



Independent Statistics & Analysis

U.S. Energy Information
Administration

2021 Domestic Uranium Production Report

May 2022



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Contacts

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Introduction

In this report, EIA provides detailed data on U.S. uranium production activities from 2007 through 2021.

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 recovery 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 our [Energy Glossary](#).

Mining, production, shipments, and sales

U.S. uranium mines produced 21,000 pounds of triuranium octoxide (U_3O_8), or uranium concentrate in 2021. Production data was withheld in 2020 but 2021 production was down 88% from 2019 production levels. The production of uranium concentrate is the first step in the nuclear fuel production process, preceding the conversion of U_3O_8 into UF_6 to enable uranium enrichment, then fuel pellet fabrication, and finally fuel assembly fabrication.

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

At the end of 2021, Shootaring Canyon Uranium Mill and White Mesa Mill in Utah and Sweetwater Uranium Project in Wyoming were on standby with a total capacity of 5,750 short tons of material per day. In Wyoming, one heap leach plant was in the planning stages (Sheep Mountain).

Regarding in-situ recovery facilities, at the end of 2021 the Lost Creek Project and the Smith Ranch-Highland Operation in Wyoming were operating with a combined capacity of 7.5 million pounds U_3O_8 per year. Nine in-situ recovery plants were on standby as of the end of 2021 with a combined annual production capacity of 13.8 million pounds U_3O_8 . Ten in-situ recovery plants were planned for four states: New Mexico, South Dakota, Texas, and Wyoming with a combined annual production capacity of 15 million pounds U_3O_8 .

Employment and expenditures

Total employment in the U.S. uranium production industry was 207 full-time person-years (one person year is equal to full-time employment for one person) in 2021, a decrease of 8% from the 2020 total.

Total expenditures for land, exploration, drilling, production, and reclamation were \$72.5 million in 2021, 17% lower than in 2020.

Table 1. U.S. uranium drilling activities, 2007–21

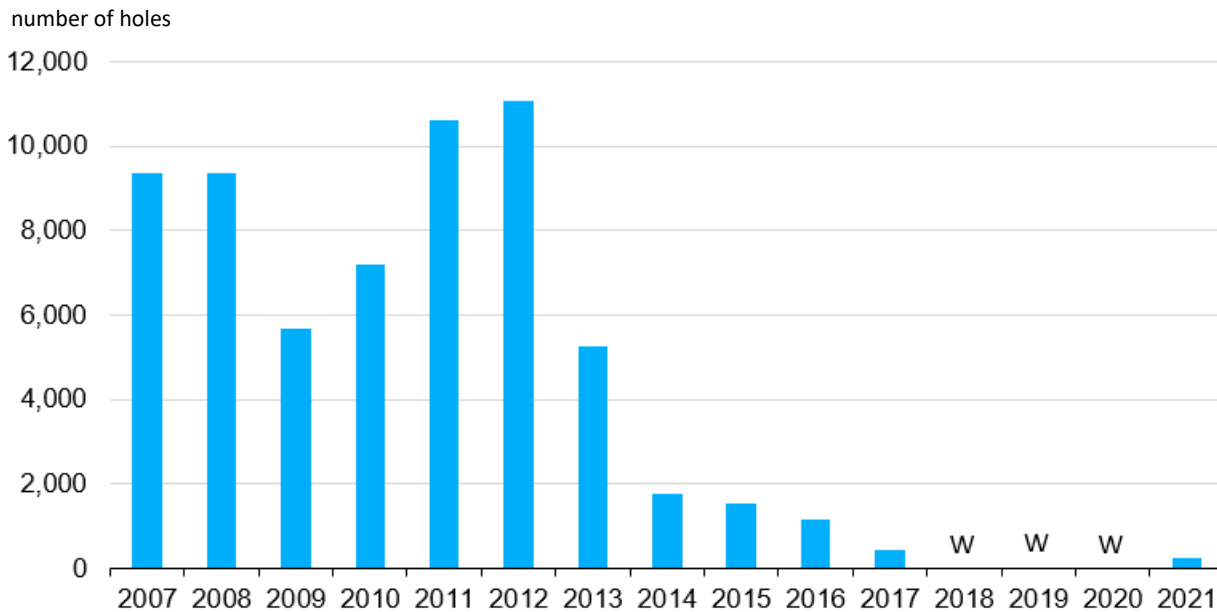
Year	Exploration drilling		Development drilling		Exploration and development drilling	
	number of holes	feet (thousand)	number of holes	feet (thousand)	number of holes	feet (thousand)
2007	4,351	2,200	4,996	2,946	9,347	5,146
2008	5,198	2,543	4,157	2,551	9,355	5,093
2009	1,790	1,051	3,889	2,691	5,679	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
2020	W	W	W	W	W	W
2021	W	W	W	W	260	123

