National Mapping Program
Technical Instructions

Standards for National Hydrography Dataset

U.S. Environmental Protection Agency
U.S. Department of the Interior
U.S. Geological Survey
National Mapping Division

CONTENTS

CONTENTS

LIST OF PAGES

A complete and current copy of the Standards for National Hydrography Dataset, consists of the pages (and most recent creation or revision dates) listed below.

ANCHORAGE - An area where a vessel anchors or may anchor, either because of suitability or designation.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Anchorage Type	Function or purpose
Explosives Isolation	Area designated for the detainment of ships carrying explosives
Quarantine	Area designated for the detainment of quarantined ships
Seaplane	Area designated for the anchoring of seaplanes
Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required

DELINEATION

The limit of ANCHORAGE is the extent of the area suitable or designated for anchoring.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

Attribute Information

Source Interpretation Guidelines

All

This feature was not available on the 1:100,000-scale source.

Graphic

Revision - General

Revision - Standard

Revision - Limited

AREA OF COMPLEX CHANNELS - An area where a stream or river flows in an intricate network of interlacing channels.

ATTRIBUTE/ATTRIBUTE VALUE LIST

N/A

DELINEATION

The limit of AREA OF COMPLEX CHANNELS is the outer bank of the outermost channel.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

If AREA OF COMPLEX CHANNELS contains at least five subchannels and is ≥ 0.16" along the shortest axis and ≥ 0.63" along the longest axis,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

If AREA OF COMPLEX CHANNELS coincides with SWAMP/MARSH or with a 2-dimensional STREAM/RIVER,
Then capture both AREA OF COMPLEX CHANNELS and the other feature.

Graphic

Brown sand areas within AREA OF COMPLEX CHANNELS are captured as BARREN LAND (Nonvegetative Surface Cover theme).

Revision - General

During conversion from DLG-3, only those features that were collected as areas with the code for braided stream (050 0413) became AREA OF COMPLEX CHANNELS. Otherwise, all 1-dimensional stream channels in the DLG-3 that were coded as braided stream were converted to STREAM/RIVER.

Revision - Standard

Revision - Limited

AREA TO BE SUBMERGED - The known extent of the intended lake that will be created behind a dam under construction.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Elevation	The vertical distance from a given datum
(Floating Point Value)	Minimum Value: -392.8 Maximum Value: 8848.3 Precision: 1 Length: 6 Increment: 0.1 Units: meters
Unspecified	The value is not known and is not required
Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 8
Unspecified	The value is not known and is not required

DELINEATION

The limit of AREA TO BE SUBMERGED is the line corresponding to the average water elevation of the intended lake.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

If AREA TO BE SUBMERGED is ≥ 0.5" along the shortest axis and the perimeter coincides DAM/WEIR that meets capture conditions,
Then capture.

Attribute Information

Capture all elevations to the nearest 0.1 meter when the basic contour interval = 1 meter,
And capture all elevations to the nearest 0.5 meter when the basic contour interval = 1.5, 2, or 3 meters,
And capture all elevations to the nearest meter when the basic contour interval ≥ 4 meters.

Source Interpretation Guidelines

All

All features inside of AREA TO BE SUBMERGED will be captured as they normally would, if they meet capture conditions.

For elevations in tenths of a meter, round the value down if the hundreds value is 1 to 4, or 5 following an even digit, and round the value up if the hundreds value is 5 following an odd digit, or 6 to 9.

For elevations in half meters, round the value down if the tenths and hundreds value is 01 to 24, 25 following an even digit, 51 to 74, or 75 following an even digit, and round up if the tenths and hundreds value is 25 following an odd digit, 26 to 49, 75 following an odd digit, or 76 to 99.

For elevations in whole meters, round the value down if the tenths value is 1 to 4, or 5 following an

even digit, and round the value up if the tenths value is 5 following an odd digit, or 6 to 9.

Graphic

Capture all.

DAM/WEIR under construction on an existing graphic may be completed by the time it is captured digitally. Regardless, remain true to the date of the graphic and capture DAM/WEIR with Operational Status = Under Construction and the intended lake as AREA TO BE SUBMERGED.

Revision - General

The limits for AREA TO BE SUBMERGED and the values for the Attributes of Elevation and Name may have to be obtained from the operating agency or other ancillary sources.

Revision - Standard

Revision - Limited

ARTIFICIAL PATH - An abstraction to facilitate hydrologic modeling through open water bodies and along coastal and Great Lakes shorelines and to act as a surrogate for lakes and other water bodies.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Open Water Body ID	The ID of the open water body an artificial flow path represents
(Integer Value)	Minimum Value: 1 Maximum Value: 999999999 Precision: 0 Length: 9 Increment: 1 Units:
Unspecified	The value is not known and is not required

DELINEATION

The limit of ARTIFICIAL PATH is:
the connection between the inflow and outflow points of an in-line open water body ;

the line through a head or terminal open water body that connects to the inflow or ouflow point;

shorelines for the Atlantic Ocean, Pacific Ocean, Gulf of Mexico, and the Great Lakes

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
Is Above		UNDERPASS

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional		>0	
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

Attribute Information

During the sychronization process, the attribute Open Water Body ID was not populated. When this information is available, it may be added.

Source Interpretation Guidelines

All

Graphic

Revision - General

Revision - Standard

Revision - Limited

BAY/INLET - A water area that is an opening of the sea/ocean into the land, or of an estuary, lake, or river into its shore.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 8

DELINEATION

The limit of BAY/INLET is SHORELINE of ESTUARY, LAKE/POND, SEA/OCEAN, or STREAM/RIVER, and the extension of shoreline across the mouth of BAY/INLET and across any area where a river enters BAY/INLET.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

If BAY/INLET is named,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

The feature BAY/INLET is included in the GNIS feature class "bay". According to GNIS, bays can be described by about 40 generics. GNIS maintains a list of feature classes and related generics. Contact GNIS for more information.

If BAY/INLET meets capture conditions,
Then capture BAY/INLET, and ESTUARY, LAKE/POND, SEA/OCEAN, or STREAM/RIVER.

Graphic

Revision - General

During conversion from DLG-3, BAY/INLET was not created. When names are available and required for this feature, it can be created.

Revision - Standard

Revision - Limited

BRIDGE - A structure spanning and providing passage over a waterway, railroad, or other obstacle.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 8
Unspecified	The value is not known and is not required

DELINEATION

The limit of BRIDGE is the extent of the span as defined by the edges of the deck and the end abutments.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional			

Special Conditions:

If BRIDGE carries a 1-dimensional feature,
Then BRIDGE is represented as a 1-dimensional basic feature object.

If BRIDGE carries a 2-dimensional feature,
Then BRIDGE is represented as a 2-dimensional basic feature object.

DATA EXTRACTION

Capture Conditions

If BRIDGE is ≥ 0.12" along the longest axis and carries a hydrographic feature,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

If BRIDGE meets capture conditions and carries CANAL/DITCH.
Then capture both BRIDGE and CANAL/DITCH.

If a bridge does not meet capture conditions and carries CANAL/DITCH over another CANAL/DITCH or STREAM/RIVER,
Then capture CANAL/DITCH and UNDERPASS to allow definition of the relationship between CANAL/DITCH and the feature over which it passes.

If BRIDGE carries multiple features,
Then it is delineated and represented at the greatest horizontal extent.

If BRIDGE carries a transportation feature,
Then collect in the theme Transportation.

Graphic

Named BRIDGES over double-line drains, symbolized without bridge wing ticks, are captured from shoreline to shoreline.

BRIDGES symbolized with bridge wing ticks are captured from wing tick to wing tick.

Revision - General

Revision - Standard

Revision - Limited

CANAL/DITCH - An artificial open waterway constructed to transport water, to irrigate or drain land, to connect two or more bodies of water, or to serve as a waterway for watercraft.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Canal/Ditch Type	Function or purpose
Aqueduct	A structure designed to transport domestic or industrial water from a supply source to a distribution point, often by gravity
Unspecified	The value is not known and is not required
Elevation	The vertical distance from a given datum
(Floating Point Value)	Minimum Value: -392.8 Maximum Value: 8848.3 Precision: 1 Length: 6 Increment: 0.1 Units: meters
Stage	Height of water surface
Normal Pool	The stage of an artificially impounded water body that prevails for the greater part of the year
Not Applicable	The attribute does not apply and therefore cannot be valued

DELINEATION

The limit of CANAL/DITCH is the top of the banks of the artificial waterway.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
Is Above		UNDERPASS

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional		< 0.025"	
2-dimensional		≥ 0.025"	

Special Conditions:

To accomodate variations in the shortest axis of CANAL/DITCH:

If shortest axis of CANAL/DITCH is:

< 0.025" but ≥ 0.01" for a distance < 2.64", and is connected at both ends to a 2-dimensional CANAL/DITCH,
Then CANAL/DITCH is represented as a 2-dimensional basic feature object.

< 0.025" but ≥ 0.01" for a distance ≥ 2.64", or < 0.01" regardless of distance, and is connected at both ends to a 2-dimensional CANAL/DITCH,
Then CANAL/DITCH is represented as a 1-dimensional basic feature object.

≥ 0.025" but < 0.04" for a distance < 2.64", and is connected at both ends to a 1-dimensional CANAL/DITCH,
Then CANAL/DITCH is represented as a 1-dimensional basic feature object.

≥ 0.025" but < 0.04" for a distance ≥ 2.64", or ≥ 0.04" regardless of distance, and is connected at both ends to a 1-dimensional CANAL/DITCH,
Then CANAL/DITCH is represented as a 2-dimensional basic feature object.

DATA EXTRACTION

Capture Conditions

If CANAL/DITCH is named,
Or
If CANAL/DITCH is ≥ 0.63" along the longest axis,
Then capture.

