



## Bureau Style Guide

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## Bureau Style Guide

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## Punctuation

### Commas

Comma usage may be seen as controversial by some, but there are definite rules in which a comma is required. These rules include:

- Before coordinating conjunctions that link two independent clauses.
  - o *Fracture fluid contains chemicals, but produced water has been treated.*
- After a dependent clause that starts a sentence.
  - o *After Ar-ion milling, the samples are scanned with FE-SEM.*
- To set off appositives (specifying, nonessential information).
  - o *...screening for petroleum, a type of hydrocarbon, as well as natural gas.*
- To separate items in a series. The Bureau uses the ***Oxford comma***.
  - o *Limestone, bedrock, and shale*
- After introductory adverbs.
  - o *Finally, the core is placed on the corresponding warehouse shelf.*
- When attributing quotes.
  - o *He said, “Energy poverty is a serious threat.”*
  - o *“Global warming is a serious threat,” she countered.*
- To separate elements in an address or full date.
  - o *Tuesday, February 11, 2020, but February 2020*
  - o *... located in Austin, Texas, the Bureau...*
- Between coordinating adjectives.
  - o *Earthquakes can be violent, catastrophic forces of nature.*

For numerical comma rules, see [Measurements and Quantities](#) in [Numbers](#), below.

### Hyphens and Dashes

Generally, the rules for hyphenation as outlined in the [Chicago Manual of Style](#) should be followed. See [Appendix A](#) for a list of specific word treatments, including hyphenations, that are common in Bureau publications.

#### *Hyphens as Modifiers*

- Hyphens are used to connect ***words that must work in tandem*** to be meaningful. If each word individually modifies the noun, do not use a hyphen. Note: do not use hyphens for ***predicate nominatives***.
  - o *fine-grained sandstone* (adjectival modifier—hyphenate)
  - o *sandstone is fine grained* (predicate nominative—do not hyphenate)
- Be sure to use hyphens when they can help to ***avoid misreading or confusion*** (e.g., “re-cover,” vs. “recover”).
- Remember to hyphenate the ***unconnected modifier*** when you are dealing with a group of modifiers.
  - o *nano- and micro-scale measurements*

- **Adverbs.** Do not use a hyphen if the first word of a group of three modifiers is an adverb that modifies the second word or if the first two words are adverbs.
  - o *very fine grained sandstone*
- Hyphens should be replaced with en dashes in the case of **compound and/or open modifier–noun pairs** (e.g., “*circum–Gulf of Mexico*”), but use this sparingly. Commas are often a much more elegant solution (e.g., “*high-resolution–high-frequency microscopy*” vs “*high-resolution, high-frequency microscopy*”).
- Hyphenate **compound directions**, such as *north-northwest*. Note that such directions should be abbreviated NNW, no hyphens.
- Do not hyphenate **foreign phrases** in a unit modifier (e.g., “*in situ sample*,” “*prima facie evidence*.”)

### Hyphens and Numbers

- **Numbers and abbreviated units of measure used as modifiers** are hyphenated, whether they are written out or abbreviated.
  - o *a 6- to 10-m-thick unit*
  - o *a hundred-meter race*
- Hyphenate numbers from **twenty-one to ninety-nine** when they are spelled out.

### En Dashes

- Use en dashes **to denote range**, with the dash substituting “to” in meaning (e.g., “2–4 ft”).
  - o However, avoid doing this when the range comes after “*from*” and other **prepositions**.
- Use en dashes **to denote equal relationships** (e.g., “*north–south baulk*,” “*shale–clay interface*”).
- INDD shortcut: CTRL + Hyphen

### Em Dashes

- Em dashes are mainly used to **set off a phrase** in a way similar to commas or parentheses. Make sure not to confuse — (em dash) with the shorter – (en dash).
- INDD shortcut: CTRL + SHIFT + Hyphen

### Periods

- For punctuation of names and degrees, see Names, Terms, Titles in Distinctive Treatment, below.
- For punctuation in abbreviations, see Abbreviations, below.

### Parentheses

- If you have **nested parentheticals**, alternate between parentheses and square brackets.
  - o *The trends are increasing (2,000 md [station 2, 2008]; 2,600 [station 2, 2011]; 3,000 [station 3, 2013])*

- **Placement of parenthetical units.** If one unit is given in the text followed by an equivalent measurement in parentheses, the placement of the noun they are measuring varies. Essentially, you should not separate a noun from its modifier, but if you are dealing with a predicate nominative, it is fine to keep the measurements next to each other.
  - o a section with 2- to 5-ft zones (0.6- to 1.5-m) of sandstone (modifier; do not put together)
  - o they are 2 to 5 ft (0.6–1.5 m) thick (predicate nominative; group units)
- Always put **figure references** in parentheses.
- When making a **numbered list** in running text, use both semicolons and open and close parentheses.
  - o The study included (1) a scanning electron microscope (SEM); (2) core sampling and cleaning; and (3) chemical testing.

## Quotes and Apostrophes

- Always change straight quotes to curly quotes. If you are getting straight quotes, you probably need to change your typography settings in Word or InDesign.
- Add apostrophes to the following:
  - o Indefinite expressions of time: e.g., 1950's
  - o Possessive acronyms: e.g., LST's (of the LST)
    - When referring to plurals of acronyms, no apostrophe (e.g., SARs).

## Semicolons

- Semicolons should be used **in lists** where commas are also used between modifiers for a single list item (e.g., “*Scott Tinker, Director, Bureau of Economic geology; Ryan Williamson, Assistant Director, Department of Energy; Michelle Abbott, President, Exxon Mobil*”).
- See also their usage in **numbered lists** in running text, described in [Parentheses](#), above.

## Symbols and Special Text

- Always use a **degree sign** (°) for Fahrenheit and Celsius; never Kelvin. No space between the symbol and the temperature unit.
- Use **special math symbols** rather ( $\times$ ,  $\div$ ,  $\geq$ ) rather than common keyboard equivalents such as x, \*, or /. Do not use ~ to mean “approximately; use proper symbol ( $\approx$ ).
  - o Note that there is a typological difference between a hyphen (-), an en dash (–), and a minus sign (−), though it may not be obvious in your chosen font.
- Spell out “**percent**” in text. Use symbol (%) in tables.
- Write out “**greater/less than**” in text, use symbols (>, <,  $\geq$ ,  $\leq$ ) in parentheses.
- Do not use the symbol (#) to abbreviate “**number**”; use “no.” instead.



- Do not put a space before *trademark symbols* (<sup>®</sup>, <sup>™</sup>) or the *copyright symbol* (©).
- Use the Equation editor or LaTeX to lay out *mathematical formulas* requiring special symbols and constructions such as logarithms, integrals, and sums.

## Distinctive Treatment of Words

### Bold, Italics, Roman

- In a reference, italicize “*in*” when referring to the chapter of a book.
- Do not italicize the names of journals, bulletins, or volumes.

### Capitalization

#### *Bodies and Organizations*

- Always capitalize “**State**” and “**Federal**” (e.g., “the Bureau received renewed *State* and *Federal* funding for 2019–2020,” “the State of Texas”).
- Capitalize “The” in “**The University of Texas at Austin**” even if it appears awkwardly midsentence.
  - o Similarly, **The Bureau Store**.

#### *Geologic Terms*

As a rule, you should always try to look up official names and capitalizations to confirm them.

- **Specific rock types** are capitalized. If it’s a rock from a special region, capitalize full name, if the rock is described by geological time or class, the rock is lowercase.
  - o Town Mountain *Granite* (regional, proper name)
  - o Ordovician *limestone* (date)
  - o bituminous *shale* (other classification)
- Rules for capitalizing **modifiers of geologic time** are variable depending on whether or not the modifier is formally recognized or used informally. Informal modifiers are not capitalized.
  - o See [Appendix B: Divisions of Geologic Time](#) for the complete breakdown of formal and informal.
- **Lower/Upper vs. Early/Late**. There is a difference between Upper Cretaceous and Late Cretaceous, despite the chart in Appendix B making them appear interchangeable:
  - o Upper/Lower = lithological units; e.g., stratigraphy, position in the rock column
    - These Lower Jurassic rocks are full of fossils.
  - o Early/Late = geochronologic units; e.g., dating/chronology, timescale
    - This shale dates to the Late Jurassic.

#### *Miscellany*

- Capitalize “**Web**” (internet).

## References

- For **hyphenated compounds** in the titles of Bureau documents, capitalize both words in the compounds (e.g., “Sedimentology in *Hydrocarbon-Rich* Cretaceous Basins”).
- For references in which a title has two parts (including colons/em dashes), **a common noun after the separator** should always be lower cased (e.g., “Systems of West Texas: the Permian Basin”).

