

EA34120 - Welsh Mineral Resources

View Online



[1]

P. McL. D. Duff and P. F. Rawson, *Geology of England and Wales*, 2nd ed. London: Geological Society, 2006.

[2]

A. Curtis, R. Wood, and Geological Society of London, *Geological prior information: informing science and engineering*, vol. Geological Society special publication. London: The Geological Society, 2004.

[3]

D. E. Highley, G. Chapman, and K. Bonel, 'The Economic Importance of Minerals to the UK'. Available: <https://www.bgs.ac.uk/mineralsuk/planning/economy.html>

[4]

M. F. Howells, 'Regional Geology Guide'. Available: 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

[5]

A. Maltman, *Geological maps: an introduction*, 2nd ed. Chichester: Wiley, 1998.

[6]

'Welsh Government | Minerals Planning Policy Wales'. Available:
<http://wales.gov.uk/topics/planning/policy/minerals/mineralsplanning/?lang=en>

[7]

'Planning and Minerals: Practice Guide. 2006 Department for Communities and Local Government. HMSO.' Available:
<https://www.gov.uk/government/publications/planning-and-minerals-practice-guide>

[8]

A. Thompson, Great Britain, and Symonds Travers Morgan, Environmental geology in land use planning: guide to good practice. East Grinstead: Symonds Travers Morgan, 1998.

[9]

N. H. Woodcock and R. A. Strachan, Geological history of Britain and Ireland, 2nd ed. Chichester: Wiley-Blackwell, 2012.

[10]

R. J. Merriman, 'Clay mineral assemblages in British Lower Palaeozoic mudrocks', Clay Minerals, vol. 41, no. 1, pp. 473–512, Mar. 2006, doi: 10.1180/0009855064110204

[11]

D. D. Pritchard, 'Historical aspects of the Welsh slate industry'. Available:
http://www.slateroof.co.uk/Slate_industry.html

[12]

Great Britain, Slate waste tips and workings in Britain. London: HMSO, 1995.

[13]

D. Sallery, 'The slate industry in North and Mid Wales'. Available:
<http://www.penmorfa.com/Slate/>

[14]

R. E. Bevins and National Museum of Wales, A mineralogy of Wales, vol. National Museum of Wales Geological Series. Cardiff: National Museum of Wales, 1994.

[15]

T. B. Colman and D. C. Cooper, 'Exploration for metalliferous and related minerals in Britain: a guide'. Available:
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]

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

[17]

'Wiley: Ore Geology and Industrial Minerals: An Introduction, 3rd Edition - Anthony M. Evans', Available: <http://eu.wiley.com/WileyCDA/WileyTitle/productCd-0632029536.html>

[18]

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

[19]

'Geological mapping in the evaluation of structurally controlled gold veins: A case study from the Dolgellau goldbelt, north Wales, United Kingdom - Document Summary'. Available:
<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>

[20]

K. A. McL. Adlam, D. J. Harrison, and J. B. L. Wild, The hard-rock resources of the country around Caerphilly, South Wales: description of parts of 1:50000 geological sheets 249 and 263, vol. Mineral assessment report. London: HMSO, 1984.

[21]

D. J. Harrison, 'High-purity limestones in England and Wales', Quarterly Journal of Engineering Geology and Hydrogeology, vol. 26, no. 4, pp. 293–303, Nov. 1993, doi: 10.1144/GSL.QJEGH.1993.026.004.05

[22]

A. Thompson et al, 'The sustainable use of high specification aggregates for skid-resistant road surfacing in England - final report', 2004. Available: http://www.sustainableaggregates.com/library/docs/samp/l0057_samp_1_039.pdf

[23]

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

[24]

'The South Wales Coalfield: low grade metamorphism in a foreland basin setting', Available: <http://journals.cambridge.org/action/displayFulltext?type=1&fid=4482680&jid=GEO&volumeld=133&issueld=06&aid=4482672>

[25]

'Summary of information on coal for land-use planning purposes'. Available: <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>

[26]

A. E. Trueman, T. R. Owen, and University College of Swansea, *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*. Cardiff: University of Wales Press, 1974.

[27]

P. Fowler and R. A. Gayer, '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*, vol. 42, no. 1, pp. 1-31, Dec. 1999, doi: 10.1016/S0166-5162(99)00027-0

[28]

K. Frodsham and R. A. Gayer, 'The impact of tectonic deformation upon coal seams in the South Wales coalfield, UK', *International Journal of Coal Geology*, vol. 38, no. 3-4, pp. 297-332, Jan. 1999, doi: 10.1016/S0166-5162(98)00028-7

[29]

R. Gayer, R. Fowler, and G. Davies, '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*, vol. 125, no. 1, pp. 161-178, Jan. 1997, doi: 10.1144/GSL.SP.1997.125.01.13

[30]

R. Gayer, G. Garven, and D. Rickard, 'Fluid migration and coal-rank development in foreland basins', *Geology*, vol. 26, no. 8, 1998, doi: 10.1130/0091-7613(1998)026<0679:FMACRD>2.3.CO;2

[31]

J. C. Hower and R. A. Gayer, 'Mechanisms of coal metamorphism: case studies from Paleozoic coalfields', *International Journal of Coal Geology*, vol. 50, no. 1-4, pp. 215-245, May 2002, doi: 10.1016/S0166-5162(02)00119-2