Attribute Information

If water level of CANAL/DITCH is controlled by GATE with Gate Type = Lock, and CANAL/DITCH is ≥ 0.025" along the shortest axis and ≥ 0.5" along the longest axis and is not coincident with LOCK CHAMBER,
Then Elevation = (Floating Point Value),
Else Elevation = Not Applicable.

Capture all elevations to the nearest 0.1 meter when the basic contour interval = 1 meter,
And capture all elvations to the nearest 0.5 meter when the basic contour interval = 1.5, 2, or 3 meters,
And capture all elevations to the nearest meter when the basic contour interval ≥ 4 meters.

Source Interpretation Guidelines

All

If CANAL/DITCH meets capture conditions, and coincides with BRIDGE, LOCK CHAMBER, or TUNNEL,
Then capture both CANAL/DITCH and the other feature.

Do not capture underground aqueducts that are not in TUNNEL as CANAL/DITCH. See PIPELINE with Product = Water, Pipeline Type = Aqueduct, and Relationship to Surface = Underground.

Do not capture rivers that have been channelized to control flooding or erosion, or to maintain flow for navigation as CANAL/DITCH. See STREAM/RIVER. Capture as CANAL/DITCH only those inland navigation waterways that are cut through land to bypass outcrops or rapids, or to connect two bodies of water.

If a canal or ditch passes through a siphon that meets capture conditions for PIPELINE with Pipeline Type = Siphon,
Then do not capture CANAL/DITCH. See PIPELINE.

Do not capture ditches associated with a cranberry bog.

If CANAL/DITCH meets capture conditions, and coincides with a structure, but that structure does not meet the definition and capture conditions for another feature (BRIDGE, PIPELINE with Pipeline Type = Siphon, TUNNEL),
Then capture CANAL/DITCH and, if required, capture UNDERPASS to allow definition of the

relationship between CANAL/DITCH and the feature over or under which it passes.

Structures which carry CANAL/DITCH over another feature are captured as BRIDGE.

For elevations in tenths of a meter, round the value down if the hundreds value is 1 to 4, or 5 following an even digit, and round the value up if the hundreds value is 5 following an odd digit, or 6 to 9.

For elevations in half meters, round the value down if the tenths and hundreds value is 01 to 24, 25 following an even digit, 51 to 74, or 75 following an even digit, and round up if the tenths and hundreds value is 25 following an odd digit, 26 to 49, 75 following an odd digit, or 76 to 99.

For elevations in whole meters, round the value down if the tenths value is 1 to 4, or 5 following an even digit, and round the value up if the tenths value is 5 following an odd digit, or 6 to 9.

If 2-dimensional CANAL/DITCH meets capture conditions, and coincides with NONEARTHEN SHORE or WALL,
Then capture both CANAL/DITCH and the other feature.

Graphic

Capture all, except ditches associated with a cranberry bog.

Revision - General

Revision - Standard

Revision - Limited

CONNECTOR - A known, but nonspecific, connection between two nonadjacent network segments.

ATTRIBUTE/ATTRIBUTE VALUE LIST

N/A

DELINEATION

The limit of CONNECTOR is the imaginary line connecting two nonadjacent network segments.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional		> 0	
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

If CONNECTOR is required to maintain connectivity between two network feature objects that represent AREA OF COMPLEX CHANNELS, CANAL/DITCH, ESTUARY, LAKE/POND, RESERVOIR, SEA/OCEAN, or STREAM/RIVER,
Then capture.

Attribute Information

N/A

Source Interpretation Guidelines

All

The following list of conditions indicates when and why the capture of CONNECTOR is important:

1) When CONNECTOR is part of a network that is represented as being connected.

2) When there is a gap with no collected network feature object between pieces of the network, for example, at a 2-dimensional DAM/WEIR that causes a gap between an upstream LAKE/POND and a downstream STREAM/RIVER.

Graphic

Revision - General

Revision - Standard

Revision - Limited

CREVASSE FIELD - An area of deep fissures in the surface of an ice mass caused by breaking or parting.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required

DELINEATION

The limit of CREVASSE FIELD is the extent of the field.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

Attribute Information

Source Interpretation Guidelines

All

This feature was not available on the 1:100,000-scale source.

Graphic

Revision - General

Revision - Standard

Revision - Limited

DAM/WEIR - A barrier constructed to control the flow or raise the level of water.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Construction Material	Predominant material used
Earthen	Constructed of earth, or a combination of earth and rock
Nonearthen	Constructed of concrete, brick or stone
Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 8
Unspecified	The value is not known and is not required
Operational Status	State or condition
Operational	Usable and intended for use
Under Construction	Construction has begun but is not completed

DELINEATION

The limit of DAM/WEIR is the extent of the exposed built-up barrier.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional		< 0.02"	
2-dimensional		≥ 0.02"	

Special Conditions:

DATA EXTRACTION

Capture Conditions

If DAM/WEIR is earthen, and is named, and is ≥ 0.12" along the longest axis,
Or
If DAM/WEIR is nonearthen and is ≥ 0.12" along the longest axis,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

If DAM/WEIR with Construction Material = Nonearthen meets capture conditions,
Then capture DAM/WEIR and NONEARTHEN SHORE.

If DAM/WEIR covers part of the same area as SPILLWAY,
Then capture both DAM/WEIR and SPILLWAY where the features overlap.

If DAM/WEIR has an overflow spillway,
Then capture only DAM/WEIR (do not capture as SPILLWAY).

SPILLWAY may exist completely apart from the feature DAM/WEIR.

If a lock and DAM/WEIR share a name, as in "Lock and Dam #6,"
Then only collect the name with DAM/WEIR.

Do not capture check dams.

If DAM/WEIR is 1-dimensional,
Then capture NONEARTHERN SHORE only for the portion of DAM/WEIR that separates land from water.

Graphic

If named earthen dams are shown by contours,
Then capture DAM/WEIR as the area defined by the portion of the shoreline that runs parallel to the squared-off contours and the arbitrary line surrounding the built-up barrier as indicated by the contours.

Revision - General

If Operational Status = Under Construction,
Then the limits of DAM/WEIR must be obtained from the operating agency.

Revision - Standard

Revision - Limited

ESTUARY - The lower end of a river, or a semienclosed coastal body of water with access to the open ocean, which is affected by the tides and where fresh and salt water mix.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 8
Unspecified	The value is not known and is not required

DELINEATION

The limit of ESTUARY is the extent of the area where fresh and salt water mix, as defined by National Wetlands Inventory.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

If ESTUARY has been identified as an Estuarine area by National Wetlands Inventory (NWI), Then capture.

Attribute Information

Source Interpretation Guidelines

All

The minimum size for islands within ESTUARY is 0.03" along the shortest axis.

Graphic

Revision - General

During conversion from DLG-3, ESTUARY was not created. When information is available to distinguish these features, they can be created.

Revision - Standard

Revision - Limited

FISH LADDER - A facility consisting of a series of small pools, each one slightly higher than the preceding, built around an obstruction to enable fish to make their way upstream.

ATTRIBUTE/ATTRIBUTE VALUE LIST

N/A

DELINEATION

The limit of FISH LADDER is the extent of the small pools.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

Attribute Information

Source Interpretation Guidelines

All

This feature was not available on the 1:100,000-scale source.

Graphic

Revision - General

FISH LADDER

Revision - Standard

Revision - Limited

FLUME - An open, inclined, artificial channel constructed of wood, metal, or concrete; generally elevated.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required

DELINEATION

The limit of FLUME is the extent of the structure.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

Attribute Information

Source Interpretation Guidelines

All

This feature was not available on the 1:100,000-scale source.

Graphic

Revision - General

Revision - Standard

Revision - Limited

FORESHORE - The part of a seashore between high-water and low-water marks.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 8
Unspecified	The value is not known and is not required

DELINEATION

The limit of FORESHORE is the approximate line of mean high water, and the approximate line of mean lower low water.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

For a topographic/bathymetric edition only, if FORESHORE is on the final compilation provided to USGS by NOS,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

If FORESHORE is captured,
Then also capture ESTUARY, LAKE/POND, SEA/OCEAN, or STREAM/RIVER, and capture BARREN LAND (Nonvegetative Surface Cover) to describe the composition of the area.

FORESHORE does not have to be attached to the shore.

Areas that uncover and are within or alongside REEF are captured as FORESHORE.

Graphic

Do not capture areas surrounded by a dotted blue line but shown without brown tint as FORESHORE. See SEA/OCEAN.

Revision - General

Revision - Standard

Revision - Limited

FUMAROLE - A hole in the earth's crust from which steam and gases are emitted.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 8
Unspecified	The value is not known and is not required

DELINEATION

The limit of FUMAROLE is the extent of the hole from which vapors are emitted.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional		> 0	
1-dimensional			
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

If FUMAROLE is not within an area of closely spaced fumaroles,
Or
If FUMAROLE is within an area of closely spaced fumaroles, and is necessary to accurately represent the pattern of fumaroles (see Source Interpretation Guidelines to determine how to accurately represent the pattern),
Then capture.

Attribute Information

Source Interpretation Guidelines

All

The feature FUMAROLE is not a GNIS feature class. According to GNIS, FUMAROLE is included in the GNIS feature class "geyser". However, not all GNIS "geysers" can be classified as the feature FUMEROLE.

If FUMAROLE is in an area of closely spaced fumaroles,
Then first capture named FUMAROLES, then those that are on the perimeter of the area, then those that are most prominent, then finally capture a representative pattern of FUMAROLES internal to the area. Capture as many as can be shown in correct position. The symbols must not overlap.

Graphic

If a geyser or water well symbol is shown in a geothermal area and is labeled "vent" or "gas vent",
Then capture as FUMAROLE.

Revision - General

Revision - Standard

Revision - Limited

GAGING STATION - A structure used to measure the characteristics of a hydrographic feature.

ATTRIBUTE/ATTRIBUTE VALUE LIST

N/A

DELINEATION

The limit of GAGING STATION is the extent of the housing of the equipment.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional		> 0	
1-dimensional			
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

If GAGING STATION is published in the most recent "USGS Water Resources Data for (State)" report and it is permanent, automatic, continuous reading, and housed,
Then capture.

