LOMBARDINI
GEOLOGICAL
SERVICES LLC

MOUNTAINVIEW GROUP LLC TRAVEL CENTER

Critical Aquifer Recharge Area

-Hydrogeologic Assessment-

West Sparks Road,
Easton, WA 98925
December 13th, 2025

Shawn Lombardini LHG RG PG
PRINCIPAL HYDROGEOLOGIST

LOMBARDINI
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APPENDIX

LOMBARDINI
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SERVICES LLC

December 13th, 2025

Majestic Group LLC
26304 230th Road Place SE
Covington, WA 98042

Project: Proposed Development
Mountainview Group LLC Travel Center
West Sparks Road
Easton, WA 98925
Kittitas County Parcel #778834

Dear Majestic Group LLC:

Lombardini Geological Services, LLC (LGS) has conducted a Site specific hydrogeologic review of the proposed Site development of the property, and prepared this Hydrogeological Assessment pursuant of the Kittitas County Code Chapter 17A.03 Critical Aquifer Recharge Areas (CARAs) Hydrogeologic Assessment.

Specifically;
§ 17A.01.080 Critical areas reports.

Minimum report contents. At a minimum, the report shall contain the following:
a. The name and contact information of the applicant and a description of the proposal;
b. The site plan for the proposed development, including a map drawn to scale depicting critical areas, buffers and/or setbacks, the proposed development, and any areas to be cleared or altered;
c. The names and qualifications of the persons preparing the report;
d. Documentation of any fieldwork performed on the site;
e. Documentation that consultation, when deemed appropriate, was initiated with agencies of expertise;
f. Field identification and characterization of all critical areas and buffers on and adjacent to the proposed development;
g. A statement specifying the accuracy of the report, and all assumptions made and relied upon;
h. A discussion of the performance standards applicable to the critical area and proposed development;
i. A mitigation plan in accordance with KCC § 17A.01.100 if mitigation is required; and
j. Any additional report information required for the critical area as specified in KCC § 17A.01.80 through KCC § 17A.01.100.
(Ord. 2021-016, 2021; Ord. 2025-006, 7/1/2025)

§ 17A.03.050 Reporting.

Contents. The hydrogeological assessment shall include the general critical areas report requirements of KCC § 17A.01.080 in addition to the following:
a. Geologic setting and soils information for the site and surrounding area;

b. Water quality data, including pH, temperature, dissolved oxygen, conductivity, nitrates, and bacteria;
c. Location and depth of perched water tables;
d. Recharge potential of site (permeability/transmissivity);
e. Hydrologic budget;
f. Local groundwater flow, direction, and gradient;
g. Location, depth, and other water quality data on the three shallowest wells or springs located within 1,000 feet of the site;
h. Potential impacts to wellhead protection areas located within the site;
i. Surface water locations within 1,000 feet of the site;
j. Discussion of the effects of the proposed development on groundwater quality and quantity;
k. Recommendations on appropriate mitigation, if any, to assure that there shall be no measurable exceedance of minimum state groundwater quality standards or measurable reduction in available quantity of groundwater;
l. Emergency management plan; and
m. Containment release detection.
(Ord. 2021-016, 2021; Ord. 2025-006, 7/1/2025)

The Hydrogeological Assessment herein shall include applicable hydrogeological principles and assessments to the Kittitas County Code in respect to the development of the Site, located at the above-referenced address in Easton, Washington (Site).

The hydrogeological assessment presented follows generally accepted hydrogeologic industry principles and standards. This report is exclusively for Majestic Group LLC's use only. It is at the discretion of Majestic Group LLC to distribute this report and plan to others as needed. This is in lieu of other warranties, expressed, or implied.

1.0 BACKGROUND-

The property is currently a single parcel that is undeveloped land per the Kittitas County GIS map page. The total land is 16.51 acres. The property only has trees, shrubs, and low growing vegetation. The trees are up to approximately 50' tall and appear to have been selectively clear cut in some areas.

The general topography of the parcel is approximately 10' below West Sparks Road and is on average approximately 2,218' NAVD88 in elevation on the preliminary Site drawing found in the appendix.

The property to the north is Easton State Airport, to the east a campground, to the west I-90 Washington Department of Transportation property, and Lake Easton, and to the south is a commercial/residential property. Generally, the vicinity use is small commercial operations and low density residential.

The property (Site) is Kittitas County parcel described as follows by the County Assessor;

West Sparks Road Easton, WA 98925; Parcel #778834- 16.51 acres, PTN SE1/4 SW1/4 E. OF I-90 & CO. RD, .16 RD@; SEC 2, TWP 20, RGE 13.

Figure 1- *Site Map,* Shows the Site parcel configuration. Figure 2 – *Geologic Cross Section A-A',* identifies reasonably ascertainable, adjacent, observed well locations, pertinent to discussing the conceptual Site hydrogeological conditions. Multiple additional figures exist in the Appendix – *Supporting Documents* that were used to research conditions in support of the assessment.

The proposed development property is within two wellhead protection areas identified on the Department of Health SWAP MAP seen in the attachments. The closest well is the Lake Easton Resort well #1 AFL-866 approximately 800' south of the property, 1,000' time of travel, down gradient direction, and the second closest well Easton Water District Well #2, AFT-391, down gradient, approximately 1,800' southeast of the property. For the A third well identified is the Lake Easton State Park well #1, AHB-845, which is approximately 1,600' due south as well, down gradient direction, but the property is not within its wellhead protection area. These wellhead protection areas do intersect the property, however, the Underground Storage Tanks (USTs), and associated fueling canopies that are proposed, sit outside of the 1,000-foot time of travel and the 10-year Calculated Fixed Radius for the two first wells described, respectively. This Site is located within the "High Aquifer Susceptibility" polygon in a high-structural fill basin aquifer and extensive alluvial deposits with high well density.

2.0 SCOPE OF WORK-

The scope of LGS services was to evaluate the hydrogeologic conditions at the Site and provide a hydrogeologic assessment of the Site in respect to the protected wellhead/springs. LGS is providing an opinion if the project/Site development is protective of human health and the environment.

The following explains the scope in further detail;

1) Review existing Site features, available topographic maps, soil profile (USDA Soil Survey), geology & hydrogeology (USGS/DNR), local well logs (DOE), Local Department of Health well resource protection maps (DOH), and Wellhead Guidance Document (DOH), National Oceanic Atmospheric Administration (NOAA), Kittitas County Code 17A.03 Critical Aquifer Recharge Areas, and other pertinent documents for preparing the hydrogeological assessment.
2) Perform a Site visit to identify wells identified for the CARA (as accessible), surficial runoff potential, catch basins, adjacent creeks and other sensitive/critical area receptors within 1,000' of the Site, infiltration ponds, surficial topographical changes, and final site concept for development.
3) Evaluate groundwater flow directions, hydraulic conductivities/transmissivities of aquitards and aquifers pertinent to the Site, and background aquifer properties within the vicinity of the Site to prepare a conceptual Site hydrogeological model.
4) Preparing this Hydrogeological Assessment to adequately justify the development being protective of human health and the environment per Kittitas County Code 17A.03 Critical Aquifer Recharge Areas for development within critical aquifer recharge area capture zones.

3.0 SITE CONDITIONS-

During the Site visit it was observed that the access is from Silver Ridge Ranch Road, east of the property. The provided preliminary Site development map shows the entrance on the west side of the property from West Sparks Road. The topography was generally flat with no major topographical changes within approximately ¼ mile. Roads maintained a generally fair asphaltic condition and no notable features were observed that would have any impact on the subsurface aquifers being evaluated. Based on the Site development map there is approximately 9' of relief from east to west, elevation 2,222' NAVD88 to 2,213' NAVD88 respectively.

LGS drove to the wellheads being evaluated and has presented their condition in the Appendix, *Supporting Documents – Site Photographic Record.*

4.0 SURFICIAL GEOLOGIC SETTING-

Site surficial geology was reviewed using USDA Soil Web survey. The Soil Web Survey describes the soils as Kladnick ashy sandy loam, 0-3 percent slopes at the property. These soils produce terraces landforms. The parent materials are described as glacial outwash with a mantle of volcanic ash deposits. The survey states the restrictive layer is more than 80" and water table is more than 80". The soils are well drained.

A Site USGS surficial geologic review showed the Site being located on Jes, Jurassic, Shuksan Greenschist. The Shuksan Greenschist deposit is described as; "Phyllitic greenschist. This is the Shuksan Greenschist of the Easton Metamorphic Suite, unit KES of Tabor and Others". The Geologic map of Easton, Kittitas County, Washington*; Cheney, E.S. 1999* shows that this Site is located on this deposit. LGS notes that this map lacks the alluvial deposit from the recent glaciation that resides from the last 20,000 YBP period.

During the Site visit it appeared that the elevation ranged approximately 9' from east to west. No geological outcrops were observed during the site visit. LGS estimates the thickness of the alluvium to be up to 80' thick based on the proximal boring logs reviewed in this area as a part of this project. The hydrogeology is further described in the next section.

5.0 HYDROGEOLOGIC SETTING-

LGS reviewed 7 Department of Ecology well logs within reasonable proximity to the Site (up to 1/2 mile) to establish the common hydrogeologic properties and geology that define different depths of domestic drinking water aquifers within a reasonable proximity to the Site.

It appears that a confined aquifer exists in proximity of the Site. The literature describes one distinct aquifer, USGS Aquifer "UNC" also known as the Rosyln Basin. This is likely the same observable aquifer that ranges from 40-160' deep, beneath the glacial till or clay with boulders. This was observed within the well log research and the review of the Hydrogeologic Framework and Groundwater/Surface-Water Interactions of the Upper Yakima River Basin, Kittitas County, Central Washington, *USGS, 2014.*

LGS identifies the UNC aquifer as mostly confined and is within the unconsolidated alpine and general glacial drifts known to the area that are above basement plutonic/metamorphic complexes. The wells identified a soil matrix in the screened intervals of sand and gravels with empirical hydraulic conductivity of 10-10,000 FT/D. (Heath 1983). The range of pump testing the reviewed well logs was from 15-250GPM

in the aquifer.

The review of differing local depths of wells near the Site for production wells, were used to identify wells in the area, for assessment of this Site's conceptual Site model described below. These well logs are compared to the report Hydrogeologic Framework and Groundwater/Surface-Water Interactions of the Upper Yakima River Basin, Kittitas County, Central Washington, *USGS, 2014.*

The Site's subsurface soil matrix/lithological contacts are estimated due to the limited amount well logs at or adjacent to the Site. See cross section found in the USGS geologic map.

This table below correlates the well-log interpretation for the confined aquifer with published sources such as Hydrogeologic Framework literature. The Double K Ranch well was the most easterly well, the "English" well is approximately the same elevation as the Site (next parcel east) so it was used for estimating the confined aquifer, and inferred below to the depth of the cross sections terminating at the most westerly well, Easton State Park Well #1.

Table 1

Interval (ft)	Elevation NAVD88 EST. (English)	Unit	Description – "English", approximate surface elevation of 2,222' NAVD88.
0-6	2,222'-2,216'	Topsoil Qag	Weathered alpine outwash Gravel and sand
6-45	2,216'-2,177'	Qagt	Sandy Clay, Hardpan, Gravel, and boulders. Glacial Till likely. (Undocumented by public sources, LGS is using Qagt for Quaternary alpine glacial till)
45-66	2,177'-2,156'	Qaga	Loose sand and gravel, likely pre-glacial advance outwash. (Undocumented by public sources, LGS is using Qaga for Quaternary alpine glacial advance, confined aquifer, or semi confined)

*This table is only an estimate, it is for concept.

It is estimated that the theoretical hydraulic conductivity of the Qaga aquifer has a range of 10 Ft/Day to 10,000 Ft/Day .This is horizontal hydraulic conductivity which is often greater than the vertical values due to the orientation of grains to be parallel to the surface limiting the vertical flow.

With the geological structure provided in the table above the estimated time for a constituent of concern that hypothetically could be released at the Site, to reach each wellhead would take; Lake Easton Resort well #1 AFL-866 approximately 800' south of the property, down gradient direction approximately 4-5 years LGS is estimating, assuming some unconfined aquifer exists below I-90, and the second closest well Easton Water District Well #2, AFT-391, down gradient, approximately 1,800' southeast of the property,

which is the 10 year time of travel capture zone.

This conceptual model and reviewed wells, adjacent to the Site, are shown in Figure 2, *Geologic Cross Section A-A'* beneath the Site. It is inferred that the same geology with similar hydraulic conductivity properties exists continuously adjacent to the Site.

The static groundwater elevation is on average approximately 33'-48' below surface grade.

The gradient of the aquifer is calculated to be approximately 0.0027 FT/FT to the southeast, in the same flow direction as the Yakima River. Hydrogeologic Framework and Groundwater/Surface-Water Interactions of the Upper Yakima River Basin, Kittitas County, Central Washington, *USGS, 2014- Figure 22- Potentiometric surface and generalized flow directions*.

6.0 GROUNDWATER RECHARGE-

Groundwater recharge of primary regional aquifers (mostly unconfined water tables) is produced from infiltrating rainwater recharge from the regional lakes, contacts of the adjacent high topographical relief mountains, and peripheral watersheds that contribute to the Yakima River valley.

7.0 WELLHEAD PROTECTION AREA-

The Site is located within two wellhead protection areas identified on the Department of Health SWAP MAP seen in the attachments. The closest well is the Lake Easton Resort well #1 AFL-866 approximately 800' south of the property, down gradient direction, and the second closest well Easton Water District Well #2, AFT-391, down gradient, approximately 1,800' southeast of the property. See Appendix, *Supporting Documents.*

8.0 CONCEPTUAL SITE MODEL -

The Site hydrogeology is within the surficial aquifer assumed to be minimal if at all present, very thin Alpine Glacial Outwash Deposits, followed by an undocumented glacial till/hardpan, and then below that a confined or semi confined aquifer, "UNC" LGS believes, where the majority of the wells in the area are screened up to approximately 80' below the surface, and the furthest east well Double K Ranch at ~170', which may be its own aquifer outside of the identified 40'-80' wells. The basement rock is the Shuksan Greenschist, Jes, as seen in cross section and on the surficial geologic map and cross section, projected and called the Ainsley canyon Anticline. The conceptual Site Model shows that the primary aquifer of concern is the Aquifer "UNC" which the Site rests 40'-80' below the surface. Very near the surface it was observed in multiple well logs an undocumented glacial till, clay, hardpan with boulders was present in massive form, to approximately 40-50 feet below the surface. It would be anticipated that this would exist at the Site and create a protective layer preventing the vertical migration of potential consitiutents of concern. LGS believes that intent of the High-Risk designation by Kittitas County identifies that the narrow canyon watershed is restrictive and releases of fuel, in this case, could have high potential to find pathways into the relatively shallow confined aquifer "UNC", if a release were to occur. With the geological structure provided in the table above the estimated time for a constituent of concern that hypothetically could be released at the Site, to reach each wellhead would take; Lake Easton Resort well #1 AFL-866 approximately 800' south of the property, down gradient direction approximately LGS is estimating 4-5 years, assuming

some unconfined aquifer exists below I-90, and the second closest well Easton Water District Well #2, AFT-391, down gradient, approximately 1,800' southeast of the property, which is the 10 year time of travel capture zone.

9.0 KITTITAS COUNTY CODE 17A.03 CRITICAL AQUIFER RECHARGE AREA

9.1 A. GEOLOGIC SETTING AND SOILS INFORMATION FOR THE SITE AND SURROUNDING AREA.

The geologic setting is identified in Section 4.0 and Geologic map of Easton area, Kittitas County, Washington; *Cheney, E.S. 1999*, Geologic map of the Snoqualmie Pass 30 X 60 minute quadrangle, Washington. *Tabor, R.W., Frizzell, V.A., Booth, D.B., and Waitt, R.B., 2000*, and Hydrogeologic Framework and Groundwater/Surface-Water Interactions of the Upper Yakima River Basin, Kittitas County, Central Washington, *USGS, 2014* included in the Attachments.

The Qag, alpine glacial deposits, chiefly of sand and gravel matrix. Clay and hardpan was identified in multiple well logs and LGS speculates the origin of "Hardpan" which typically is translated to glacial till. Since this is not mapped, on the geological maps available in plan or cross section view, LGS has used a common nomenclature for till and advance sequences, for the till LGS is using Qagt. LGS believes it is more glacial till vs a lacustrine source because of the boulders present, this is just one of many possible interpretations. The identified well depths are up to approximately 80' deep and are beneath the protective clay and hardpan layer, in sands and gravels, aquifer ranging from 40'-80' below the surface, generally.

The estimated contacts inferred at the Site are seen in Table 1 above and in Figure 2. *Geological Cross Section A-A'*.

9.2 B. WATER QUALITY DATA, INCLUDING PH, TEMPERATURE, DISSOLVED OXYGEN, CONDUCTIVITY, NITRATES, AND BACTERIA;

LGS did not sample any of the identified wells for these constituents however has reviewed the Sentry Data available from the Department of Health links from the SWAP Map. The closest well is the Lake Easton Resort well #1 AFL-866 approximately 800' south of the property, down gradient direction, has had exceedances in total coliform, and the second closest well Easton Water District Well #2, AFT-391, down gradient, approximately 1,800' southeast of the property, has had exceedances in iron, manganese, and has been present for total coliform. For the third well identified is the Lake Easton State Park well #1, AHB-845, which is approximately 1,600' due south as well, down gradient direction, but the property is not within its wellhead protection area, and has been present for total coliform. Please see the DOH sentry data printouts in the appendix.

9.3 C. LOCATION AND DEPTH OF PERCHED WATER TABLES;

Water tables are likely perched upon the identified glacial till just below the surface.

9.4 D. RECHARGE POTENTIAL OF SITE (PERMEABILITY/TRANSMISSIVITY);

The shallow low permeability clay/hardpan identified in multiple adjacent well log reports, creates a barrier near the surface, which LGS estimates would be present at the Site, that would be protective of the confined or semi-confined aquifer below.

