Geological-mapping-in-the-evaluation-of-structurally-controlled-gold-veins-A-case-study-from-the-Dolgellau-goldbelt-north-Wales-United-Kingdom?d=1234567890123456789012345678901234567890123456789012345678901234159918&fullText=Mineralium%20Deposita&organization=SAIMM>.

Great Britain 1995. Slate waste tips and workings in Britain. HMSO.

Harrison, D.J. 1993. High-purity limestones in England and Wales. *Quarterly Journal of Engineering Geology and Hydrogeology*. 26, 4 (Nov. 1993), 293–303.
DOI:<https://doi.org/10.1144/GSL.QJEGH.1993.026.004.05>.

Historical aspects of the Welsh slate industry:
http://www.slateroof.co.uk/Slate_industry.html.

Hower, J.C. and Gayer, R.A. 2002. Mechanisms of coal metamorphism: case studies from Paleozoic coalfields. *International Journal of Coal Geology*. 50, 1-4 (May 2002), 215-245. DOI:[https://doi.org/10.1016/S0166-5162\(02\)00119-2](https://doi.org/10.1016/S0166-5162(02)00119-2).

Integrated analysis of special data from multiple sources: using evidence of reasoning and artificial neural techniques for geological mapping:
<http://nature.berkeley.edu/~penggong/PDFpapers/GongPERS96geo.pdf>.

[26]

Integrated mineral resource mapping and safeguarding : a national-scale example from Wales - NERC Open Research Archive: <http://nora.nerc.ac.uk/19870/>.

[27]

Jones, R.R. et al. 2004. Digital field data acquisition: towards increased quantification of uncertainty during geological mapping. Geological Society, London, Special Publications. 239, 1 (Jan. 2004), 43–56. DOI:<https://doi.org/10.1144/GSL.SP.2004.239.01.04>.

[28]

Lelliott, M.R. et al. 2009. A structured approach to the measurement of uncertainty in 3D geological models. Quarterly Journal of Engineering Geology and Hydrogeology. 42, 1 (Feb. 2009), 95–105. DOI:<https://doi.org/10.1144/1470-9236/07-081>.

[29]

Maltman, A. 1998. Geological maps: an introduction. Wiley.

[30]

Merriman, R.J. 2006. Clay mineral assemblages in British Lower Palaeozoic mudrocks. Clay Minerals. 41, 1 (Mar. 2006), 473–512. DOI:<https://doi.org/10.1180/0009855064110204>.

[31]

Mineral Evidence Base 2: The origins of the minerals safeguarding areas and policies: http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0CCMQFjAA&url=http%3A%2F%2Fwww.centralbedfordshire.gov.uk%2FImages%2FM%2520EB%25202%2520Extent%2520of%2520MSA%2520etc_tcm6-25138.pdf&ei=lq-RVKHfL6WV7AbEwoHIDw&usg=AFQjCNEy8X-cuw7jxTmurdS4Oj3EcDND4w&sig2=pBR9D-tVoNjJa5XvKs5bvg&bvm=bv.82001339,d.ZGU.

[32]

Modelling the geometry of geological units and its uncertainty in 3D from structure data: the Potential-field Method. Orebody modelling and strategic mine planning uncertainty and risk management models.: http://www.geomodeller.com/co/papers_presentations/papers/w_pap_3d_geology/2004_Chi

les_etal_3DGeology_OMSMP_Perth.pdf.

[33]

National Minerals Map and Aggregate Safeguarding Map for Wales: Outcomes of Consultation Event held at Ladywell House, Newtown 19th May 2009:

http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&cad=rja&uact=8&ved=0CCMQFjAB&url=http%3A%2F%2Fnora.nerc.ac.uk%2F20138%2F1%2FAggregates_Safeguarding_Map_Of_Wales_Final.pdf&ei=8a-RVN-jF6bg7Qbv04DQBg&usg=AFQjCNHfzLQwAM7FxdcCAV9loWGqfkDVUA&sig2=Vpb6VRke7wP1aHgD9I9EMQ&bvm=bv.82001339,d.ZGU.