## Latin Phrases

- **E.g.** (*exempli gratia*, “for example”) and **i.e.** (*id est*, “that is”) are acceptable and are always abbreviated. Make sure to punctuate with periods and set these phrases off with a comma just as you would their English equivalents.
- **Et al.** (*et alia*, “and others”) is not used in Bureau publications. Write out as “and others.”
- **Etc.** (*et cetera*, “and so forth”) is acceptable; make sure to punctuate properly.
- **In situ** (“in position”) is fine. Do not italicize it or other common Latin phrases. No special punctuation. Do not hyphenate if it appears as a modifier.

## Pluralization

- When talking about core samples, “**core**” can be a mass noun referred to singularly (e.g., “boxes of *core*”).
- “**Data**” and “**media**” are treated as plural nouns. “Datum” may be used singularly.
- “**Reservoir**” is not a mass noun; always pluralize it when referring to multiple (e.g., “few or no *reservoirs*”).

## Mathematics and Equations

- For guidance on mathematical symbols and abbreviations, see [Symbols and Special Text in Punctuation](#), and [Abbreviations](#).
- Equations should be justified left, with the equation number at the right margin.

$$(x + a)^n = \sum_{k=0}^n \binom{n}{k} x^k a^{n-k} \quad \text{Equation 1}$$

- A colon is not necessary to introduce an equation in the preceding text:

## Miscellany

- “**Correspond to**” is correct for our usage; “correspond with” means *to write letters to*.
- The noun “**outcrop**” should not be used as a verb.
  - o Correct: *The Barstow Formation crops out in California.*
  - o Incorrect: *The Barstow Formation outcrops in California.*

- “**Updip**” and “**downdip**” refer to directions and should be treated thusly.
  - o *The formation is located updip of the shelf edge.*

### Subscript and Superscript

- Do not write out *exponents* like “40 square feet”—it’s “40 ft<sup>2</sup>” instead.
- Do not superscript the *suffix in an ordinal* (e.g., 44th, not 44<sup>th</sup>).
- Use subscript for *chemical compounds* (e.g., HCO<sub>3</sub>).
- Use superscript for *chemical isotopes* (e.g., <sup>14</sup>C = carbon-14).

## Names, Terms, Titles

For guidance on capitalization of organizations and ruling bodies, see [Capitalization](#), above.

### Bureau Titles

- In Bureau publications (Annual Report, news briefs, etc.), *Director-level titles* are always capitalized.
- In Bureau publications (Annual Report, news briefs, etc.), *all other staff titles* are capitalized based on their placement.
  - o “James Sivil, *a research science associate*”
  - o “*Research Science Associate* James Sivil”

### Degrees

- Abbreviate degrees as “**M.S.**,” “**B.S.**,” “**Ph.D.**”
- **Dr.** is punctuated.

### Names

- When referring to *initials*, put a space in between and use dots.
  - o Write a name like “Jean-Paul” as “J. -P.”
- In the **Bureau Annual Report** specifically, all Bureau staffer names should be in bold-face font. Non-Bureau employees should not be bolded.
- Shorten something like “Brian Adams, *Director for the* Project to Sequester Carbon” to “Brian Adams, *Director*, Project to Sequester Carbon.”

## Numbers

### Chemistry

- Formulas for compounds with X number of an element:
  - o C<sub>14</sub>, H<sub>2</sub>O
- Isotopes:
  - o <sup>14</sup>C
  - o carbon-14

### Dates and Geologic Time

- When using **Ma** (million years ago), write the number of years from oldest to most recent when dealing with a range (e.g., “25–17 Ma”).
- For a full breakdown of units of geologic time and their treatments, see [Appendix B: Divisions of Geologic Time](#).

### Indefinite Expressions


- Spell out indefinite expressions such as “*the nineties*.”
- Use figures and apostrophes for indefinite expressions such as “*the 1990’s*.”

### Measurements and Quantities

- **Write out numbers 1–9** and **use figures for numbers 10 and up** (e.g., “*nine* papers were published,” “*11* boulders were added”).
  - o Exception: When numbers 1–9 are used with a unit of measurement, express them as figures (e.g., “*2-year program*,” “*4 minutes*,” “*8-foot path*”).
  - o Exception: When numbers 1–9 appear juxtaposed with other numbers, make all numbers figures (e.g., “*he was present for the 1st, 9th, and 11th sessions*”).
  - o Exception: Numbers less than 100 that come before a modifier with a figure in it should be spelled out (e.g., “*two 6-cm incisions*,” “*120 3-nm pores*”).
  - o Exception: When more than two things are expressed numerically, use figures regardless of the number (e.g., “*2 carbonate, 3 shale, and 6 sandstone samples*”).
- Correct written instances such as “**a hundred**” or “**a thousand**” to “*100*” or “*1,000*.”
- **Numbers in the thousands**:
  - o When referring to **page-number references**, numbers up to 9999 do not use a comma. Starting with 10,000, use commas.

- When referring to *numbers in regular text*, commas are fine (e.g., “over 1,000 people attended the dedication”).
- **Exponents:** Do not write out things like “40 square feet”—it’s “40 ft<sup>2</sup>” instead.

## Ordinals

- **Use figures to write out ordinals only from 10 up** (e.g., eighth, ninth, 10th, 11th...).
- I think the Bureau may use “2d” instead of “2nd”—personally, I hate this; it looks like you’re either talking about 2D as in two dimensions, or you’re numbering something like 2c, 2d, 2e... This also doesn’t really match 4th, 5th... But it looks like it appears in USGS, so...
  -  Confirm if we also do “3d”? I really hope not, considering 3D modeling and such is commonly found in geology.
- **Do not superscript the suffix** in an ordinal (e.g., 44th, not 44<sup>th</sup>). You can turn off this autocorrect setting in Word very easily.

## Ratios

- Spell out common ratios such as “two-thirds.”
- For other ratios, denote as [low net]:[gross ratio].

## Reference Numbers

- References to *maps* can appear as strange nonstandard combinations (e.g., *Map 53* might show up as *M053* or *MM00053* or something like that). Standardize to a plain number without leading zeros or unnecessary letters.
- **Page numbers** in a References/Bibliography section can show up strangely sometimes (e.g., letters mixed with numbers, leading zeros in page numbers). Always mark these up to double check them.

## Years (span)

- Do not use an en dash on a range of years in running text; write out the span of time.
  - *Production doubled from 2009 through 2012.*

## Abbreviations

### BEG vs. Bureau

When referring to the Bureau of Economic Geology, spell out the full name initially, then refer to it as “the Bureau.” Previously, the acronym “BEG” was used; this is considered obsolete. “BEG” should only be used in a quotation from a previously published work, the title of a previously published work, or the name of an award (e.g., the Tinker Family BEG Publication Award).

### Common Abbreviations

- & (only allowed in Mark Blount’s department title; spell out elsewhere)
- abs. (abstract)
- cont. (continued)
- 3D (no dashes)
- B.S.
- M.S./M.Sc.
- Ph.D.
- PO (post-office box)
- U.S. (U.S.A.)
- U.S. Geological Survey
- USGS

### General Terms

- Abbreviate *cardinal directions* as N, S, E, W.
- Use standard abbreviations for *time zones* (e.g., CST = central standard time).
- Never abbreviate “table(s).”
- Abbreviate the following when cited in parentheses:
  - o Abbreviate “**appendix**” as “app.” — note the punctuation.
  - o Abbreviate “**figure(s)**” as “fig(s).” — note the punctuation.
  - o Abbreviate “**page(s)**” as “p.” — note the punctuation.
  - o Abbreviate “**plate(s)**” as “pl(s).” — note the pluralization.
- The names of some of the *months* may be abbreviated in tables and figures: Jan., Feb., Mar., Apr., Aug., **Sept.**, Oct., Nov., and Dec.
  - o **May, June, and July** are always spelled out.

### Geologic Time

Abbreviations for lithologic or time-stratigraphic terms are not used in text. For figures, tables, or slides, the following abbreviations are recommended by the U.S. Geological Survey.

Lithologic abbreviations are capitalized when following a formal name (i.e., Tanyard Sh.); when used informally to refer to a rock type, the first letter of the rock type should be lowercase. Time-stratigraphic abbreviations are always capitalized.

Term or lithology	Abbreviation
Group	Gp.
Formation	Fm.
Member	Mbr.
Sandstone	Ss.
Siltstone	Slts.
Shale	Sh.

Term or lithology	Abbreviation
Limestone	Ls.
Dolomite	Dol.
Conglomerate	Cgl.
Quartzite	Qtz.
Volcanics	Volc.



For a visual chart listing the divisions of geologic time, see [Appendix B](#).

System, period, era	Abbreviation
Quaternary	Quat.
Tertiary	Tert.
Cretaceous	Cret.
Jurassic	Jur.
Triassic	Tri.
Permian	Perm.
Pennsylvanian	Penn.
Mississippian	Miss.