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* (2007–21)

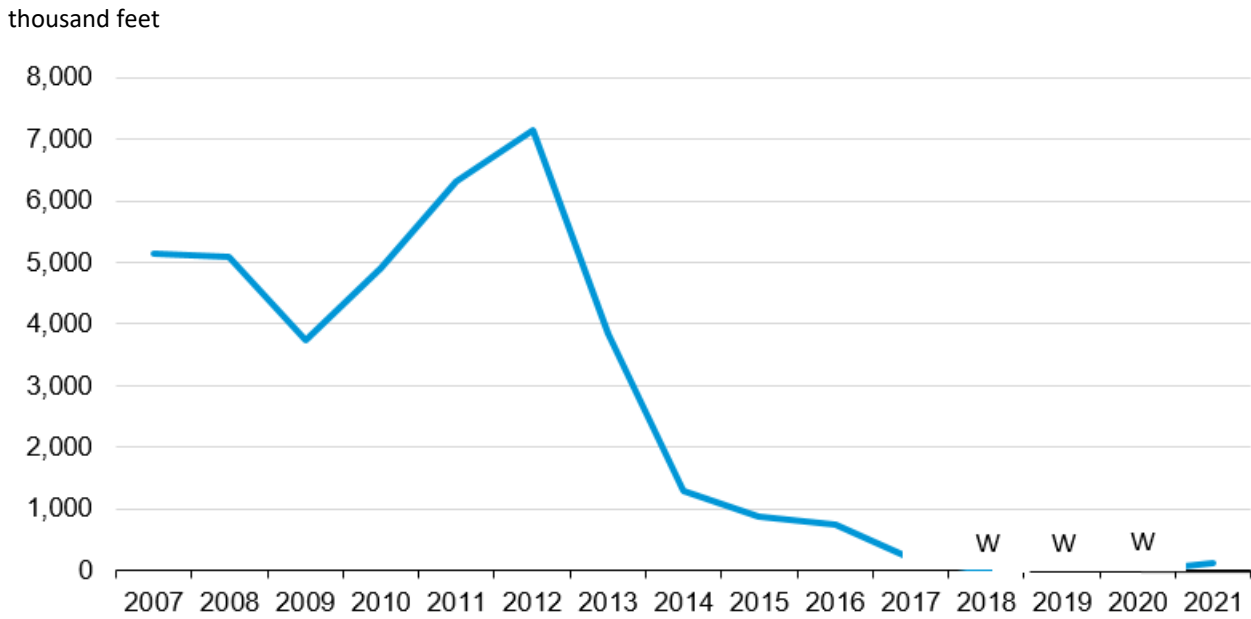
Figure 1. U.S. uranium drilling by number of holes, 2007–21



Source: U.S. Energy Information Administration, Form EIA-851A, *Domestic Uranium Production Report* (2007–21) W = Withheld



Figure 2. U.S. uranium drilling, 2007–21



Source: U.S. Energy Information Administration, Form EIA-851A, *Domestic Uranium Production Report* (2007–21) W = Withheld



Table 2. U.S. uranium mine production and number of mines and sources, 2007–21

Production / mining method	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Underground															
(estimated contained thousand pounds U3O8)	W	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	0
In-situ recovery															
(thousand pounds U3O8)	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
Other¹															
(thousand pounds U3O8)	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
Total mine production															
(thousand pounds U3O8)	4,541	3,879	4,145	4,237	4,114	4,335	4,577	4,912	3,711	2,545	1,150	721	174	W	21
Number of operating mines															
Underground	6	10	14	4	5	6	3	2	1	0	0	0	1	1	0
Open pit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
In-Situ leaching	5	6	4	4	5	5	7	8	7	8	6	6	5	5	3
Other sources ¹	1	1	2	1	1	1	2	1	1	1	1	1	0	0	0
Total mines and sources	12	17	20	9	11	12	12	11	9	9	7	7	6	6	3

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* (2007–21)

