

Independent Statistics & Analysis U.S. Energy Information Administration

2019 Domestic Uranium Production Report

May 2020



Independent Statistics & Analysis www.eia.gov U.S. Department of Energy Washington, DC 20585

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Introduction

In this report, the U.S. Energy Information Administration (EIA) reports detailed data on U.S. uranium production activities from 2006 through 2019 and summary data back to 1996.

Data in this report are based primarily on information reported on Form EIA-851A, *Domestic Uranium Production Report (Annual)*, and some information reported on Form EIA-858, *Uranium Marketing Annual Survey*. The Form EIA-851A survey collects data on uranium milling and in-situ leach processing, feed sources, mining, employment, drilling, expenditures, and reserve estimates. The Form EIA-858 survey includes data collected on uranium contracts and deliveries.

Previous editions of this report are available on our website.

Definitions for terms in this report are available in EIA's Energy Glossary.

Mining, production, shipments, and sales

U.S. uranium mines produced 0.17 million pounds of triuranium octoxide (U3O8), or uranium concentrate¹, in 2019, 76% less than in 2018. The production of uranium concentrate is the first step in the nuclear fuel production process. The U3O8 is then converted into UF6 to first enable uranium enrichment, then fuel pellet fabrication, and finally fuel assembly fabrication.

Total production of U.S. uranium concentrate from all domestic sources in 2019 was 0.17 million pounds of U3O8, 89% less than in 2018, from six facilities: five in-situ leaching (ISL) plants in Nebraska and Wyoming (Crow Butte Operation, Lost Creek Project, Ross CPP, North Butte, and Smith Ranch-Highland Operation) and one underground mine.

Total shipments of uranium concentrate from domestic producers were 0.19 million pounds U3O8 in 2019, 87% less than in 2018.

Facility status (mills, heap leach plants, and in-situ leach plants)

At the end of 2019, Shootaring Canyon Uranium Mill in Utah and Sweetwater Uranium Project in Wyoming were on standby with a total capacity of 3,750 short tons of material per day. The White Mesa Mill in Utah, which had a capacity of 2,000 short tons of material per day, was not producing uranium. In Wyoming, one heap leach plant was in the planning stages (Sheep Mountain).

At the end of 2019, three U.S. uranium ISL plants were operating with a combined capacity of 9.5 million pounds U3O8 per year (Lost Creek Project, Nichols Ranch ISR Project, and the Smith Ranch-Highland Operation in Wyoming). Six ISL plants were on standby as of the end of 2019, and seven ISL plants were planned for four states: New Mexico, South Dakota, Texas, and Wyoming.

¹A yellow or brown powder obtained by milling uranium ore, by processing of in-situ leach mining solutions, or as a byproduct of phosphoric acid production.

Employment

Total employment in the U.S. uranium production industry was 265 full-time person-years (one person year is equal to full-time employment for one person) in 2019, a decrease of 29% from the 2018 total. Exploration employment was 40 person-years, a 48% increase from the 2018 total. Mining employment was 48 person-years, a 56% decrease from 2018. Reclamation employment decreased 20% to 110 person-years from 2018 to 2019. Wyoming accounted for 55% of total employment in the U.S. uranium production industry in 2019, up slightly from 53% of total employment in 2018.

Expenditures

Total expenditures for land, exploration, drilling, production, and reclamation were \$81 million in 2019, 26% less than in 2018.

Reserve estimates

At the end of 2019, reported estimated uranium reserves were 31 million pounds U3O8 at a maximum forward cost of up to \$30 per pound. At up to \$50 per pound, reported estimated reserves were 206 million pounds U₃O₈. At up to \$100 per pound, reported estimated reserves were 389 million pounds U3O8. These reserves are a fraction of likely total domestic uranium reserves because we did not include inferred resources that were not reported because of a lack of cost estimates or because the reserves were not located on actively managed properties.