System, period, era	Abbreviation
Devonian	Dev.
Silurian	Sil.
Ordovician	Ord.
Cambrian	Camb.
Cenozoic	Cen.
Mesozoic	Mes.
Paleozoic	Pal.
Precambrian	Prec.

### Organizational Abbreviations/Acronyms

Shortened forms of agency names may be used in the text. Spell out the full name the first time it is used in the text and give its abbreviation in parentheses immediately afterward. Agency names in references should not be abbreviated. A name that is used frequently throughout the text may be abbreviated, whereas a name used only a few times may be spelled out. Don't expect a reader to remember an unusual abbreviation through many pages of text.

**Bureau research consortia** are given in bold-faced italics.

A	
AAAS	American Association for the Advancement of Science
AAPG	American Association of Petroleum Geologists
AASG	Association of American State Geologists
ACS	American Chemical Society
AEC	Atomic Energy Commission
AEG	Association of Engineering Geologists, Association of Exploration Geochemists
AESE	Association of Earth Science Editors
AFOSR	Air Force Office of Scientific Research
AGI	American Geological Institute
<b><i>AGL</i></b>	<b><i>Applied Geodynamics Laboratory</i></b>
AGS	Austin Geological Society
AGU	American Geophysical Union
AIC	American Institute of Chemists
AICE	American Institute of Chemical Engineers

AID	Agency of International Development
AIME	American Institute of Mining, Metallurgical, and Petroleum Engineers
AISD	Austin Independent School District
API	American Petroleum Institute
ASCE	American Society of Civil Engineers
ASCS	Agricultural Stabilization and Conservation Service
ASTM	American Society for Testing and Materials
B	
BRC	Balcones Research Center
BES	Basic Energy Sciences (DOE)
C	
CAPCO	Capital Area Planning Council
CBA	Council of Business Administration (UT)
CEAS	Center for Environmental Assessment Services

<b>CEE</b>	<b><i>Center for Energy Economics</i></b>
CEIP	Coastal Energy Impact Program
CER	Council on Energy Resources
CES	Center for Energy Studies
CIGEADATA	Committee on Storage, Automatic Processing and Retrieval of Geological Data
<b>CISR</b>	<b><i>Center for Integrated Seismicity Research</i></b>
COCORP	Consortium on Continental Reflection Profiling
COG	Council of Governments
COST	Coastal Offshore Test (wells)
CRWR	Center for Research in Water Resources
CZMA	Coastal Zone Management Act
<b>D</b>	
DAI	Dissertation Abstracts International
DNAG	Decade of North American Geology
DOA	Department of Agriculture
DOC	Department of Commerce
DOD	Department of Defense
DOE	Department of Energy
DOI	Department of the Interior
DOT	Department of Transportation
DPS	Department of Public Safety
DSDP	Deep Sea Drilling Project
<b>E</b>	
EASE	European Association of Scientific Editors
EDA	Economic Development Administration
EDIS	Environmental Data and Information Service
EDITERRA	European Association of Earth Science Editors
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
EPA	Federal Preparedness Agency
EPRI	Electric Power Research Institute
ERDA	Energy Research and Development Administration

ERTS	Earth Resources Technology Satellite
<b>F</b>	
FCC	Federal Communications Commission
FCIC	Federal Crop Insurance Corporation
FDA	Federal Disaster Assistance Administration
FEA	Federal Energy Administration
FEMA	Federal Energy Management Agency
FERC	Federal Energy Regulatory Commission
FHA	Farmers Home Administration
FIA	Federal Insurance Administration
FTC	Federal Trade Commission
FY	Fiscal Year
<b>G</b>	
GAO	General Accounting Office
GAT	Geologic Atlas of Texas
GC	Geological Circular
GCAGS	Gulf Coast Association of Geological Societies
<b>GCCC</b>	<b><i>Gulf Coast Carbon Center</i></b>
GEOCOME	Congress on the Geology of the Middle East
GIS	Geographic Information System
GLO	General Land Office of Texas
GNIS	Geographic Names Information Systems
GPO	Government Printing Office
GRI	Gas Research Institute
GSA	Geological Society of America
GURC	Gulf Universities Research Consortium
<b>H</b>	
HEW	Department of Health, Education, and Welfare
HGAC	Houston-Galveston Area Council
HUD	Department of Housing and Urban Development
<b>I</b>	
IAC	Interagency Contract

IAEG	International Association of Engineering Geology
ICC	Institute of Constructive Capitalism (UT)
ICNRE	Interagency Council on Natural Resources and the Environment
IDT	Interdepartmental Transfer
IFS	Industrial Facility Siting
INDFOCLIMA	World Climate Programme Data Referral System
INQUA	International Union for Quaternary Research
IUGS	International Union of Geological Sciences
<b>J</b>	
JPL	Jet Propulsion Laboratory
JSC	Johnson Space Center
<b>L</b>	
LBB	Legislative Budget Board
LPI	Lunar and Planetary Institute
<b>M</b>	
MARPOLMON	Marine Pollution Monitoring
MCC	Microelectronics and Computer Technology Corporation
MRC	Mineral Resource Circular
MSI	Marine Science Institute
MSL	Mineral Studies Laboratory
<i><b>MSRL</b></i>	<i><b>Mudrock Systems Research Laboratory</b></i>
<b>N</b>	
NAS	Naval Air Station
NASA	National Aeronautics and Space Administration
NATO	North Atlantic Treaty Organization
NBS	National Bureau of Standards
NCC	National Climatic Center
NCIC	National Cartographic Information Center
NDIP	National Flood Insurance Program
NEIC	National Earthquake Information Center
NEPA	National Environmental Policy Act Network

NGSDC	National Geophysical and Solar-Terrestrial Data Center
NHC	National Hurricane Center
NOAA	National Oceanic and Atmospheric Administration
NOS	National Ocean Survey
NPS	National Park Service
NRC	National Research Council, Natural Resources Council (state) Nuclear Regulatory, Commission (federal)
NSF	National Science Foundation
NSSFC	National Severe Storms Forecast Center
NTIS	National Technical Information Service
NURE	National Uranium Resource Evaluation
NWTS	National Waste Terminal Storage
<b>O</b>	
OAS	Organization of American States
OCS	Outer Continental Shelf
OCZM	Office of Coastal Zone Management
ONWI	Office of Nuclear Waste Isolation
OPEC	Organization of Petroleum Exporting Countries
OPI	Office of Public Inquiries
OPSER	Office of personnel Services and Employee Relations (UT)
OTA	Office of Technology Assessment
OWRT	Office of Water Research and Technology
<b>P</b>	
PC	Personal Computer
PER	Personnel Effort Report
PETEX	Petroleum Extension Service (UT)
PUC	Public Utilities Commission
<b>Q</b>	
QA	Quality Assurance
QAP	Quality Assurance Procedure
<b>R</b>	
RANN	Research Applied to National Needs

<b><i>RCRL</i></b>	<b><i>Reservoir Characterization Research Laboratory</i></b>
RI	Report of Investigations
RR/DC	Reading Room/Data Center
RRC	Railroad Commission of Texas
<b>S</b>	
SCS	Soil Conservation Service
SEPM	Society of Economic Paleontologists and Mineralogists
SME	Society of Mining Engineers
SPE	Society of Petroleum Engineers
SSIE	Smithsonian Science Information Exchange
<b><i>STARR</i></b>	<b><i>State of Texas Advanced Resource Recovery program</i></b>
STNP	South Texas Nuclear Project
<b>T</b>	
TACB	Texas Air Control Board
TACC	Texas Advanced Computing Center
TAES	Texas Agricultural Experiment Station
TAS	Texas Academy of Sciences
<b><i>TCCS</i></b>	<b><i>Texas Consortium for Computational Seismology</i></b>
TCMC	Texas Coastal Marine Council
TCMP	Texas Coastal Management Program
TDH	Texas Department of Health
TDHPT	Texas Department of Highways and Public Transportation
TDPW	Texas Department of Parks and Wildlife
TDWR	Texas Department of Water Resources

TEAC	Texas Energy Advisory Council
TEC	Texas Employment Commission
TEES	Texas Engineering Extension Service
TENRAC	Texas Energy and Natural Resources Advisory Council
TIC	Texas Industrial Commission
TIPRO	Texas Independent Petroleum Royalty Owners
TMMRRI	Texas Mining and Mineral Resources Research Institute
TMPA	Texas Municipal Power Agency
TNRIS	Texas Natural Resources Information System
TWRI	Texas Water Resources Institute
<b><i>TxSON</i></b>	<b><i>Texas Soil Observation</i></b>
<b>U</b>	
USACE	U.S. Army Corps of Engineers
USBM	U.S. Bureau of Mines
USCG	U.S. Coast Guard
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USIA	U.S. Information Agency
UTEP	The University of Texas at El Paso
UTM	Universal Transverse Mercator
<b>W</b>	
WDC	World Data Center
WIPP	Waste Isolation Pilot Program
WPA	Works Progress Administration
WSCL	Well Sample and Core Library
WTWI	West Texas Waste Isolation

## Scientific Terms and Units

Standard units of measure are abbreviated in text whenever they are preceded by numbers.