Attribute Information

N/A

Source Interpretation Guidelines

All

If two or more GAGING STATIONS are closely spaced,
Then capture as many as can be shown in correct position. The symbols must not overlap.

Graphic

Capture all.

An elevation on GAGING STATION is captured as SPOT ELEVATION.

Revision - General

Revision - Standard

Revision - Limited

GATE - A structure that may be swung, drawn, or lowered to block an entrance or passageway.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Gate Type	Function or purpose
Lock	Gate at either end of a lock chamber, to control the flow of water through the lock

DELINEATION

The limit of GATE is the extent of the structure.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional			

Special Conditions:

If GATE is associated with a 1-dimensional feature,
Then GATE is represented as a 0-dimensional basic feature object.

If GATE is associated with a 2-dimensional feature,
Then GATE is represented as a 1-dimensional basic feature object.

DATA EXTRACTION

Capture Conditions

If GATE is a lock gate and is associated with a lock that is ≥ 0.03" along the longest axis or ≥ 0.025" along the shortest axis,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

GATE is captured as a straight chain across the end of LOCK CHAMBER.

Graphic

If GATE has been symbolized by a V-shaped symbol and is on a 2-dimensional feature,
Then capture GATE as a line from bank to bank, tangent to the apex of the symbol and perpendicular to a line bisecting the symbol.

Revision - General

Revision - Standard

Revision - Limited

GEYSER - A natural fountain that intermittently ejects a column of water into the air from a hole in the Earth's crust.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 8
Unspecified	The value is not known and is not required

DELINEATION

The limit of GEYSER is the extent of the hole from which the eruption occurs.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional		> 0	
1-dimensional			
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

If GEYSER is not within an area of closely spaced geysers,
Or
If GEYSER is within an area of closely spaced geysers and is necessary to accurately represent the pattern of geysers (see Source Interpretation Guidelines to determine how to accurately represent the pattern),
Then capture.

Attribute Information

Source Interpretation Guidelines

All

If GEYSER is in an area of closely spaced geysers,
Then first capture named GEYSERS, then those that are on the perimeter of the area, then those that are most prominent, then finally capture a representative pattern of GEYSERS internal to the area. Capture as many as can be shown in correct position. The symbols must not overlap.

If a group of GEYSERS is named,
Then the group name is captured on the feature LOCALE (Built-up theme).

Graphic

An elevation on GEYSER is captured as SPOT ELEVATION.

Revision - General

Revision - Standard

Revision - Limited

HAZARD ZONE - An area identified as a danger to maritime navigation.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Hazard Zone Category	Form or nature
Rock Area	Containing one or more rocks

DELINEATION

The limit of HAZARD ZONE is the extent of the area that is dangerous to navigation. This extent is provided to the USGS by NOS.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

If HAZARD ZONE is in existing DLG-3 data,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

HAZARD ZONE is only captured during conversion of DLG-3 data.

Graphic

Revision - General

Delete all. Capture individual rocks within HAZARD ZONE as ROCK.

Revision - Standard

Revision - Limited

ICE MASS - A field of ice, formed in regions of perennial frost.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Ice Mass Category	Form or nature
Alpine Glacier	Body of ice and snow, originating in a mountain range, showing evidence of past or present flow
Continental Glacier	
Continental Glaciation Category	Form or nature
Ice Shelf	Seaward extension of an Ice Sheet, floating but attached to the land on at least one side and bounded on the seaward side by a steep cliff rising 2 to 50 m or more above sea level
Inland Ice Sheet	Very thick ice, completely covering and obscuring over 50,000 sq km of land
Pack Ice	Areas of floating broken ice driven and jammed together
Snowfield	Broad expanse of permanent snow
Unspecified	The value is not known and is not required
Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 8
Unspecified	The value is not known and is not required

DELINEATION

The limit of ICE MASS is the extent of the ice or snow.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

If ICE MASS is ≥ 0.12" along the shortest axis,
Then capture.

Attribute Information

For all ICE MASSES within the Continental United States,
Ice Mass Category = Alpine Glacier.

Source Interpretation Guidelines

All

If named Glaciers are contiguous,
Then the dividing line is the approximate line of divergence or confluence, as determined by the topography of the ice masses, or by the changes in color or texture, or both.

Graphic

Revision - General

Revision - Standard

Revision - Limited

INUNDATION AREA - An area of land subject to flooding.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Elevation	The vertical distance from a given datum
(Floating Point Value)	Minimum Value: -392.8 Maximum Value: 8848.3 Precision: 1 Length: 6 Increment: 0.1 Units: meters
Stage	Height of water surface
Flood Elevation	The stage of an artificially impounded water body as determined by the highest controlling structure
Unspecified	The value is not known and is not required
Inundation Control Status	Existence of functional control structures
Controlled	Structures, such as DAM/WEIR or EMBANKMENT, exist to control the water and inundate specific areas
Inundation Area Type	Function or purpose
Debris Basin	Area to catch and temporarily store debris and sediment from runoff
Dewatering Area	Area that is seasonally drained by TVA to control mosquitoes
Duck Pond	Commercially developed areas, inundated for duck hunting (normally found along the Pacific Coast Flyway)
General Case	Common use
Percolation Basin	Area to temporarily store excess runoff and return water to the ground-water reservoir; also called spreading ground
Retarding Basin	Basin or embanked area for retarding the flow of flood waters
Not Controlled	No controlling structures exist. Flooding is natural and periodic
Name	Proper name, specific term, or expression

(Alphanumeric) Length Value: 99

GNIS Identifier The unique identifier assigned by GNIS beginning in 1996

(Alphanumeric) Length Value: 8

Unspecified The value is not known and is not required

DELINEATION

In flat coastal areas where the shoreline varies with the tide and meteorological conditions, the limit of INUNDATION AREA is the approximate mean low or mean lower low water line, and the approximate limit of flooding.

The limit of INUNDATION AREA controlled by DAM/WEIR is the average water line and the line corresponding to the highest controlling structure.

For all other controlled INUNDATION AREAS, the limit is the average water line and the crest of EMBANKMENT or, if there is no EMBANKMENT, the limit of flooding.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

If INUNDATION AREA is controlled and is ≥ 0.06" along the shortest axis,
Or
If INUNDATION AREA is uncontrolled, and is ≥ 0.06" along the shortest axis, and is along SEA/OCEAN or ESTUARY,
Then capture.

Attribute Information

If Inundation Control Status = Controlled, and Inundation Area Type = General Case,
Then Elevation = (Floating Point Value),
Else Elevation = Unspecified.

If Name applies to INUNDATION AREA only, and not to an associated LAKE/POND or STREAM/RIVER,
Then Name = (Alphanumeric),
Else Name = Unspecified.

Capture all elevations to the nearest 0.1 meter when the basic contour interval = 1 meter,
And capture all elvations to the nearest 0.5 meter when the basic contour interval = 1.5, 2, or 3 meters,
And capture all elevations to the nearest meter when the basic contour interval ≥ 4 meters.

Source Interpretation Guidelines

All

All features inside INUNDATION AREA will be captured as they normally would, if they meet capture conditions.

For elevations in tenths of a meter, round the value down if the hundreds value is 1 to 4, or 5 following an even digit, and round the value up if the hundreds value is 5 following an odd digit, or 6 to 9.

For elevations in half meters, round the value down if the tenths and hundreds value is 01 to 24, 25 following an even digit, 51 to 74, or 75 following an even digit, and round up if the tenths and hundreds value is 25 following an odd digit, 26 to 49, 75 following an odd digit, or 76 to 99.

For elevations in whole meters, round the value down if the tenths value is 1 to 4, or 5 following an even digit, and round the value up if the tenths value is 5 following an odd digit, or 6 to 9.

Graphic

Revision - General

Revision - Standard

Revision - Limited

LAKE/POND - A standing body of water with a predominantly natural shoreline surrounded by land.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Elevation	The vertical distance from a given datum
(Floating Point Value)	Minimum Value: -392.8 Maximum Value: 8848.3 Precision: 1 Length: 6 Increment: 0.1 Units: meters
Stage	Height of water surface
Average Water Elevation	The stage of a natural water body that prevails for the greater part of the year
Date of Photography	The stage that exists at the date of photography
High Water Elevation	The stage that prevails when a natural water body is at or near capacity
Normal Pool	The stage of an artificially impounded water body that prevails for the greater part of the year
Spillway Elevation	The stage of an artificially impounded water body as determined by the spillway
Unspecified	The value is not known and is not required
Hydrographic Category	Portion of the year the feature contains water
Intermittent	Contains water for only part of the year, but more than just after rainstorms and at snowmelt
Perennial	Contains water throughout the year, except for infrequent periods of severe drought
Water Characteristics	Distinctive properties of the water
Salt	
Unspecified	The value is not known and is not required

DELINEATION

The limit of LAKE/POND where STREAM/RIVER enters or leaves, is determined by the conformation of the land.

The limit of a naturally formed, perennial LAKE/POND is the position of SHORELINE when the water is at the stage that prevails for the greater part of the year (Average Water Elevation), or if this limit cannot be determined, the visible edge of the water body (Date of Photography).

The limit of an artificially formed, perennial LAKE/POND is the position of SHORELINE when the water is at the stage that prevails for the greater part of the year (Normal Pool), or if this limit cannot be determined, the limits defined by the spillway (Spillway Elevation), or the visible edge of the water body (Date of Photography).

The limit of an intermittent LAKE/POND is the position of SHORELINE when the water is at the stage that prevails when the feature is at or near capacity (High Water Elevation) or, if this limit cannot be determined, the visible edge of the water body (Date of Photography).

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

If LAKE/POND is ≥ 0.06" along the shortest axis,
Then capture.

Attribute Information

If LAKE/POND has a printed elevation on a 1:100,000-scale graphic,
Then Elevation = (Floating Point Value)
Else Elevation = Unspecified.