Table 3. U.S. uranium concentrate production, shipments, and sales, 2007–21

Activity at U.S. mills and in-situ-leach plants	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Estimated contained U₃O₈ (thousand pounds)															
Ore from underground mines and stockpiles fed to mills ¹		0	W	W	W	W	W	W	0	0	0	0	W	W	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 U ₃ O ₈)		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 U ₃ O ₈)		W	W	W	W	W	W	W	W	W	W	W	W	W	W
Total uranium concentrate production															
(thousand pounds U ₃ O ₈)		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	W
Total uranium concentrate shipped from U.S. mills and in-situ-leach plants															
(thousand pounds U ₃ O ₈)		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	W
Total uranium concentrate sales by U.S. producers³															
(thousand pounds U ₃ O ₈)		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	W
Weighted-average price (dollars per pound U ₃ O ₈)		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	W

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* (2006–20), and Form EIA-858, *Uranium Marketing Annual Survey* (2007–21)

Table 4. U.S. uranium mills and heap leach facilities by owner, location, capacity, and operating status at end of the year, 2017–21

Owner	Mill and heap leach ¹ facility name	County, State (existing and planned locations)	Capacity (short tons of ore per day)	Capacity				
				2017	2018	2019	2020	2021
Anfield Resources	Shootaring Canyon Uranium Mill	Garfield, Utah	750	standby	standby	standby	standby	standby
EFR White Mesa LLC	White Mesa Mill	San Juan, Utah	2,000	operating-processing alternate feed	operating-processing alternate feed	standby	operating-processing alternate feed	standby
Energy Fuels Wyoming Inc	Sheep Mountain	Fremont, Wyoming	725	undeveloped	undeveloped	undeveloped	undeveloped	undeveloped
Kennecott Uranium Company/Wyoming Coal Resource Company	Sweetwater Uranium Project	Sweetwater, Wyoming	3,000	standby	standby	standby	standby	standby
Total Capacity:			6,475					

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 2021. 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 (2017–21)*

Table 5. U.S. uranium in-situ recovery plants by owner, location, capacity, and operating status at end of the year, 2017–21

In-situ recovery plant owner	In-situ recovery plant name	County, State (existing and planned locations)	Production capacity (pounds U ₃ O ₈ per year)	Production				
				2017	2018	2019	2020	2021
Uranium Energy Corporation	Reno Creek ISR Uranium Project	Campbell, Wyoming	2,000,000	partially permitted and licensed	partially permitted and licensed	partially permitted and licensed	permitted and licensed	permitted and licensed
Azarga Uranium Corp	Dewey Burdock Project	Fall River and Custer, South Dakota	1,000,000	partially permitted and licensed	partially permitted and licensed	partially permitted and licensed	permitted and licensed	permitted and licensed
Cameco	Crow Butte Operation	Dawes, Nebraska	1,000,000	operating	operating	standby	standby	standby
Hydro Resources, Inc.	Church Rock	McKinley, New Mexico	1,000,000	partially permitted and licensed	partially permitted and licensed	partially permitted and licensed	partially permitted and licensed	partially permitted and licensed
Hydro Resources, Inc.	Crownpoint	McKinley, New Mexico	1,000,000	partially permitted and licensed	partially permitted and licensed	partially permitted and licensed	partially permitted and licensed	partially permitted and licensed
Lost Creek ISR LLC	Lost Creek Project	Sweetwater, Wyoming	2,000,000	operating	operating	operating	operating	operating
Mestena Uranium LLC	Alta Mesa Project	Brooks, Texas	1,500,000	standby	standby	standby	standby	standby
Pathfinder Mines Corporation	Pathfinder Shirley Basin	Carbon County, Wyoming	2,000,000	developing	developing	developing	permitted and licensed	permitted and licensed
Power Resources Inc., dba Cameco Resources	Smith Ranch-Highland Operation	Converse, Wyoming	5,500,000	operating	operating	operating	operating	operating
Uranium Energy Corporation	Hobson ISR Processing Plant	Karnes, Texas	2,000,000	standby	standby	standby	standby	standby
Uranium Energy Corporation	La Palangana ISR Uranium Project	Duval, Texas	1,000,000	standby	standby	standby	standby	standby
Strata Energy Inc	Ross CPP	Crook, Wyoming	3,000,000	operating	operating	standby	standby	standby
URI, Inc. (an enCore Energy company)	Kingsville Dome	Kleberg, Texas	1,000,000	restoration	restoration	restoration	standby	standby
URI, Inc. (an enCore Energy company)	Rosita	Duval, Texas	1,000,000	reclamation	reclamation	reclamation	standby	standby
URI, Inc. (an enCore Energy company)	Vasquez	Duval, Texas	1,000,000	restoration	restoration	restoration	reclamation	reclamation
Uranerz Energy Corporation	Nichols Ranch ISR Project	Johnson and Campbell, Wyoming	2,000,000	operating	operating	operating	standby	standby
Uranium Energy Corporation	Burke Hollow ISR Uranium Project	Bee County, Texas	1,000,000	partially permitted and licensed	partially permitted and licensed	partially permitted and licensed	permitted and licensed	permitted and licensed
Uranium Energy Corporation	Goliad ISR Uranium Project	Goliad, Texas	1,000,000	permitted and licensed	permitted and licensed	permitted and licensed	permitted and licensed	permitted and licensed
Uranium Energy Corporation	Jab and Antelope	Sweetwater, Wyoming	2,000,000	developing	developing	developing	developing	developing
Uranium Energy Corporation	Moore Ranch	Campbell, Wyoming	3,000,000	permitted and licensed	permitted and licensed	permitted and licensed	permitted and licensed	permitted and licensed
Uranium Energy Corporation	Willow Creek Project (Christensen Ranch and Irigaray)	Campbell and Johnson, Wyoming	1,300,000	operating	operating	standby	standby	standby
Total Production Capacity:			36,300,000					