9.5 E. HYDROLOGIC BUDGET;

The surficial water would drain into the unconfined aquifer, run along the till or confining layer identified, and reach likely to a local rivers and surface waters like Lake Easton primarily. At the margins of the till, adjacent to the hillside, non conformity contacts, the surface water could potentially enter into the "UNC" or alpine glacial advance deposits beneath the glacial till.

9.6 F. LOCAL GROUNDWATER FLOW, DIRECTION, AND GRADIENT;

The gradient is measured from Figure 22 USGS at 0.0027 FT/FT to the east-southeast.

9.7 G. LOCATION, DEPTH, AND OTHER WATER QUALITY DATA ON THE THREE SHALLOWEST WELLS OR SPRINGS LOCATED WITHIN 1,000 FEET OF THE SITE;

The only well within 1,000' is the Lake Easton Resort Well #1 AFL-866 approximately 800' south of the property, down gradient direction, has had exceedances in total coliform.

9.8 H. POTENTIAL IMPACTS TO WELLHEAD PROTECTION AREAS LOCATED WITHIN THE SITE;

The proximal wells discussed above have a low risk of impacts, based on groundwater gradient, flow direction, and the shallow glacial till.. In LGS's opinion, the general susceptibility of the wellheads themselves outside the surface seals, shallow depth pose a low risk, additionally based a "hardpan" soils being present in the adjacent wells, the overall risk in the broad aquifer, is low for constituents of concern and potential for impacts to human health and the environment if a hypothetical release were to occur.

9.9 I. SURFACE WATER LOCATIONS WITHIN 1,000 FEET OF THE SITE;

Lake Easton is within 825' of the closest corner of the property, cross gradient.

9.10 J. DISCUSSION OF THE EFFECTS OF THE PROPOSED DEVELOPMENT ON GROUNDWATER QUALITY AND QUANTITY;

The development of forest to a developed commercial truck stop will not change the aquifers water quality with the appropriate BMPs in place. This would include oil-water separators and regulated fueling apparatus, leak detection in tanks and fueling product lines, including annual decay and inspections of tanks and lines. Stormwater will be infiltrated on Site and will continue to broadly infiltrate in the same location.

9.11 K. RECOMMENDATIONS ON APPROPRIATE MITIGATION, IF ANY, TO ASSURE THAT THERE SHALL BE NO MEASURABLE EXCEEDANCE OF MINIMUM STATE GROUNDWATER QUALITY STANDARDS OR MEASURABLE REDUCTION IN AVAILABLE QUANTITY OF GROUNDWATER;

Using appropriate regulated BMPs will be paramount in assuring water quality infiltration into the aquifer.

9.12 L. EMERGENCY MANAGEMENT PLAN; AND

The state regulated fueling tanks will have the appropriate protocol for emergency management.

9.13 M. CONTAINMENT RELEASE DETECTION.

Underground storage tanks require dual tanks with interstitial space monitoring for internal tank breech via electronic monitoring, Veeder-Root systems for example, or similar, in LGS's experience. Lines and USTs are annually physically tested for pressure decay and general inspection to meet state regulatory guidelines.

10.0 CONCLUSIONS-

LGS concludes that, using institutional/engineered controls of the storage of fuels, containment for potential spills, storm drainage, per Kittitas County Code 17A.03 Critical Aquifer Recharge Areas (with all Best Management Practices), the low permeability of the "hardpan" directly present adjacent to the Site, one well being down gradient on hardpan, 1,000' time of travel, one well in a 10-year capture zone, a lack of unconfined aquifer transport, the tanks themselves on the Site not in either of these capture zones, groundwater flow direction to the east-southeast, there is a low risk, in the opinion of LGS to impact the three wells in review, the Roslyn Valley UNC aquifer, and any potable water sources, which LGS considers the important receptor to human health and the environment.

11.0 SUMMARY-

Based on a review of the "English" well log, proximal well logs, regional geological maps, Geologic map of Easton area, Kittitas County, Washington; *Cheney, E.S. 1999*, Geologic map of the Snoqualmie Pass 30 X 60 minute quadrangle, Washington. *Tabor, R.W., Frizzell, V.A., Booth, D.B., and Waitt, R.B., 2000*, and Hydrogeologic Framework and Groundwater/Surface-Water Interactions of the Upper Yakima River Basin, Kittitas County, Central Washington, *USGS, 2014*, Kittitas County Code 17A.03 Critical Aquifer Recharge Areas, and general principles of hydrogeologic theory, LGS has determined, in our opinion, *-that proposed Site development, as long as proper BMPs are utilized, has a low risk of contamination entering into Aquifer "UNC", which is protective of human health and the environment.*

12.0 LIMITATIONS-

LGS has prepared this report for the use of Majestic Group LLC and their authorized agents. LGS's interpretations regarding subsurface conditions rely on information gathered from well logs which have limitations. One of the limitations is the actual location, the other is the accuracy of the descriptions which LGS has interpreted based on experience. The interpretations are not to be a warranty of subsurface conditions. No subsurface explorations were completed for this project.

Within the limitations of the scope and budget, LGS's services have been completed in accordance with generally accepted practices of hydrogeology when this report was prepared. No other conditions, expressed or implied, should be understood.

13.0 REFERENCES-

Text Resources;

Geologic map of Easton area, Kittitas County, Washington; *Cheney, E.S. 1999*

Geologic map of the Snoqualmie Pass 30 X 60 minute quadrangle, Washington. *Tabor, R.W., Frizzell, V.A.,*

Booth, D.B., and Waitt, R.B., 2000

Hydrogeologic Framework and Groundwater/Surface-Water Interactions of the Upper Yakima River Basin, Kittitas County, Central Washington, *USGS, 2014*

Kittitas County Code 17A.03 Critical Aquifer Recharge Area

Freeze, R. Allan, and John A. Cherry. 1979. Groundwater. Englewood Cliffs, N.J.: Prentice-Hall. Harvard (18th ed.)

Website Resources; *Accessed 12/03/2025 through 12/13/2025*

https://ecode360.com/45422641#45422658

https://ngmdb.usgs.gov/mapview/?center=-121.181,47.239&zoom=14

https://fortress.wa.gov/doh/swap/index.html

https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

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LGS appreciates the opportunity to assist you with this project. Please contact LGS if you have any questions regarding this report.

Regards,

Shawn Lombardini LHG, RG, PG
Principal Hydrogeologist
December 13, 2025

FILENAME	DRAWN BY	CHECKED BY	APPROVED BY	PROJECT NUMBER
25-105_2104.DWG	ICD 12/13/2025	SL 12/13/2025	SL 12/13/2025	25-129

SOURCE: 2024 AERIAL PHOTOGRAPHY; © GOOGLE

N
W E
S

LEGEND

ENGLISH 65' — WELL

SITE

0 200 400
SCALE IN FEET

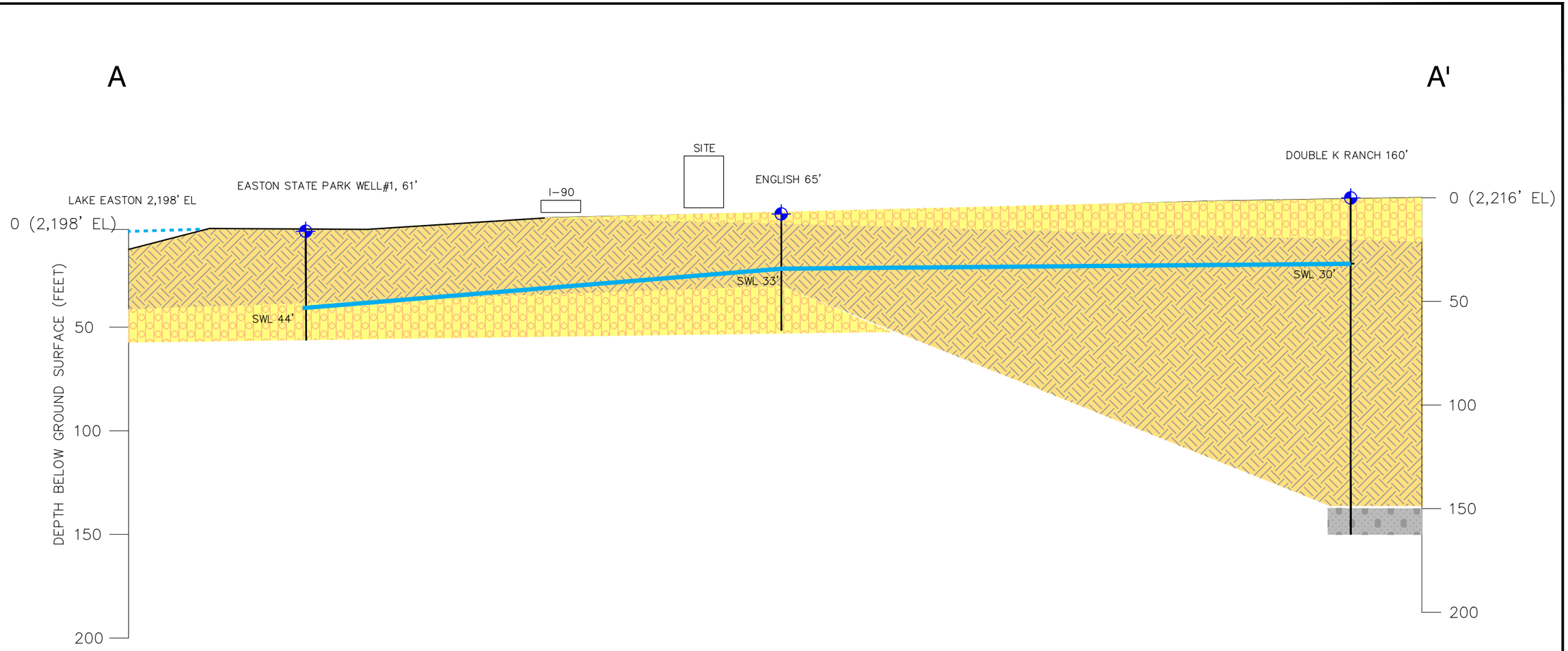
LOMBARDINI GEOLOGICAL SERVICES LLC

FIGURE 1

SITE MAP & GEOLOGIC CROSS SECTION A-A'

MOUNTAINVIEW GROUP LLC TRAVEL CENTER
WEST SPARKS ROAD
EASTON, WA 98925

PROJECT NUMBER	APPROVED BY	CHECKED BY	DRAWN BY	FILENAME
25-129	SL 12/13/2025	SL 12/13/2025	ICD 12/13/2025	25-105_XSECTIONS.DWG



LEGEND

MW-1 – WELL, SOIL BORING, SOIL SAMPLING

– GROUNDWATER LEVEL AT TIME OF DRILLING

– SCREENED INTERVAL

– MAXIMUM DEPTH EXPLORED

– SOIL CONTACT

POORLY GRADED GRAVEL/WELL GRADED GRAVEL 10-1,000 FT/D K

CLAY WITH BOULDERS, GLACIAL TILL – 0.0001-1FT/D K

CLAY WITH QUARTZ – 0.01-50FT/D K

0 150 300
HORIZONTAL SCALE

0 25 50
VERTICAL SCALE

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FIGURE 2

GEOLOGIC CROSS SECTION A-A'

MOUNTAINVIEW GROUP LLC TRAVEL CENTER
WEST SPARKS ROAD
EASTON, WA 98925

LOMBARDINI GEOLOGICAL SERVICES LLC

SITE PHOTOGRAPHIC RECORD

MOUNTAINVIEW GROUP LLC TRAVEL CENTER
WEST SPARKS ROAD, EASTON, WA 98925
LGS Project #25-129
December 13, 2025

Photo #1:	*Center of Site looking west.*

Photo #2:	*Entrance to Site from north looking east.*

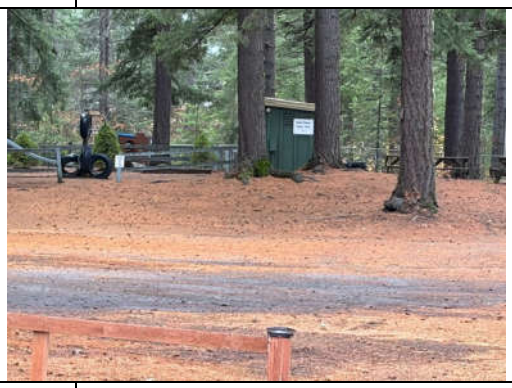


Photo #3:	*Lake Easton Resort well house.*

Photo #4:	*Easton Water District Well#2, AFT-391*

Photo 5:	*Large diameter upper surface casing. Easton Water District Well #2.*

Photo #6:	*Easton Water District Well #1, AFT-392*

PO BOX 6 • Moses Lake, WA 98837
Phone: 253.334.4782 • Email: shawn@lgs-geo.com

GENERAL NOTES FOR SITE LAYOUT

1. ALL DIMENSIONS ARE TO EDGE OF PAVEMENT UNLESS NOTED OTHERWISE.
2. IMAGERY IS FROM COUNTY GIS 2021, IT IS SHOWN FOR REFERENCE ONLY AS RELATION TO PROPERTY LINES MAY NOT BE PRECISE.
3. STANDARD AUTO PARKING STALLS ARE 9' WIDE BY 20' DEEP UNLESS NOTED OTHERWISE. TRUCK PARKING STALLS ARE 12.5' WIDE BY 65' DEEP UNLESS NOTED. ADA STALLS SHALL INCLUDE A 5' WIDE ACCESS ISLE AS SHOWN.
4. TRASH ENCLOSURE SHALL INCLUDE SURROUNDING 5' HIGH FENCE (NOT SHOWN).
5. 50' VEGETATED SCREENING BUFFER MUST BE MAINTAINED AROUND THE ENTIRE PROPERTY. VEGETATION TO BE DETERMINED AT A LATER DATE.

OUTDOOR PARKING SUMMARY

ADA STALLS (GAS STATION)	4
STANDARD STALLS (GAS STATION)	11
TRUCK STALLS (TRUCK STOP)	47

SITE AREA CALCULATIONS

PROPERTY ID	778834
TOTAL SITE AREA	16.5± ACRES
EXISTING BUILDING SPACE	0 SF
TOTAL EXISTING IMPERVIOUS	0 SF
TOTAL PROPOSED IMPERVIOUS	6.38 ACRES
PROPOSED NEW BUILDING SPACE	10,000 SF

SURFACING TABLE

- BUILDING
- STANDARD DUTY BITUMINOUS PAVEMENT
- CONCRETE PAVEMENT
- PERMANENT LAWN VEGETATION
- STORMWATER POND/MANAGEMENT

LEGEND

- PROPERTY LINE
- PROPOSED SPOT ELEVATION + 1101.2
- EXISTING FENCING
- VEGETATION SETBACKS (50')
- PROPOSED VEGETATION
- EXISTING CATCH BASIN
- PROPOSED PARCEL LINE
- PROPOSED FUEL PUMP

DATE	REVISIONS	NO.	BY

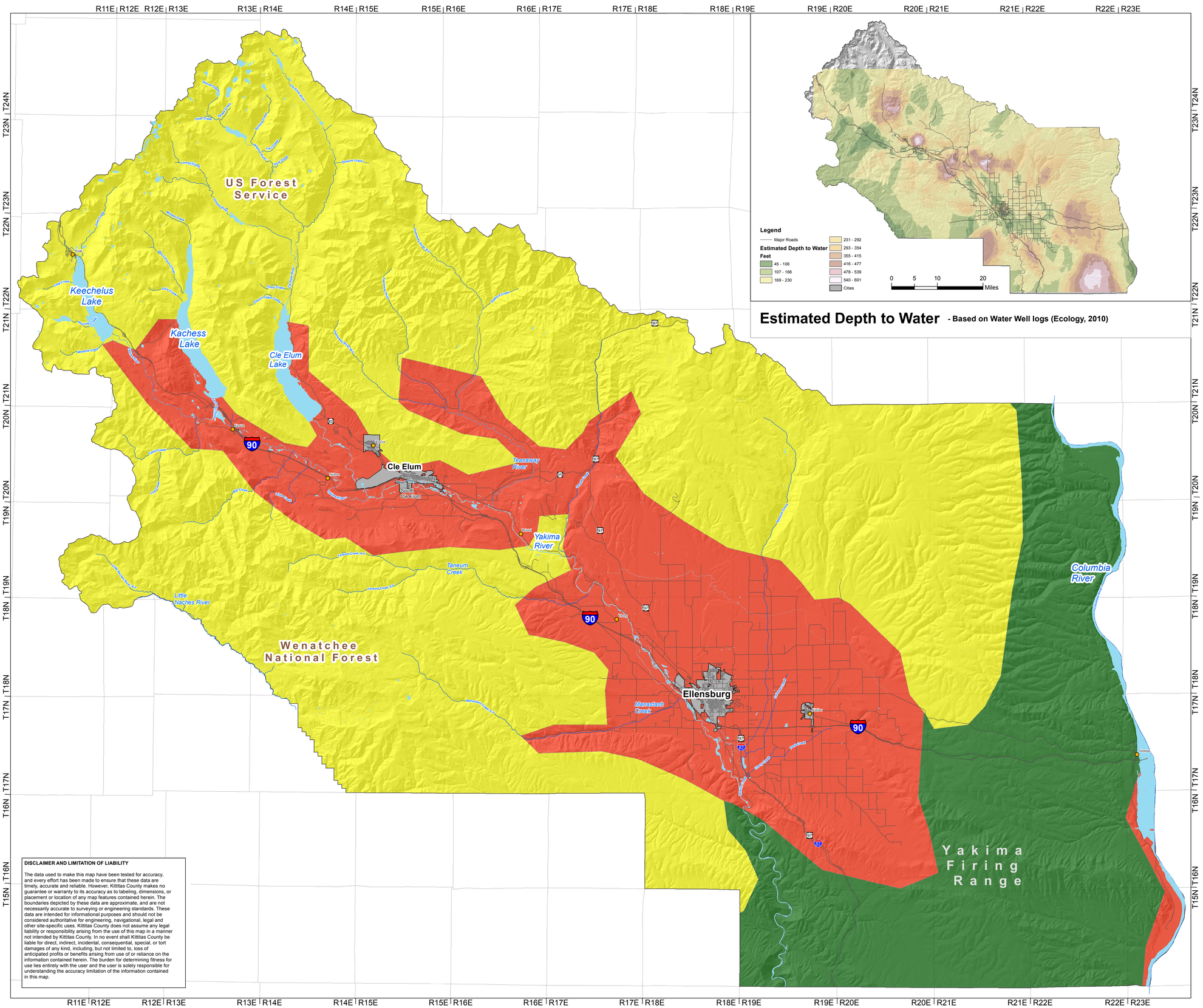
EASTON TRAVEL CENTER

SCALE: GRAPHIC
DRAWN BY: LVE
CHECKED BY: LVE
SURVEYED BY:

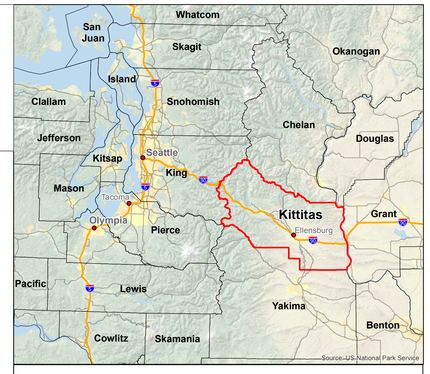
EASTON TRAVEL CENTER
PARCEL SITE PLAN
EASTON, WA
DATE: FEBRUARY 13, 2024
SHEET: 1 OF 1

*REVISED SITE PLAN ADDED 03.21.26 - LGS

KITTITAS COUNTY CRITICAL AREAS ORDINANCE - CRITICAL AQUIFER RECHARGE AREAS



Estimated Depth to Water - Based on Water Well logs (Ecology, 2010)



Legend

Aquifer Susceptibility

- High
- Medium
- Low

- Streams
- Waterbodies
- Major Roads
- Cities

CRITICAL AQUIFER RECHARGE AREAS DATA SOURCES:

This map is very preliminary and should be used for planning purposes only. Aquifer susceptibility was mapped in support of Kittitas County's Critical Areas update. Aquifer susceptibility was estimated using Washington Department of Land and Natural Resources surficial geology (2010), Ecology well data (2010) and NRCS soils (2003) information as well as data from USGS on aquifers (2003) and PRISM precipitation data (2000). The methods used were generally consistent with the Department of Ecology's "Guidelines for Estabilshing Critical Aquifer Recharge Areas" (Cook, 2002).

High = structural fill basin aquifer + more extensive alluvial deposits + higher shallow well density.

Medium = Few shallow wells + bedrock aquifer + >15"/year precipitation based on PRISM.

Low = Low well density + bedrock aquifer + <15"/year precipitation based on PRISM.

The estimated depth to water surface was created using interpolation methods in ArcGIS. We used the Ecology wells (well depth field) to create the surface layer.

Coordinate System: State Plane NAD1983 (Ft)
Washington South FIPS 4602

NOTE: Map data shown here are the property of the sources listed below. Inacuracies may exist, and ESA implies no warranties or guarantees regarding any aspect of data depiction.

Data Sources: DNR, 2010, NRCS, 2003; Ecology, 2010, PRISM, 2000, ESRI, 2010, Kittitas County, 2012.

N

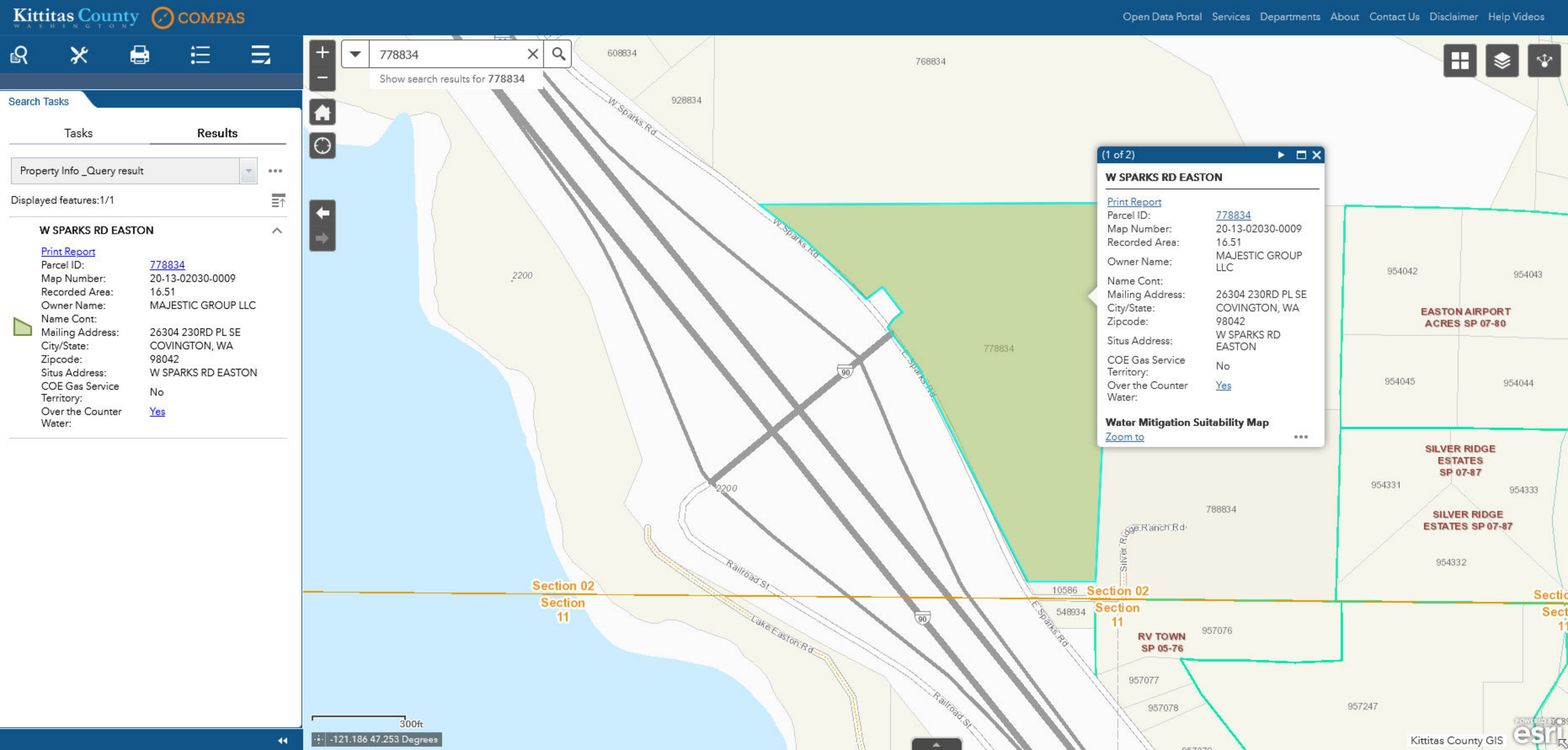
0 2 4 8
Miles

DISCLAIMER AND LIMITATION OF LIABILITY

The data used to make this map have been tested for accuracy, and every effort has been made to ensure that these data are timely, accurate and reliable. However, Kittitas County makes no guarantee or warranty to its accuracy as to labeling, dimensions, or placement or location of any map features contained herein. The boundaries depicted by these data are approximate, and are not necessarily accurate to surveying or engineering standards. These data are intended for informational purposes and should not be considered authoritative for engineering, navigational, legal and other site-specific uses. Kittitas County does not assume any legal liability or responsibility arising from the use of this map in a manner not intended by Kittitas County. In no event shall Kittitas County be liable for direct, indirect, incidental, consequential, special, or tort damages of any kind, including, but not limited to, loss of anticipated profits or benefits arising from use of or reliance on the information contained herein. The burden for determining fitness for use lies entirely with the user and the user is solely responsible for understanding the accuracy limitation of the information contained in this map.

Kittitas County Critical Areas Ordinance
Critical Aquifer Recharge Areas

Kittitas County, Washington
December 2013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Search Tasks
Tasks
Results
Property Info _Query result
Displayed features:1/1
W SPARKS RD EASTON
Print Report
Parcel ID: 778834
Map Number: 20-13-02030-0009
Recorded Area: 16.51
Owner Name: MAJESTIC GROUP LLC
Name Cont:
Mailing Address: 26304 230RD PL SE
City/State: COVINGTON, WA
Zipcode: 98042
Situs Address: W SPARKS RD EASTON
COE Gas Service Territory: No
Over the Counter Water: Yes
778834
Show search results for 778834
(1 of 2)
W SPARKS RD EASTON
Print Report
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Owner Name: MAJESTIC GROUP LLC
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Water Mitigation Suitability Map
Zoom to
608834
768834
928834
W Sparks Rd
E Sparks Rd
2200
778834
788834
954042
954043
954045
954044
954331
954333
954332
957076
957077
957078
957247
EASTON AIRPORT ACRES SP 07-80
SILVER RIDGE ESTATES SP 07-87
SILVER RIDGE ESTATES SP 07-87
RV TOWN SP 05-76
Silver Ridge Ranch Rd
Railroad St
Lake Easton Rd
90
Section 02
Section 11
10586
548834
300ft
-121.186 47.253 Degrees
Kittitas County GIS
esri

Search Tasks

Tasks | Results

Property Info _Query result

Displayed features:1/1

W SPARKS RD EASTON

Print Report

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Situs Address:	W SPARKS RD EASTON
COE Gas Service Territory:	No
Over the Counter Water:	Yes

778834

Show search results for **778834**

ECHELUS RIDGE

FRENCH CABIN MOUNTAIN

KACHESS RIDGE

Kachess Lake

AMABILIS MOUNTAIN

CASCADE RANGE

Cle Elum Lake

CLE ELUM RIDGE

Lake Easton

CABIN MOUNTAIN

Yakima River

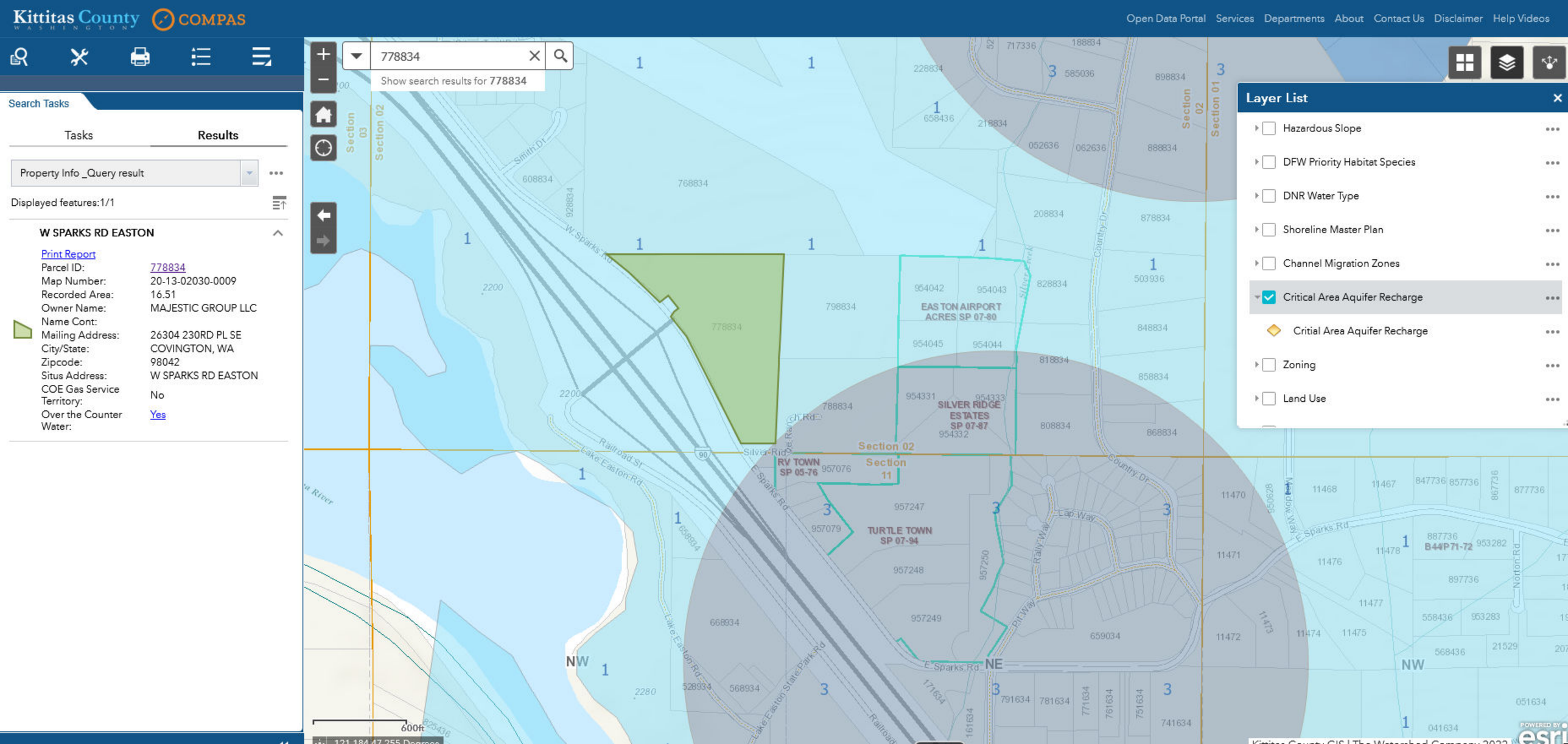
Lavender Lake

COLE BUTTE

SOUTH

2mi

-121.147 47.244 Degrees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Help Videos
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Tasks
Results
Property Info _Query result
Displayed features:1/1
W SPARKS RD EASTON
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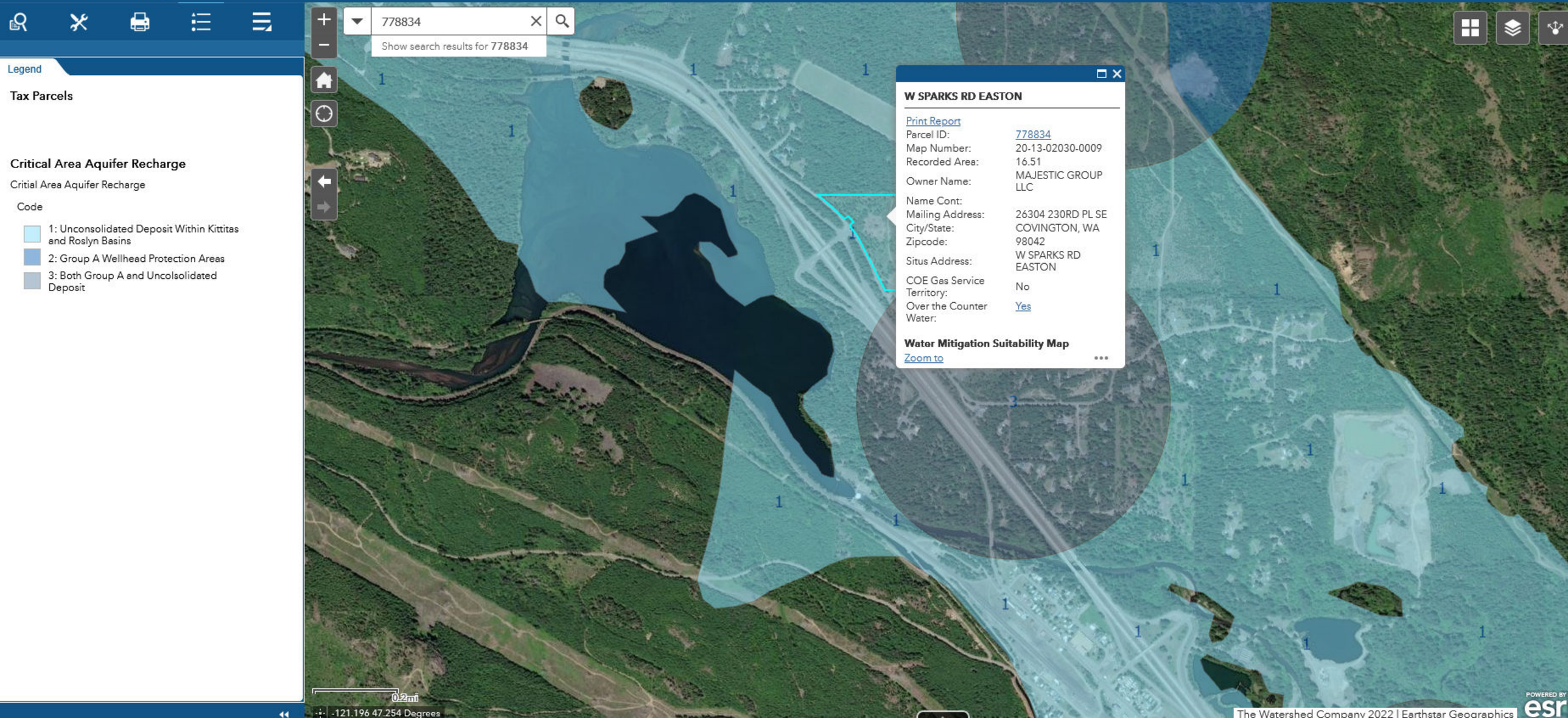
Situs Address: W SPARKS RD EASTON
COE Gas Service Territory: No
Over the Counter Water: Yes
778834
Show search results for 778834
Layer List
Hazardous Slope
DFW Priority Habitat Species
DNR Water Type
Shoreline Master Plan
Channel Migration Zones
Critical Area Aquifer Recharge
Critial Area Aquifer Recharge
Zoning
Land Use
EASTON AIRPORT ACRES SP 07-80
SILVER RIDGE ESTATES SP 07-87
RV TOWN SP 05-76
TURTLE TOWN SP 07-94
Section 02
Section 11
Section 03
Section 01
W Sparks Rd
E Sparks Rd
Railroad St
Lake Easton Rd
Lake Easton State Park Rd
Silver Ridge Ranch Rd
Country Dr
Rally Way
Pit Way
Lap Way
Meadow Way
Norton Rd
B44P71-72
600ft