If Hydrographic Category = Intermittent,
Then Stage = High Water Elevation,
Or
If High Water Elevation cannot be determined,
Then Stage = Date of Photography.

If LAKE/POND is a natural lake, and Hydrographic Category = Perennial,
Then Stage = Average Water Elevation,
Or
If Average Water Elevation cannot be determined,
Then Stage = Date of Photography.

If LAKE/POND is an artificially impounded lake, and Hydrographic Category = Perennial, and the water level is reasonably constant,
Then Stage = Normal Pool.

If LAKE/POND is an artificially impounded lake, and Hydrographic Category = Perennial, and the water level is not reasonably constant,
Then Stage = Spillway Elevation.

If LAKE/POND is an artificially impounded lake, and Hydrographic Category = Perennial, and the Normal Pool or Spillway Elevation cannot be determined,
Then Stage = Date of Photography.

See INUNDATION AREA for capture of flood elevation.

Capture all elevations to the nearest 0.1 meter when the basic contour interval = 1 meter,
And capture all elevations to the nearest 0.5 meter when the basic contour interval = 1.5, 2, or 3 meters,
And capture all elevations to the nearest meter when the basic contour interval ≥ 4 meters.

Source Interpretation Guidelines

All

Do not capture dry lakes as LAKE/POND. See PLAYA.

Refer to the feature definition to decide how to categorize a given feature instance. Do not use the proper name of the feature as a guide. Many features that are known as "Reservoirs" or labeled on the graphic as "Reservoirs" will be captured as LAKE/PONDS. "Stock Tanks" may be RESERVOIR or LAKE/POND depending on their form. As a general rule, if a water body has a geometric shape or other information indicates it is contained by a constructed basin, capture it as RESERVOIR. If it does not appear to be contained by a constructed basin, capture it as LAKE/POND.

The minimum size for islands within LAKE/POND is 0.03" along the shortest axis.

For elevations in tenths of a meter, round the value down if the hundreds value is 1 to 4, or 5 following an even digit, and round the value up if the hundreds value is 5 following an odd digit, or 6 to 9.

For elevations in half meters, round the value down if the tenths and hundreds value is 01 to 24, 25 following an even digit, 51 to 74, or 75 following an even digit, and round up if the tenths and hundreds value is 25 following an odd digit, 26 to 49, 75 following an odd digit, or 76 to 99.

For elevations in whole meters, round the value down if the tenths value is 1 to 4, or 5 following an even digit, and round the value up if the tenths value is 6 to 9, or 5 following an odd digit.

Graphic

If Elevation shown on map is preceded by "Spillway",
Then Stage = Spillway.

If Elevation = (Floating Point Value) and LAKE/POND is artificially impounded, and "Spillway (elevation)" is not printed (either on the graphic or on any other graphics containing portions of the same LAKE/POND)
Then Stage = Normal Pool.

Revision - General

If image shows lower than average water level,
Then capture LAKE/POND at a normal pool or average water level by using ancillary sources or evidence of water marks on images.

If image shows lower than average water level and the average water elevation or normal pool elevation cannot be determined,
Then capture LAKE/POND at the visible edge of the water body.

If image shows higher than average water level,
Then capture LAKE/POND at a normal pool or average water level by using ancillary sources.

If image shows higher than average water level and the average water elevation or normal pool elevation cannot be determined,
Then capture LAKE/POND at the visible edge of the water body.

Revision - Standard

Revision - Limited

LOCK CHAMBER - An enclosure on a waterway used to raise and lower vessels as they pass from one level to another.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 8
Unspecified	The value is not known and is not required

DELINEATION

The limit of LOCK CHAMBER is the GATE and WALL that enclose the portion of a waterway to be raised or lowered.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional			

Special Conditions:

If LOCK CHAMBER is on a 1-dimensional STREAM/RIVER or CANAL/DITCH and LOCK CHAMBER has been symbolized on existing graphic with only one wing tick, and the graphic product is the only source used, or if LOCK CHAMBER is < 0.03" along the longest axis,
Then LOCK CHAMBER is represented as a 0-dimensional basic feature object.

If LOCK CHAMBER is on a 1-dimensional STREAM/RIVER or CANAL/DITCH and does not meet the conditions for a 0-dimensional LOCK CHAMBER,
Then LOCK CHAMBER is represented as a 1-dimensional basic feature object.

If LOCK CHAMBER is on a 2-dimensional STREAM/RIVER or CANAL/DITCH,

Then LOCK CHAMBER is represented as a 2-dimensional basic feature object.

DATA EXTRACTION

Capture Conditions

If LOCK CHAMBER is named,
Or
If LOCK CHAMBER is ≥ 0.03" along the longest axis,
Or
If LOCK CHAMBER is ≥ 0.025" along the shortest axis,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

If LOCK CHAMBER and DAM/WEIR share a name, as in "Lock and Dam #6,"
Then only collect the name with DAM/WEIR.

If a 1-dimensional or 2-dimensional LOCK CHAMBER is captured,
Then also capture STREAM/RIVER or CANAL/DITCH.

If a 2-dimensional LOCK CHAMBER and STREAM/RIVER are captured,
Then also capture SHORELINE, NONEARTHEN SHORE, or WALL along the sidewalls of the chamber.

If a 1-dimensional or 2-dimensional LOCK CHAMBER is captured,
Then also capture GATE at each end of the LOCK CHAMBER.

Graphic

If LOCK CHAMBER has been symbolized by a single V-shaped symbol,
Then capture LOCK CHAMBER at the apex of the V-shaped symbol.

If LOCK CHAMBER has been symbolized by a pair of V-shaped symbols and is on a single-line STREAM/RIVER or CANAL/DITCH,
Then capture LOCK CHAMBER as a line connecting the apexes of the V-shaped symbols.

If LOCK CHAMBER has been symbolized by a pair of V-shaped symbols and is on a double-line STREAM/RIVER or CANAL/DITCH,
Then capture LOCK CHAMBER as the water area between the V-shaped symbols. The ends of the chamber should be collected as straight lines passing through the apex of the V-shaped symbols.

Revision - General

Revision - Standard

Revision - Limited

MUD POT - A pool of mud from which gas or vapors issue.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 8
Unspecified	The value is not known and is not required

DELINEATION

The limit of MUD POT is the extent of the pool of mud.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional		> 0	
1-dimensional			
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

If MUD POT is not within an area of closely spaced mud pots,
Or
If MUD POT is within an area of closely spaced mud pots and is necessary to accurately represent the pattern of mud pots (See Source Interpretation Guidelines to determine how to accurately represent the pattern),
Then capture.

Attribute Information

Source Interpretation Guidelines

All

The feature MUD POT is not a GNIS feature class. According to GNIS, MUD POT is included in the GNIS feature class "spring". However, not all GNIS "springs" can be classified as the feature MUD POT.

If MUD POT is within an area of closely spaced mud pots,
Then first capture named MUD POTS, then those that are on the perimeter of the area, then those that are most prominent, then finally capture a representative pattern of MUD POTS internal to the area. Capture as many as can be shown in correct position. The symbols must not overlap.

Graphic

Mud pots have been shown with the spring symbol. Unless name or label indicate that it is a mud pot, capture as SPRING.

Capture features labeled "Paint Pot" as MUD POT.

Revision - General

Revision - Standard

Revision - Limited

NONEARTHEN SHORE - A structure built of stone, brick, concrete, or other building materials that borders a body of water.

ATTRIBUTE/ATTRIBUTE VALUE LIST

N/A

DELINEATION

The limit of NONEARTHEN SHORE is the extent of the structure.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional		> 0	
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

If NONEARTHEN SHORE is ≥ 0.05" along the longest axis and separates land from water,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

If NONEARTHEN SHORE meets capture conditions and coincides 2-dimensional CANAL/DITCH,
Then capture both NONEARTHEN SHORE and CANAL/DITCH.

If a structure (DAM/WEIR, GATE, WALL) separates water from water,
Then do not capture NONEARTHEN SHORE. See the other feature.

Other structures, such as DAM/WEIR or PIER/BREAKWATER/JETTY (Built-up theme) may

coincide with NONEARTHEN SHORE, in which case both features are captured.

Graphic

Revision - General

Revision - Standard

Revision - Limited

PIPELINE - A closed conduit, with pumps, valves and control devices, for conveying fluids, gases, or finely divided solids.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Product	Principal commodity involved
Water	
Pipeline Type	Function or purpose
Aqueduct	A structure designed to transport domestic or industrial water from a supply source to a distribution point, often by gravity
General Case	Common use
Penstock	Designed to convey water into the turbine of a hydroelectric generating plant
Siphon	Designed to convey water by gravitational force over, or under, an obstruction
Relationship to Surface	Vertical location relative to the surface
At or Near	At or slightly above the surface
Elevated	Supported above the earth
Underground	Buried
Underwater	Always submerged
Unspecified	The value is not known and is not required

DELINEATION

The limit of PIPELINE that is underground is the edge of the ground scars or linear clearings.

The limit of PIPELINE that is at or near the ground or elevated, is the extent of the structure.

The limit of PIPELINE that is underwater is as shown on the final compilation provided to USGS by NOS.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional		> 0	
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

If PIPELINE is an aqueduct, and is ≥ 0.63" along the longest axis,
Or
If PIPELINE is a penstock or siphon and is ≥ 0.12" along the longest axis,
Or
If PIPELINE conveys water, and
is not underwater, and
is outside of a congested area, and
is a trunk line, and
is ≥ 0.63" along the longest axis, and is ≥ 0.02" (or < 0.02" for a distance < 0.2") from a paralleling road, railroad, or other linear feature other than a fence line,
Or
For a topographic/bathymetric edition only, if PIPELINE conveys water, and is underwater, and is on the final compilation provided to USGS by NOS,
Then capture.