Notes: Production capacity for 2021. An operating status of *Operating* indicates the in-situ recovery 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 = central processing plant.

Source: U.S. Energy Information Administration, Form EIA-851A, *Domestic Uranium Production Report* (2017–21)

Table 6. Employment in the U.S. uranium production industry by category, 2007–21

person-years

Year	Exploration	Mining	Milling	Processing	Reclamation	Total
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
2020	W	W	W	W	W	225
2021	42	32	0	52	82	207

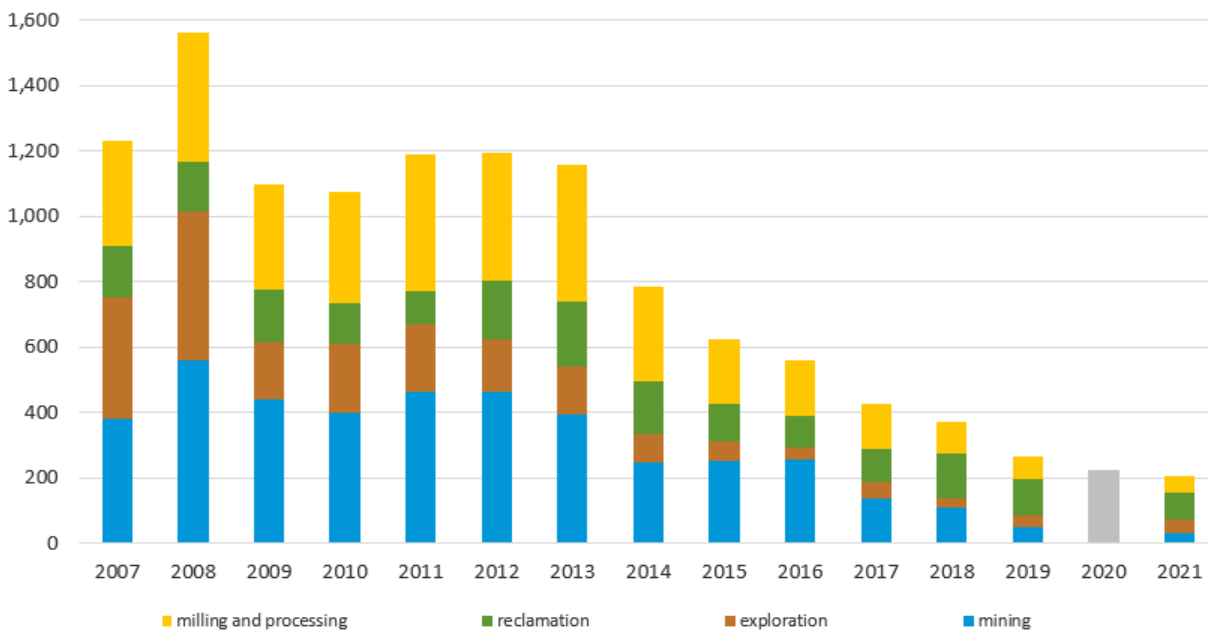
W = Data withheld to avoid disclosure of individual company data.