A	
A	ampere(s)
Å	angstrom(s)
acre-ft	acre-foot/feet
AES	atomic emission spectrometer
ANOVA	analysis of variance
API°	American Petroleum Institute gravity
atm	atmosphere (atmospheric pressure units)
avg.	average
B	
bbl	barrel(s)
bbl/d*	barrels per day
Bcf**	billion cubic feet
BHSIP	bottom-hole shut-in pressure
BOE	barrels of oil equivalent (spell out first time)
B.P.	before present
Btu	British thermal unit
b.y.	billion years (duration, not date)
bya	<b>DO NOT USE</b> ; see Ga
C	
°C	degrees Celsius (no space)
C.I.	contour interval
cm <sup>3</sup>	cubic centimeters
cm/s	centimeters per second
D	
d	day(s)
D	darcy(s)
DO	dissolved oxygen
DST	drill-stem test
E	
EA	environment assessment
EIS	environmental impact statement
elev.	elevation
EPM	equivalents per million
F	
°F	degrees Fahrenheit (no space)
ft	foot, feet
ft <sup>3</sup>	cubic foot/feet
ft-lb	foot-pounds
ft/min	feet per minute (same construction for feet per [unit])

G	
g	gram(s)
Ga	billion years; Giga-annum (date)
gal	gallon(s)
gal/d	gallon(s) per day
GCMS	gas chromatography–mass spectrometry
H	
h	hour(s) <b>can</b> also use <b>hr</b>
ha	hectares
ha-m	hectare-meters
I	
ICP	inductively coupled plasma
inch(es)	inches (always spelled out)
inch <sup>3</sup>	cubic inches
IP	initial potential; initial production
K	
k	kilo
K	Kelvin (no degree symbol)
K	permeability
kg	kilogram
km	kilometer
kPa	kilopascal
kWh	kilowatt hour(s)
L	
L	liter(s)
lat	latitude (abbreviate only when preceded by numbers)
lb	pounds
long	longitude (abbreviate only when preceded by numbers)
M	
m	meter(s)
Ma	million years (date)
maf	million acre feet
Mcf	thousand cubic feet
md	millidarcy(s)
m/d	meters per day
meq	milliequivalent
mg/L	milligrams per liter
mi	mile(s)
M <sub>L</sub>	magnitude

mL	milliliter(s)
MMcf	million cubic feet
mo	month(s)
mol	mole(s)
MPa	megapascal
mV	millivolts
m.y.	million years (duration)
mya	DO NOT USE; see <b>m.y.</b>
MSL	mean sea level
μg	microgram(s)
μm	micrometer(s)
<b>O</b>	
oz	ounce(s)
<b>P</b>	
ppb	parts per billion
ppm	parts per million
psi	pounds per square inch
psia	pounds per square inch absolute
psig	pounds per square inch gauge
<b>R</b>	
RMS	root mean square
<b>S</b>	
s	second(s)

scf	standard cubic feet
sec.	section(s)
SEM	scanning electron microscope
sp., spp.	species (singular, plural)
std.	standard
<b>T</b>	
t	metric tons
Tcf	trillion cubic feet
Tcm	trillion cubic meters
TDS	total dissolved solids
TOC	total organic carbon
ton(s)	short ton(s)
<b>U</b>	
UTM	Universal Transverse Mercator
<b>V</b>	
v.	volume (used in references)
vs.	versus
<b>W</b>	
wt	weight
<b>X</b>	
XRD	X-ray diffraction
<b>Y</b>	
yr	year

\* Production terms should not be abbreviated in text, but will often be abbreviated like so in tables and figures. Please note that otherwise, the preferred way to abbreviate ratios is with a / in place of *per*. See also: **bpd** (barrels per day), **bcpd** (barrels of condensate per day), **bopd** (barrels of oil per day), **bwpd** (barrels of water per day).

\*\* Generally, you can add B in front of a unit for which you are measuring in billions.

## States

Postal codes should only be used in addresses; use the following abbreviations instead.

State	Abbrev.	Postal
Alabama	Ala.	AL
Alaska	—	AK
Arizona	Ariz.	AZ
Arkansas	Ark.	AR
California	Calif.	CA
Colorado	Colo.	CO
Connecticut	Conn.	CT
Delaware	Del.	DE
District of Columbia	D.C.	DC
Florida	Fla.	FL
Georgia	Ga.	GA
Hawaii	—	HI
Idaho	—	ID
Illinois	Ill.	IL
Indiana	Ind.	IN
Iowa	—	IA
Kansas	Kans.	KS
Kentucky	Ky.	KY
Louisiana	La.	LA
Maine	—	ME
Maryland	Md.	MD
Massachusetts	Mass.	MA
Michigan	Mich.	MI
Minnesota	Minn.	MN
Mississippi	Miss.	MS

Missouri	Mo.	MO
Montana	Mont.	MT
Nebraska	Nebr.	NE
Nevada	Nev.	NV
New Hampshire	N.H.	NH
New Jersey	N.J.	NJ
New Mexico	N.Mex.	NM
New York	N.Y.	NY
North Carolina	N.C.	NC
North Dakota	N.Dak.	ND
Ohio	—	OH
Oklahoma	Okla.	OK
Oregon	Oreg.	OR
Pennsylvania	Pa.	PA
Rhode Island	R.I.	RI
South Carolina	S.C.	SC
South Dakota	S.Dak.	SD
Tennessee	Tenn.	TN
Texas	Tex.	TX
Utah	—	UT
Vermont	Vt.	VT
Virginia	Va.	VA
Washington	Wash.	WA
West Virginia	W.Va.	WV
Wisconsin	Wis.	WI
Wyoming	Wyo.	WY

## Preferred Phrases

The following examples may not be strictly correct over another option that is strictly incorrect, but they are the phrases preferred in Bureau publications.

In general, good academic writing will be short and simple where possible, minimizing passive voice and unnecessary nominalizations.

### Basis

“given this” — correct

“on the basis of” — incorrect

### Causation

“because”, “whereas” — correct

“while”, “as”, “since” — incorrect (should only imply relative time, not causation)

Correct: *Since the Jurassic period, flowering plants have diversified.*

“resulting from”, “owing to”, “because”, “caused by”, etc.

“due to” — incorrect (only adjectival, never adverbial)

### Circumstances

“in which” — correct

“where” — incorrect (should only imply location)

Correct: *Earthquakes are found where fault lines exist.*

Incorrect: *This is a situation where the equation does not work.*

### Comparison

“greater/lesser/higher/lower than” — correct

Correct: *The facies show a higher mineral composition than the two described earlier.*

“compared to” — incorrect

Incorrect: *The facies show a higher mineral composition compared to the two described earlier.*

### Present Participles vs. Infinitives

“useful in [present participle -ing]” — correct

*The module is useful in determining equations.*

“useful [infinitive]” — incorrect

*The module is useful to determine equations.*



## Purpose/Intention

“so as to” — correct

“to” — incorrect

“in order to” — incorrect

## Quantity

“most” — correct

“the majority of” — incorrect

“more than” — correct

“over” — incorrect

## Reference

“described later” — correct

“described below” — incorrect

## Tools/Usage

“with” — correct

Correct: *The quartz is ground with a pestle.*

“using” — incorrect

Incorrect: *The quartz is ground using a pestle.*

## Vicinity

“near” — correct

“in the vicinity of” — incorrect

## References

For guidance on using “figure,” “table,” etc. in citations, see [General Terms](#) in [Abbreviations](#).

### Citing References in the Text

References cited in the text of Bureau publications generally follow the style outlined by the USGS in its *Suggestions to Authors* (1991, p. 234–241). All works cited in the text must also appear in the list of references; the only exceptions are informal oral or written communications and unpublished data, which are cited only parenthetically in the text.

Always double check cited references against the provided bibliography, looking for spelling, consistency between entries, and whether or not there are any missing entries.

Always spell out “**and others**” instead of using the abbreviation “et al.” The exception is when submitting to journals that have a different style.

#### *Single Author*

([Author], [date]), as in (Wermund, 1983).

#### *Two Authors*

([Author] and [Author], [date]), as in (Fisher and Hovorka, 1983).

#### *Three or More Authors*

([Author] and others, [date]), as in (Brown and others, 1977).

#### *Unpublished Material*

Use sparingly and only when a published source is unavailable.