778834
Show search results for 778834
Legend
Tax Parcels
Critical Area Aquifer Recharge
Critial Area Aquifer Recharge
Code
1: Unconsolidated Deposit Within Kittitas and Roslyn Basins
2: Group A Wellhead Protection Areas
3: Both Group A and Uncolsolidated Deposit
W SPARKS RD EASTON
Print Report
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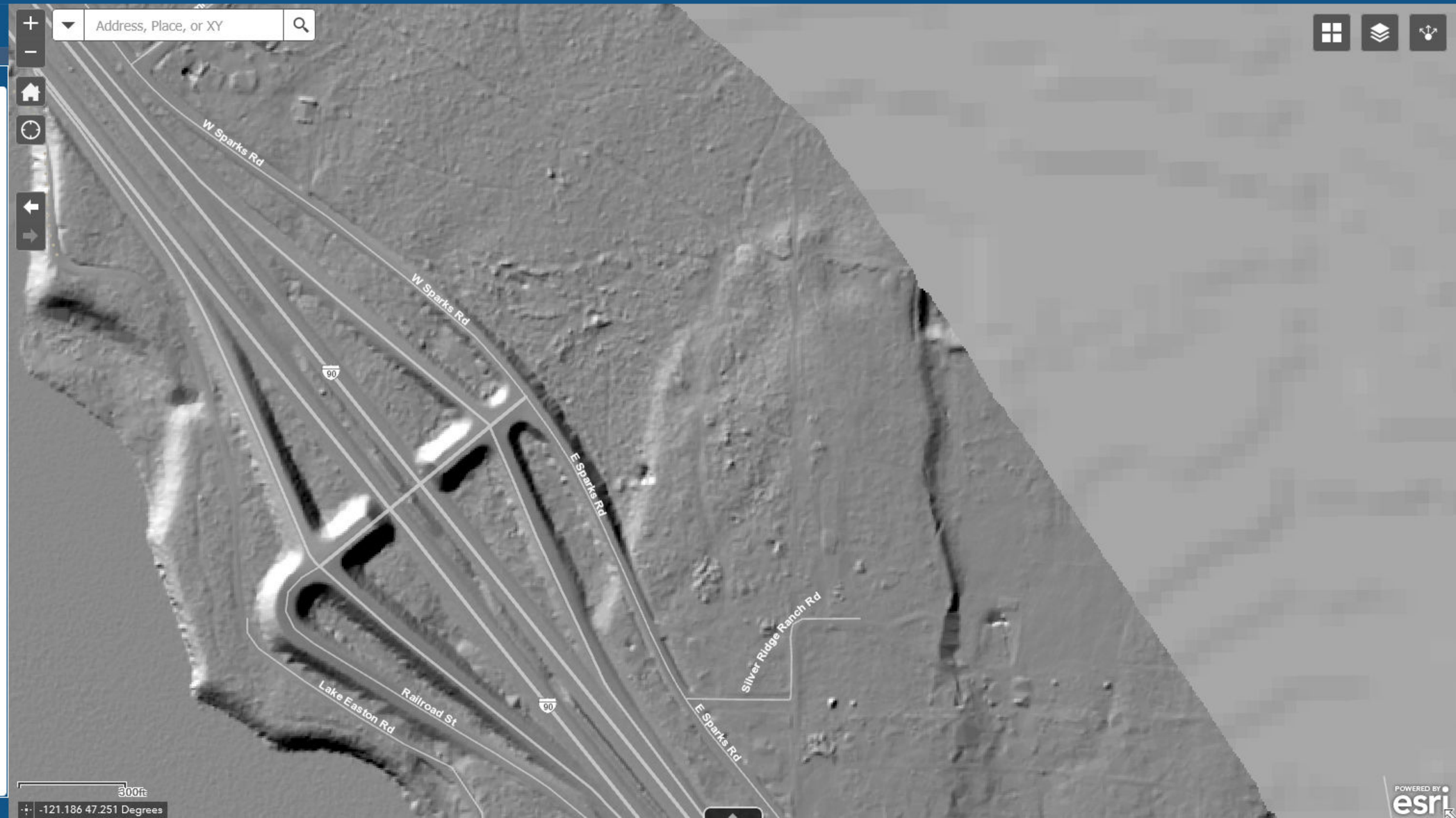
Zipcode: 98042
Situs Address: W SPARKS RD EASTON
COE Gas Service Territory: No
Over the Counter Water: Yes
Water Mitigation Suitability Map
Zoom to
0.2mi
-121.196 47.254 Degrees
The Watershed Company 2022 | Earthstar Geographics
POWERED BY esri

Search Tasks

Tasks Results

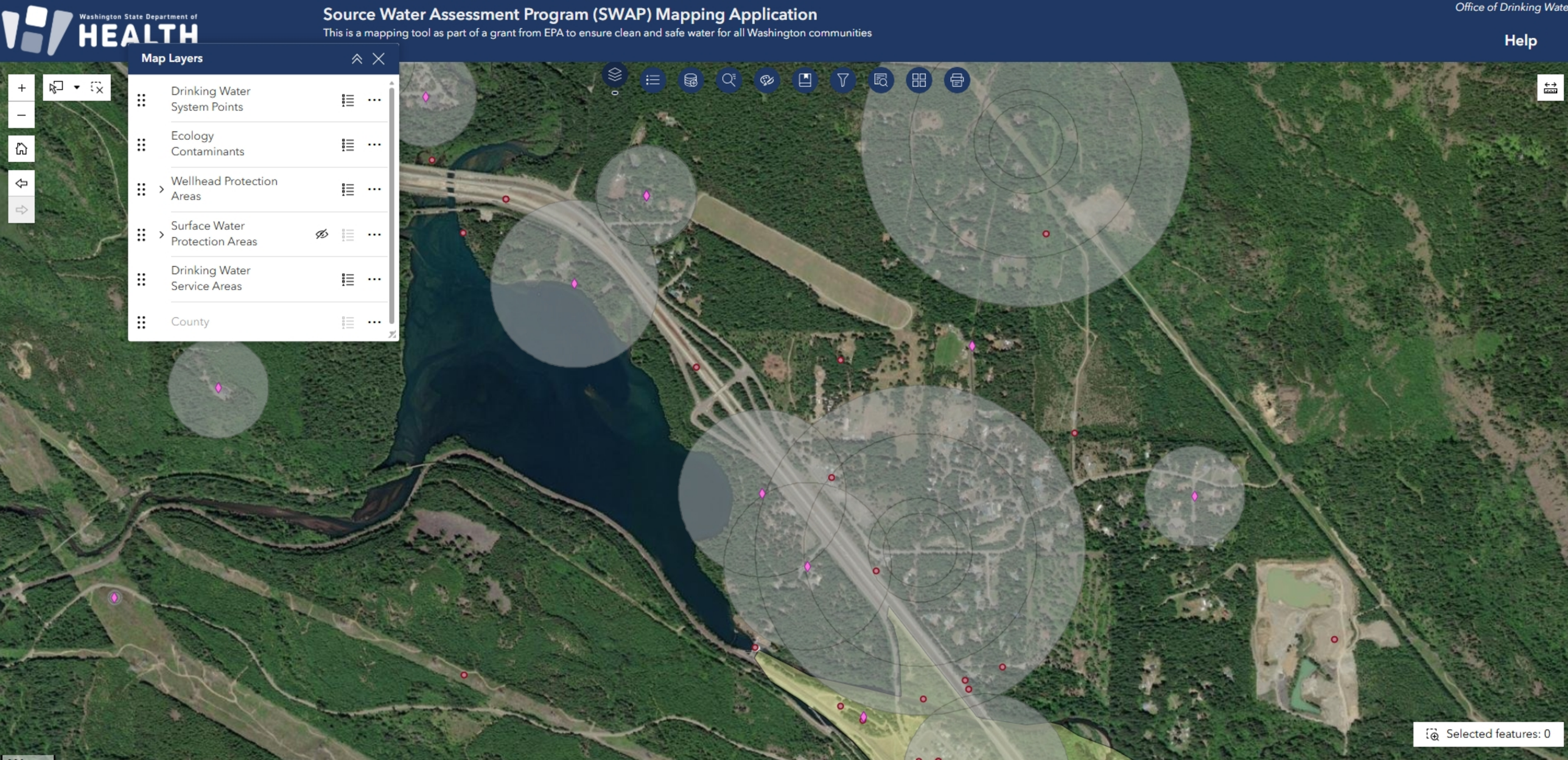
- Property Info
- Critical Areas Info
- Districts Info

Address, Place, or XY



300ft
-121.186 47.251 Degrees

POWERED BY esri


Washington State Department of HEALTH
Source Water Assessment Program (SWAP) Mapping Application
This is a mapping tool as part of a grant from EPA to ensure clean and safe water for all Washington communities
Office of Drinking Wate
Help
Map Layers
Drinking Water System Points
Ecology Contaminants
Wellhead Protection Areas
Surface Water Protection Areas
Drinking Water Service Areas
County
Selected features: 0

Soil Map—Kittitas County Area, Washington
(Easton Truckstop)

Map Scale: 1:6,610 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 300 600 1200 1800

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Kittitas County Area, Washington
Survey Area Data: Version 18, Aug 28, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 6, 2022—Sep 8, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
237	Kladnick ashy sandy loam, 0 to 3 percent slopes	167.0	87.8%
W	Water	23.1	12.2%
Totals for Area of Interest		**190.2**	**100.0%**

Kittitas County Area, Washington

237—Kladnick ashy sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2kvx
Elevation: 2,000 to 3,000 feet
Mean annual precipitation: 45 to 75 inches
Mean annual air temperature: 43 to 45 degrees F
Frost-free period: 90 to 120 days
Farmland classification: Not prime farmland

Map Unit Composition

Kladnick and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kladnick

Setting

Landform: Terraces
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Glacial outwash with a mantle of volcanic ash

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
H1 - 1 to 9 inches: ashy sandy loam
H2 - 9 to 15 inches: gravelly ashy sandy loam
H3 - 15 to 24 inches: very gravelly sandy loam
H4 - 24 to 60 inches: extremely gravelly sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Ecological site: F006XD001WA - Frigid Moist Xeric Ashy Slopes (Grand fir Warm Moist Shrub/Herb)
Other vegetative classification: grand fir/vine maple (CWS551)
Hydric soil rating: No

Minor Components

Bertolotti
Percent of map unit: 5 percent
Hydric soil rating: No

Kachess
Percent of map unit: 5 percent
Hydric soil rating: No

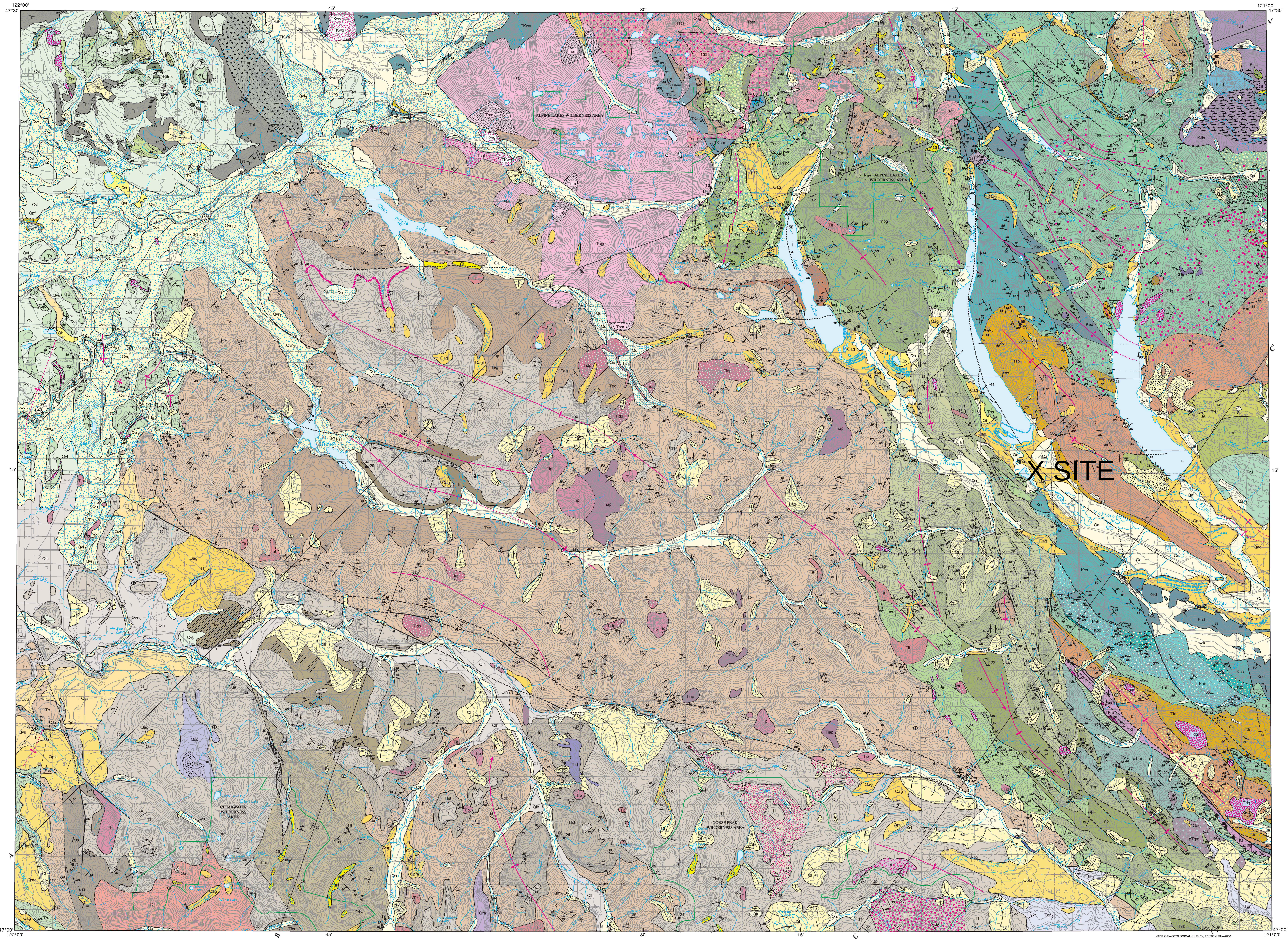
Roslyn
Percent of map unit: 5 percent
Hydric soil rating: No

Data Source Information

Soil Survey Area: Kittitas County Area, Washington
Survey Area Data: Version 18, Aug 28, 2025

USGS science for a changing world
U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

GEOLOGIC INVESTIGATIONS SERIES
MAP I–2538
Pamphlet accompanies map



Base from U.S. Geological Survey, 1975
Transverse Mercator projection

APPROXIMATE MEAN DECLINATION, 2000

Geology mapped by V.A. Frizzell, Jr., R.W. Tabor, and R.B. Waitt, 1975-82; S. Allshouse and E.A. Rodriquez, 1975; J.F. Coburn and R. Tal, 1976; W. Gaum, M. Goddard, and K.L. Marcus, 1977; E.L. Mathieson and N.B. Shew, 1978; D.B. Booth, 1978-82; S.F. Connally, S.L. Sandberg, F. Beall, F.C. Moser, and S. Cook, 1981; C. Eddy, K.M. Ort, and T. Schirmer, 1982

Digital database by R.W. Tabor

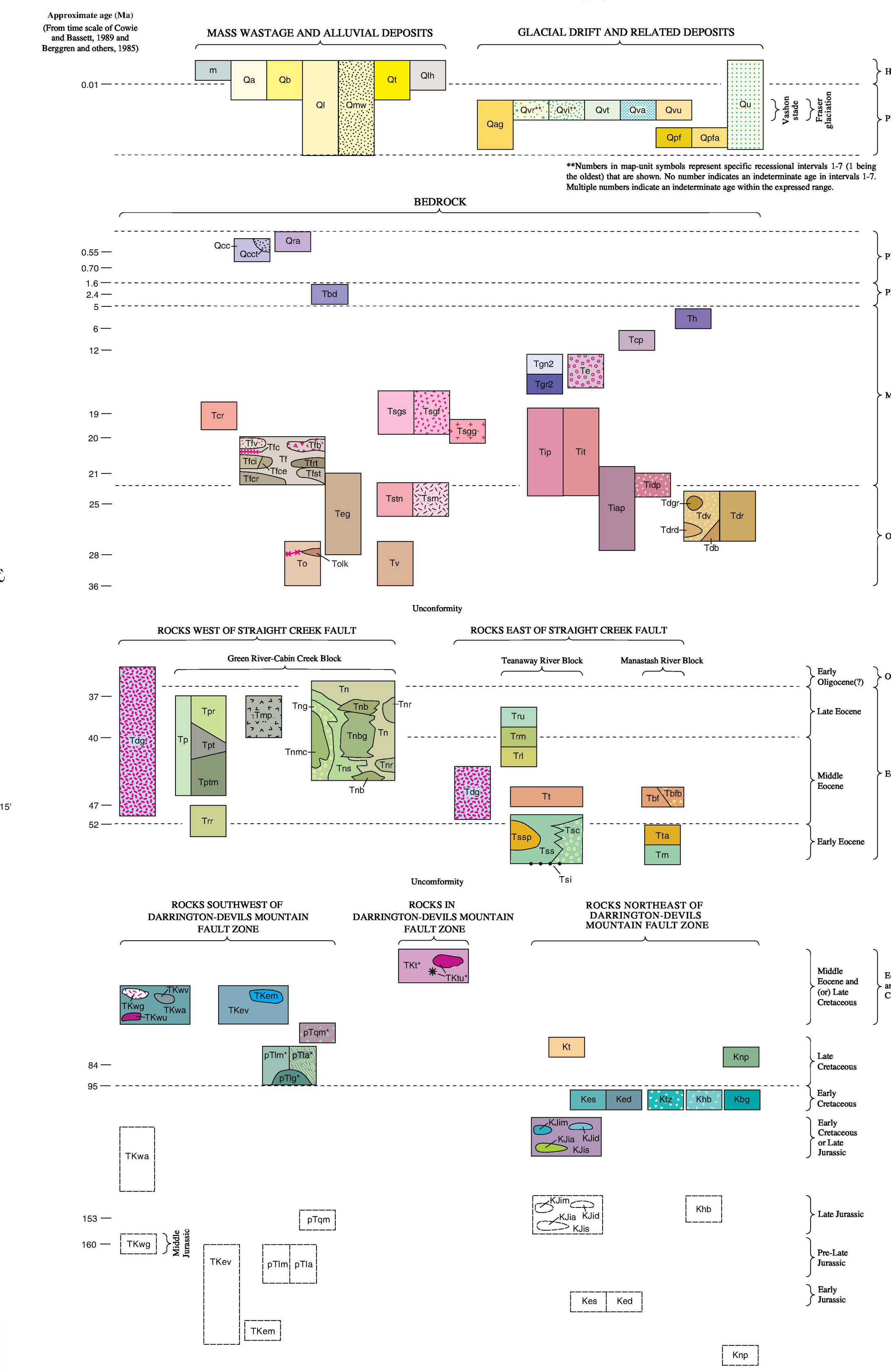
Edited by Dale Russell, Julia Thomas, and Jan Zigler; digital cartography by Kathryn Nimz with assistance from Taryn A. Lindquist, Sara Boore, Susan Mayfield, and Kevin Ghequiere

Manuscript approved for publication January 23, 1995

CORRELATION OF MAP UNITS

[*See Description of Map Units in pamphlet for specific unit age assignment]

Note: For mélange and metamorphic units, position of boxes with solid boundaries indicates age of assemblage or metamorphism, respectively; position of boxes with dashed boundaries indicates age of protolith



**Numbers in map-unit symbols represent specific recessional intervals 1-7 (1 being the oldest) that are shown. No number indicates an indeterminate age in intervals 1-7. Multiple numbers indicate an indeterminate age within the expressed range.