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* (2007–21)

Figure 3. Employment in the U.S. uranium production industry by category, 2007–21

person-years



Source: U.S. Energy Information Administration: Form EIA-851A, *Domestic Uranium Production Report* (2007–2021)

Table 7. Employment in the U.S. uranium production industry by state, 2007–21

person-years															
State(s)	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Wyoming	245	301	308	348	424	512	531	416	343	323	245	197	146	112	96
Colorado and Texas	557	696	340	292	331	248	198	105	79	61	46	54	44	42	58
Nebraska and New Mexico	149	160	159	134	127	W	W	W	W	W	56	36	48	46	W
Arizona, Utah, and Washington	245	360	273	281	W	W	W	W	W	W	W	W	W	W	W
Alaska, Michigan, Nevada, and South Dakota	25	30	W	W	W	W	W	0	0	0	W	W	W	W	W
California, Montana, North Dakota, Oklahoma, Oregon, Utah, and Virginia	9	17	W	W	W	W	W	W	W	W	W	W	W	W	W
Total	1,231	1,563	1,096	1,073	1,191	1,196	1,156	787	625	560	424	372	265	225	207

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* (2007–21)

Table 8. U.S. uranium expenditures, 2007–21

million dollars

Year	Drilling ¹	Production ²	Land and other ³				Total Expenditures
			total land and other	land	exploration	reclamation	
2007	67.5	90.4	178.2	77.7	50.3	50.2	336.2
2008	81.9	221.2	164.4	65.2	50.2	49.1	467.6
2009	35.4	141.0	104.0	17.3	24.2	62.4	280.5
2010	44.6	133.3	99.5	20.2	34.5	44.7	277.3
2011	53.6	168.8	96.8	19.6	43.5	33.7	319.2
2012	66.6	186.9	99.4	16.8	33.3	49.3	352.9
2013	49.9	168.2	90.6	14.6	21.6	54.4	308.7
2014	28.2	137.6	74.0	11.6	10.7	51.7	239.7
2015	28.7	118.5	76.2	12.1	4.7	59.4	223.5
2016	22.3	98.0	49.6	9.9	2.5	37.2	169.9
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	W	81.0
2020	W	40.0	W	W	W	W	87.0
2021	W	29.2	W	8.6	W	W	72.5

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.

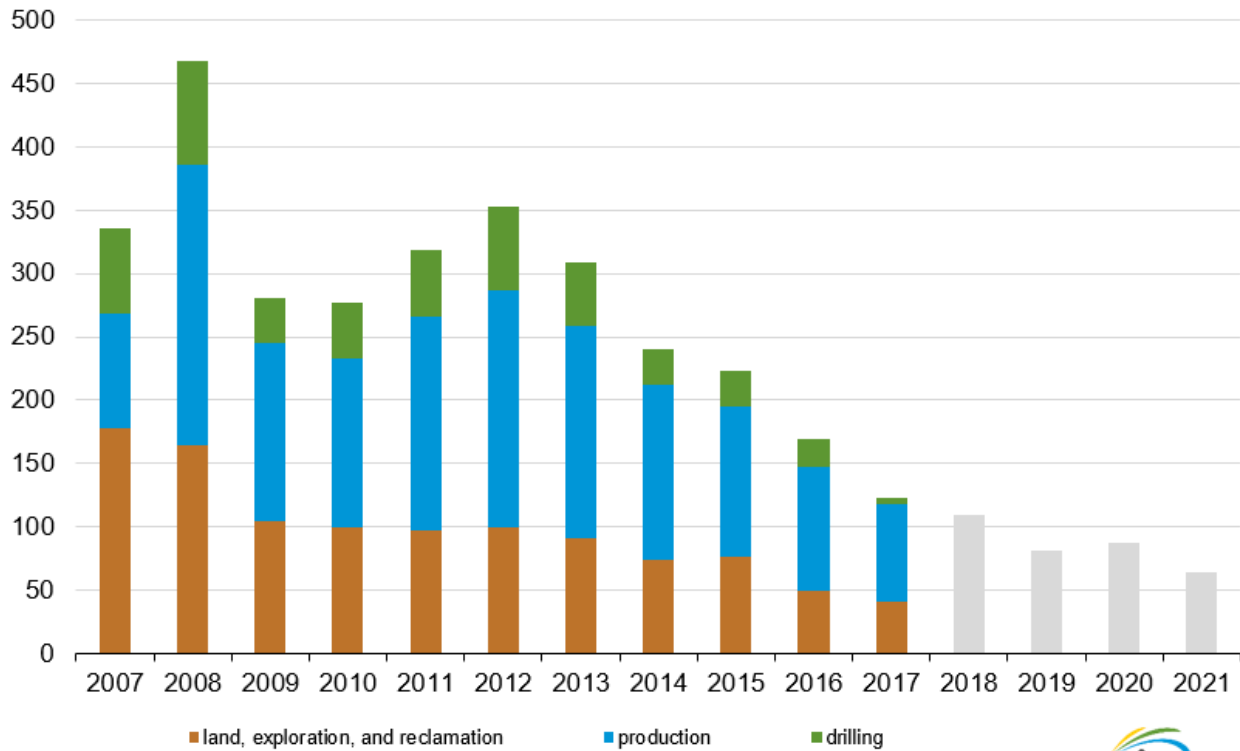
³ Land and Other: All expenditures for land; geological research; geochemical and geophysical surveys; costs incurred by field personnel in the course of exploration, reclamation, and restoration work; and overhead and administrative charges directly associated with supervising and supporting field activities.