Attribute Information

If Pipeline Type = Siphon,
Then Relationship to Surface = Unspecified,
Else Relationship to Surface ≠ Unspecified.

Source Interpretation Guidelines

All

If PIPELINE, with Pipeline Type = Siphon, causes a gap in CANAL/DITCH,

Then capture PIPELINE only.

If a siphon does not meet capture conditions for PIPELINE,
Then capture CANAL/DITCH and, if required, capture UNDERPASS to allow definition of the relationship between CANAL/DITCH and the feature over or under which it passes.

If PIPELINE is elevated over a depression by a structure built for that purpose,
Then capture only PIPELINE, with Relationship to Surface = Elevated.

If PIPELINE is within TUNNEL,
Then capture both PIPELINE and TUNNEL.

If PIPELINE conveys a product other than water,
Then collect in the theme Built-up.

Graphic

If PIPELINE is labeled "Pipeline Bridge",
Then capture PIPELINE, with Relationship to Surface = Elevated.

Revision - General

Revision - Standard

Revision - Limited

PLAYA - The flat area at the lowest part of an undrained desert basin, generally devoid of vegetation.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 8
Unspecified	The value is not known and is not required

DELINEATION

The limit of PLAYA is the extent of the lowest part of the basin.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

If PLAYA is ≥ 0.1" along the shortest axis,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

If PLAYA is captured,
Then also capture BARREN LAND (Nonvegetative Surface Cover) to describe the composition of the area.

Graphic

Lakes that are labeled "Dry" or "Alkalai" are captured as PLAYA.

Revision - General

The edge of a Playa may be indicated by vegetation, discoloration, or sediment line.

Revision - Standard

Revision - Limited

POST - An upright piece of timber or other material, in or adjacent to a body of water, used for mooring ships or supporting other structures.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Post Type — Function or purpose

Dolphin

Piling

DELINEATION

The limit of POST is the extent of the timber or other material.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

Attribute Information

Source Interpretation Guidelines

All

This feature was not available on the 1:100,000-scale source.

Graphic

Revision - General

Revision - Standard

Revision - Limited

RAPIDS - An area of swift current in a stream or river, characterized by standing waves or by boulders and rocks.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 8
Unspecified	The value is not known and is not required

DELINEATION

The limit of RAPIDS is the extent of the turbulent water.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional			

Special Conditions:

If RAPIDS are on a 1-dimensional STREAM/RIVER and are < 0.02" along the STREAM/RIVER,
Then RAPIDS are represented as a 0-dimensional basic feature object.

If RAPIDS are on a 1-dimensional STREAM/RIVER and are ≥ 0.02" along the STREAM/RIVER,
Then RAPIDS are represented as a 1-dimensional basic feature object collinear with the feature object that represents STREAM/RIVER.

If RAPIDS are on a 2-dimensional STREAM/RIVER,
Then RAPIDS are represented as a 2-dimensional basic feature object.

DATA EXTRACTION

Capture Conditions

If RAPIDS are named,
Or
If RAPIDS are ≥ 0.01" as measured perpendicular to stream flow,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

If RAPIDS are captured,
Then also capture STREAM/RIVER.

If distance between RAPIDS is ≥ 0.05",
Then capture as separate RAPIDS.

If distance between RAPIDS is < 0.05",
Then capture as one RAPIDS.

Graphic

Capture all.

If RAPIDS are symbolized by hachures,
Then capture as 2-dimensional using the extent of the hachures.

Revision - General

Revision - Standard

Revision - Limited

REACH - A segment of surface water having a unique identifier.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 8
Unspecified	The value is not known and is not required
Reach Code	Unique identifier composed of two parts. The first eight digits are the Cataloging Unit Code as defined by FIPS 103. The next six digits are randomly assigned, sequential numbers that are unique within a Catologing Unit.
(Identification)	Length Value: 14
Reach Code Assignment Date	The date the Reach Code was assigned
(Alphanumeric)	Length Value: 99
Stream Level	The level of the path which contains the feature
(Integer Value)	Minimum Value: 1 Maximum Value: 99 Precision: 0 Length: 2 Increment: 1 Units:
Unspecified	The value is not known and is not required

DELINEATION

The limit of REACH is a significant piece of surface water, generally defined as a stretch of stream between confluences or a lake.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
Connects To		REACH REACH
Flows To		REACH REACH
Is Composed Of		ARTIFICIAL PATH CANAL/DITCH CONNECTOR LAKE/POND PIPELINE STREAM/RIVER

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional			

Special Conditions:

REACH is represented as a compound feature object.

Only 1-dimensional CANAL/DITCH and STREAM/RIVER can be part of REACH.

DATA EXTRACTION

Capture Conditions

Attribute Information

Terminal REACHES are assigned Stream Levels according to the manner in which the network terminates:
Stream Level = 1 when the outlet is the Atlantic Ocean, the Pacific Ocean, or Gulf of Mexico.
Stream Level = 2 when the outlet is one of the Great Lakes or the Great Salt Lake.
Stream Level = 3 when the REACH exits the US into Canada or Mexico.
Stream Level = 4 when the REACH is an isolated drainage flowing into the ground.

Non-terminal REACHES are assigned Stream Levels one greater than the REACH into which they flow.

Non-networked REACHES have Stream Level = Unspecified

Source Interpretation Guidelines

All

Graphic

Revision - General

Revision - Standard

Revision - Limited

REEF - A chain of rocks or coral at or near the surface of the water.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 8
Unspecified	The value is not known and is not required

DELINEATION

The limit of REEF is the edge of the rock or coral.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional		> 0	
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

For a topographic/bathymetric edition only, if REEF is on the final compilation provided to USGS by NOS,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

REEF is captured only for Topographic-Bathymetric editions.

Numerous closely spaced ROCKS that form a chain along the coastline or close to the shore are collected as REEF. (Quantified rules are TBD)

If REEF is exposed at mean lower low water,
Then also capture FORESHORE.

If REEF is captured,
Then also capture SEA/OCEAN.

Graphic

Capture all.

REEF is collected along a line that connects the high points of the closed, outer portion of the reef symbol.

Revision - General

Revision - Standard

Revision - Limited

RESERVOIR - A constructed basin formed to contain water or other liquids.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Construction Material	Predominant material used
Earthen	Constructed of earth, or a combination of earth and rock
Nonearthen	Constructed of concrete, brick or stone
Unspecified	The value is not known and is not required
Elevation	The vertical distance from a given datum
(Floating Point Value)	Minimum Value: -392.8 Maximum Value: 8848.3 Precision: 1 Length: 6 Increment: 0.1 Units: meters
Unspecified	The value is not known and is not required
Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 8
Unspecified	The value is not known and is not required
Reservoir Type	Function or purpose
Aquaculture	For rearing of finfish, shellfish, or aquatic plants
Decorative Pool	For improving the aesthetic appearance of the landscape
Disposal	For disposal
Disposal Type	Function or purpose
Tailings Pond	Containing, in aqueous form, ore and waste materials discarded in ore-treatment processes

Unspecified	The value is not known and is not required
Evaporator	For the natural evaporation of water to allow harvesting of mineral concentrates
Treatment	For treatment
Treatment Type	Function or purpose
Cooling Pond	For cooling industrial waste water
Filtration Pond	For removing foreign elements from water
Settling Pond	For precipitating solid matter from a liquid
Sewage Treatment Pond	For the treatment of domestic water-born waste
Unspecified	The value is not known and is not required
Water Storage	For long- or short-term storage of water
Cover Status	Existence of a cover
Covered	
Not Covered	
Unspecified	The value is not known and is not required
Hydrographic Category	Portion of the year the feature contains water
Intermittent	Contains water for only part of the year, but more than just after rainstorms and at snowmelt
Perennial	Contains water throughout the year, except for infrequent periods of severe drought
Unspecified	The value is not known and is not required

DELINEATION

The limit of RESERVOIR is the rim of the constructed basin.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

If RESERVOIR is not a swimming pool and is ≥ 0.06" along the shortest axis,
Then capture.

Attribute Information

If RESERVOIR has a printed elevation on a 1:100,000-scale graphic,
Then Elevation = (Floating Point Value),
Else Elevation = Unspecified.

Capture all elevations to the nearest 0.1 meter when the basic contour interval = 1 meter,
And capture all elevations to the nearest 0.5 meter when the basic contour interval = 1.5, 2, or 3 meters,
And capture all elevations to the nearest meter when the basic contour interval ≥ 4 meters.

Source Interpretation Guidelines

All

Refer to the feature definition to decide how to categorize a given feature instance. Do not use the proper name of the feature as a guide. Many features that are known as "Reservoirs" or labeled on the graphic as "Reservoirs" will be captured as LAKE/PONDS. "Stock Tanks" may be RESERVOIR or LAKE/POND depending on their form. As a general rule, if a water body has a geometric shape or other information indicates it is contained by a constructed basin, capture it as RESERVOIR. If it does not appear to be contained by a constructed basin, capture it as LAKE/POND.

If RESERVOIR is < 0.06" along the shortest axis and is within 0.02" of another RESERVOIR with the

same attribute values,
Then capture as one RESERVOIR only if the combined areas are ≥ 0.06" along the shortest axis.

If RESERVOIR is identified as a Minnow Pond, Fish Hatchery, Rearing Pond, Fish Pond, or similar facility,
Then capture RESERVOIR with Reservoir Type = Aquaculture.

Fish ponds in natural water bodies are not captured as RESERVOIR. See ESTUARY, LAKE/POND or SEA/OCEAN.

If two RESERVOIRS are < 0.005" apart and have the same attribute values,
Then capture as two RESERVOIRS with a shared perimeter line.

If two RESERVOIRS are < 0.005" apart and do not have the same attribute values,
Then displace the perimeter lines equally and capture so that the perimeter lines are 0.005" apart.

If RESERVOIR is identified as a sewage disposal pond,
Then capture RESERVOIR with Reservoir Type = Treatment and Treatment Type = Sewage Treatment Pond.