[32]

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

[33]

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

[34]

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

[35]

'Welsh Government | Interim Marine Aggregates Dredging Policy'. Available:
<http://wales.gov.uk/topics/planning/policy/minerals/interimmarine/?lang=en>

[36]

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

[37]

J. P. Chiles, C. Aug, A. Guillen, and T. Lees, '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.' Available:
http://www.geomodeller.com/co/papers_presentations/papers/w_pap_3d_geology/2004_Chiles_etal_3DGeology_OMSMP_Perth.pdf

[38]

R. R. Jones, K. J. W. McCaffrey, R. W. Wilson, and R. E. Holdsworth, 'Digital field data acquisition: towards increased quantification of uncertainty during geological mapping', Geological Society, London, Special Publications, vol. 239, no. 1, pp. 43–56, Jan. 2004, doi: 10.1144/GSL.SP.2004.239.01.04

[39]

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

[40]

M. R. Lelliott, M. R. Cave, and G. P. Wealthall, 'A structured approach to the measurement of uncertainty in 3D geological models', *Quarterly Journal of Engineering Geology and Hydrogeology*, vol. 42, no. 1, pp. 95–105, Feb. 2009, doi: 10.1144/1470-9236/07-081

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

[42]

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

[43]

W. A. Read, '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*, vol. 22, no. S1, pp. 213–213, Apr. 1987, doi: 10.1002/gj.3350220521

[44]

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

[45]

A. J. Humpage and T. P. Bide, 'The Mineral Resource Map of Wales'. Available: 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

[46]

C. E. Wrighton, F. M. McEvoy, and R. Bust, 'A guide to mineral safeguarding in England: good practice advice'. Available: 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%3Fid%3D1333&ei=H6-RVPuICuOt7gaS-oCIAw&usg=AFQjCNF8jZ_slczugMWuk01j1bVYoMNULg&sig2=zIO9OtjnpwFvQ4S_BQfQtQ&bvm=bv.82001339,d.ZGU

[47]

'Mineral Evidence Base 2: The origins of the minerals safeguarding areas and policies'. Available: 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%2520%2520Extent%2520of%2520MSA%2520etc_tcm6-25138.pdf&ei=lq-RVKHfL6WV7AbEwoHIDw&usg=AFQjCNEy8X-cuw7jxTmurds4Oj3EcDND4w&sig2=pBR9D-tVoNjJa5XvKs5bvg&bvm=bv.82001339,d.ZGU

[48]

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

[49]

R. A. Waters, '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'. Available: http://books.google.co.uk/books/about/A_Geological_Background_for_Planning_and.html?id=O2MsygAACAAJ&redir_esc=y

[50]

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

[51]

'Aggregate Safeguarding Maps of Wales'. Available:
<http://www.bgs.ac.uk/downloads/browse.cfm?sec=12&cat=219>

[52]

A. J. Bloodworth, P. W. Scott, and F. M. McEvoy, 'Digging the backyard: Mining and quarrying in the UK and their impact on future land use', *Land Use Policy*, vol. 26, pp. S317–S325, Dec. 2009, doi: 10.1016/j.landusepol.2009.08.022

[53]

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

[54]

'UK Coal Resource for New Exploitation Technologies - Datasets | data.gov.uk'. Available:
<http://data.gov.uk/dataset/uk-coal-resource-for-new-exploitation-technologies1>

[55]

R. T Smith, D. C Cooper, D. J Bland, *The Occurrence and Economic Potential of Nodular Monazite in South-Central Wales*. British Geological Survey, 1994. Available:
<https://www.bgs.ac.uk/downloads/start.cfm?id=1888>

[56]

'The Unconventional hydrocarbon resources of Britain's onshore basins – Coalbed Methane'. Available:
<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%2Fonsh>

ore_paper%2FPromote_UK_CBM.pdf&ei=vrKRVMS0OlzV7Qa47IGgCA&usg=AFQjCNGxCWhj2l2URxfON0S6MS8XvutelQ&sig2=Uvp3ck4dl9sVX0Lr1cZS5Q&bvm=bv.82001339,d.ZGU

[57]

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

[58]

K. A. McL. Adlam, D. J. Harrison, and J. B. L. Wild, The hard-rock resources of the country around Caerphilly, South Wales: description of parts of 1:50000 geological sheets 249 and 263, vol. Mineral assessment report. London: HMSO, 1984.

[59]

F. C. Cox, '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'. Available:
http://books.google.co.uk/books/about/The_Distribution_of_High_Grade_Sandstone.html?id=LzhbygAACAAJ&redir_esc=y

[60]

D. J. Harrison, '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'. Available:
http://books.google.co.uk/books/about/South_Wales_Hard_Rock_Feasibility_Study.html?id=opXaXwAACAAJ&redir_esc=y

[61]

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.

[62]

A. Thompson et al, 'The sustainable use of high specification aggregates for skid-resistant road surfacing in England - final report', 2004. Available:
http://www.sustainableaggregates.com/library/docs/samp/l0057_samp_1_039.pdf

[63]

Alan Thompson, Andrew Burrows, David Flavin, and Ian Walsh, 'Sustainable Use of High specification aggregates for Skid-Resistant Road Surfacing in England', 2004. Available:
http://www.sustainableaggregates.com/library/docs/samp/l0057_samp_1_039.pdf

[64]

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