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* (2007–21).

Figure 4. U.S. uranium expenditures, 2007–21

million dollars



Source: U.S. Energy Information Administration, Form EIA-851A, *Domestic Uranium Production Report* (2007–21).



Table 9. Summary production statistics of the U.S. uranium industry, 2007–21

Year	Exploration and development surface drilling million feet	Exploration and development drilling expenditures ¹ million dollars	Mine production of uranium million pounds U ₃ O ₈	Uranium concentrate production million pounds U ₃ O ₈	Uranium concentrate shipments million pounds U ₃ O ₈	Employment person-years
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
2020	W	W	W	W	W	225
2021	0.1	W	0.02	0.02	W	207

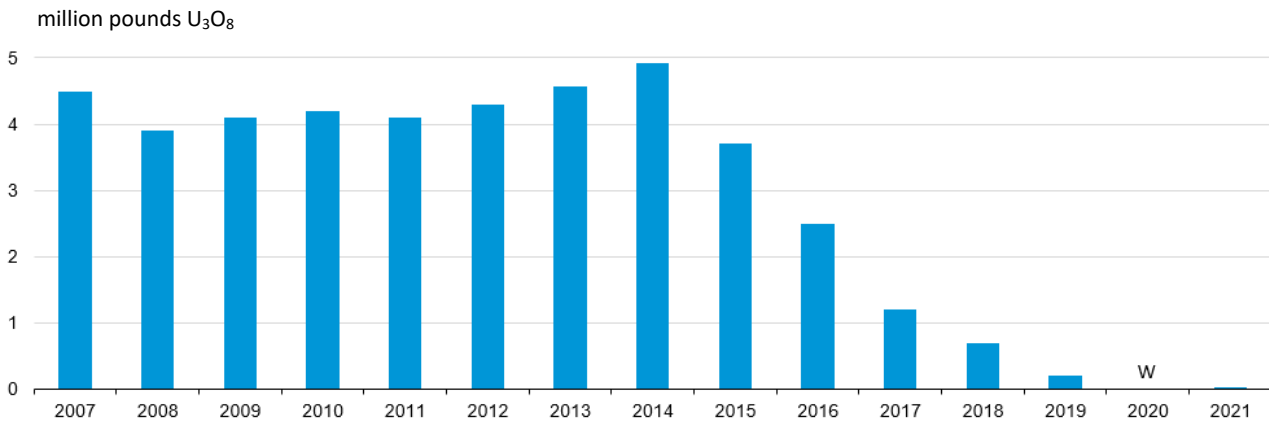
W = Data withheld to avoid disclosure of individual company data.

¹ Expenditures are in nominal U.S. dollars.

Note: A large, one-time reclamation project needed to be withheld and was not included in 2016 data.

