Helium Shortage Summary – Web Links Started 5 June 2012; D.L. Olson (dolson@illinios.edu) University of Illinois NMR Lab; Incompletely updated through 17 Sep 2013

Most Recent Links to Articles on the Helium Shortage

- http://cen.acs.org/articles/91/i37/Helium-Headache.html
 - Chemical and Engineering News; 16 Sep 2013
- <u>http://www.mercurynews.com/opinion/ci_24007168/helium-shortage-u-s-supply-danger-if-congress</u>
 By the president of the American Chemical Society; 4 Sep 2013
- http://news.yahoo.com/looming-helium-shortage-raises-alarms-161744038.html
- <u>http://www.marketplace.org/topics/sustainability/whats-behind-helium-shortage</u>
- <u>http://www.azom.com/article.aspx?ArticleID=9211</u> 17 June 2013;
- <u>http://news.sciencemag.org/2013/04/u.s.-house-passes-bill-would-head-massive-helium-shortage</u>
- <u>http://news.sciencemag.org/2013/05/u.s.-senate-committee-holds-hearing-helium-bill</u>

Links to Articles on the Helium Shortage

- http://m.ctv.ca/topstories/20120323/helium-gas-shortage-mri-120324.html
- http://tucsoncitizen.com/wryheat/2012/05/17/helium-potential-of-arizona-may-help-fill-shortage/
- <u>http://www.kgan.com/shared/newsroom/top_stories/videos/kgan_vid_11418.shtml</u>
 This is a TV story
- <u>http://articles.boston.com/2012-05-20/news/31790230_1_helium-shortage-federal-helium-reserve-helium-from-natural-gas</u>
- http://www.chemistry-blog.com/2012/04/19/helium-for-balloons-but-none-for-my-nmr/
- http://www.youtube.com/watch?v=oZkMQkHGj1s
 - Really good video by the U of Nottingham on helium recovery and liquification systems in general
- http://www.nm.blm.gov/amfo/heliumplantpipelineactivity/Pipeflow.htm
- <u>http://www.law.upenn.edu/blogs/regblog/2012/05/21-kurzweil-helium.html</u>
- <u>http://www.mathesongas.com/videocenter/viewmovie.aspx?clipid=4&mode=SPECIALTY</u>
 - Helium recovery technology video by Matheson
- http://www.hispanicbusiness.com/2012/5/1/helium_shortage_deflates_business.htm
 - News article about things other than balloons
- <u>http://wcfcourier.com/business/local/helium-shortage-a-rising-concern-for-many-industries/article_ea18f1ca-5e11-5652-a854-a18360e745d3.html</u>
- <u>http://cen.acs.org/articles/88/i5/Helium-Sell-off-Working.html</u>
- An article in C & EN about a recommendation from the National Research Council (1 Feb 2010)
- http://pubs.acs.org/isubscribe/journals/cen/85/i41/html/8541bus3.html
 - A good, but dated, overview of the issue (8 Oct 2007)
- http://cen.acs.org/articles/88/i19/Air-Liquide-Adds-Helium-Qatar.html
 - Announcement of the Qatar helium refinery plan (10 May 2010) involving Air Liquide
- http://www.cbc.ca/news/canada/windsor/story/2012/06/18/wdr-helium-shortage.html
 - A TV new story from 18 June 2012 that begins with concerns about balloons, but then includes MRI. Some technical details provided.
- <u>http://www.weldingandgasestoday.org/blogs/Devin-OToole/index.php/2012/05/two-myths-surrounding-the-helium-shortage/</u>
 - Good technical summary here of the problem
- http://news.sciencemag.org/scienceinsider/2012/05/senate-bill-would-preserve-helium.html
 - \circ Very enlightening article from Science magazine covering broad aspects of the problem.