The uranium reserve estimates presented here cannot be compared with the much larger historical data set of uranium reserves published in the July 2010 report <u>U.S. Uranium Reserves Estimates</u>. EIA estimated those reserves based on data we collected and data the National Uranium Resource Evaluation (NURE) program developed. The NURE is located in Grand Junction, Colorado, and is operated by the U.S. Department of Energy and predecessor organizations. The EIA data include about 200 uranium properties that have reserves, collected from 1984 through 2002. The NURE data include about 800 uranium properties with reserves, developed from 1974 through 1983. Although the data collected on the Form EIA-851A survey covers a much smaller set of properties than the earlier EIA data and NURE data, we believe that within its scope the Form EIA-851A data provide more reliable estimates of the uranium recoverable at each forward cost than the estimates derived from 1974 through 2002. In particular, the Form EIA-851A data are more reliable because the NURE data have not been comprehensively updated in many years and are no longer considered a current data source.

	Exploratio	n drilling	Developme	nt drilling	Exploration and development drilling		
Year	number of holes	feet (thousand)	number of holes	feet (thousand)	number of holes	feet (thousand)	
2006	1,473	821	3,430	1,892	4,903	2,713	
2007	4,351	2,200	4,996	2,946	9,347	5,146	
2008	5,198	2,543	4,157	2,551	9,355	5,093	
2009	1,790	1,051	3,889	2,691	5,679	3,742	
2010	2,439	1,460	4,770	3,444	7,209	4,904	
2011	5,441	3,322	5,156	3,003	10,597	6,325	
2012	5,112	3,447	5,970	3,709	11,082	7,156	
2013	1,231	919	4,013	2,926	5,244	3,845	
2014	W	W	W	W	1,752	1,299	
2015	W	W	W	W	1,518	878	
2016	W	W	W	W	1,158	757	
2017	W	W	W	W	420	196	
2018	W	W	W	W	W	W	
2019	W	W	W	W	W	W	

Table 1. U.S. uranium drilling activities, 2006–19

NA = Not available. W = Data withheld to avoid disclosure of individual company data.

Note: Totals may not equal sum of components because of independent rounding.

Source: U.S. Energy Information Administration, Form EIA-851A, *Domestic Uranium Production Report* (2006–19)

Figure 1. U.S. uranium drilling by number of holes, 2006–19

number of holes



Report (2006–19) W = Withheld

Figure 2. U.S. uranium drilling, 2006–19





Table 2. U.S. uranium mine production and number of mines and sources, 2006–19

Production / mining method	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Underground												17 180 180 ²¹		
(estimated contained thousand pounds U3O8)	w	w	w	w	w	w	w	w	w	w	w	w	w	w
Open pit														
(estimated contained thousand pounds U3O8)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
In-Situ leaching														
(thousand pounds U3O8)	4,259	W	W	W	W	W	W	w	W	W	W	W	W	W
Other ¹														
(thousand pounds U3O8)	w	w	w	w	w	w	w	w	w	w	w	w	w	w
Total mine production														
(thousand pounds U3O8)	4,692	4,541	3,879	4,145	4,237	4,114	4,335	4,577	4,912	3,711	2,545	1,150	721	174
Number of operating mines														
Underground	5	6	10	14	4	5	6	3	2	1	0	0	0	1
Open pit	0	0	0	0	0	0	0	0	0	0	0	0	0	0
In-Situ leaching	5	5	6	4	4	5	5	7	8	7	8	6	6	5
Other sources ¹	1	1	1	2	1	1	1	2	1	1	1	1	1	0
Total mines and sources	11	12	17	20	9	11	12	12	11	9	9	7	7	6

E = Estimated data. W = Data withheld to avoid disclosure of individual company data.

¹ Other includes, in various years, mine water, mill site cleanup and mill tailings, and well field restoration as sources of uranium.

Notes: Totals may not equal sum of components because of independent rounding. Table does not include byproduct production and sources.