LIST OF MAP UNITS

(See pamphlet for complete map unit descriptions)

MASS WASTAGE AND ALLUVIAL DEPOSITS

- m — **Man-Modified land (Holocene)**
- Qa — **Alluvium (Holocene and Pleistocene)**
- Qb — **Bog deposits (Holocene and Pleistocene)**
- Ql — **Landslide deposits (Holocene and Pleistocene)**
- Qmw — **Mass-wastage deposits (Holocene and Pleistocene)**
- Qt — **Talus deposits (Holocene and Pleistocene)**
- Qlh — **Lahar deposits (Holocene and Pleistocene)**

GLACIAL DRIFT AND RELATED DEPOSITS

- Qu — **Surficial deposits, undivided (Holocene and Pleistocene)**
- Qag — **Alpine glacial deposits (Pleistocene)**

Deposits of Vashon stade of Fraser glaciation of Armstrong and others (1965) of Cordilleran ice sheet (Pleistocene)—Divided into:

- Qvr — **Recessional outwash deposits**
- Qvi — **Ice-contact deposits**
- Qvt — **Till**
- Qva — **Advance outwash deposits**
- Qvu — **Vashon Drift, undivided**
- Qpf — **Glacial and nonglacial deposits of pre-Fraser glaciation age (Pleistocene)**
- Qpfa — **Alpine glacial drift of pre-Fraser glaciation age (Pleistocene)**

BEDROCK

- Qra — **Andesite of Mount Rainier (Pleistocene)**
- Qcc — **Basalt of Canyon Creek (Pleistocene)—Locally, includes:**
  - Qcct — **Basaltic tuff and breccia**
- Tbd — **Basalt of Dalles Ridge (Pliocene)**
- Th — **Howson Andesite (Miocene)**
- Tcp — **Volcaniclastic rocks of Cooper Pass (Miocene)**

Columbia River Basalt Group—Divided into:

Grande Ronde Basalt (Miocene)—Divided into:

- Tgn_2 — **Flows of normal magnetic polarity**
- Tgr_2 — **Flows of reverse magnetic polarity**
- Te — **Ellensburg Formation (Miocene)**

Rocks of Snoqualmie batholith—Divided into:

- Tsgs — **Tonalite and granodiorite, southern phase (Miocene)**
- Tsgf — **Fine-grained monzonite (Miocene)**
- Tsgg — **Granodiorite and granite (Miocene)**
- Tstn — **Tonalite and granodiorite, northern phase (Miocene and Oligocene)**
- Tsm — **Mafic diorite and gabbro (Miocene and Oligocene)**
- Tcr — **Carbon River stock (Miocene)**

Intrusive rocks (Miocene and Oligocene)—Divided into:

- Tip — **Pyroxene andesite porphyry**
- Tit — **Tonalite**
- Tiap — **Altered porphyry**
- Tidp — **Dacite porphyry**
- Tf — **Fifes Peak Formation (Miocene)—Divided into:**
  - Tfv — **Volcaniclastic rocks**
  - Tfb — **Andesite and basalt megabreccia**
  - Tfc — **Crystal-lithic tuff**
  - **Rhyolite unit of Clear West Peak—Divided into:**
    - Tfci — **Intracaldera rhyolite**
    - Tfce — **Extracaldera rhyolite tuff**
  - Tfrt — **Rhyodacite tuff**
  - Tfst — **Sun Top unit**
  - Tfcr — **Chenuis Ridge unit**
- Teg — **Volcanic rocks of Eagle Gorge (Miocene and Oligocene)**

Volcanic rocks of Mount Daniel (Oligocene)—Divided into:

- Tdv — **Andesite, dacite, and rhyolite volcanic rocks**
- Tdgr — **Granophyre and rhyolite porphyry**
- Tdrd — **Rhyodacite tuff**
- Tdb — **Breccia**
- Tdr — **Rhyolite**
- To — **Ohanapecosh Formation (Oligocene)—Locally, includes:**
  - Tolk — **Tuff member of Lake Keechelus**
- Tv — **Volcanic rocks (Oligocene)**

ROCKS WEST OF THE STRAIGHT CREEK FAULT

- Tdg — **Diabase, gabbro, and basalt (Oligocene? and Eocene)**

Green River-Cabin Creek Block

- Tn — **Naches Formation (early Oligocene? to middle Eocene)—Divided into:**
  - Tns — **Feldspathic sandstone and volcanic rocks (late and middle Eocene)**
  - Tnr — **Rhyolite (late and middle Eocene)**
  - Tnb — **Basalt (late and middle Eocene)**
  - Tng — **Guye Sedimentary Member (late and middle Eocene)**
  - Tnmc — **Mount Catherine Rhyolite Member (late and middle Eocene)**
  - Tnbg — **Glomeroporphyritic basalt (late and middle Eocene)**
- Tp — **Puget Group—Divided into:**
  - Tpr — **Renton Formation (late and middle Eocene)**
  - Tpt — **Tukwila Formation (late and middle Eocene)**
  - Tptm — **Tiger Mountain Formation (middle Eocene)**
- Tmp — **Volcanic rocks of Mount Persis (late? Eocene)**
- Trr — **Raging River Formation (middle Eocene)**

ROCKS EAST OF THE STRAIGHT CREEK FAULT

Teanaway River Block

Roslyn Formation (late and middle Eocene)—Divided into:

- Tru — **Upper member (late Eocene)**
- Trm — **Middle member (late and middle Eocene)**
- Trl — **Lower member (middle Eocene)**
- Tt — **Teanaway Formation (middle Eocene)**
- Tdg — **Diabase, gabbro, and basalt (Eocene)**

Swauk Formation (middle and early Eocene)—Divided into:

- Tss — **Sandstone**
- Tsc — **Conglomerate facies (middle and early Eocene)**
- Tssp — **Silver Pass Volcanic Member (early Eocene)**
- Tsi — **Ironstone (early Eocene)**

Manastash River Block

- Tbf — **Basalt of Frost Mountain (middle Eocene)—Locally divided into:**
  - Tbfb — **Basalt breccia and tuff**
- Tta — **Taneum Formation (early Eocene)**
- Tm — **Manastash Formation (early Eocene)**

ROCKS SOUTHWEST OF DARRINGTON-DEVILS MOUNTAIN FAULT ZONE

Rocks of the western mélange belt (middle Eocene and (or) Late Cretaceous)—Divided into:

- TKwa — **Argillite and graywacke**
- TKwv — **Metavolcanic rocks**
- TKwg — **Metagabbro**
- TKwu — **Ultramafic rocks**

Rocks of the eastern mélange belt (middle Eocene and (or) Late Cretaceous)—Divided into:

- TKev — **Chert, mafic metavolcanic rock, amphibolite, and marble**
- TKem — **Marble**
- pTqm — **Quartz Mountain stock (pre-Tertiary)**

Lookout Mountain Formation of Stout (1964) (pre-Tertiary)—Divided into:

- pTlm — **Mica schist**
- pTla — **Amphibolite and hornblende tonalite gneiss**
- pTlg — **Gabbro and metagabbro**

ROCKS IN DARRINGTON-DEVILS MOUNTAIN FAULT ZONE

- TKt — **Tectonic complex of Stout (1964) (Tertiary and (or) Cretaceous)— Locally divided into:**
  - TKtu — **Ultramafic rocks**

ROCKS NORTHEAST OF DARRINGTON-DEVILS MOUNTAIN FAULT ZONE

- Kt — **Tonalite (Late Cretaceous)**
- Knp — **Metavolcanic rocks of North Peak (Late Cretaceous)**

Easton Metamorphic Suite (Early Cretaceous)—Divided into:

- Kes — **Shuksan Greenschist**
- Ked — **Darrington Phyllite**
- Ktz — **Tectonic zone (Early Cretaceous)**
- Khb — **Tonalite gneiss of Hicks Butte (Early Cretaceous)**
- Kbg — **Banded gneiss (Early Cretaceous)**

Ingalls Tectonic Complex (Early Cretaceous or Late Jurassic)

- KJis — **Foliated and massive serpentinite and serpentinized meta-peridotite**
- KJim — **Metabasalt, tuff, and breccia**
- KJid — **Diabase and gabbro**
- KJia — **Amphibolite**

Contact—Dashed where inferred; dotted where concealed; queried where uncertain

High-angle Fault—Dashed where inferred; dotted where concealed. Bar and ball on downthrown side. Arrows shown in cross section indicate direction of relative movement

Major Folds—Dotted where concealed. Arrowhead along axial trace shows direction of plunge

- **Anticline**
- **Syncline**
- **Overturned Syncline**

Strike and dip of bedding

- **Inclined**
- **Inclined, top known**
- **Overturned**
- **Overturned, top known**
- **Vertical**
- **Vertical, top towards ball**
- **Horizontal**

Strike and dip of foliation—In igneous and metamorphic rocks

- **Inclined**
- **Vertical**

Lineation—Showing bearing and plunge. May be combined with other symbols

Zone of sheared rock—See description of sandstone unit of Swauk Formation (Tss)

Zone of foliated rock—See Description of foliated and massive serpentinite and serpentinized metaperidotite (KJis) of Ingalls Tectonic Complex

Zone of silicified rhyolite

Crest of moraine

Spillway—Arrow indicates direction of flow of drainage from recessional glacial lakes. Number indicates present day altitude

Landslide arrow—Shows direction of movement of landslide

Location of dated sample—See Table 1 in pamphlet

Teanway dike swarm—Area underlain by dikes. Density of symbols indicate estimated percent (80-85%, 5-10%)

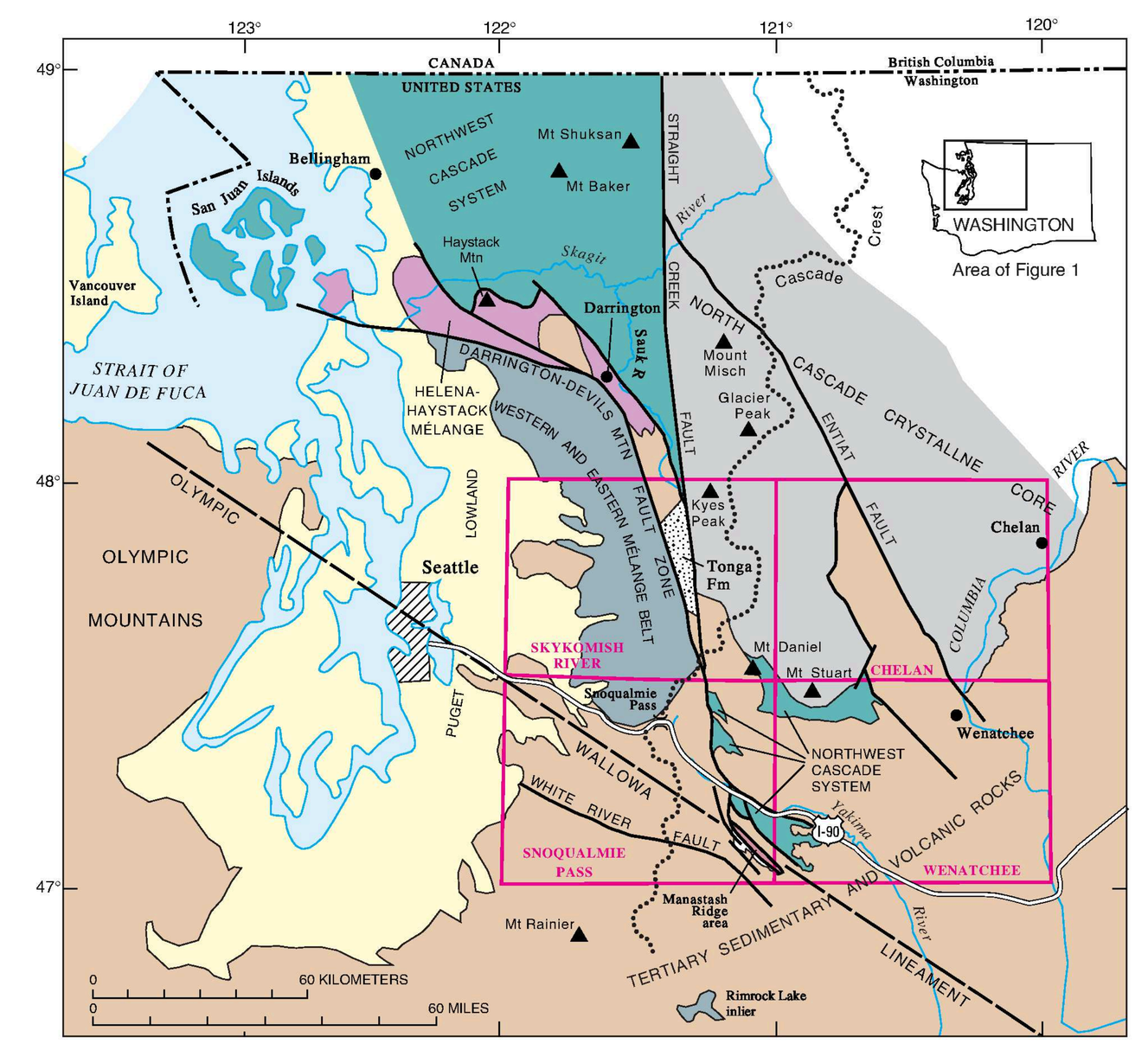


Figure 1. Regional overview of geologic setting for Snoqualmie Pass quadrangle, Washington. Arc plutons are not shown. Wenatchee 1° by 2° quadrangle is composed of the Skykomish River, Chelan, Snoqualmie Pass, and Wenatchee 1:000,000-scale quadrangles (shown in magenta).