[34]

North, F.J. and National Museum of Wales 1962. Mining for metals in Wales. [National Museum of Wales].

[35]

Planning and Minerals: Practice Guide. 2006 Department for Communities and Local Government. HMSO.:

<https://www.gov.uk/government/publications/planning-and-minerals-practice-guide>.

[36]

Potential for mesothermal gold and VMS deposits in the Lower Palaeozoic Welsh Basin - NERC Open Research Archive: <http://nora.nerc.ac.uk/3658/>.

[37]

R. T Smith, D. C Cooper, D. J Bland 1994. The Occurrence and Economic Potential of Nodular Monazite in South-Central Wales. British Geological Survey.

[38]

Read, W.A. 1987. Down to earth: One hundred and fifty years of the British geological survey by H.E. Wilson, Scottish Academic Press, Edinburgh & London, 1985. No. of pages: 189. Price: £9.95 (paperback only). Geological Journal. 22, S1 (Apr. 1987), 213–213. DOI:<https://doi.org/10.1002/gj.3350220521>.

[39]

Regional Geology Guide:

https://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCgQFjAA&url=https%3A%2F%2Fwww.bgs.ac.uk%2Fdownloads%2Fstart.cfm%3Fid%3D832&ei=_4uRVNrYGoHR7Qblo4DwBQ&usg=AFQjCNGW1whP38d2MFI70dd-3EIFavr8Lg&sig2=b_yqobcUhHN3NoZiGxizuQ&bvm=bv.82001339,d.ZGU&cad=rja.

[40]

Risk List 2012 | MineralsUK: <http://www.bgs.ac.uk/mineralsuk/statistics/risklist.html>.

[41]

Some Of The Major Structures Of Early Palaeozoic Age In Wales And The Welsh Borderland : An Historical Essay : Reprinted From The Pre-Cambrian And Lower Palaeozoic Rocks Of Wales By Douglas A Bassett - Used Books - Paperback - 1969 - from Tavrobel and Biblio.com:

<http://www.biblio.com/book/some-major-structures-early-palaeozoic-age/d/524354981>.

[42]

South Wales Hard Rock Feasibility Study: a Preliminary Report: Institute of ... - D. J. Harrison, J. B. L. Wild, K. A. McL. Adlam, Institute of Geological Sciences (Great Britain). Mineral Resources Division, Institute of Geological Sciences (Great Britain). Industrial Minerals Assessment Unit - Google Books:

http://books.google.co.uk/books/about/South_Wales_Hard_Rock_Feasibility_Study.html?id=opXaXwAACAAJ&redir_esc=y.

[43]

Summary of information on coal for land-use planning purposes:

<http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0CCMQFjAA&url=http%3A%2F%2Fwww.bgs.ac.uk%2Fdownloads%2Fstart.cfm%3Fid%3D1299&ei=maORVKWgCO6p7Ab0-IDACg&usg=AFQjCNEIzsrItfhUxdhGavTTxjxD9coo3g&sig2=eXr7jeM29rEQKDqSRMp0SQ&bvm=bv.82001339,d.ZGU>.

[44]

Sustainable Use of High specification aggregates for Skid-Resistant Road Surfacing in

England: 2004.

http://www.sustainableaggregates.com/library/docs/samp/l0057_samp_1_039.pdf.

[45]

The Distribution of High Grade Sandstone for Aggregate Usage in Parts of ... - F. C. Cox, J. R. Davies, R. C. Scrivener, Great Britain. Department of the Environment, British Geological Survey - Google Books:

http://books.google.co.uk/books/about/The_Distribution_of_High_Grade_Sandstone.html?id=LzhbygAACAAJ&redir_esc=y.