([Author], [type of] commun., [date])

- (A. B. Smith, oral commun., 2005)
- (C. Brown, written commun., 2018)
- (D. E. Jones, unpub. data, 2019).

#### *Material “in press” or “in preparation”*

“In press” refers to works that have been formally approved for publication and have entered the editing process. Only works “in press” can be cited.

([Author], in press), as in (Price, in press).

#### *Works “In preparation”*

Includes rough drafts and manuscripts in peer review; these cannot be cited in the text or included in the references.

## Citing Two or More References Together

- When citing two or more references together in the text, separate the references with a *semicolon* to prevent misreading. Multiple references in the text should be *ordered chronologically, then alphabetically*.
  - (Woodruff and Gustavson, 1976; Brown, 1977; Fisher, 1983; Fracasso, 1983)
- If an author has citations for different years, list ALL of that author's references in chronological order first, then ALL refs for the next author in chronological order, etc.
  - (Kreitler, 1977, 1981; Henry, 1979a, 1979b; Finley and others, 1981, 1990; Light, 1982)
- If the same date is given for more than one reference by the same author, the same coauthors, or, in the case of multiple authors, the same senior author, label each text reference "a," "b," and "c" sequentially as they are listed in the references to differentiate the references in the text. Note that "b" may be cited in the text before "a"; references are labeled according to their order in the list of references, not the order in which they are cited in the text.

McGowen, J. H., Brown, L. F., Jr., Evans, T. J., Fisher, W. L., and Groat, C. G., 1976a, Environmental geologic atlas of the Texas Coastal Zone--Bay City--Freeport area: The University of Texas at Austin, Bureau of Economic Geology, 98 p.

McGowen, J. H., Proctor, C. V., Jr., Brown, L. F., Jr., Evans, T. J., Fisher, W. L., and Groat, C. G., 1976b, Environmental geologic atlas of the Texas Coastal Zone—Port Lavaca area: The University of Texas at Austin, Bureau of Economic Geology, 107 p.

## References, Selected References, Bibliography

Almost every manuscript submitted for editing has some discrepancies between the references cited in the text and those in the list of references. Please cross-check spelling and dates after the manuscript has been completed. References in the figures and tables, as well as those in the text, must be included in the reference list. Remember that a revised manuscript often needs a revised reference list.

References are cited in the section title "References" ("Selected References" or "Selected Bibliography" may be used if the list is more extensive than citations in the text, "Bibliography" if it is exhaustive). Surnames of authors are given first, followed by a comma, initials, a comma, and the date of publication. In general, only proper names and the first word of a title are capitalized; common nouns following colons and em dashes are not capitalized.

References should be arranged *first alphabetically* and *then chronologically*. Single-author entries precede multiple-author entries. The last name of the second, third, and so on, author determines the order of multiple-author entries. Thus, "Brown and Fisher" would precede "Brown and McGowen," regardless of dates.

Use a bar in place of the author's or authors' names only if the names are exactly the same as those in the preceding reference. There is no punctuation between the bar and the date that follows it. For example:

Morton, R. A., 1981a, Factors critical to the development of energy resources from geopressured aquifers in Texas (abs.): Geological Society of America, Abstracts with Programs, v. 13, no. 5, p. 259.

\_\_\_\_\_, 1981b, Methane entrained in Gulf Coast geopressured aquifers (abs.): Houston Geological Society Bulletin, v. 24, no. 1, p. 6.

## Reference Style

Although this manual supersedes the 7th edition of *Suggestions to Authors of the Reports of the United States Geological Survey*, any additional questions about references and citations may be answered by reading *Suggestions*, specifically the chapter entitled “Preparing references for survey reports,” which includes a list entitled “Examples of cited publications.”

### Books

The order after the colon is (1) place of publication, (2) publisher, and (3) pagination. The full name is not needed for most publishers; “Macmillan” is enough for “The Macmillan Company.” For example:

Galloway, W. E., and Hobday, D. K., 1983, Terrigenous clastic depositional systems: applications to petroleum, coal, and uranium exploration: New York, Springer-Verlag, 423 p., doi:123456.789.12.

### Part of a Book

If the reference is only part of a publication (such as a book chapter), distinguish the part from the whole by using an italicized “in” followed by the editor’s or compiler’s name in inverted order, then “ed.,” then the title of the book. For example:

Bay, A. R., and Bebout, D. G., 1983, Cyclic, shoaling-carbonate banks in the lower Glen Rose Formation (Cretaceous), South Texas, *in* Harris, P. M., ed., Carbonate buildups—a core workshop: Society of Economic Paleontologists and Mineralogists Core Workshop No. 4, p. 429–462.

### Abstract

If the reference is an abstract, insert “(abs.)” after the title:

Henry, C. D., 1984, Variations in caldera development in the Tertiary volcanic field of Trans-Pecos Texas (abs.): EOS, v. 65, no. 10, p. 95.

### Article in Periodical

The order after colon is (1) the name of the periodical or series, (2) the volume and issue numbers, abbreviated as “v.” and “no.,” and (3) the pagination, “p.,” all in Arabic numerals. Include the DOI number at the end, if available. For example:

Fisher, W. L., 1981, Geologic activities into the 21st century: will the boom bust again?: Houston Geological Society Bulletin, v. 23, no. 6, p. 3–5.

Chen, Y., and Fomel, S., 2018, EMD-seislet transform: Geophysics, v. 83, no. 1, p. 197–213, doi:10.1007/s10040-017-0554.1.

For an *online journal article*.

Snyder, V., 2002, The Effect Course-Based Reading Strategy Training on the Reading Comprehension Skills of Developmental College Students: Research and Teaching in Developmental Education, v. 18, no. 2, p. 37–41, [www.jstor.org/stable/42802532](http://www.jstor.org/stable/42802532).

#### *M.A. Theses and Ph.D. Dissertations*

Follow the format: Author, date, title, institution, degree, and number of pages. It is not necessary to repeat the university's city or state or add that the work is "unpublished."

Use "Master's thesis" for all Master's degrees—M.A., M.S., or M.Sc.

Lin, Z. S., 1974, Estimating magnitude of earthquakes in Taiwan area from total duration of oscillation: National Taiwan University, Master's thesis, 51 p.

Senger, R. K., 1983, Hydrogeology of Barton Springs, Austin, Texas: The University of Texas at Austin, Master's thesis, 119 p.

Use "Ph.D. dissertation" for all doctoral dissertations:

Dutton, A. R., 1982, Hydrogeochemistry of the unsaturated zone at Big Brown lignite mine, East Texas: The University of Texas at Austin, Ph.D. dissertation, 239 p.

#### *Proceedings of Annual Meetings*

The citation should include (1) the name of the congress or conference, (2) number of meeting, if any, (3) title of the publication, and (4) collation (series, volume, number, part, and pagination). The name of the city and country where the meeting was held may be included if relevant. The information may be given in whatever order best approximates the order of the title page or cover.

Use regular rules for ordinals (see [Numbers](#), above).

Ayers, W. B., Jr., and Kaiser, W. R., 1982, Tongue River (Paleocene) depositional systems and the occurrence of coal in the Powder River Basin of Wyoming and Montana (abs.): International Association of Sedimentologists, 11th International Congress on Sedimentology, abstract volume, p. 56.

#### *Field Trip Guidebooks*

Citations of field-trip guidebooks should indicate the publisher as well as the field-trip sponsor.

Morton, R. A., and White, W. A., 1983, Coastal field trip, Corpus Christi area: The University of Texas at Austin, Bureau of Economic Geology, guidebook prepared for Austin Geological Society field trip, 24 p.

#### *Annual Compilations*

Cite only the years used in your work.

Railroad Commission of Texas, Oil and Gas Division, 1965–1975, Annual report of the Oil and Gas Division: Austin, variously paginated.

U.S. Coast and Geodetic Survey, 1928–1970, U.S. earthquakes: Washington, D.C., annual publication, variously paginated.

### *Corporate Publications*

The company's name is spelled out and punctuated according to the company's usage.

Turk, Kehle and Associates, 1978, Tectonic framework and history, Gulf of Mexico: report prepared for Law Engineering Testing Co., Marietta, Georgia, 29 p.

This reference would appear in the text as (Turk, Kehle and Associates, 1978).

### *Websites and Blogs*

[Last name], [First initial(s)] (if no author available, begin with site owner), [year], "[Page title]": [Website Title], [Web Address] (accessed [month]/[day]).

Smith, J., 2009, "Obama Inaugurated as President": CNN.com, [http://www.cnn.com/POLITICS/01/21/obama\\_inaugurated/index.html](http://www.cnn.com/POLITICS/01/21/obama_inaugurated/index.html) (accessed February 1).