Source: U.S. Energy Information Administration, Form EIA-851A, Domestic Uranium Production Report (2006–19)

Table 3. U.S. uranium concentrate production, shipments, and sales, 2006–19

Activity at U.S. mills and in-situ-leach plants	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Estimated contained U3O8 (thousand pounds)														
Ore from underground mines and stockpiles fed to mills ¹	w	0	w	w	w	w	w	w	w	0	0	0	0	w
Other feed materials ²	W	w	w	w	w	w	w	w	w	w	w	w	w	w
Total mill feed	w	w	w	w	w	w	w	w	w	w	w	w	w	w
Uranium concentrate produced at U.S. mills														
(thousand pounds U3O8)	W	w	w	w	w	w	w	w	w	w	w	w	w	w
Uranium concentrate produced at U.S. in-situ-leach plants														
(thousand pounds U3O8)	W	w	w	w	w	w	w	w	w	w	w	w	w	W
Total uranium concentrate production														
(thousand pounds U3O8)	4,106	4,534	3,902	3,708	4,228	3,991	4,146	4,659	4,891	3,343	2,916	2,443	1,647	174
Total uranium concentrate shipped from U.S. mills and in-situ-lea	ch plants													
(thousand pounds U3O8)	3,838	4,050	4,130	3,620	5,137	4,000	3,911	4,655	4,593	4,023	3,018	2,277	1,489	190
Total uranium concentrate sales by U.S. producers ³														
Deliveries (thousand pounds U3O8)	3,786	3,602	3,656	2,044	2,684	2,870	3,630	4,447	4,746	3,634	2,691	1,254	1,541	w
Weighted-average price (dollars per pound U3O8)	28.98	42.11	43.81	36.61	37.59	52.36	49.63	44.65	39.17	42.86	38.22	41.34	32.51	w

E = Estimated data. W = Data withheld to avoid disclosure of individual company data.

¹ Uranium ore fed to mills in any year can include ore mined and shipped to a mill during the same year, ore that was mined during a previous year and later shipped from mine-site stockpiles, ore obtained from drawdowns of stockpiles maintained at a mill site, or a combination of these options.

² Includes for various years uranium from mill cleanup, mine water, tailings water, and other materials.

³ Sales of U.S-origin uranium only.

Notes: Totals may not equal sum of components because of independent rounding.

Source: U.S. Energy Information Administration, Form EIA-851A, Domestic Uranium Production Report (2005–18), and Form EIA-858, Uranium Marketing Annual Survey (2006–19)

Table 4. U.S. uranium mills and heap leach facilities by owner, location, capacity, and operating status at end of the year, 2016–19

Owner	Mill and heap leach ¹ facility name	County, State (existing and planned locations)	Capacity (short tons of ore per day)	2016	2017	2018	2019
	Shootaring Canyon						
Anfield Resources	Uranium Mill	Garfield, Utah	750	standby	standby	standby	standby
				operating-	operating-	operating-	
				nrocessing	nrocessing	nrocessing	
EFR White Mesa LLC	White Mesa Mill	San Juan, Utah	2,000	alternate feed	alternate feed	alternate feed	standby
Energy Fuels Wyoming Inc	Sheep Mountain	Fremont, Wyoming	725	undeveloped	undeveloped	undeveloped	undeveloped
Kennecott Uranium Company/Wyoming Coal	Sweetwater	Sweetwater.					
Resource Company	Uranium Project	Wyoming	3,000	standby	standby	standby	standby
Total Canacity:			6 475				

- = No data reported.

¹ Heap leach solutions: The separation, or dissolving-out from mined rock, of the soluble uranium constituents by the natural action of percolating a prepared chemical solution through mounded (heaped) rock material. The mounded material usually contains low grade mineralized material and waste rock, which are produced from open pit or underground mines. The solutions are collected after percolation is completed and processed to recover the valued components. Notes: Capacity for 2018. An operating status of *Operating* indicates the mill usually was producing uranium concentrate at the end of the period. Source: U.S. Energy Information Administration, Form EIA-851A, *Domestic Uranium Production Report* (2016–19)

Table 5. U.S. uranium in-situ leach plants by owner, location, capacity, and operating status at end of the year,2016–19