[46]

The Economic Importance of Minerals to the UK:

<https://www.bgs.ac.uk/mineralsuk/planning/economy.html>.

[47]

The future of the global minerals and metals sector : issues and challenges out to 2050 - NERC Open Research Archive: <http://nora.nerc.ac.uk/19657/>.

[48]

The Mineral Resource Map of Wales:

http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&cad=rja&uact=8&ved=0CCoQFjAB&url=http%3A%2F%2Fwww.bgs.ac.uk%2Fdownloads%2Fstart.cfm%3Fid%3D1665&ei=zq6RVKeWDciP7AbZ9YDgDw&usg=AFQjCNGpdJ2Z3tURk3ypzFH0CF3h_TXPxg&sig2=Mbj13u7RO04BYXwOcgmWeg&bvm=bv.82001339,d.ZGU.

[49]

The slate industry in North and Mid Wales: <http://www.penmorfa.com/Slate/>.

[50]

The sustainable use of high specification aggregates for skid-resistant road surfacing in England - final report: 2004.

http://www.sustainableaggregates.com/library/docs/samp/l0057_samp_1_039.pdf.

[51]

The sustainable use of high specification aggregates for skid-resistant road surfacing in England - final report: 2004.

http://www.sustainableaggregates.com/library/docs/samp/l0057_samp_1_039.pdf.

[52]

The Unconventional hydrocarbon resources of Britain's onshore basins - Coalbed Methane:

https://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0CCgQFjAA&url=https%3A%2F%2Fwww.og.decc.gov.uk%2FUKpromote%2Fonshore_paper%2FPromote_UK_CBM.pdf&ei=vrKRVMS0OIZV7Qa47IGgCA&usg=AFQjCNGxCWhj2l2URxfON0S6MS8XvutelQ&sig2=Uvp3ck4dl9sVX0Lr1cZS5Q&bvm=bv.82001339,d.ZGU.

[53]

Thompson, A. et al. 1998. Environmental geology in land use planning: guide to good practice. Symonds Travers Morgan.

[54]

Trueman, A.E. et al. 1974. The Upper Palaeozoic and post-Palaeozoic rocks of Wales: published in memory of Sir Arthur Trueman, and also to celebrate the fiftieth anniversary (1920-1970) of the Department of Geology, University College of Swansea. University of Wales Press.

[55]

UK Coal Resource for New Exploitation Technologies - Datasets | data.gov.uk:

<http://data.gov.uk/dataset/uk-coal-resource-for-new-exploitation-technologies1>.

[56]

Welsh Government | Interim Marine Aggregates Dredging Policy:

<http://wales.gov.uk/topics/planning/policy/minerals/interimmarine/?lang=en>.

[57]

Welsh Government | Minerals Planning Policy Wales:

<http://wales.gov.uk/topics/planning/policy/minerals/mineralsplanning/?lang=en>.

[58]

Welsh Government | Minerals Technical Advice Note (MTAN) Wales 1: Aggregates (March 2004): <http://wales.gov.uk/topics/planning/policy/mineralstans/2888891/?lang=en>.

[59]

Welsh Government | Minerals Technical Advice Note (MTAN) Wales 1: Aggregates (March 2004): <http://wales.gov.uk/topics/planning/policy/mineralstans/2888891/?lang=en>.

[60]

Welsh Government | Minerals Technical Advice Note (MTAN) Wales 2: Coal (January 2009): <http://wales.gov.uk/topics/planning/policy/mineralstans/2877461/?lang=en>.

[61]

Woodcock, N.H. and Strachan, R.A. 2012. Geological history of Britain and Ireland. Wiley-Blackwell.

[62]

The South Wales Coalfield: low grade metamorphism in a foreland basin setting.

[63]

Unpublished test data for the Cribarth and Crymych formations in the Cribarth area (available on Blackboard).

[64]

Wiley: Ore Geology and Industrial Minerals: An Introduction, 3rd Edition - Anthony M. Evans.