Smith, J., 2017, "Catalonia Declares Independence from Spain": New York Times, [http://www.newyorktimes.com/POLITICS/11/21/catalonia\\_spain.html](http://www.newyorktimes.com/POLITICS/11/21/catalonia_spain.html) (accessed February 1).

### *Maps*

For maps, give the scale and the number of map sheets if more than one:

Barnes, V. E., 1983, Tucumcari sheet: The University of Texas at Austin, Bureau of Economic Geology Geologic Atlas of Texas, scale 1:250,000.

### *Unpublished Computer Prints or Programs*

These should be cited by author(s), date, title or program name, the affiliation of the program's author, and "unnumbered" if the page count is not given. Works about programs should be cited in the usual bibliographic style.

Masterson, A. R., 1984, EDIBLE: a computer program for editing data-base information in bibliographic language: The University of Texas at Austin, Bureau of Economic Geology, draft, unnumbered.

Parkhurst, D. L., Thorstenson, D. C., and Plummer, L. N., 1981, PHREEQE: a computer program for geochemical calculations: U.S. Geological Survey Water-Resources Investigations WRI 80-96, 216 p.

### *Foreign-Language Publications*

Be sure to include accent marks and other punctuation marks exactly as they appear on the title page. It is not necessary to include the translation of foreign titles or names or organizations or conferences into English unless both versions appear on the title page.

Ewing, T. E., 1980, Eocene tectonism in the North American cordillera (abs.): 26e Congrès Géologique International, v.1, p. 337.

## Style for Bureau Publications

### *Formal Names*

Formal names were designated for UT campuses in 1967. **References before 1967** should list UT as “University of Texas, city.” **References dated 1967 or later** should list UT as “The University of Texas at Austin,” “... at El Paso,” etc.

Flawn, P. T., **1952**, The Hazel copper-silver mine, Culberson County, Texas: University of Texas, Austin, Bureau of Economic Geology Report of Investigations No. 85, 32 p.

Baumgardner, R. W., Jr., Hamlin, H. S., and Rowe, H. D., **2016**, Lithofacies of the Wolfcamp and lower Leonard intervals, Southern Midland Basin: The University of Texas at Austin, Bureau of Economic Geology Report of Investigations No. 281, 67 p.

### *Contract Reports*

Contract reports should list all contributors to the report, the year, the title of the report, the status of the report (draft, milestone, final, etc.), and the page count. University and Bureau information, funding agency name, and the contract number(s) should also be included.

Jackson, M. P. A., 1983, Natural strain in glacial and diapiric rock salt, with emphasis on Oakwood Dome, East Texas: The University of Texas at Austin, Bureau of Economic Geology, milestone report prepared for U.S. Department of Energy under contract no. DE-AC97-80ET46617, 127 p.

Woodruff, C. M., Jr., and Gever, C., 1984, Integration of geochemical data along the Balcones/Ouachita trend, Central Texas: The University of Texas at Austin, Bureau of Economic Geology, final report prepared for U.S. Department of Energy under contract no. DE-AS07-79ID12057, 21 p. plus appendixes.

### *Cross Sections*

Dodge, M. M., and Posey, J. S., 1981, Structural cross sections, Tertiary formations, Texas Gulf Coast: The University of Texas at Austin, Bureau of Economic Geology Cross Sections.

### *Geological Circulars*

#### ***Article contained within a geological circular:***

Gustavson, T. C., Finley, R. J., and Baumgardner, R. W., Jr., 1980, Preliminary rates of slope retreat and salt dissolution along the Eastern Caprock Escarpment of the Southern High Plains and in the Canadian River valley, in Gustavson, T. C., and others, Geology and geohydrology of the Palo Duro Basin, Texas Panhandle, a report on the progress of nuclear waste isolation feasibility studies (1979): The University of Texas at Austin, Bureau of Economic Geology Geological Circular 80-7, p. 76–82.

#### ***Entire geological circular:***

If you are citing the entire circular, all contributors must be cited.

Gustavson, T. C., Bassett, R. L., Budnik, R., Finley, R. J., Goldstein, A. G., McGowen, J. H., Roedder, E., Ruppel, S. C., Baumgardner, R. W., Jr., D. A., Ramondetta, P. J., Simpkins, W. W., Smith, D., Smith, D. A., Duncan, E. A., Griffin, J. A., Merritt, R. M., and Naiman, E. R., 1982, Geology and geohydrology of the Palo Duro Basin, Texas Panhandle, a report on the progress of nuclear waste isolation feasibility studies (1981): The University of Texas at Austin, Bureau of Economic Geology Geological Circular 82-7, 212 p.

#### *Mineral Resource Circulars*

McBride, M. W., and Dobbs, A. L., 1983, Nonpetroleum mineral producers in Texas—1983: The University of Texas at Austin, Bureau of Economic Geology Mineral Resource Circular No. 74, 94 p.

#### *Reports of Investigations*

Seni, S. J., 1980, Sand-body geometry and depositional systems, Ogallala Formation, Texas: The University of Texas at Austin, Bureau of Economic Geology Report of Investigations No. 105, 36 p.

#### *Special Publications*

These include Bureau Annual Reports, symposia, special reports, educational materials, the Index series, the Catalog of North American Early Tertiary Fossils of the Gulf and Atlantic Coastal Plains, Mineral Producers publications, Mineral Resource pamphlets, research notes, and the Energy and Mineral Resources of Texas map series.

The format is author, date, title, UT name, Bureau name, and pagination:

Brown, L. F., Jr., Morton, R. A., McGowen, J. H., Kreitler, C. W., and Fisher, W. L., 1974, Natural hazards of the Texas Coastal Zone: The University of Texas at Austin, Bureau of Economic Geology, 13 p.

In all Bureau publications, no comma is needed between the Bureau name and the series name, if there is a series name. For example, “University of Texas Bulletin No. 3232” is correct; “University of Texas, Bulletin No. 3232” is incorrect.



## Proofing

### Bad breaks

- Laid-out text should break from one line to the next without being disruptive to the reader. If a word must break between lines, break it across its syllables as found in the Merriam Webster Dictionary. Don't break -ly across lines.

### Captions

#### *Credits*

- Only non-Bureau photographs need credits (in the Bureau Annual Report).
- Include more guidance in the style guide on how we handle credits in captions elsewhere.

## Appendix A: Bureau Word List

A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | R | S | T | U | W | X | Y

## A

accommodate	Alaskan North Slope	Animikie
acknowledgments	Alexandrian	aquifer recharge zone
acre-foot	align	Argentinean
air-dried samples	Allen Intrusive Complex	ash-flow tuff
air mass	analog	Atoka

## B

back-bank (adj.)	barrier-strandplain system	benchmark (general point of reference)
back bank (n.)	baseline (foundation, basis)	bench mark (surveying)
back bay	base line (surveying only)	Bermuda grass
backbeach	Basin and Range Province	bird's-foot delta
backfill	bay fill	black-and-white photographs
back-island dunes	bayhead	blowout
backreef	bay line	blue-green algae
backset	bay margin	borehole
backshore	bay-margin sand	Boston Blue Clay
back side	bay shore	bottom-hole pressure
backswamp	bayside	bottom load
backwash	bayward	bottomset
Balcones Fault Zone	beachhead	brackish water
bankfill	beachline	brackish-water marsh
bar finger	beach ridge	breaker-point bars
bar-finger sands	bed form	breakpoint
Barnett Shale play	bed load	Bureau of Economic Geology, the Bureau (not BEG)
barrier-island facies	bed-load sediment	bypass
barrier-island-strandplain system	bedrock	by-product
	bed set	

## C

caliche	central Texas coast	coal gas
calichification	channel bar	coal mine
capillary pressure curve	channel fill	coarse-grained sandstone
cap rock (salt dome)	channel-fill deposits	coast (shoreline)—Texas coast, Gulf coast
caprock (overburden)	channel flow	the Coastal Atlas (of Texas) or, seven coastal atlases
carbon-14 dates	channel-mouth bar	coastal-barrier deposits
carbonate-bank development	chenier plain	Coastal Plain (Texas)
Carboniferous Systems	clear-cut trend	coastal region
Cayuga	closeup (noun, adj.)	Coastal Zone (Texas)
Central Mineral Region	close up (verb)	coastline
Central Texas	coalfield	

color-infrared photographs	coupled flow–geomechanical simulator	crosscutting
continental shelf, inner	Coast (shoreline) When two counties mentioned: Travis and Hays Counties	cross-index list
continental shelf (but Outer Continental Shelf)	creekbed	cross-lamination
convolute bedding (not “convoluted”)	crevasse splay facies	cross plot
core hole	crop out (verb)	cross section
County/Countries (capped when preceded by name but: Travis–Hays county line)	cross-bank channels	cross-stratification
	cross-bed	cut-and-fill structure
		cutbank
		cutoff (noun, adj.)
		cut off (verb)