In-situ leach plant owner	In-situ leach plant name	County, State (existing and planned locations)	Production capacity (pounds [—] U3O8 per year)	2016	2017	2018	2019
				partially	partially	partially	partially
				permitted and	permitted and	permitted and	permitted and
AUC LLC	Reno Creek	Campbell, Wyoming	2,000,000	licensed	licensed	licensed	licensed
				partially	partially	partially	partially
Azarga Uranium Corn	Dowov Burdock Project	Fall River and Custer,	1 000 000	permitted and	permitted and	permitted and	permitted and
	Dewey Buruock Project	SUUIT Dakula	1,000,000	ncensed	ncenseu	ncenseu	ncenseu
Cameco	Crow Butte Operation	Dawes, Nebraska	1,000,000	operating	operating	operating	standby
				partially	partially	partially	partially
Under Deserves Inc.	Church Deals	Makialan Nam Maniaa	1 000 000	permitted and	permitted and	permitted and	permitted and
Hydro Resources, Inc.		wickiniey, new wexico	1,000,000	Incensed	ncensed	Incensed	incensed
				partially permitted and	partially permitted and	partially permitted and	partially permitted and
Hydro Resources, Inc.	Crownpoint	McKinley, New Mexico	1,000,000	licensed	licensed	licensed	licensed
Lost Creek ISB LLC	Lost Creek Project	Sweetwater Wyoming	2 000 000	operating	operating	operating	operating
		Sweetwater, wyonning	2,000,000	operating	operating	operating	operating
Mestena Uranium LLC	Alta Mesa Project	Brooks, Texas	1,500,000	standby	standby	standby	standby
Power Resources Inc. dba	Smith Ranch-Highland						
Cameco Resources	Operation	Converse, Wyoming	5,500,000	operating	operating	operating	operating
South Texas Mining Venture	Hobson ISR Plant	Karnes, Texas	1,000,000	standby	standby	standby	standby
South Texas Mining Venture	La Palangana	Duval, Texas	1,000,000	standby	standby	standby	standby
Strata Energy Inc	Ross CPP	Crook, Wyoming	375,000	operating	operating	operating	standby
URI, Inc.	Kingsville Dome	Kleberg, Texas	1,000,000	restoration	restoration	restoration	restoration
	Docito	Dunal Toxac	1 000 000	raclamation	raclamation	raclamation	rodomation
URI, IIIC.	RUSILA	Duval, lexas	1,000,000	recramation	recramation	recramation	Tectamation
URI, Inc.	Vasquez	Duval, Texas	800,000	restoration	restoration	restoration	restoration
Uranerz Energy Corporation	Nichols Ranch ISR Project	Johnson and Campbell Wyoming	2 000 000	operating	operating	operating	operating
oranerz Energy Corporation	Nichols Kalich ISK Project		2,000,000	operating	operating	operating	operating
	Collined ICD Unanity						
Uranium Energy Corp.	Project	Goliad. Texas	1.000.000	licensed	licensed	licensed	licensed
Uranium One Americas, Inc.	Jab and Antelope	Sweetwater, Wyoming	2.000.000	developing	developing	developing	developing
			,,				
	Maara Banah	Comphell Misseria -	F00 000	permitted and	permitted and	permitted and	permitted and
or anium one Americas, Inc.	woore karich	campben, wyoming	500,000	iicensed	iicensed	ilcensed	ilcensed
	Willow Creek Project	Comphellord					
Uranium One USA Inc	(Christensen Kanch and Irigaray)	Johnson, Wyoming	1,300,000	standby	operating	operating	standby
			2,000,000	Standby	Sperating	SPECIALITY	standby
Total Production Capacity:			26,975.000				

- = No data reported.

Notes: Production capacity for 2018. An operating status of *Operating* indicates the in-situ-leach plant usually was producing uranium concentrate at the end of the period. Hobson ISR Plant processes uranium concentrate that came from La Palangana. Hobson and La Palangana are part of the same project. ISR stands for in-situ recovery. Christensen Ranch and Irigaray are part of the Willow Creek Project. Uranerz Energy has a tolling arrangement with Cameco Resources. Uranium is first processed at the Nichols Ranch plant and then transported to the Smith Ranch-Highland Operation plant for final processing into Uranerz's uranium concentrate. CPP stands for central processing plant.