For elevations in tenths of a meter, round the value down if the hundreds value is 1 to 4, or 5 following an even digit, and round the value up if the hundreds value is 5 following an odd digit, or 6 to 9.

For elevations in half meters, round the value down if the tenths and hundreds value is 01 to 24, 25 following an even digit, 51 to 74, or 75 following an even digit, and round up if the tenths and hundreds value is 25 following an odd digit, 26 to 49, 75 following an odd digit, or 76 to 99.

For elevations in whole meters, round the value down if the tenths value is 1 to 4, or 5 following an even digit, and round the value up if the tenths value is 5 following an odd digit, or 6 to 9.

Graphic

If RESERVOIR is < 0.06" along the shortest axis, and shares an outline with another RESERVOIR with the same attribute values, and their combined area is ≥ 0.06" along the shortest axis,
Then capture the combined areas as one RESERVOIR.

Revision - General

If RESERVOIR is divided by wire mesh, screens, or grates,
Then do not capture the resulting divisions as separate RESERVOIRS.

Reservoir Type = Unspecified for newly collected RESERVOIRS. Retain Reservoir Type on existing RESERVOIRS.

Elevation = Unspecified for newly collected RESERVOIRS. Retain Elevation on existing RESERVOIRS.

Revision - Standard

Revision - Limited

ROCK - A concreted mass of stony material.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 8
Unspecified	The value is not known and is not required
Relationship to Surface	Vertical location relative to the surface
Abovewater	Exposed at mean lower low water
Underwater	Always submerged

DELINEATION

The limit of ROCK that is abovewater is the edge of the mass exposed at mean lower low water.

The limit of ROCK that is underwater is as shown on the final compilation provided to USGS by NOS.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional		> 0	
1-dimensional			
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

For a topographic/bathymetric edition only, if ROCK is on the final compilation provided to USGS by NOS,
Then capture.

Attribute Information

If ROCK is exposed at high tide or is awash,
Then Relationship to Surface = Abovewater.

Source Interpretation Guidelines

All

Numerous closely spaced ROCKS that form a chain along the coastline or close to the shore are collected as REEF. (Quantified rules are TBD)

Do not capture exposed rocks ≥ 0.03" along the shortest axis as ROCK. See rules for islands within LAKE/POND, SEA/OCEAN, and STREAM/RIVER. See ISLAND if named (Named Landforms theme).

Graphic

Revision - General

Revision - Standard

Revision - Limited

SEA/OCEAN - The great body of salt water that covers much of the earth.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 8
Unspecified	The value is not known and is not required
Sea/Ocean Category	Form or nature
Reef Pool	Pocket of SEA/OCEAN completely surrounded by a coral reef
Unspecified	The value is not known and is not required

DELINEATION

The limit of SEA/OCEAN is the approximate line of mean high water.

In areas where rivers enter SEA/OCEAN, the limit is where the conformation of the land and water make the division obvious, or, if the land and water do not suggest an obvious limit, the limit is where the river reaches a width of 1 nautical mile (6076.1 feet, or 1.15 statute miles) with no further constrictions.

In an area where ESTUARY enters SEA/OCEAN, the limit is where ESTUARY ends.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

Capture all.

Attribute Information

Sea/Ocean Category = Reef Pool only for topographic/bathymetric editions.

Source Interpretation Guidelines

All

The minimum size for islands within SEA/OCEAN is 0.03" along the shortest axis.

Graphic

Revision - General

Revision - Standard

Revision - Limited

SINK/RISE - The place at which a stream disappears underground or reappears at the surface in a karst area.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required

DELINEATION

The limit of SINK/RISE is the extent of the hole where the stream disappears or reappears.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

Attribute Information

Source Interpretation Guidelines

All

This feature was not available on the 1:100,000-scale source.

Graphic

Revision - General

Revision - Standard

Revision - Limited

SNAG/STUMP - A firmly attached stem or trunk of a tree near the surface of water.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Relationship to Surface	Vertical location relative to the surface
Abovewater	Exposed at mean lower low water
Underwater	Always submerged
Snag/Stump Type	
Snag	
Stump	

DELINEATION

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

Attribute Information

Source Interpretation Guidelines

All

This feature was not available on the 1:100,000-scale source.

Graphic

Revision - General

Revision - Standard

Revision - Limited

SOUNDING DATUM LINE - A line representing the tidal datum to which bathymetric contours are referenced.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Positional Accuracy	The accuracy within which a feature can be confidently positioned
Approximate	Conditions permit the feature to be confidently positioned between 0.02" and 0.1", at map scale, of its true ground position.
Definite	Conditions permit the feature to be confidently positioned. Horizontal data are confidently positioned within 0.02", at map scale, of the true ground position. Vertical data are confidently positioned within one-half contour interval of the true ground position

DELINEATION

The limit of SOUNDING DATUM LINE is the line of mean lower low water.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional		> 0	
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

For a topographic/bathymetric edition only, if SOUNDING DATUM LINE is on the final compilation provided to USGS by NOS,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

If SOUNDING DATUM LINE is not symbolized on the source (as when the position of the line is indicated by the edge of the FORESHORE tint on graphic source, rather than by a unique line symbol),
Then Positional Accuracy = Approximate.

Graphic

Revision - General

Revision - Standard

Revision - Limited

SPECIAL USE ZONE - An area where distinctive types of maritime activities occur.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Operational Status	State or condition
Abandoned	Intact but not maintained or intended for use
Operational	Usable and intended for use
Special Use Zone Type	Function or purpose
Dump Site	For dumping of discarded materials
Spoil Area	For the disposal of material obtained by dredging

DELINEATION

The limit of SPECIAL USE ZONE is the extent of the area used for distinctive activities.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

For a topographic/bathymetric edition only, if SPECIAL USE ZONE is on the final compilation provided to USGS by NOS,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

If SPECIAL USE ZONE is within LAKE/POND, SEA/OCEAN, or STREAM/RIVER,
Then capture both SPECIAL USE ZONE and the other feature.

SPECIAL USE ZONE may coincide with FORESHORE, SWAMP/MARSH, or land areas.

Islands in rows, and islands that do not match the pattern of islands in adjacent non-SPECIAL USE ZONE areas, should not be included in the SPECIAL USE ZONE.

Graphic

Revision - General

Revision - Standard

Revision - Limited

SPECIAL USE ZONE LIMIT - The limit of an area used for distinctive types of maritime activities.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Positional Accuracy	The accuracy within which a feature can be confidently positioned
Definite	Conditions permit the feature to be confidently positioned. Horizontal data are confidently positioned within 0.02", at map scale, of the true ground position. Vertical data are confidently positioned within one-half contour interval of the true ground position
Indefinite	Conditions prevent the feature from being confidently positioned. Horizontal data cannot be confidently positioned within 0.02", at map scale, of the true ground position. Vertical data cannot be confidently positioned within one-half contour interval of the true ground position

DELINEATION

The position of SPECIAL USE ZONE LIMIT is determined by the extent of SPECIAL USE ZONE.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional		> 0	
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

For a topographic/bathymetric edition only, if SPECIAL USE ZONE LIMIT is on the final compilation provided to USGS by NOS,
Then capture.

Attribute Information

If SPECIAL USE ZONE LIMIT is indicated only by a change in fill patterns on the source,
Then Positional Accuracy = Indefinite.

If SPECIAL USE ZONE LIMIT coincides with definite SHORELINE or definite SOUNDING DATUM LINE,
Then Positional Accuracy = Definite.

Source Interpretation Guidelines

All

Graphic

Revision - General

Revision - Standard

Revision - Limited

SPILLWAY - A constructed passage for surplus water to run over or around a dam.

ATTRIBUTE/ATTRIBUTE VALUE LIST

N/A

DELINEATION

The limit of SPILLWAY is the extent of the structure over which water flows.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

If SPILLWAY is constructed of masonry and is ≥ 0.02" along the shortest axis,
Then capture.

Attribute Information

N/A

Source Interpretation Guidelines

All

If SPILLWAY is captured,
Then also capture NONEARTHEN SHORE along the edge of any adjacent water body.

Tunnel or closed-conduit spillways, including glory-holes and risers, are not captured as SPILLWAY. See PIPELINE.

Do not capture overflow spillways as SPILLWAY. See DAM/WEIR.

Graphic

Revision - General

Revision - Standard

Revision - Limited

SPRING/SEEP - A place where water issues from the ground naturally.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 8
Unspecified	The value is not known and is not required
Water Characteristics	Distinctive properties of the water
Alkaline	Water shows evidence of alkali salts
Hot	Water temperature is higher than that of the human body (98.6 degrees F)
Sulphur	
Unspecified	The value is not known and is not required

DELINEATION

The limit of SPRING/SEEP is the extent of the place where water issues from the ground.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional		> 0	
1-dimensional			
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

If SPRING/SEEP is in an arid region,
Or
If SPRING/SEEP is not in an arid region and is large or well known,
Or
If SPRING/SEEP is within an area of closely spaced springs and is necessary to accurately represent the pattern of springs (see Source Interpretation Guidelines to determine how to accurately represent the pattern),
Then capture.

Attribute Information

If "Hot", "Sulphur", or "Alkali" appear in the proper name of SPRING/SEEP,
Then give like value to Water Characteristics.

Source Interpretation Guidelines

All

If SPRING/SEEP is in an area of closely spaced springs,
Then first capture named SPRING/SEEPS, then those that are on the perimeter of the area, then those that are most prominent, then finally capture a representative pattern of SPRING/SEEPS internal to the area. Capture as many as can be shown in correct position. The symbols must not overlap.

Graphic

An elevation on SPRING/SEEP is captured as SPOT ELEVATION.

Do not capture springs labelled 'dry'. See LOCALE (Built-Up theme).

If SPRING/SEEP is identified as "Salt" on the graphic,
Then Water Characteristics = Alkaline.