## D

decisionmaking	delta-plain sediments	downcutting
deep-sea fan	desiccation	down dip (noun, adj.)
deepwater (adj.)	Devils River Uplift (no apostrophe)	downdrift
delta bar	dissemination	downhole
delta bedding	dissolved-solids content	downslope
delta facies unit	distributary channel	dredge spoil
delta fan	distributary-channel deposits	drift-line elevation
delta front	downcurrent	driller’s logs
delta-front sand		dryland farming

## E

earth (soil, ground, land)	Eastern Caprock Escarpment	enclosed-bay environments
Earth (planet)	east–west-trending arch	Eocene-age systems
Eagle Ford Shale	ebb-tidal delta	eolian
East Texas	electric log files	ephemeral-stream system
East Texas Basin	enclosed bay	the Equator

## F

fan-delta lobes	floodbasin	fold belt
fanhead delta	floodplain	foraminifers (not forams)
fan-shaped deposit	flood prevention structures	forebeach
far West Texas	flood-prone areas	foredune
federal government	flood state	fore-island dunes
federal law	flood-surge elevations	forereef
field (lowercase unless listed)	flood-tidal levels	forest
fieldwork	flood tide	foreshore
fine-grained siltstone	floodwaters	foreword
fine-grained	flowback	fracking
(very) fine grained sand	flow-banded rhyolite	fresh water (noun)
finite difference method	flow banding (noun)	fresh-water sands
flexure fault zone	fluvial–deltaic system	fuller’s earth

## G

gage	gamma-ray logs
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geologic (formation, section, time)	grass-covered dunes	Gulf Coast (region): Upper Texas
geological (society, survey)	grassflats	Gulf Coast, Middle Texas Gulf
geopressed geothermal energy	grasslands	Coast, Lower Texas Gulf Coast
glacial	gray	Gulf of Mexico, Gulf (geographic entity)
Glorieta Formation	greenbelts	gulf (the water)
grain-size analysis	groundwater	Gulf coastal province
grain-sized particles	groundwater withdrawal	gulfside
	Gulf coast (shoreline)	gulfward

## H

hachure	high-energy environment	hot-water geothermal system
half-life	high flood stage	hurricane-aftermath storms
half-scale	high-gradient stream	Hurricane George
Haynesville–Bossier	highstand	hurricane storm surge
headward-eroding stream	high water (noun)	hurricane surge
Hensel Sand (not “Hensell” Sand – Geolex is incorrect, namesake is Hensel Ranch.)	high-water mark	hurricane-surge flooding
high energy	highway right-of-way	hurricane-tidal surge
	Hill Country (region of Texas)	
	hot-dry rock system	

## I

incised-valley-fill systems	inner continental shelf	interglacial
Indiangrass	inner-shelf facies	
infauna	in situ gasification	

## J

Joule heating

## L

land cut	Landsat	live-oak mottes
land-cut area	land-surface subsidence	Llano Uplift
land disposal sites	land use	log–log graph
landfall	land use maps	logjam
landfill	land-water boundary	long-term
landmass	lidar	low-sand areas
landowner	liquid-disposal sites	lowstand
land resources	live oak	
land resources planning	live-oak-covered ridges	

## M

magnetic north	marine deltaic sand	meander lobe
man-made	marsh-covered tracts	mean sea level (MSL)
man-years	mass-flow deposits	medium- to large-scale structures
map-measuring wheel	meanderbelt	

meltwater  
metabituminous  
meta-igneous  
micro-computed tomography  
microelectromechanical  
midheight  
millidarcy(s) (md)  
Mississippi River Delta

mixed load  
mixed-load stream  
modeled/modeling  
molecular dynamics simulation  
molluscan  
mollusk  
mud clasts  
mud crack

mud fill  
mud-filled channels  
mud flat  
mud-flat facies  
multidirectional  
multiphase

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## N

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nationwide  
natural resource  
natural resource inventory  
nearshore  
near-surface occurrence  
net-sandstone map

Nicol prism  
nonbauxitic  
nonelectronic  
nonpay  
nontransmissive  
nonzero

North Texas  
north-central Texas  
nuclear-waste disposal  
Nueces Delta  
Nueces River  
Nueces River valley

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## O

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occurrence  
offlap  
off-reef facies  
Ogallala  
Ohm's law  
oil and gas industry  
oil field  
oil field brine disposal  
ongoing  
onland

onlap  
online  
onsite  
open-bay fetch  
open gulf, open sea  
open-marine fauna  
open-pit mine  
open-shelf areas  
orebody  
organic-rich sediments

Ouachita  
outbuilding  
outcrop (noun)  
Outer Continental Shelf (OCS)  
outer-shelf facies  
overbank  
oversteepening  
oyster reef  
oystershell

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## P

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the Panhandle (of Texas)  
pay-zone thickness  
percent (use with numbers; spell out in text; use % in tables)  
percentage (proportion: "small percentage")  
Permian (upper/lower, early/late)  
pinch-out (noun)  
pinch out (verb)  
plane table  
play  
point bar

point-bar sands  
point-count method  
policymaking  
PO Box X  
polycarbonate  
poorly sorted sand  
porcelaneous  
postdepositional  
postglacial  
postsalt  
poststorm

pre (run in as a prefix)  
Precambrian  
preexisting  
pre-Pennsylvanian  
preprocessor  
presalt  
present-day  
prestorm  
prime meridian  
prodeltaic

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## R

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ramp-barrier shell  
ramp/barrier flat

ranchland  
range-pastureland

re-cover (to cover again)  
re-create (to create again)

re-form (to form again)	ridge-and-swale topography	roadcut
red-bed facies	ring-fracture intrusions	rock-stratigraphic terminology
red beds	Rio Grande	root mottled
reef-bank system	Rio Grande Embayment	root-mottled clays
relative permeability curve	riverbank	rudist-fragment packstone

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## S

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sabkha	septic-tank systems	special-use maps
saddleback	sewage treatment facility	spoil heap
saltgrass	shallow-water bays	Spraberry Formation
salt marsh	shallow water table	stairstep topography
salt-marsh plain	shaly	State (of Texas)
salt water (n.)	sheetflood	statewide
saltwater (adj.)	sheet-sand facies	stillstand
sandbar	sheetwash	stillwater
sand belt	shelf-carbonate deposits	stillwater mark
sand body	shelf edge	storm-surge flooding
sand-body geometry	shoreface	storm-tidal surge
sand flat	short-term consequences	storm-washover channel
salt-flat facies	shrink-swell potential	strandline
sand hills	shut-in	strandplain
sand-percent map	sinkhole	stress dependent permeability
sandplain	slopewash	strip mine (noun)
seabed	sloughgrass	strip-mine (verb)
seafloor	small-scale ripples	subbituminous
sea level	solid-waste disposal sites	sulfur
sea-level fluctuation	soluble	Sulphur River
seawall	solution collapse zones	surface-water storage area
seawater	south-central Texas	surface-wind direction
semiarid	South Texas	suspended-load facies
semiempirical	Southern High Plains	swamp-timber
septic-tank filter-field locations	southwest India monsoon	

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## T

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Taiwan warm current	Texas coast	Tobin Grind System
terrain (landscape, topography)	Texas Coastal Zone	topset
terrane (geology, physiology)	Texas Gulf Coast	topsoil
terrigenous	tidal delta	total dissolved solids (TDS)
Tertiary (early Tertiary late Tertiary)	tidal-delta deposition	trace element analysis
test site area	tidal flat	Trans-Pecos Texas
Texas' (possessive)	tide gauge measurements	
	time-stratigraphic units	

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## U

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UT Austin (OK for internal audience)  
the University (1967 to present: The University of Texas at Austin; 1881–1966 = the University of Texas, Austin)

upbuilding  
upcurrent  
updip  
uplands  
upper Coastal Zone (Texas)  
upper Texas coast

upstream  
U.S. Geological Survey, the Survey, or USGS

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## W

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washover fan  
washover-fan environments  
waste disposal site  
wastewater  
wastewater treatment plant  
water bodies  
water table  
water-table position  
water well  
waterflooding

wave-cut (noun, adj.)  
wave-dominated delta  
well-developed meanders  
wellbore  
wellhead  
well log character  
well-log data  
well-sorted sands very well sorted sands  
West Texas

Western North Pacific  
wettability  
windblown  
wind-flat facies  
wind-tidal flats  
wind tide  
woodland-timber  
worldwide

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## X

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X-ray

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## Y

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Yangtze River Estuary  
years—1990's  
years ago