Source: U.S. Energy Information Administration, Form EIA-851A, Domestic Uranium Production Report (2016–19)

Table 6. Emplo	yment in the U.S.	uranium production	industry by catego	ory, 2006–19
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person-years

Year	Exploration	Mining	Milling	Processing	Reclamation	Total
2006	188	121	W	W	155	755
2007	375	378	107	216	155	1,231
2008	457	558	W	W	154	1,563
2009	175	441	W	W	162	1,096
2010	211	400	W	W	125	1,073
2011	208	462	W	W	102	1,191
2012	161	462	W	W	179	1,196
2013	149	392	W	W	199	1,156
2014	86	246	W	W	161	787
2015	58	251	W	W	116	625
2016	38	255	W	W	98	560
2017	50	136	W	W	100	424
2018	27	110	W	W	138	372
2019	40	48	W	W	110	265

W = Data withheld to avoid disclosure of individual company data.

Note: Totals may not equal sum of components because of independent rounding. A large, one-time reclamation project needed to be withheld and was not included in 2016 data.

Source: U.S. Energy Information Administration, Form EIA-851A, Domestic Uranium Production Report (2006–19)



Figure 3. Employment in the U.S. uranium production industry by category, 2005–18

Source: U.S. Energy Information Administration: Form EIA-851A, Domestic Uranium Production Report (2006-2019)

Table 7. Employment in the U.S. uranium production industry by state, 2006–19

person-years														
State(s)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Wyoming	195	245	301	308	348	424	512	531	416	343	323	245	197	146
Colorado and Texas	263	557	696	340	292	331	248	198	105	79	61	46	54	44
Nebraska and New Mexico	160	149	160	159	134	127	W	W	W	W	W	56	36	48
Arizona, Utah, and Washington	120	245	360	273	281	W	W	W	W	W	W	W	W	W
Alaska, Michigan, Nevada, and														
South Dakota	16	25	30	W	W	W	W	W	0	0	0	W	W	W
California, Montana, North Dakota,														
Oklahoma, Oregon, Utah, and														
Virginia	0	9	17	W	W	W	W	W	W	W	W	W	W	W
Total	755	1,231	1,563	1,096	1,073	1,191	1,196	1,156	787	625	560	424	372	265

W = Data withheld to avoid disclosure of individual company data.

Note: Totals may not equal sum of components because of independent rounding.

Source: U.S. Energy Information Administration, Form EIA-851A, Domestic Uranium Production Report (2006-19).