If Water Characteristics of SPRING/SEEP are not specifically identified on the graphic,
Then Water Characteristics = Unspecified.

Revision - General

Revision - Standard

Revision - Limited

STREAM/RIVER - A body of flowing water.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Elevation	The vertical distance from a given datum
(Floating Point Value)	Minimum Value: -392.8 Maximum Value: 8848.3 Precision: 1 Length: 6 Increment: 0.1 Units: meters
Stage	Height of water surface
Normal Pool	The stage of an artificially impounded water body that prevails for the greater part of the year
Not Applicable	The attribute does not apply and therefore cannot be valued
Hydrographic Category	Portion of the year the feature contains water
Intermittent	Contains water for only part of the year, but more than just after rainstorms and at snowmelt
Perennial	Contains water throughout the year, except for infrequent periods of severe drought
Positional Accuracy	The accuracy within which a feature can be confidently positioned
Definite	Conditions permit the feature to be confidently positioned. Horizontal data are confidently positioned within 0.02", at map scale, of the true ground position. Vertical data are confidently positioned within one-half contour interval of the true ground position
Indefinite	Conditions prevent the feature from being confidently positioned. Horizontal data cannot be confidently positioned within 0.02", at map scale, of the true ground position. Vertical data cannot be confidently positioned within one-half contour interval of the true ground position
Not Applicable	The attribute does not apply and therefore cannot be valued

DELINEATION

The limit of a perennial STREAM/RIVER is the position of the shoreline when the water is at the stage that prevails for the greater part of the year.

The limit of an intermittent STREAM/RIVER is the position of the shoreline when the water is at the stage that prevails when the feature is at or near capacity.

The upper limit of STREAM/RIVER is where the feature first becomes evident as a channel.

The limit of STREAM/RIVER where it enters or leaves LAKE/POND is determined by the conformation of the land.

The limit of STREAM/RIVER where it enters SEA/OCEAN is where the conformation of the land and water make the division obvious, or, if the land and water do not suggest an obvious limit, the limit is where the stream reaches a width of 1 nautical mile (6076.1 feet or 1.15 statute miles) with no further constrictions.

The limit of STREAM/RIVER where it enters ESTUARY is where ESTUARY ends.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
Is Above		UNDERPASS

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional		< 0.025"	
2-dimensional		≥ 0.025"	

Special Conditions:

To accommodate variations in the shortest axis of STREAM/RIVER:

If shortest axis of STREAM/RIVER is:

< 0.025" but ≥ 0.01" for a distance < 2.64", and is connected at both ends to a 2-dimensional STREAM/RIVER,
Then STREAM/RIVER is represented as a 2-dimensional basic feature object.

< 0.025" but ≥ 0.01" for a distance ≥ 2.64", or < 0.01" regardless of distance, and is connected at both

ends to a 2-dimensional STREAM/RIVER,
Then STREAM/RIVER is represented as a 1-dimensional basic feature object.

≥ 0.025" but < 0.04" for a distance < 2.64", and is connected at both ends to a 1-dimensional STREAM/RIVER,
Then STREAM/RIVER is represented as a 1-dimensional basic feature object.

≥ 0.025" but < 0.04" for a distance ≥ 2.64", or ≥ 0.04" regardless of distance, and is connected at both ends to a 1-dimensional STREAM/RIVER,
Then STREAM/RIVER is represented as a 2-dimensional basic feature object.

DATA EXTRACTION

Capture Conditions

If STREAM/RIVER is perennial and flows from LAKE/POND or SPRING/SEEP,
Or
If STREAM/RIVER is intermittent, and can be definitely located, and flows from LAKE/POND or SPRING/SEEP,
Or
If STREAM/RIVER is perennial and is ≥ 0.63" along the longest axis,
Or
If STREAM/RIVER is intermittent, and can be definitely located, and is not in an arid region, and is ≥ 0.63" along the longest axis,
Or
If STREAM/RIVER is intermittent, and can be definitely located, and is in an arid region, and is ≥ 1.2" along the longest axis,
Then capture.

Attribute Information

If the water level of STREAM/RIVER is controlled by DAM/WEIR, or GATE with Gate Type = Lock, and STREAM/RIVER has a printed elevation on a 1:100,000-scale graphic,
Then Elevation = (Floating Point Value),
Else Elevation = Not Applicable.

If STREAM/RIVER coincides with LOCK CHAMBER,
Then Elevation = Not Applicable.

If STREAM/RIVER is represented as a 2-dimensional basic feature object,
Then Positional Accuracy = Not Applicable.

If STREAM/RIVER is represented as a 1-dimensional basic feature object, and Hydrographic Category = Intermittent,
Then Positional Accuracy = Definite.

Capture all elevations to the nearest 0.1 meter when the basic contour interval = 1 meter,

And capture all elevations to the nearest 0.5 meter when the basic contour interval = 1.5, 2, or 3 meters,
And capture all elevations to the nearest meter when the basic contour interval ≥ 4 meters.

Source Interpretation Guidelines

All

In arid areas it is difficult to distinguish between narrow intermittent and ephemeral drains and no distinction will be made. All drainages < 0.025" are collected as 1-dimensional intermittent streams. Thin drainage in arid areas to appropriately represent the "wetness" of the area. Rules for thinning intermittent streams in arid areas will be documented as more information becomes available.

If a portion of STREAM/RIVER flows through SWAMP/MARSH,
Then select the appropriate Hydrographic Category according to the definitions given.

Do not capture areal dry washes, arroyos, dry gulches and ephemeral streams as STREAM/RIVER. See WASH.

The minimum size for islands within STREAM/RIVER is 0.03" along the shortest axis.

If a stream flows in a braided pattern,
Then see AREA OF COMPLEX CHANNELS.

For elevations in tenths of a meter, round the value down if the hundreds value is 1 to 4, or 5 following an even digit, and round the value up if the hundreds value is 5 following an odd digit, or 6 to 9.

For elevations in half meters, round the value down if the tenths and hundreds value is 01 to 24, 25 following an even digit, 51 to 74, or 75 following an even digit, and round up if the tenths and hundreds value is 25 following an odd digit, 26 to 49, 75 following an odd digit, or 76 to 99.

For elevations in whole meters, round the value down if the tenths value is 1 to 4, or 5 following an even digit, and round the value up if the tenths value is 5 following an odd digit, or 6 to 9.

Graphic

If STREAM/RIVER flows from SPRING/SEEP,
Then capture STREAM/RIVER starting at the center of SPRING/SEEP symbol.

Revision - General

If image shows lower than average water level,
Then capture STREAM/RIVER at a normal pool or average water level by using ancillary sources or evidence of water marks on images.

If image shows lower than average water level and the average water elevation or normal pool elevation cannot be determined,
Then capture STREAM/RIVER at the visible edge of the water body.

If image shows higher than average water level,
Then capture STREAM/RIVER at a normal pool or average water level by using ancillary sources.

If image shows higher than average water level and the average water elevation or normal pool elevation cannot be determined,
Then capture STREAM/RIVER at the visible edge of the water body.

If the headwaters of STREAM/RIVER are closer than 0.2" from a saddle or divide,
Then capture STREAM/RIVER starting 0.2" from the saddle or divide.

Revision - Standard

Revision - Limited

SUBMERGED STREAM - An old river course inundated by an impounded water body.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 8
Unspecified	The value is not known and is not required

DELINEATION

The limit of SUBMERGED STREAM is the extent of the banks as previously mapped.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

If SUBMERGED STREAM is ≥ 0.025" along the shortest axis, and is published as a double-line stream on previous mapping at the same or larger scale, and the stream has since been submerged by an impounded lake or stream,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

SUBMERGED STREAM must be coincident with LAKE/POND. Therefore, SUBMERGED STREAM cannot be collected outside of the impounded water area.

If SUBMERGED STREAM is captured,
Then also capture LAKE/POND.

Graphic

Capture all.

If the dashed symbol ends within 0.01" of the limits of the impounded water area,
Then delineate the area using the limits of the impounded water area.

If the end of dashed symbol is greater than 0.01" from the limits of the impounded water area,
Then delineate the area by connecting the ends of the dashed outline with a straight line.

Revision - General

Revision - Standard

Revision - Limited

SWAMP/MARSH - A noncultivated, vegetated area that is inundated or saturated for a significant part of the year. The vegetation is adapted for life in saturated soil conditions.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 8
Unspecified	The value is not known and is not required

DELINEATION

The limit of SWAMP/MARSH is the extent of the wet, spongy area.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

If SWAMP/MARSH is ≥ 0.24" along the shortest axis,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

Break SWAMP/MARSH for RAILWAYS and for Class 1 and Class 2 ROADS.

Break SWAMP/MARSH for clearings that are ≥ 0.05" along the shortest axis, or for linear clearings that are ≥ 0.025" along the shortest axis.

Do not capture mangrove areas as SWAMP/MARSH, see TREES (Vegetative Surface Cover theme).

SWAMP/MARSH may be coincident with AREA OF COMPLEX CHANNELS, ESTUARY, LAKE/POND, SEA/OCEAN, STREAM/RIVER, or TREES (Vegetative Surface Cover theme).

Do not capture cranberry bogs and other cultivated cropland as SWAMP/MARSH. See CULTIVATED CROPLAND (Vegetative Surface Cover theme). Rice fields are not captured.

Graphic

Capture as SWAMP/MARSH any areas filled with the marsh and swamp symbol.

Revision - General

Revision - Standard

Revision - Limited

TUNNEL - An underground or underwater passage.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 8
Unspecified	The value is not known and is not required

DELINEATION

The limit of TUNNEL is the walls of and openings to the passage.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional		> 0	
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

If TUNNEL provides passage for a hydrographic feature and is ≥ 0.12" along the longest axis,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

If TUNNEL meets capture conditions and provides passage for another feature (CANAL/DITCH, PIPELINE with Product = Water),
Then capture both TUNNEL and the other feature.