## Appendix B: Divisions of Geologic Time

Eon	Era	Period, System, Subperiod, Subsystem		Epoch or Series			
Phanerozoic <sup>1</sup>	Cenozoic <sup>1</sup>	Quaternary <sup>1</sup>		Holocene			
				Pleistocene			
		Tertiary	Neogene <sup>1</sup>	Pliocene			
				Miocene			
			Paleogene <sup>1</sup>	Oligocene			
				Eocene			
				Paleocene			
	Mesozoic <sup>1</sup>	Cretaceous		Late	Upper		
				Early	Lower		
		Jurassic		Late	Upper		
				Middle	Middle		
				Early	Lower		
		Triassic		Late	Upper		
				Middle	Middle		
				Early	Lower		
		Paleozoic <sup>1</sup>		Permian		Late	Upper
						Early	Lower
	Carboniferous Systems		Pennsylvanian	Late	Upper		
				Middle	Middle		
			Mississippian	Early	Lower		
				Late	Upper		
	Devonian		Early	Lower			
			Late	Upper			
			Middle	Middle			
			Early	Lower			
			Silurian		Late	Upper	
					Middle	Middle	
	Early				Lower		
	Ordovician		Late	Upper			
			Middle	Middle			
			Early	Lower			
	Cambrian		Late	Upper			
			Middle	Middle			
Early			Lower				
Proterozoic	Late Proterozoic	none defined					
	Middle Proterozoic	none defined					
	Early Proterozoic	none defined					
Archean	Late Proterozoic	none defined					
	Middle Proterozoic	none defined					
	Early Proterozoic	none defined					
pre-Archean							

<sup>1</sup> = modifiers used with these divisions of time are informal and therefore should not be capitalized



## Appendix C: Abstracts

### Overview

An abstract should be *a distillation of the most essential information in a paper*. An abstract quickly telegraphs to readers what the report is (a review of progress, new data or technique, etc.) and what the report will tell them. In writing the abstract, try to maintain the precarious balance of being as specific as possible while remaining succinct.

The abstract deserves careful preparation because it may determine a report's impact and usefulness. The abstract is read by many more people than hear or read the entire article. It may appear in abstract journals or be used by indexers, bibliographers, book reviewers, database compilers and searchers, etc.

An abstract should be *simple, direct, and terse*. Elaboration and eloquence belongs in the rest of the text. Do not duplicate the introduction of the report in the abstract or repeat the abstract in the summary or conclusions sections. Use active voice as much as possible will to help readability and brevity. Brevity is critical in writing an abstract; many societies or associations limit the abstract to 250 words.

The Bureau uses abstracts to prepare publication announcements because they promote current awareness of Bureau publications and of geologic research in general, so they should be written for a broad audience.

### What Goes into an Abstract

#### Abstracts should contain:

- Objectives/purpose of research
- Location of study area (state, region, county, or city)
- General methods
- Results summarized
- Brief conclusions and recommendations
- Applications or possible uses for research

#### Abstracts should avoid:

- Background information
- Previous research
- Common knowledge
- Raw data (included summaries of data only)
- References
- Footnotes
- Illustrations
- Equations
- Arguments/proofs/lengthy discussions
- Details on equipment and methods
- Abbreviations and acronyms

### Other Resources

[Abstracts | The Writing Center, University of North Carolina at Chapel Hill](#)

[Writing Scientific Abstracts | Purdue University](#)

## Appendix D: Keywords

### Overview

Keywords allow readers to assess quickly the contents and relevance of an article, and they increase the ease and accuracy of indexing and preparing bibliographies. Journal editors and indexers prefer to use author-supplied keywords because authors, being more familiar with their subject and study area, can provide terms that are not apparent from the article's title or abstract.

Beginning in 1983, all Bureau publications will carry keywords at the end of the Abstract section. Bureau researchers should comply with journals and other non-Bureau publishers in following their preferred styles for keywords.

To assist in selecting keywords, many journal editors will refer you to a published list of keywords, known as a thesaurus, that is specific to the discipline. Two of the most commonly used thesauruses in the geosciences are the *GeoRef Thesaurus and Guide to Indexing* and the *Thesaurus of Engineering and Scientific Terms*. Because of its extensive coverage of the geosciences, we recommend that Bureau authors use the *GeoRef Thesaurus* for Bureau publications and for outside papers and abstracts, unless the journal editor specifies otherwise.

### Selection

We suggest that authors ***choose up to 10 keywords per article or report*** including the proper names used in the title. At least two keywords should refer to ***geographic location***, such as name of group or formation, city, county, state, or region. The *GeoRef Thesaurus* has additional geographic keywords for Texas.

The other keywords chosen should reflect the general field of interest or subject matter of the article. The *GeoRef Thesaurus* includes the following broad terms (indicated by boldface type in the thesaurus):

<i>areal geology</i>	<i>mineralogy</i>	<i>hydrogeology</i>
<i>geochronology</i>	<i>engineering geology</i>	<i>structural geology</i>
<i>marine geology</i>	<i>geophysical surveys</i>	<i>geochemistry</i>
<i>economic geology</i>	<i>soils</i>	<i>hydrology</i>
<i>geomorphology</i>	<i>environmental geology</i>	<i>tectonics</i>

More specific subject terms, which are also listed in the Thesaurus, include:

<i>geothermal oil and gas</i>	<i>uranium ores (commodity)</i>	<i>soil sampling</i>
<i>lignite radioactive waste</i>	<i>nuclear facilities</i>	<i>water quality</i>

Keywords for maps that are published alone should include the name of the area mapped, the map scale, and the kind of map, such as:

<i>contour maps</i>	<i>geologic maps</i>	<i>geophysical maps</i>
<i>gravity survey maps</i>	<i>hydrologic maps</i>	<i>isopach maps</i>
<i>stratigraphic maps</i>	<i>structure contour maps</i>	<i>tectonic maps</i>

## Appendix E: Linked Resources

### U.S. Geological Survey

[\*Dictionary of Water Terms\*](#)

[\*Earthquake Glossary\*](#)

[\*Glossary of Astrogeology\*](#)

[\*Directory of Keyword Resources\*](#)

- Some of these resources redirect to non-USGS government sites and lists.





### AAPG

[\*AAPG Wiki\*](#)

- Useful for explanations of science and checking spellings.

## Appendix F: Proofreading Marks

Mark	Meaning	Example
	delete	towards
	close up	proof read
	delete and close up	acknowledgements
	insert	very <sup>fine</sup> grained
#	space	crop <sup>#</sup> out
eq #	equal space	eg. # The University of Texas at Austin
skt	let it stand (as was)	skt The University of Texas at Austin
tr	transpose	receive
	move right	something set too far left
	move left	something set too far right
	center	heading
	align	whoops a <u>day</u>
	begin new paragraph	... end of sentence.  New sentence ...
no P	no paragraph	... end of sentence.  Former beginning of new paragraph ...
	spell out	AAPG
cap	capitalize	Governor's office
	lower case	member  states
ital	set in italic	ital <u>marginulina</u>
rom	set in roman	rom <u>Foraminifera</u>
bf	bold face	bf major heading
=	hyphen	deep  basin lignite
	en dash (—)	1978  1984, pages 3  10
	em dash (—)	The legend  not the map  is wrong.
	superscript	log ([Ca <sup>2+</sup> ].3[Na <sup>+</sup> ])
	subscript	\$M

	comma	geothermal resources, lignite and oil and gas
	apostrophe	Regents' approval
	period	PO. Box
	wrong font	<i>some strange typeface</i>
<i>antecedent?</i>	unclear antecedent	<i>antecedent?</i> ... by private companies and State agencies. (They) require ...
<i>awk</i>	awkward	<i>awk</i> researchers' <u>résumés</u> ' format
<i>bb</i>	bad break at the end of a line or page	<i>bb</i> park visitors enjoying recreational facilities ...
<i>collision</i>	characters overlap	<i>Collision</i> 10 <sup>120</sup>
<i>mng?</i>	meaning unclear	<i>mng?</i> ... could not <u>hardly</u> occur.
<i>s/b</i>	should be	<i>reserves s/b reservoirs</i>
<i>sing/pl.</i>	singular or plural (See also subject-verb agreement below.)	The <u>media</u> is ... <i>pl?</i> <i>sing.</i>
<i>tight</i>	too little space between characters or words	<i>tight</i> { You couldn't get a shoehorn between these letters
<i>spacy</i>	too much space between characters or words	<i>spacy</i> { You could plant a tree between these letters
<i>s-v agent</i>	subject and verb do not agree in number	<i>s-v agent</i> The outcome of the projects are determined ...
<i>tense?</i>	correct verb tense?	<i>tense?</i> I came, I saw, I have conquered.
<i>t.o.</i>	text omission	Now is the time for <sup>t.o.</sup> a country.
<i>curl pos</i>	curl apostrophe	<i>curl pos</i> cumulative production in the 1990's ...
<i>curl quotes</i>	curl quotation marks	<i>curl quotes</i> @true resistivity value