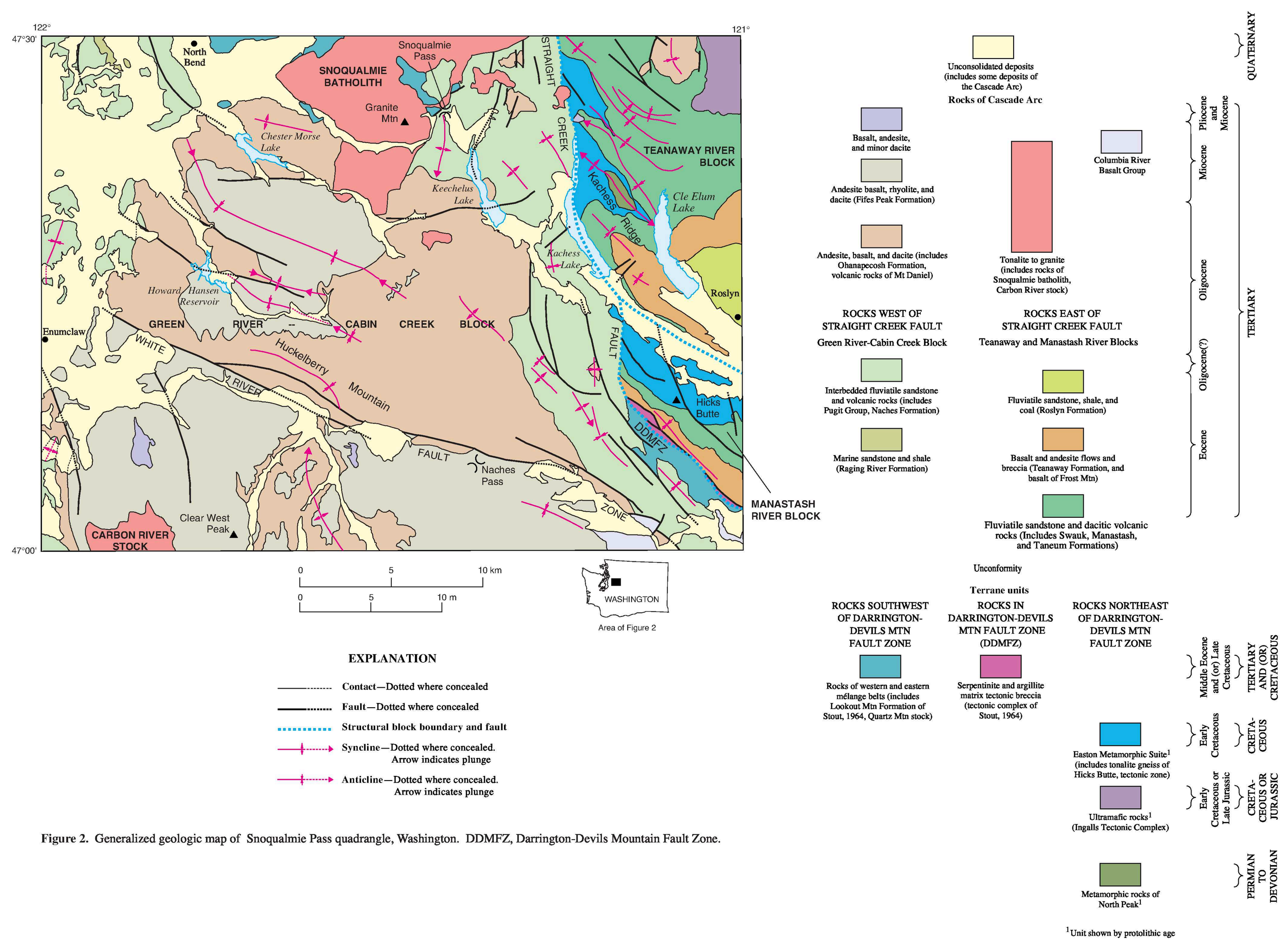
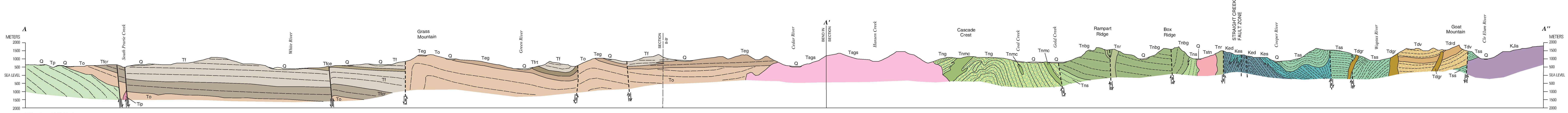
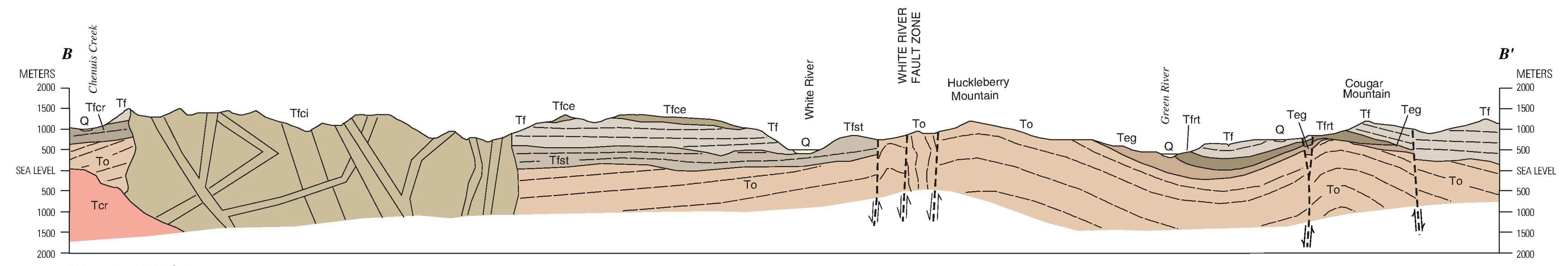


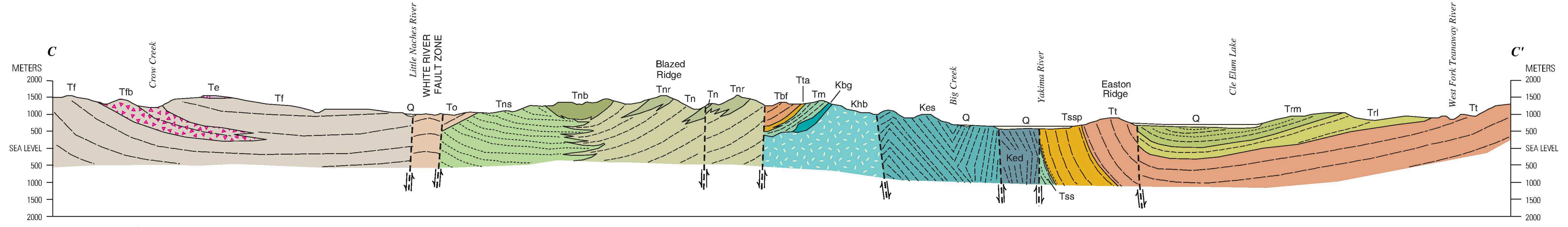
Figure 2. Generalized geologic map of Snoqualmie Pass quadrangle, Washington. DDMFZ, Darrington-Devils Mountain Fault Zone.



500 meters=1640.4 feet
Unconsolidated deposits, (Q) undifferentiated and exaggerated in thickness, small areas not shown



500 meters=1640.4 feet
Unconsolidated deposits, (Q) undifferentiated and exaggerated in thickness, small areas not shown



500 meters=1640.4 feet
Unconsolidated deposits, (Q) undifferentiated and exaggerated in thickness, small areas not shown

GEOLOGIC MAP OF THE SNOQUALMIE PASS 30×60 MINUTE QUADRANGLE, WASHINGTON

By
R.W. Tabor, V.A. Frizzell, Jr., D.B. Booth, and R.B. Waitt

2000

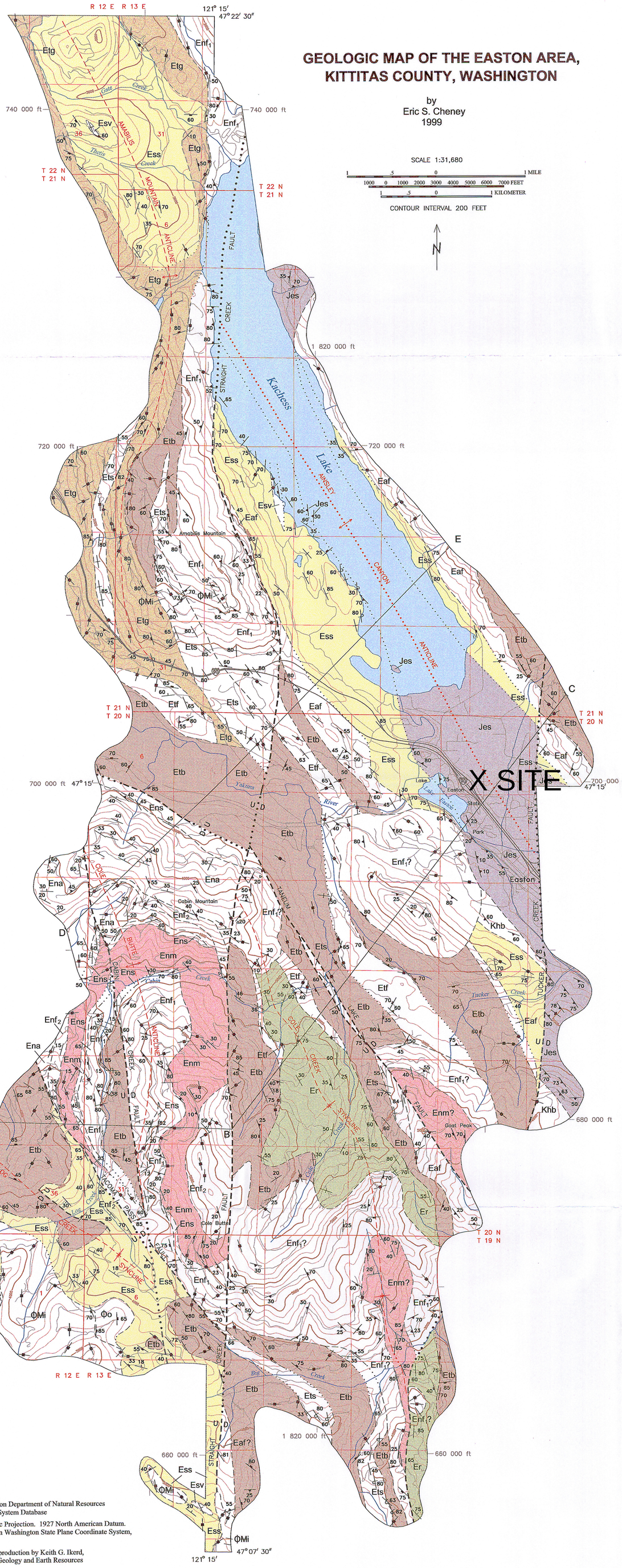
WASHINGTON DIVISION OF GEOLOGY AND EARTH RESOURCES
Raymond Lasmanis, State Geologist

OPEN FILE REPORT 99-4
GEOLOGIC MAP OF THE EASTON AREA,
KITTITAS COUNTY, WASHINGTON

WASHINGTON STATE DEPARTMENT OF
Natural Resources
Jennifer M. Belcher - Commissioner of Public Lands

GEOLOGIC MAP OF THE EASTON AREA, KITTITAS COUNTY, WASHINGTON

by
Eric S. Cheney
1999



SCALE 1:31,680

1 .5 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 .5 0 1 KILOMETER

CONTOUR INTERVAL 200 FEET

N

EXPLANATION

Tertiary Intrusive Rocks

ΦMi — Tonalitic intrusions (Oligocene to Miocene)

Tertiary Sedimentary and Volcanic Rocks

Ohanapecosh Formation (Oligocene)

Φo — Predominantly andesitic rock

Naches Formation (Eocene)

Ens — Arkosic sandstone and black and olive siltstone

Ena — Andesitic volcaniclastic rock

Enf_2 — Felsic volcanic rock, locally contains felsic clasts

Enm — Andesitic volcaniclastic rock with felsic clasts

Enf_1 — Felsic volcanic rock, locally contains felsic clasts

Roslyn Formation (Eocene)

Er — Arkosic sandstone and black to olive siltstone

Teanaway Formation (Eocene)

Etf — Felsic volcaniclastic rock in Etg and Etb

Ets — Predominantly arkosic sandstone and siltstone in Etg and Etb

Etb — Black, subophitic, commonly amygdaloidal basalt

Etg — Glomeroporphyritic, commonly amygdaloidal basalt

Taneum Formation (Eocene)

Eaf — Predominantly felsic volcanic rock

Swauk Formation (Eocene)

Ess — Arkosic sandstone and black and olive siltstone

Esv — Andesitic volcaniclastic rock

Mesozoic Metamorphic Rocks

Orthogneiss of Hicks Butte (Cretaceous)

Khb — Dioritic orthogneiss

Shuksan Greenschist (Jurassic)

Jes — Predominantly green phyllite

Unconsolidated deposits are not shown, but contacts, faults, and folds, where dotted, are concealed beneath unconsolidated deposits.

Contacts

Inferred; dotted where concealed

Faults

High-angle fault - inferred; dotted where concealed; U, upthrown block; D, downthrown block; half arrows in cross sections indicate direction of relative movement

Folds

Anticline - inferred; dotted where concealed

Syncline - inferred; dotted where concealed

Strike and dip of bedding

65 inclined

vertical

55 overturned

Strike and dip of joints

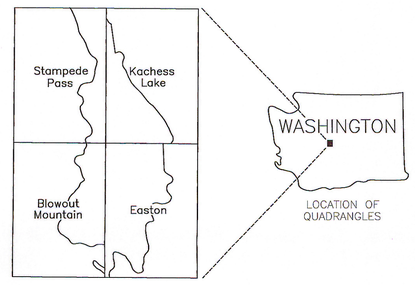
50 inclined

vertical

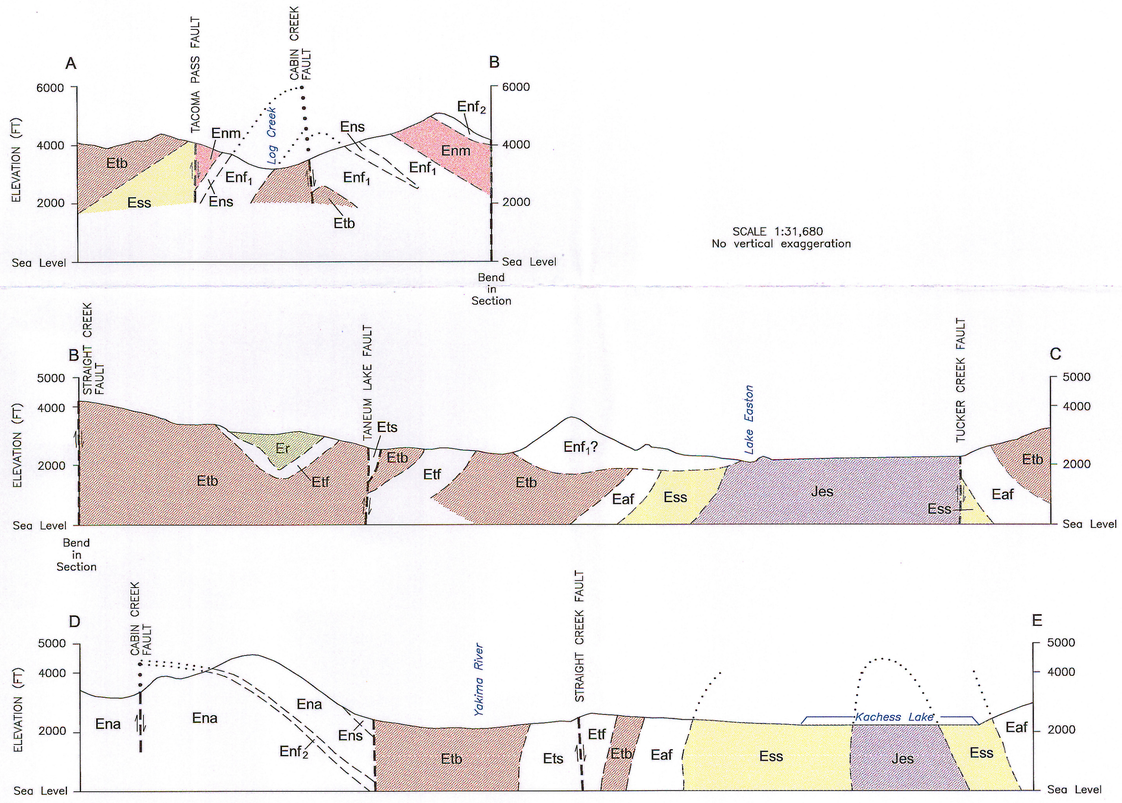
Strike and dip of cleavage

70 inclined

80 inclined



CROSS SECTIONS



Base map from Washington Department of Natural Resources Geographic Information System Database

Lambert Conformal Conic Projection. 1927 North American Datum. 10,000-foot ticks based on Washington State Plane Coordinate System, South zone

Cartographic design and production by Keith G. Ikerd, Washington Division of Geology and Earth Resources

USGS
science for a changing world

Prepared in cooperation with the Washington State Department of Ecology and Kittitas County

Hydrogeologic Framework and Groundwater/Surface-Water Interactions of the Upper Yakima River Basin, Kittitas Count Central Washington

Scientific Investigations Report 2014–5119

U.S. Department of the Interior
U.S. Geological Survey

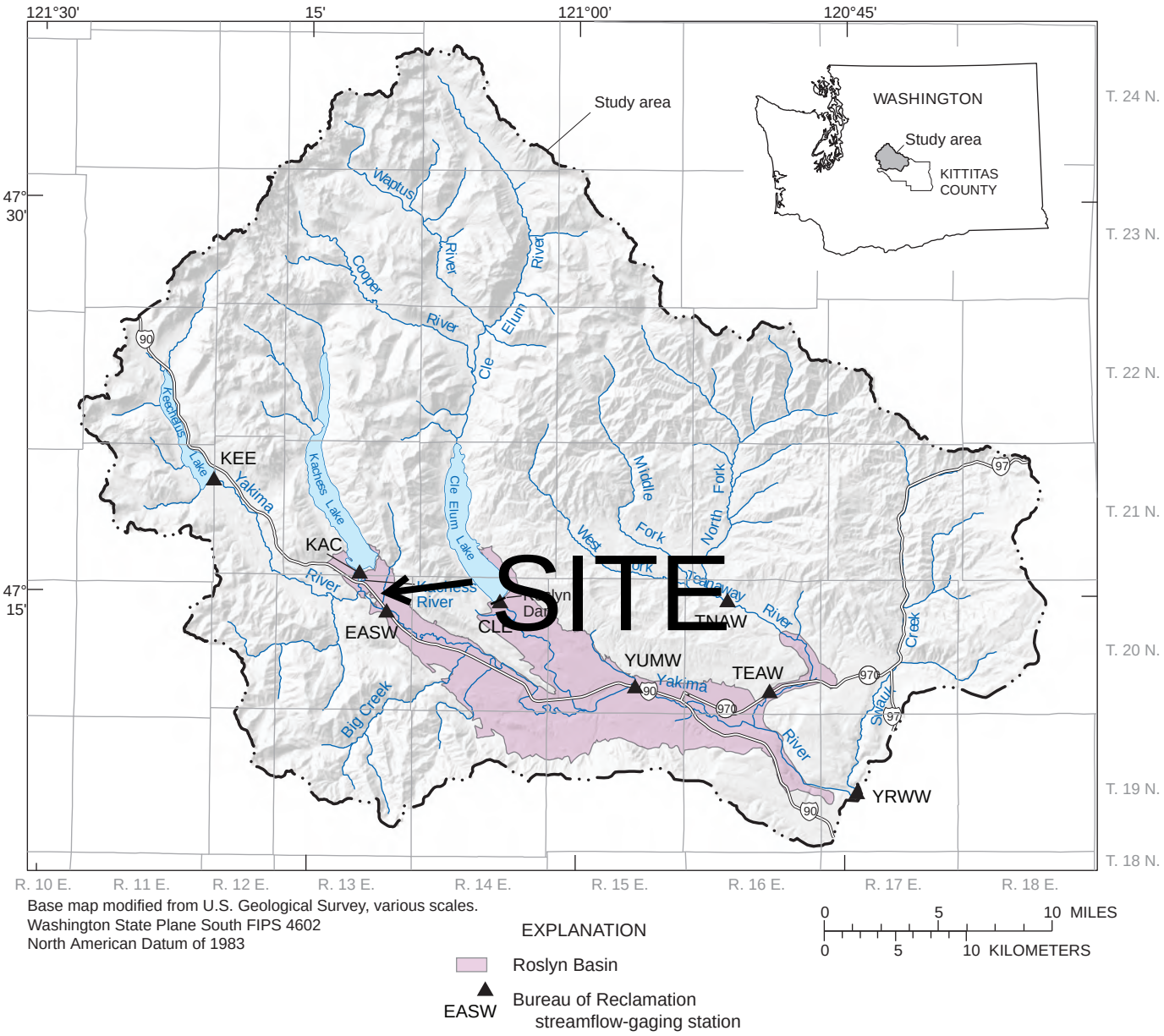


Figure 2. Upper Yakima River Basin, Kittitas County, central Washington. Abbreviations refer to streamflow-gaging stations as shown in table 1

Methods of Investigation

A diverse suite of methods was used to compile and analyze the hydrogeologic, hydrologic, and geochemical data for this study. These methods were used to synthesize existing geologic and hydrogeologic data into a basin-wide hydrogeologic framework, characterize the geochemistry of groundwater and surface water, characterize groundwater and surface-water interactions, estimate groundwater use, and develop a water budget.