If a tunnel does not meet capture conditions and carries another feature,
Then capture that feature, and if required, capture UNDERPASS to allow definition of the relationship between that feature and any other feature over or under which it passes.

If TUNNEL provides passage for ROAD or RAILWAY,
Then collect in the theme Transportation.

Graphic

Water tunnels in Hawaii that are shown with the adit symbol are not captured as TUNNEL. See WELL.

Revision - General

Revision - Standard

Revision - Limited

UNDERPASS - The grade separation where part or all of one feature instance is directly above part or all of another feature instance.

ATTRIBUTE/ATTRIBUTE VALUE LIST

N/A

DELINEATION

The limit of UNDERPASS is the extent of the horizontal area where the two separated feature instances overlap.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
Is Above		ARTIFICIAL PATH CANAL/DITCH STREAM/RIVER

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional		>0	
1-dimensional			
2-dimensional			

Special Conditions:

If the feature object above UNDERPASS is 0-dimensional, and the feature object below UNDERPASS is 1-dimensional, or vice-versa,
Then UNDERPASS is represented as a 0-dimensional basic feature object.

If the feature object above and the feature object below UNDERPASS are both 1-dimensional, and they are not collinear in the planar graph,
Then UNDERPASS is represented as a 0-dimensional basic feature object.

DATA EXTRACTION

Capture Conditions

If UNDERPASS occurs where CANAL/DITCH, STREAM/RIVER, or ARTIFICIAL PATH cross over each other at different levels,
Then capture.

Attribute Information

N/A

Source Interpretation Guidelines

All

Do not capture UNDERPASS, even if there is no captured separating structure, between ROAD, RAILWAY, or TRAIL, and a waterbody. Without a structure, ROAD, RAILWAY, or TRAIL is always assumed to be above the waterbody, never below.

Only two feature objects may be involved in instances of the Is Above relationship with an UNDERPASS feature object. In a case of three or more feature objects overpassing each other at the same place, only vertically adjacent feature objects are involved in Is Above relationship instances with any one UNDERPASS feature object. Thus, a triple level stacking of feature objects requires two UNDERPASS feature objects; one UNDERPASS between the top and middle feature objects, and the other UNDERPASS between the middle and bottom feature objects.

If the features that cross at UNDERPASS are in two different themes,
Then capture UNDERPASS in both themes.

Graphic

Revision - General

Revise if features participating in relationship are revised.

Revision - Standard

Revision - Limited

WALL - An upright structure of masonry, wood, plaster, or other building material serving to enclose, divide, or protect an area.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Wall Type	Function or purpose
General Case	Common use
Sea	A wall set back from the shoreline for the purpose of holding back the sea.

DELINEATION

The limit of WALL is the edge of the structure.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional		> 0	
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

If WALL is associated with a 2-dimensional LOCK CHAMBER and WALL has water on both sides,
Or
If WALL extends into a body of water and is not a pier/breakwater/jetty or seawall,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

If DAM/WEIR, NONEARTHEN SHORE, PIER/BREAKWATER/JETTY, or SPILLWAY is captured,
Then do not capture WALL.

If the edge of LOCK CHAMBER separates water from land,
Then do not capture WALL. See NONEARTHEN SHORE.

If WALL meets capture conditions, and coincides 2-dimensional CANAL/DITCH,
Then capture both WALL and CANAL/DITCH.

Graphic

Revision - General

Revision - Standard

Revision - Limited

WASH - The usually dry portion of a stream bed that contains water only during or after a local rainstorm or heavy snowmelt.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 8
Unspecified	The value is not known and is not required

DELINEATION

The limit of WASH is the cut banks of the dry channel.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

If WASH is ≥ 0.06" along the shortest axis, and is ≥ 0.63" along the longest axis, and is greater than or equal to two times the width of any STREAM/RIVER within the WASH,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

Capture the stream bed portion of the channel that contains water more than just during or after local rainstorms or heavy snowmelt as STREAM/RIVER.

If WASH is captured,
Then also capture BARREN LAND (Nonvegetative Surface Cover Theme).

If WASH contains STREAM/RIVER,
Then capture both.

Sand areas that do not meet capture conditions for WASH and which are associated with STREAM/RIVER may be considered for capture as just the feature BARREN LAND. (Nonvegetative Surface Cover theme)

If WASH is < 0.025" along the shortest axis,
Then capture as STREAM/RIVER with Hydrographic Category = Intermittent, if capture conditions for STREAM/RIVER are met.

Graphic

If a wash is represented as a single brown line, or as a sand area that is too small to meet capture conditions,
Then capture STREAM/RIVER with Hydrographic Category = Intermittent if capture conditions for STREAM/RIVER are met.

Revision - General

Revision - Standard

Revision - Limited

WATER INTAKE/OUTFLOW - A structure through which water enters or exits a conduit.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Water Intake/Outflow Type	Function or purpose
Intake	For controlling the level of a waterbody or for intaking water for hydroelectric power, irrigation or water supply
Outflow	For releasing water from a structure

DELINEATION

The limit of WATER INTAKE/OUTFLOW is the extent of the structure.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

Attribute Information

Source Interpretation Guidelines

All

This feature was not available on the 1:100,000-scale source.

Graphic

Revision - General

Revision - Standard

Revision - Limited

WATERFALL - A vertical or near vertical descent of water over a step or ledge in the bed of a river.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 8
Unspecified	The value is not known and is not required

DELINEATION

The limit of WATERFALL is the extent of the vertical or nearly vertical descent, and the SHORELINES.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional			

Special Conditions:

If WATERFALL is on a 1-dimensional STREAM/RIVER,
Then WATERFALL is represented as a 0-dimensional basic feature object.

If WATERFALL is on a 2-dimensional STREAM/RIVER,
Then WATERFALL is represented as a 1-dimensional basic feature object.

DATA EXTRACTION

Capture Conditions

If WATERFALL is named,
Or
If WATERFALL is on a perennial STREAM/RIVER and has a vertical drop ≥ 10 ft, and extends from SHORELINE to SHORELINE,
Or
If WATERFALL is within an area of closely spaced waterfalls and is necessary to accurately represent the pattern of waterfalls (see Source Interpretation Guidelines to determine how to accurately represent the pattern),
Then capture.

Attribute Information

Source Interpretation Guidelines

All

If WATERFALL is within an area of closely spaced waterfalls,
Then first capture upstream WATERFALL, then capture as many others as can be shown in correct position. The symbols must not overlap.

Graphic

Capture all.

Names that contain the word "Falls" may indicate the feature RAPIDS. Careful identification of the symbol will be required to accurately determine whether the feature should be captured as WATERFALL or RAPIDS.

If WATERFALL is on a single-line STREAM/RIVER,
Then capture at intersection of tick and STREAM/RIVER.

If WATERFALL is shown by a tick on a double-line STREAM/RIVER,
Then capture by connecting the intersection of tick and SHORELINES.

If WATERFALL is shown by hachures on a double-line STREAM/RIVER,
Then capture by connecting the upstream limit of the hachures and SHORELINES.

Revision - General

Revision - Standard

Revision - Limited

WELL - A pit or hole dug or bored into the earth for the extraction of oil, water, other fluids, or gases.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 8
Unspecified	The value is not known and is not required
Product	Principal commodity involved
Water	
Flow Status	State or condition
Flowing	Water flows to the surface naturally
Unspecified	The value is not known and is not required
Water Characteristics	Distinctive properties of the water
Alkaline	Water shows evidence of alkali salts
Hot	Water temperature is higher than that of the human body (98.6 degrees F)
Sulphur	
Unspecified	The value is not known and is not required

DELINEATION

The limit of WELL is the extent of the hole in the ground.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional		> 0	
1-dimensional			
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

If WELL produces water, and is named or landmark,
Or
If WELL produces water and is in an arid area, and is ≥0.01" from a building,
Or
If WELL produces water, and is within an area of closely spaced wells, and is necessary to accurately represent the pattern of wells (see Source Interpretation Guidelines to determine how to accurately represent the pattern),
Then capture.

Attribute Information

If Flow Status = Flowing,
Then Water Characteristics = Unspecified.

Source Interpretation Guidelines

All

If WELL is within an area of closely spaced wells,
Then first capture named WELLS, then those that are on the perimeter of the area, then those that are most prominent, then finally capture a representative pattern of WELLS internal to the area. Capture as many as can be shown in correct position. The symbols must not overlap.

IIf WELL is associated with WINDMILL,
Then do not capture WELL. See WINDMILL.

If WELL produces a product other than water,
Then collect in the theme Built-Up. (Topographic-Bathymetric editions only)

Graphic

If WELL is identified as "geothermal" or "steam" on the graphic,
Then do not capture.

If WELL is identified as "artesian" on the graphic,
Then Product = Water and Flow Status = Flowing.

If a water WELL is identified as "salt" on the graphic
Then Water Characteristics = Alkaline.

If characteristics of a water WELL are not otherwise identified on the graphic,
Then Water Characteristics = Unspecified.

Water tunnels in Hawaii, shown with the adit symbol, are captured as WELL.

Revision - General

Revision - Standard

Revision - Limited

WRECK - The hulk or the ruins of a disabled vessel which is attached to or foul of the bottom or cast up on the shore.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
GNIS Identifier	The unique identifier assigned by GNIS beginning in 1996
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required
Relationship to Surface	Vertical location relative to the surface
Abovewater	Exposed at mean lower low water
Abovewater Portion	Portion exposed at mean lower low water
Hull and/or Superstructure	
Mast and/or Funnel	
Underwater	Always submerged

DELINEATION

The limit of WRECK is the extent of the hull or other remaining portion of the disabled vessel.

REPRESENTATION RULES

Feature Relationships

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST AXIS	LONGEST AXIS
0-dimensional			
1-dimensional			
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

Attribute Information

Source Interpretation Guidelines

All

This feature was not available on the 1:100,000-scale source.

Graphic

Revision - General

Revision - Standard

Revision - Limited