Table 8. U.S. uranium expenditures, 2006–19

million dollars

YearDrilling 1Production 2and otherlandexplorationreclamationexpenditures200640.165.9115.241.023.350.9221.2200767.590.4178.277.750.350.2336.2200881.9221.2164.465.250.249.1467.6200935.4141.0104.017.324.262.4280.5201044.6133.399.520.234.544.7277.3201153.6168.896.819.643.533.7319.2201266.6186.999.416.833.349.3352.9201349.9168.290.614.621.654.4308.7201428.2137.674.011.610.751.7239.7201528.7118.576.212.14.759.4223.5201622.398.049.69.92.537.2169.920174.078.340.28.93.727.7122.52018W65.9WWWW81.0					Land an	d other ³		
YearDrilling¹Production²and otherlandexplorationreclamationexpenditures200640.165.9115.241.023.350.9221.2200767.590.4178.277.750.350.2336.2200881.9221.2164.465.250.249.1467.6200935.4141.0104.017.324.262.4280.5201044.6133.399.520.234.544.7277.3201153.6168.896.819.643.533.7319.2201266.6186.999.416.833.349.3352.9201349.9168.290.614.621.654.4308.7201428.2137.674.011.610.751.7239.7201528.7118.576.212.14.759.4223.5201622.398.049.69.92.537.2169.920174.078.340.28.93.727.7122.52018W65.9WWWW108.82019W38.0WWWW81.0				total land				Total
200640.165.9115.241.023.350.9221.2200767.590.4178.277.750.350.2336.2200881.9221.2164.465.250.249.1467.6200935.4141.0104.017.324.262.4280.5201044.6133.399.520.234.544.7277.3201153.6168.896.819.643.533.7319.2201266.6186.999.416.833.349.3352.9201349.9168.290.614.621.654.4308.7201428.2137.674.011.610.751.7239.7201528.7118.576.212.14.759.4223.5201622.398.049.69.92.537.2169.920174.078.340.28.93.727.7122.52018W65.9WWWW81.02019W38.0WWW81.0	Year	Drilling ¹	Production ²	and other	land	exploration	reclamation	expenditures
200767.590.4178.277.750.350.2336.2200881.9221.2164.465.250.249.1467.6200935.4141.0104.017.324.262.4280.5201044.6133.399.520.234.544.7277.3201153.6168.896.819.643.533.7319.2201266.6186.999.416.833.349.3352.9201349.9168.290.614.621.654.4308.7201428.2137.674.011.610.751.7239.7201528.7118.576.212.14.759.4223.5201622.398.049.69.92.537.2169.920174.078.340.28.93.727.7122.52018W65.9WWWW81.02019W38.0WWW81.0	2006	40.1	65.9	115.2	41.0	23.3	50.9	221.2
200881.9221.2164.465.250.249.1467.6200935.4141.0104.017.324.262.4280.5201044.6133.399.520.234.544.7277.3201153.6168.896.819.643.533.7319.2201266.6186.999.416.833.349.3352.9201349.9168.290.614.621.654.4308.7201428.2137.674.011.610.751.7239.7201528.7118.576.212.14.759.4223.5201622.398.049.69.92.537.2169.920174.078.340.28.93.727.7122.52018W65.9WWWW81.02019W38.0WWW81.0	2007	67.5	90.4	178.2	77.7	50.3	50.2	336.2
200935.4141.0104.017.324.262.4280.5201044.6133.399.520.234.544.7277.3201153.6168.896.819.643.533.7319.2201266.6186.999.416.833.349.3352.9201349.9168.290.614.621.654.4308.7201428.2137.674.011.610.751.7239.7201528.7118.576.212.14.759.4223.5201622.398.049.69.92.537.2169.920174.078.340.28.93.727.7122.52018W65.9WWWW81.02019W38.0WWW81.0	2008	81.9	221.2	164.4	65.2	50.2	49.1	467.6
201044.6133.399.520.234.544.7277.3201153.6168.896.819.643.533.7319.2201266.6186.999.416.833.349.3352.9201349.9168.290.614.621.654.4308.7201428.2137.674.011.610.751.7239.7201528.7118.576.212.14.759.4223.5201622.398.049.69.92.537.2169.920174.078.340.28.93.727.7122.52018W65.9WWWW81.02019W38.0WWW81.0	2009	35.4	141.0	104.0	17.3	24.2	62.4	280.5
201153.6168.896.819.643.533.7319.2201266.6186.999.416.833.349.3352.9201349.9168.290.614.621.654.4308.7201428.2137.674.011.610.751.7239.7201528.7118.576.212.14.759.4223.5201622.398.049.69.92.537.2169.920174.078.340.28.93.727.7122.52018W65.9WWWW81.02019W38.0WWW81.0	2010	44.6	133.3	99.5	20.2	34.5	44.7	277.3
201266.6186.999.416.833.349.3352.9201349.9168.290.614.621.654.4308.7201428.2137.674.011.610.751.7239.7201528.7118.576.212.14.759.4223.5201622.398.049.69.92.537.2169.920174.078.340.28.93.727.7122.52018W65.9WWWW81.02019W38.0WWW81.0	2011	53.6	168.8	96.8	19.6	43.5	33.7	319.2
201349.9168.290.614.621.654.4308.7201428.2137.674.011.610.751.7239.7201528.7118.576.212.14.759.4223.5201622.398.049.69.92.537.2169.920174.078.340.28.93.727.7122.52018W65.9WWWW81.02019W38.0WWW81.0	2012	66.6	186.9	99.4	16.8	33.3	49.3	352.9
201428.2137.674.011.610.751.7239.7201528.7118.576.212.14.759.4223.5201622.398.049.69.92.537.2169.920174.078.340.28.93.727.7122.52018W65.9WWWW108.82019W38.0WWW81.0	2013	49.9	168.2	90.6	14.6	21.6	54.4	308.7
201528.7118.576.212.14.759.4223.5201622.398.049.69.92.537.2169.920174.078.340.28.93.727.7122.52018W65.9WWWW108.82019W38.0WWWW81.0	2014	28.2	137.6	74.0	11.6	10.7	51.7	239.7
201622.398.049.69.92.537.2169.920174.078.340.28.93.727.7122.52018W65.9WWWW108.82019W38.0WWW81.0	2015	28.7	118.5	76.2	12.1	4.7	59.4	223.5
2017 4.0 78.3 40.2 8.9 3.7 27.7 122.5 2018 W 65.9 W W W W 108.8 2019 W 38.0 W W W 81.0	2016	22.3	98.0	49.6	9.9	2.5	37.2	169.9
2018 W 65.9 W W W W 108.8 2019 W 38.0 W W W W 81.0	2017	4.0	78.3	40.2	8.9	3.7	27.7	122.5
2019 W 38.0 W W W W 81.0	2018	W	65.9	W	W	W	W	108.8
	2019	W	38.0	W	W	W	W	81.0