- http://www.azjournal.com/2012/05/25/helium-shortage-looming-and-northeastern-arizona-can-help/
 - An article from the Arizona Journal published 25 May 2012 on local issues that explains some history and current policy matters related to the future of developing helium as a natural resource.
- <u>http://zingmit.net/video/SX1KA5B2HR16/Comedy-Scientist-Raises-Awareness-About-Helium-Crisis</u>
 - A short comedy sketch, and very funny. Probably from July 2011. http://www.washingtonpost.com/blogs/ezra-klein/post/americas-looming-helium-crisis-no-
 - really/2011/05/31/AGZIBdFH_blog.html
 - Nothing much new here, but to clarify, the naturally abundant isotope that is used in liquid helium is ⁴He. This is sometimes written He-4. The NMR-active isotope is ³He, but that is not used for liquid helium, and it is *extremely* rare in abundance.
- http://www.physicstoday.org/resource/1/phtoad/v64/i5/p20_s1
- This is about the use of 3 He, and is not directly relevant to the use of 4 He liquefied for magnets.
- http://www.gasworld.com/world-exclusive-helium-shortage-20/5727.article
 - An article from June 12, 2011 which address cyclic shortages
- <u>http://www.blm.gov/nm/st/en/prog/energy/helium/helium_operators_information.html</u>
 - o Bureau of Land Management web site on helium operation
- <u>http://www.weldingandgasestoday.org/index.php/2012/01/eyeing-potential-shortages-in-2012/</u>
 - An article from the welding industry on current situations; January 9, 2012
- <u>http://www.guardian.co.uk/science/2012/mar/18/helium-party-balloons-squandered</u>
 - From March 18, 2012; a bad headline, but better content. The truth is that every helium user who does not recover and recycle it is squandering helium.
- http://www.victoriaadvocate.com/news/2012/jun/21/am_helium_062212_180086/?entertainment&localbusiness
 - News from a Texas website containing factoids not seen elsewhere; too much concern over balloons.
- <u>http://www.blm.gov/pgdata/etc/medialib/blm/nm/programs/0/helium_docs.Par.80129.File.dat/pl104273.pdf</u>
 - The Helium Privatization Act of 1996.
- <u>http://www.gasworld.com/news/regions/north-america/senators-propose-bill-to-solve-helium-issues/2000737.article</u>
 - Article on a bill proposed before the US Congress to change the way the helium reserve is managed
- <u>http://www.energy.senate.gov/public/index.cfm/featured-items?ID=6ac1b461-d2d5-4d8b-9138-fcbab8a8ce0b</u>
 - The proposed Senate bill that would update the Helium act of 1996.
 - http://wqad.com/2012/03/27/helium-shortage-affecting-business-in-the-quad-cities/
 - This is a local, Illinois TV story, but still highlights that the problem is long-term. The local helium rep vocalizes his priorities: medical, military, everyone else; he makes no mention of the scientific uses of helium.
- <u>http://news.nationalpost.com/2012/06/22/the-cost-of-funny-voices-helium-shortage-sends-prices-soaring/</u>
 - A pretty good overview published 22 June 2012
- <u>http://www.popularmechanics.com/science/health/med-tech/why-is-there-a-helium-shortage-10031229?click=pm_latest</u>
 - Popular Mechanics magazine chimes in on the issue dated 25 June 2012
- <u>http://www.mercurynews.com/breaking-news/ci_20976840/global-helium-shortage-threatens-deflate-holiday-parades-parties</u>
 - Published 1 July 2012, and contains several pithy paragraphs of good information

- <u>http://www.washingtonpost.com/blogs/ezra-klein/post/congress-turns-its-attention-to-americas-helium-crisis/2012/05/12/gIQA4fIbKU_blog.html</u>
 - Published on the Washington Post on 13 May 2012; covers the issue with an emphasis on the political and economic viewpoint
- <u>http://www.nature.com/</u>
 - Nature article published 30 May 2012 on the problem, and the global policy issue
- <u>http://cen.acs.org/articles/90/i29/Helium-Shortage-Affecting-Instrument-Users.html</u>
 - Chemical and Engineering News article published 16 July 2012 that covers the issue and its effects on scientific research, plus an outlook on the problem
- http://video.foxnews.com/v/1066722748001/worlds-helium-supply-shrinking-fast/
 - Fox news story from 20 July 2012 on the issue at large
- <u>http://naturalresources.house.gov/calendar/eventsingle.aspx?EventID=302995</u>
 - U.S. House Subcommittee on Engery and Mineral Resources; hearing of 20 July 2012
- <u>http://newsfeed.time.com/2012/08/23/theres-a-helium-shortage-on-and-its-affecting-more-than-just-balloons/#the-government</u>
 - A Time magazine on-line article; light content with 9 panels to click through. Nice to see some attention given the issue in a popular news publication.
- <u>http://www.timesunion.com/business/article/Chip-firms-helium-hopes-3825704.php</u>
- \circ An update on 29 Aug 2012 on the issue at large. Discusses legislation possibilities.
- <u>http://www.dotmed.com/news/story/19381</u>

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- An article from DotMed news about the helium shortage effects on MRI; 14 Sep 2012
- <u>http://www.deseretnews.com/article/865562506/Helium-shortage-creating-trouble-for-industry-health-care-birthday-parties.html?pg=all</u>
 - A decent article with some updates from the Deseret News in Salt Lake City; 16 Sep 2012
- <u>http://www.nytimes.com/2012/12/20/us/a-helium-shortage-leads-to-fewer-balloons-in-the-sky.html?pagewanted=1&_r=0</u>
 - New York Times, December 2012, but a focus on balloons, and only a mention of science.
 - http://news.yahoo.com/blimps-bolster-washingtons-air-shield-test-204629886--finance.html
 - Yahoo article on military, helium-filled blimps to protect Washington, D.C. 4 Feb 2013
- http://news.yahoo.com/video/high-tech-cargo-blimp-getting-080535153.html
 - Another huge helium-consuming government blimp project; 6 Feb 2013
- http://cen.acs.org/articles/91/i5/Coping-Helium-Shortage.html?h=1429938890
 - Chemical and Engineering News Update
- <u>http://news.sciencemag.org/scienceinsider/2013/02/once-again-congressional-committ.html</u>
- \circ Article on U.S. government actions concerning the helium supply; 15 Feb 2013
- <u>http://www.marketplace.org/topics/sustainability/whats-behind-helium-shortage</u>
 - \circ National Public Radio Market place Morning report, 29 Apr 2013
- <u>http://www.independent.co.uk/news/science/why-the-world-is-running-out-of-helium-2059357.html</u>
 A good overview article from 23 August 2010 in a publication called the Independent
- <u>http://www.blm.gov/pgdata/etc/medialib/blm/nm/programs/0/federal_helium_program.Par.28420.File.d</u> at/082613_QandAs_WOapproved.pdf
 - A set of FAQs by the Bureau of Land Management; viewed August 2013