Source: U.S. Energy Information Administration, 2007-2021 data from Form EIA-851A, *Domestic Uranium Production Report* (2007–21)

Figure 5. U.S. mine production of uranium, 2007–21

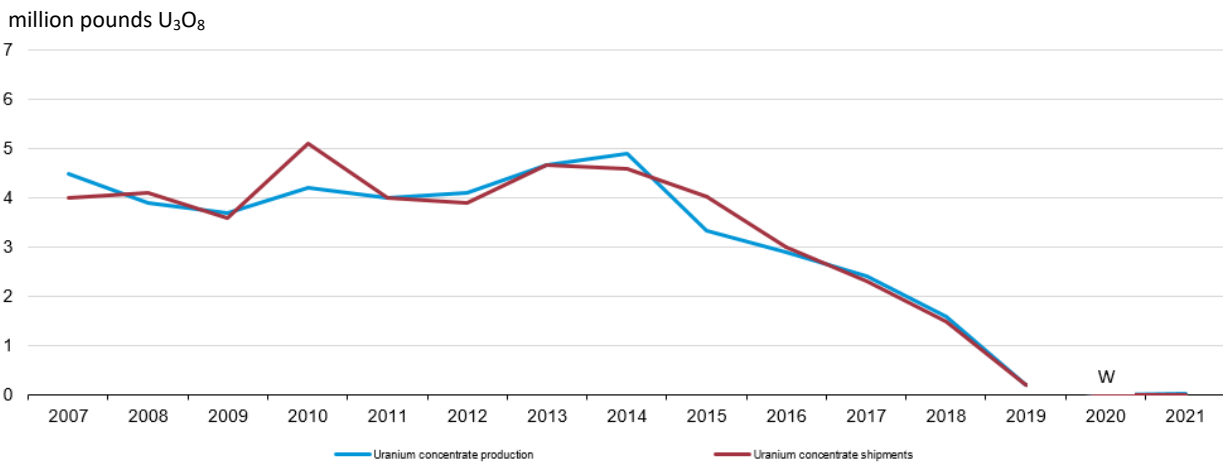


W = Withheld data.

Source: U.S. Energy Information Administration



Figure 6. U.S. uranium concentrate production and shipments, 2007–21

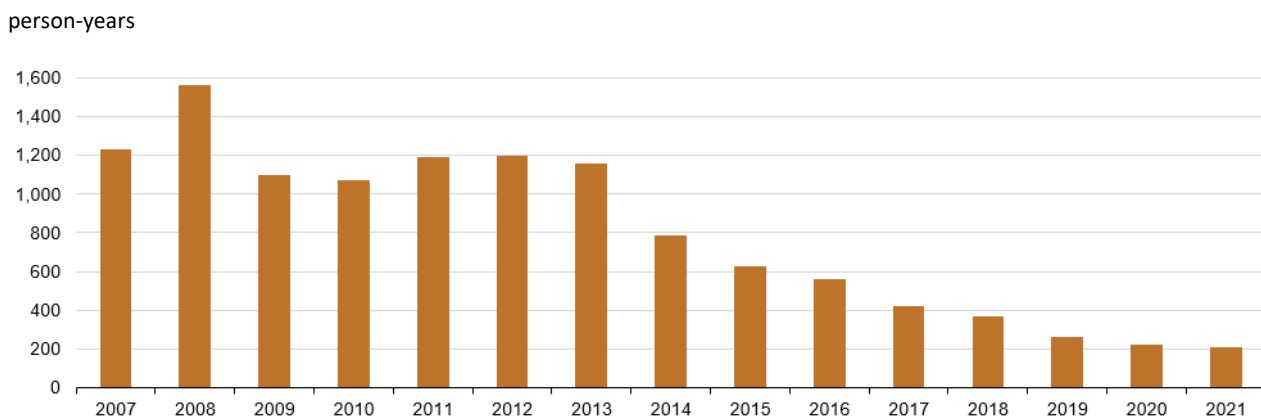


W = Withheld data.

Source: U.S. Energy Information Administration



Figure 7. Employment in the U.S. uranium production industry, 2007–21



Source: U.S. Energy Information Administration



Table 10. Uranium reserve estimates at the end of 2020 and 2021

million pounds U3O8

Uranium reserve estimates ¹ by mine and property status, mining method, and State(s)	End of 2020			End of 2021		
	Forward Cost ²					
	\$0 to \$30 per pound	\$0 to \$50 per pound	\$0 to \$100 per pound	\$0 to \$30 per pound	\$0 to \$50 per pound	\$0 to \$100 per 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	W	W	W	W	W	435.5
In-situ leach mining	W	W	W	W	W	W
Underground and open pit mining	W	W	W	W	W	W
Total	W	W	W	W	W	435.5
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	W	W	W	W	W	435.5

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* (2020–21)