Collection and Analysis of Hydrogeological Data

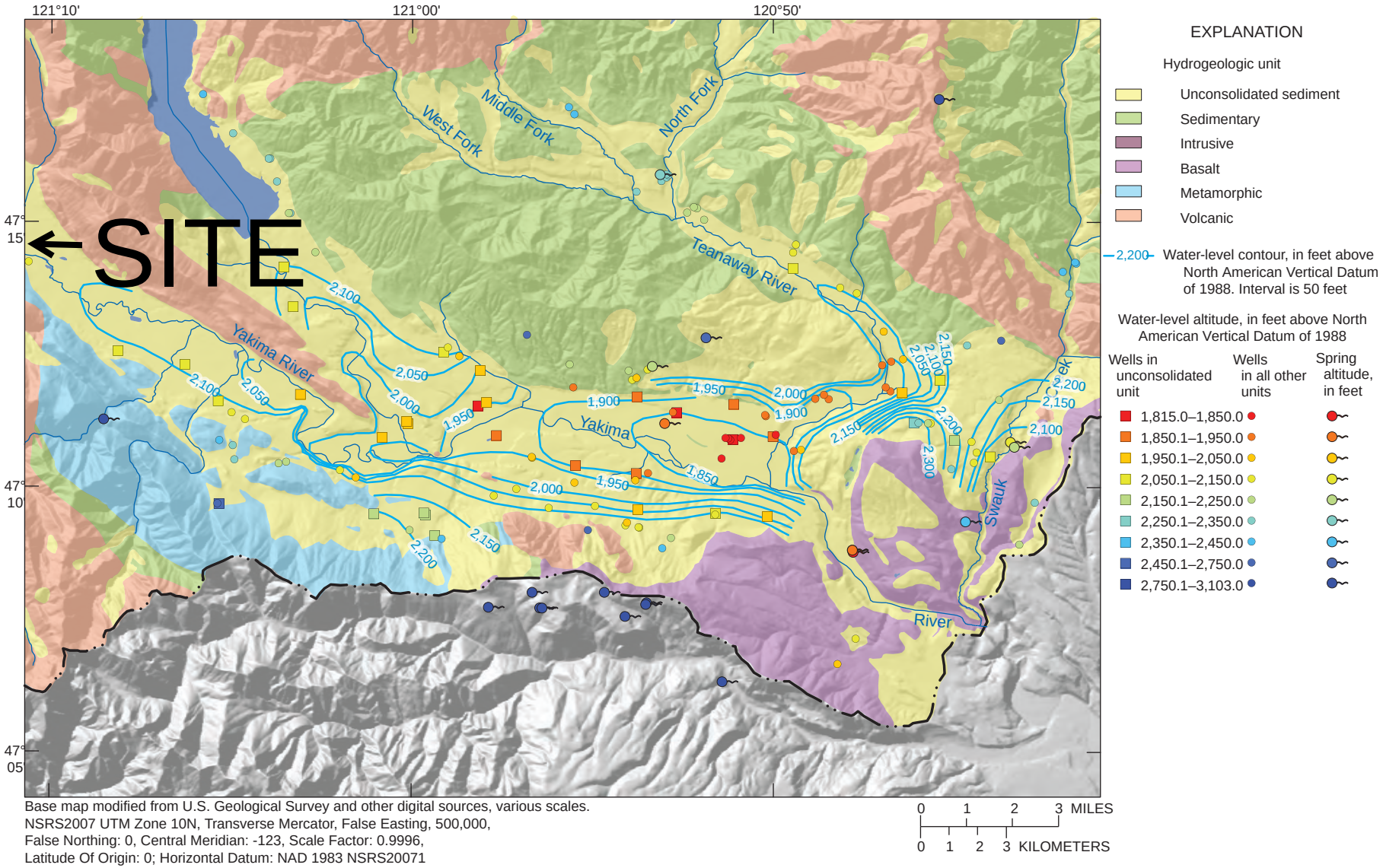
The surficial geology for the study area was compiled from previous maps developed by Dragovich and others (2002), Brown and Dragovich (2003), Cheney and Hayman (2007), and Haugerud and Tabor (2009). A geologic map of the upper Kittitas County study area was clipped from a larger map by Haugerud and Tabor (2009) and is included on plate 1. Additional lithostratigraphic information was obtained from drillers' logs from 271 project wells; 196 of these wells were field-inventoried in April and May of 2011 (Fasser and Julich, 2011). The locations of the project wells used to describe the hydrogeology of the study area are shown on plates 1 and 2. Selected physical and hydrologic data for the project wells are included on table 7 (at back of report).

The geologic units were grouped into six hydrogeologic units based on similar rock types, lithologic characteristics, and large-scale hydrologic properties. The hydrogeologic units described in this report include unconsolidated sediment (UNC), basalt (BAS) , volcanic rocks (VOLC), sedimentary rocks (SED), metamorphic rocks (META), and intrusive rocks (INT) (table 2). The surficial extent of the units across the study area and their subsurface extent along four hydrogeologic sections are illustrated on plate 2. The open intervals of the wells are color coded based on the hydrogeologic unit that the wells are open to. Using the hydrogeologic unit map and information contained on drillers' logs for the project wells, four hydrogeologic sections were constructed to identify and correlate hydrogeologic units, primarily on the basis of rock type and stratigraphic position (*A*–*A*′ through *D*–*D*′, pl. 2).

Table 2. Hydrogeologic units, well yields, and estimated hydraulic conductivity in upper Yakima River Basin, Kittitas County, central Washington.

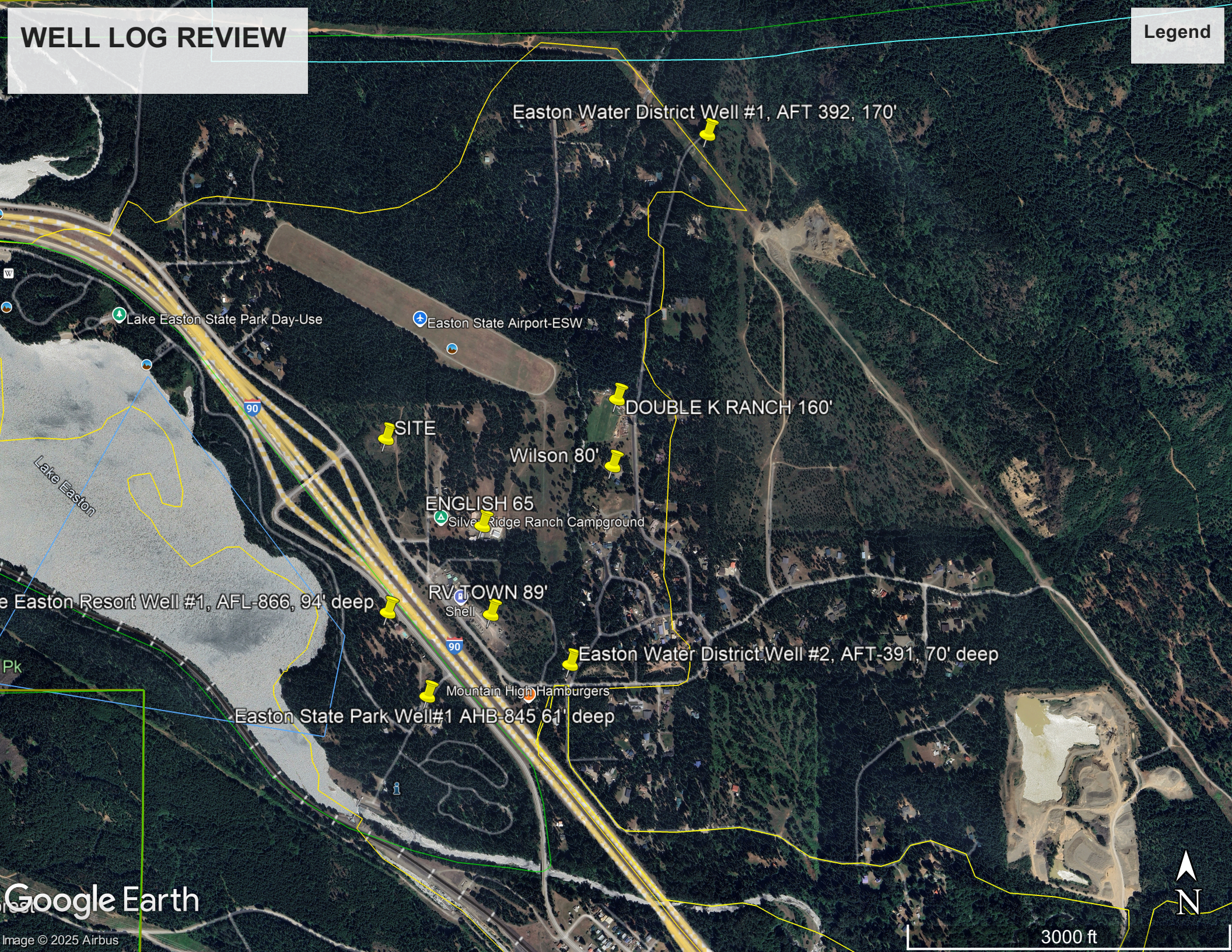
[**Abbreviations:** min, minimum; max, maximum; gal/min, gallon per minute; ft/d, foot per day]

Hydro-geologic unit	Description of hydrogeologic units	Number of project wells open to unit	Well yield [min, median, max] {number of values} (gal/min)	Estimated hydraulic conductivity [min, median, max] {number of wells} (ft/d)
UNC	UNCONSOLIDATED SEDIMENT—Unconsolidated glacial and non-glacial deposits; includes alluvium, talus, landslide deposits, glaciolacustrine deposits, alpine glacial deposits, recessional outwash, outburst flood deposits.	67	[0, 25, 1,600] {53}	[4.4, 190, 1,600] {10}
BAS	Flood BASALT of the Grande Ronde and associated interbeds of the Ellensburg Formation.	9	[1, 17.5, 75] {8}	{0}
VOLC	VOLCANIC ROCKS—basalt, andesite, some rhyolite, breccias, tuffs of the Fifes Peak episode (Tcaf) and Ohanapecosh episode (Tcao). As well as basalt and rhyolite flows, breccia, and tuff intermixed with some sandstone and conglomerate; Teanaway Fm; Tev. This unit also includes dacite and andesite flows and pyroclastic rocks locally interbedded in the Swauk Fm; Silver Pass Volcanic Member of Swauk Fm.	18	[3, 18, 42] {14}	[0.02] {1}
SED	SEDIMENTARY ROCKS—sandstone and conglomerate with subordinate shale, coal; Roslyn Fm; Tes as well as stream-deposited sandstone and conglomerate; Swauk Fm; Tees.	113	[0, 10, 150] {94}	[1.6, 2.6, 3.6] {2}
META	METAMORPHIC ROCKS—black phyllite, typically with abundant quartz veinlets; Ked, Darrington Phyllite; fine grained greenschist and (or) blueschist derived mostly from ocean-floor basalt; Kes, Shuksan Greenschist.	20	[0, 3, 40] {17}	{0}
INT	INTRUSIVE ROCKS—peridotite and foliated and massive serpentinite; Ingalls terrane, Jis.	3	[0, 5, 60] {3}	{0}



Base map modified from U.S. Geological Survey and other digital sources, various scales.
NSRS2007 UTM Zone 10N, Transverse Mercator, False Easting, 500,000,
False Northing: 0, Central Meridian: -123, Scale Factor: 0.9996,
Latitude Of Origin: 0; Horizontal Datum: NAD 1983 NSRS20071

Figure 22. Potentiometric surface and generalized flow directions in hydrogeologic units, upper Yakima River Basin, Kittitas County, central Washington


WELL LOG REVIEW
Legend
Easton Water District Well #1, AFT 392, 170'
Lake Easton State Park Day-Use
Easton State Airport-ESW
DOUBLE K RANCH 160'
SITE
Wilson 80'
Lake Easton
ENGLISH 65
Silver Ridge Ranch Campground
e Easton Resort Well #1, AFL-866, 94' deep
RV TOWN 89'
Shell
Easton Water District Well #2, AFT-391, 70' deep
Mountain High Hamburgers
Easton State Park Well#1 AHB-845 61' deep
Google Earth
Image © 2025 Airbus
N
3000 ft

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT
STATE OF WASHINGTON

Application No. /
Permit No.

(1) **OWNER:** Name Mr. & Mrs. Ken E English Address 1203 Laurel Street Kent, Wa.

(2) **LOCATION OF WELL:** County Kititas — NE ¼ SW ¼ Sec 2 T. 20 N., R 13 W.M.

Bearing and distance from section or subdivision corner East Nelson RV park

(3) **PROPOSED USE:** Domestic X Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) **TYPE OF WORK:** Owner's number of well (if more than one) 1
New well X Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary X Jetted ☐

(5) **DIMENSIONS:** Diameter of well 6 inches.
Drilled 66 ft. Depth of completed well 66 ft.

(6) **CONSTRUCTION DETAILS:**

Casing installed: 6 " Diam. from 0 ft. to 61 ft.
Threaded PVC liner 4 " Diam. from 58 ft. to 65 ft.
Welded X " Diam. from ft. to ft.

Perforations: Yes X No ☐
Type of perforator used blade cut
SIZE of perforations 1/8 in. by 6 in.
perforations from 58 ft. to 65 ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☐ No X
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No X Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes X No ☐ To what depth? 30+ ft.
Material used in seal Bentonite
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

(7) **PUMP:** Manufacturer's Name
Type: H.P.

(8) **WATER LEVELS:** Land-surface elevation above mean sea level 2200 ft.
Static level 33' ft. below top of well Date
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) **WELL TESTS:** Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☐ If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☐ No ☐

(10) **WELL LOG:**

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL			FROM	TO
Top soil	brn	S	0	6
Sandy clay and boulders		M	6	10
Hard pan	brn	H	10	15
Clay and boulders	brn	H	15	20
Hardpan and boulders	brn	H	20	26
Brown clay and boulders		H	26	29
unconsolidated cobbles and b oulders		H	29	39
Hardpan and boulders	brn	H	39	40
Sandy cobbles andboulders		H	40	45
Loose sand and rock	brn	M	45	55
Loose snad and rock	brn	M	55	58
Water at 45 - 55 ft. 1 gpm				
Water at 55 - 58 ft. 15 gpm				
Caving loose and spinning				
Loose sand and gravel			58	66
Water 25 - 30 gpm at 66 ft.				
Top of PVC liner from 58 to 65 ft.				
4" x 5" bell top				
Cased with 61 ft of 6" casing				
Cased wth 7 ft. of 4" Inside diameter				
PVC liner bottom of well. Perforated.				

RECEIVED
NOV - 2 1984
DEPARTMENT OF ECOLOGY
CENTRAL REGION

Work started 9/17/84 19 Completed 9/20/84 19

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME RIEBE WELL DRILLING
(Person, firm, or corporation) (Type or print)

Address 1503 East Nob Hill Blvd.