NA = Not available. W = Data withheld to avoid disclosure of individual company data.

¹ Drilling: All expenditures directly associated with exploration and development drilling.

² Production: All expenditures for mining, milling, processing of uranium, and facility expense.

³ Land and other: All expenditures for land; geological research; geochemical and geophysical surveys; costs incurred by field personnel in the course of exploration, reclamation, and restoration work; and overhead and administrative charges directly associated with supervising and supporting field activities.

Notes: Expenditures are in nominal U.S. dollars. Totals may not equal sum of components because of independent rounding. Source: U.S. Energy Information Administration, Form EIA-851A, *Domestic Uranium Production Report* (2006–19)



Figure 4. U.S. uranium expenditures, 2006–19

million dollars

Source: U.S. Energy Information Administration, Form EIA-851A, Domestic Uranium Production Report (2006–19).

Table 9. Summary production statistics of the U.S. uranium industry, 1996–2019

	Exploration and development surface drililng	Exploration and development drilling expenditures ¹	Mine production of uranium	Uranium concentrate production	Uranium concentrate shipments	Employment
Year	(million feet)	(million dollars)	(million pounds U ₃ O ₈)	(million pounds U_3O_8)	(million pounds U_3O_8)	(person-years)
1996	3.0	7.2	4.7	6.3	6.0	1,118
1997	4.9	20.0	4.7	5.6	5.8	1,097
1998	4.6	18.1	4.8	4.7	4.9	1,120
1999	2.5	7.9	4.5	4.6	5.5	848
2000	1.0	5.6	3.1	4.0	3.2	627
2001	0.7	2.7	2.6	2.6	2.2	423
2002	W	W	2.4	2.3	3.8	426
E2003	W	W	2.2	2.0	1.6	321
2004	1.2	10.6	2.5	2.3	2.3	420
2005	1.7	18.1	3.0	2.7	2.7	648
2006	2.7	40.1	4.7	4.1	3.8	755
2007	5.1	67.5	4.5	4.5	4.0	1,231
2008	5.1	81.9	3.9	3.9	4.1	1,563
2009	3.7	35.4	4.1	3.7	3.6	1,096
2010	4.9	44.6	4.2	4.2	5.1	1,073
2011	6.3	53.6	4.1	4.0	4.0	1,191
2012	7.2	66.6	4.3	4.1	3.9	1,196
2013	3.8	49.9	4.6	4.7	4.7	1,156
2014	1.3	28.2	4.9	4.9	4.6	787
2015	0.9	28.7	3.7	3.3	4.0	625
2016	0.8	22.3	2.5	2.9	3.0	560
2017	0.2	4.0	1.2	2.4	2.3	424
2018	W	W	0.7	1.6	1.5	372
2019	W	W	0.2	0.2	0.2	265

E = Estimated data, except for employment. W = Data withheld to avoid disclosure of individual company data.

¹ Expenditures are in nominal U.S. dollars.

Note: The 2003 annual production and shipment amounts were estimated by rounding to the nearest 200,000 pounds to avoid disclosure of individual company data. A large, one-time reclamation project needed to be withheld and was not included in 2016 data.

Source: U.S. Energy Information Administration, 1996–2002 data taken from *Uranium Industry Annual* 2002 (May 2003), Table H1 and Table 2. 2003-2019 data from Form EIA-851A, *Domestic Uranium Production Report* (2003–19)



Figure 5. U.S. mine production of uranium, 1996–2019

million pounds U3O8

Figure 6. U.S. uranium concentrate production and shipments, 1996–2019



Sources: U.S. Energy Information Administration, 1996–2002 data taken from *Uranium Industry Annual* 2002 (May 2003), Table H1 and Table 2. Data for 2003–2019 data taken from Form EIA-851A, *Domestic Uranium Production Report* (2003–19)



Figure 7. Employment in the U.S. uranium production industry, 1996–2019

person-years

Sources: U.S. Energy Information Administration, 1996–2002 data taken from *Uranium Industry Annual* 2002 (May 2003), Table H1 and Table 2. Data for 2003–19 data taken from Form EIA-851A, *Domestic Uranium Production Report* (2003–19)

Table 10. Uranium reserve estimates at the end of 2018 and 2019

million pounds U3O8

_	End of 2018			End of 2019		
	Forward Cost ²					
Uranium reserve estimates ¹ by mine and property status,	\$0 to \$30 per	\$0 to \$50 per	\$0 to \$100 per	\$0 to \$30 per	\$0 to \$50 per	\$0 to \$100 per
mining method, and State(s)	pound	pound	pound	pound	pound	pound
Properties with exploration completed, exploration						
continuing, and only assessment work	W	W	W	W	w	W
Properties under development for production and						
development drilling	W	W	W	W	W	W
Mines in production	W	W	W	W	w	W
Mines closed temporarily, closed permanently, and mined						
out	W	W	W	W	W	W
Total	43.0	174.4	353.2	31.2	206.0	388.8
In-situ leach mining	W	127.6	W	W	159.1	W
Underground and open pit mining	W	46.8	W	W	46.8	W
Total	43.0	174.4	353.2	31.2	206.0	388.8
Arizona, New Mexico, and Utah	W	W	W	W	W	W
Colorado, Nebraska, and Texas	W	W	W	W	W	W
Wyoming	W	W	W	W	W	W
Total	43.0	174.4	353.2	31.2	206.0	388.8

W = Data withheld to avoid disclosure of individual company data.

¹ These uranium reserve estimates cannot be compared with the much larger historical data set of uranium reserves that were published in the July 2010 report *U.S. Uranium Reserves Estimates*. Reserves, as reported here, do not necessarily imply compliance with U.S. or international government definitions for purposes of investment disclosure.

² Forward Cost: The operating and capital costs still to be incurred in the production of uranium from in-place reserves. By using forward costing, estimates for reserves for ore deposits in differing geological settings and status of development can be aggregated and reported for selected cost categories. Included are costs for labor, materials, power and fuel, royalties, payroll taxes, insurance, and applicable general and administrative costs. Excluded from forward cost estimates are prior expenditures, if any, incurred for property acquisition, exploration, mine development, and mill construction, as well as income taxes, profit, and the cost of money. Forward costs are neither the full costs of production nor the market price at which the uranium, when produced, might be sold.

Note: Totals may not equal sum of components because of independent rounding.

Source: U.S. Energy Information Administration, Form EIA-851A, Domestic Uranium Production Report (2018–19)