[Signed] John H. Riebe
(Well Driller)

License No. 0422 Date 10/2/84, 19

DH 11/3/84

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

File Original and First Copy with Department of Ecology
Second Copy—Owner s Copy
Third Copy—Driller s Copy

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No 39153

UNIQUE WELL I D #

Water Right Permit No

(1) OWNER Name DOUBLE K RANCH Address EASTON

(2) LOCATION OF WELL County KITTITAS NE ¼ SE ¼ Sec 20 T 20 N R 13 E W M

(2a) STREET ADDDRESS OF WELL (or nearest address)

(3) PROPOSED USE ☑ Domestic ☐ Industrial ☐ Municipal ☐ ☐ Irrigation ☐ Test Well ☐ Other ☐ ☐ DeWater

(4) TYPE OF WORK Owner s number of well (if more than one)

Abandoned ☐ New well ☑ Method Dug ☐ Bored ☐ Deepened ☐ Cable ☐ Driven ☐ Reconditioned ☐ Rotary ☑ Jetted ☐

(5) DIMENSIONS Diameter of well 6 inches Drilled 160 feet Depth of completed well 160 ft

(6) CONSTRUCTION DETAILS

Casing installed 6 Diam from 0 ft to 140 ft

Welded ☑ Liner installed ☐ Threaded ☐ Diam from ft to ft

Diam from ft to ft

Perforations Yes ☐ No ☑

Type of perforator used

SIZE of perforations in by in

perforations from ft to ft

perforations from ft to ft

perforations from ft to ft

Screens Yes ☑ No ☐

Manufacturer s Name HOUSTON W S.

Type CONTINUOUS WRAP Model No

Diam 5" Slot size .060 from 150 ft to 155 ft

Diam Slot size from ft to ft

Gravel packed Yes ☐ No ☑ Size of gravel

Gravel placed from ft to ft

Surface seal Yes ☑ No ☐ To what depth? 20 ft

Material used in seal BENTONITE

Did any strata contain unusable water? Yes ☐ No ☐

Type of water? Depth of strata

Method of sealing strata off

(7) PUMP Manufacturer s Name

Type HP

(8) WATER LEVELS Land surface elevation above mean sea level ft

Static level 30 ft below top of well Date 8/12/93

Artesian pressure lbs per square inch Date

Artesian water is controlled by (Cap valve etc)

(9) WELL TESTS Drawdown is amount water level is lowered below static level

Was a pump test made? Yes ☐ No ☐ If yes by whom?

Yield gal /min with ft drawdown after hrs

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test

Bailer test gal /min with ft drawdown after hrs

Airtest 15 gal /min with stem set at 140 ft for 2 hrs

Artesian flow g p m Date

Temperature of water Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation Describe by color character size of material and structure and show thickness of aquifers and the kind and nature of the material in each stratum penetrated with at least one entry for each change of information

MATERIAL	FROM	TO
SOIL	0	5
GRAVEL, SAND	5	25
SAND, CLAY	25	30
GRAVEL, SAND TO SILT	30	65
CLAY, BLUE	65	75
SAND, BLUE, OCC CLAY	75	105
CLAY, BLUE	105	145
CLAY, BLUE, OCC QUARTZ	145	160

RECEIVED
OCT - 4 1993
DEPARTMENT OF E

Work started 8/10 19 Completed 8/12 1993

WELL CONSTRUCTOR CERTIFICATION

I constructed and/or accept responsibility for construction of this well and its compliance with all Washington well construction standards Materials used and the information reported above are true to my best knowledge and belief

NAME BACH DRILLING CO (PERSON FIRM OR CORPORATION) (TYPE OR PRINT)

Address RT 5 BOX 1010

(Signed) (WELL DRILLER) License No 1776

Contractor s Registration No HIKE BAC.133N4 Date 8/12 1993

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050 1 20 (10/87) 1329 ® 18

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

STATE OF WASHINGTO.
DEPARTMENT OF CONSERVATION AND DEVELOPMENT

WELL LOG Easton St. Park No. A.6414

Date 9-24, 1962

Record by well driller

Source driller's record

Location: State of WASHINGTON

County Kittitas

Area

Map

¼ ¼ sec. 3 T. 20 N., R. 13 E. WM

Diagram of Section

29/13-3J

Drilling Co. Ralph R. Charlton

Address Rt. 1, Okanogan, Wash.

Method of Drilling Date 1-9-62, 19

Owner U.S. Bureau of Reclamation

Address Yakima, Wash.

Land surface, datum ft. above / below

CORRELATION	MATERIAL	THICKNESS (feet)	DEPTH (feet)
	(Transcribe driller's terminology literally but paraphrase as necessary, in parentheses. If material water-bearing, so state and record static level if reported. Give depths in feet below land-surface datum unless otherwise indicated. Correlate with stratigraphic column, if feasible. Following log of materials, list all casings, perforations, screens, etc.)		
	Glacier till	41	41
	Water gravel	20	61
	PUMP TEST:		
	Dim. 10"x61'		
	SWL: 44 ft.		
	DD: 30 ft.		
	Yield: 200 g.p.m.		
	Type & size of pump: 4" Turbine		
	" " " " motor: Wisconsin gas		
	CASING:		
	10" diam. from 0 to 61 ft.		
	Shoe at 61 ft.		
	PERFORATIONS:		
	per ¼"x8" - 4 per foot from 41 to 61 ft.		

Turn up

Sheet ... of ... sheets

File Original and First Copy with Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

307 Start Card No. 27268

Water Right Permit No. J

(1) OWNER: Name EASTON Address

(2) LOCATION OF WELL: County KITITAS N ¼ SE ¼ Sec 11 T. 20 N., R. 13 W.M.

(2a) STREET ADDDRESS OF WELL (or nearest address)

(3) PROPOSED USE: ☐ Domestic ☐ Industrial ☐ Municipal ☑ ☐ Irrigation ☐ Test Well ☐ Other ☐ ☐ DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one)
Abandoned ☐ New well ☑ Method: Dug ☐ Bored ☐ Deepened ☐ Cable ☐ Driven ☐ Reconditioned ☐ Rotary ☑ Jetted ☐

(5) DIMENSIONS: Diameter of well 8 inches.
Drilled 170 feet. Depth of completed well 165 ft.

(6) CONSTRUCTION DETAILS:
Casing Installed: 8 " Diam. from 0 ft. to 168 ft.
Welded ☐ Liner installed ☐ Threaded ☐ " Diam. from ft. to ft.
" Diam. from ft. to ft.

Perforations: Yes ☐ No ☑
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☐ No ☑
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☑ Size of gravel
Gravel placed from ft. to ft.

Surface seal: Yes ☑ No ☐ To what depth? 20 ft.
Material used in seal BENTONITE
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name
Type: H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 105 ft. below top of well Date
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☐ If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal./min. with ft. drawdown after hrs.
Airtest 100 gal./min. with stem set at 165 ft. for 1 hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
cobbles - gravel	0	35
clay - gravel	35	60
sand - gravel (20gpm)	60	145
Black sand	145	160
gravel (100 gpm)	160	170

SEP 1991
DEPARTMENT OF ECOLOGY CENTRAL REGION OFFICE

Work started 9-12 19. Completed 9-15 1991

WELL CONSTRUCTOR CERTIFICATION:
I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Bach Drilling (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
Address Rt 5 Box 1010 Ellensburg
(Signed) Mike Bach (WELL DRILLER) License No. 22
Contractor's Registration No. MIKEBAC133W4 Date 9-19 1991

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (10/87) -1329- 3

WELL LOG CHANGE FORM

Instructions: Record any change made to the well log record on this form. Append this form to the well log image. File with the original.

WCL Log ID (Required) _____ Well Log ID 114258

Regional Office: ☒CRO ☐ERO ☐NWRO ☐SWRO

Type of Well: ☒ Water ☐ Resource

Notice of Intent: _____ Ecology Well ID Tag No. _____

Property (Well) Owner's Name Easton (Change name to Kittitas Co. W.D. #3)
Well Street Address _____
City _____ County Kittitas Zip Code _____

Location: SE 1/4-1/4 NE 1/4 Sec 2 Twn 20 R 13 (E) or W (Circle One)

Lat./Long: (Required) Lat. Deg. _____ Lat. Min/Sec _____
Long. Deg. _____ Long. Min/Sec _____
Horizontal Collection Method Code _____

Tax Parcel No _____

Type of Work: ☒ New Well ☐ Reconditioned ☐ Deepened
Well Log Received Date __/__/__
Well Diameter ___ (in inches) Well Depth _____ (in feet) Well Completed Date __/__/__

Driller's Ecology License No. _____
Trainee's Ecology License No. _____

Reason/Source of Change (Required)
Correcting 1/4-1/4-Section, Township, Range, and added accurate name of owner, per AL LANG AT EASTSIDE CONSULTANTS, Cle Elum (509) 674-7433

Signature of Well Log Tracker (Required) EG Date 1/2/03

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT
STATE OF WASHINGTON

Application No. 64-23334
Permit No. 64-23334P

(1) OWNER: Name R.V. TOWN Address P.O. Box 12 EASTON, WA. 98925

(2) LOCATION OF WELL: County KITTITAS NW ¼ NE ¼ Sec. 11 T. 20 N., R. 13E W.M.
Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☒

(4) TYPE OF WORK: Owner's number of well (if more than one)
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☒ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 8 inches.
Drilled 89 ft. Depth of completed well 92 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 8" Diam. from 0 ft. to 89 ft.
Threaded ☐ " Diam. from ft. to ft.
Welded ☒ " Diam. from ft. to ft.

Perforations: Yes ☒ No ☐
Type of perforator used MILLS
SIZE of perforations 3/8" in. by 2" in.
5 perforations from 71 ft. to 77 ft.
25 perforations from 85 ft. to 88 ft.
perforations from ft. to ft.

Screens: Yes ☐ No ☒
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☒ Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 20 ft.
Material used in seal BENTONITE
Did any strata contain unusable water? Yes ☒ No ☐
Type of water? SURFACE Depth of strata 13-19'
Method of sealing strata off WELL SEAL

(7) PUMP: Manufacturer's Name
Type: H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 30 ft. below top of well Date 10-5-78
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☒ If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test 60+ gal./min. with 0 ft. drawdown after hrs.
Artesian flow g.p.m. Date 10-5-78
Temperature of water Was a chemical analysis made? Yes ☐ No ☒

(10) WELL LOG:
Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
TOP SOIL - GRAVEL MIXED	0'	13'
GRAVEL & SAND - H2O	13'	19'
BROWN CLAY, SAND, MIXED	19'	47'
SAND & GRAVEL - H2O	47'	55'
HARDPAN - SOME COBBLES	55'	79'
WATER IN SAND (COARSE) LAYER AT 1' GRAVEL H2O	79'	89'

RECEIVED

Work started 9-16-, 1978 Completed 10-5-, 1978

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME W.T. LUKEMAN
(Person, firm, or corporation) (Type or print)
Address R-4 Box 246 ELLENSBURG
[Signed] Wm. T. Lukeman
(Well Driller)
License No. 0706 Date 10-20-78

(USE ADDITIONAL SHEETS IF NECESSARY)

S. F. No. 7356—OS—(Rev. 4-71)
ECY-070-28

STATE OF WASHINGTO
DEPARTMENT OF CONSERVATION AND DEVELOPMENT

WELL LOG Well #1 No. A.6250

Date 9-24, 1962

Record by well driller

Source driller's record

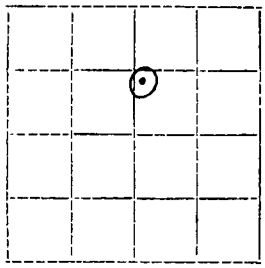


Diagram of Section

20/13E-11G
File number

Location: State of WASHINGTON

County Kittitas

Area

Map

¼ ¼ sec. 11 T. 20 N., R. 13 E. W.

Drilling Co. Ralph W. Charlton

Address Rt. 1, Okanogan, Wash.

Method of Drilling Date 1-8, 1962

Owner State Parks & Recreation Comm.

Address Olympia, Washington

Land surface, datum ft. above / below

CORRELATION	MATERIAL	THICKNESS (feet)	DEPTH (feet)
	(Transcribe driller's terminology literally but paraphrase as necessary, in parentheses. If material water-bearing, so state and record static level if reported. Give depths in feet below land-surface datum unless otherwise indicated Correlate with stratigraphic column, if feasible. Following log of materials, list all casings, perforations, screens, etc.)		
	Glacier till	42	42
	Water gravel	20	62
	PUMP TEST:		
	Dim. 10"x62'		
	SWL: 45 ft.		
	DD: 6 ft.		
	Yield: 250 g.p.m.		
	Type & size of pump: 4" Turbine		
	Type & size of engine: 22 h.p. Wisconsin gas		
	CASING:		
	10" diam. from 0 to 62 ft.		
	Shoe - 65 ft.		
	PERFORATIONS:		
	¼"x four per foot from	42 to	62 ft.

Turn up

Sheet ..... of ..... sheets

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. WO86072
UNIQUE WELL I.D. # QCL 119
Water Right Permit No. _____

(1) OWNER: Name Don Wilson Address P.O. Box 1983 North Bend Wa 9

(2) LOCATION OF WELL: County Easton Kittitas SE 1/4 SE 1/4 Sec 2 T. 20 N., R. 13 W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) _____ R

(3) PROPOSED USE: [X] Domestic [ ] Industrial [ ] Municipal [ ] Irrigation [ ] Test Well [ ] Other [ ] DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one) _____
Abandoned [ ] New well [X] Method: Dug [ ] Bored [ ] Deepened [ ] Cable [ ] Driven [ ] Reconditioned [ ] Rotary [X] Jetted [ ]

(5) DIMENSIONS: Diameter of well 10" 6" Inches.
Drilled 80 feet. Depth of completed well 80' ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6" Diam. from +2 ft. to 78' ft.
Welded [X]
Liner installed [ ] _____" Diam. from _____ ft. to _____ ft.
Threaded [ ] _____" Diam. from _____ ft. to _____ ft.

Perforations: Yes [ ] No [X]
Type of perforator used _____
SIZE of perforations _____ in. by _____ in.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

Screens: Yes [ ] No [X]
Manufacturer's Name _____
Type _____ Model No. _____
Diam. _____ Slot size _____ from _____ ft. to _____ ft.
Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes [ ] No [X] Size of gravel _____
Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes [X] No [ ] To what depth? 18' ft.
Material used in seal Bentonite
Did any strata contain unusable water? Yes [ ] No [X]
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(7) PUMP: Manufacturer's Name _____
Type: _____ H.P. _____

(8) WATER LEVELS: Land-surface elevation above mean sea level _____ ft.
Static level 48' ft. below top of well Date _____
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes [ ] No [ ] If yes, by whom? _____
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
	Approx	4/2 to 45	28m		
	Air Lift				

Date of test _____
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Airtest _____ gal./min. with stem set at _____ ft. for _____ hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? Yes [ ] No [ ]

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
Top Soil Brown m	0	3
silty sand gravel cobbels mainly H	3	54
sand gravel mainly color mH	54	60
sand gravel mainly color mH	60	80

RECEIVED
DEC 3 1996
DEPARTMENT OF ECOLOGY
CENTRAL REGIONAL OFFICE

Work Started 11/16/96 19. Completed 11/18/96 19

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Water Man Well Drilling (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 106 Berriman In Selah Wa 989

(Signed) Steve Mills (WELL DRILLER) License No. 1335

Contractor's Registration No. WATERMW0640 Date 11/18/96 19

(USE ADDITIONAL SHEETS IF NECESSARY)

Ecology is an Equal Opportunity and Affirmative Action employer. For special accommodation needs, contact the Water Resources Program at (206) 407-6600. The TDD number is (206) 407-6006.

ECY 050-1-20 (9/93)

LevelType	LevelTypeName	Source	SrcDOEId	LabNum	SamNum	SamCollectDate	ResultQty	ResultColi	UOMCode	UOMName	AnalyteGroupCode	AnalyteGroupName	TestPanelCode	TestPanelName	AnalyteName
P	Coliform Presence	01	112	26403	5/9/2024 12:00:00 AM	P	/100ml	Per 100 milliliters	MICRO	MICROBIOLOGICAL COLI_AP	ABSENCE / PRESENCE	TOTAL COLIFORM			
P	Coliform Presence	Distribution	291	38602	9/26/2025 12:00:00 AM	P	/100ml	Per 100 milliliters	MICRO	MICROBIOLOGICAL COLI_AP	ABSENCE / PRESENCE	TOTAL COLIFORM			
P	Coliform Presence	Distribution	291	38603	9/26/2025 12:00:00 AM	P	/100ml	Per 100 milliliters	MICRO	MICROBIOLOGICAL COLI_AP	ABSENCE / PRESENCE	TOTAL COLIFORM			
P	Coliform Presence	Distribution	291	38601	9/26/2025 12:00:00 AM	P	/100ml	Per 100 milliliters	MICRO	MICROBIOLOGICAL COLI_AP	ABSENCE / PRESENCE	TOTAL COLIFORM			
P	Coliform Presence	Distribution	291	35301	9/24/2025 12:00:00 AM	P	/100ml	Per 100 milliliters	MICRO	MICROBIOLOGICAL COLI_AP	ABSENCE / PRESENCE	TOTAL COLIFORM			
P	Coliform Presence	Distribution	291	09303	8/6/2025 12:00:00 AM	P	/100ml	Per 100 milliliters	MICRO	MICROBIOLOGICAL COLI_AP	ABSENCE / PRESENCE	TOTAL COLIFORM			
P	Coliform Presence	Distribution	291	09302	8/6/2025 12:00:00 AM	P	/100ml	Per 100 milliliters	MICRO	MICROBIOLOGICAL COLI_AP	ABSENCE / PRESENCE	TOTAL COLIFORM			
P	Coliform Presence	Distribution	291	09304	8/6/2025 12:00:00 AM	P	/100ml	Per 100 milliliters	MICRO	MICROBIOLOGICAL COLI_AP	ABSENCE / PRESENCE	TOTAL COLIFORM			
P	Coliform Presence	Distribution	291	09301	8/6/2025 12:00:00 AM	P	/100ml	Per 100 milliliters	MICRO	MICROBIOLOGICAL COLI_AP	ABSENCE / PRESENCE	TOTAL COLIFORM			
P	Coliform Presence	Distribution	291	05001	8/5/2025 12:00:00 AM	P	/100ml	Per 100 milliliters	MICRO	MICROBIOLOGICAL COLI_AP	ABSENCE / PRESENCE	TOTAL COLIFORM			
P	Coliform Presence	Distribution	291	12001	7/9/2025 12:00:00 AM	P	/100ml	Per 100 milliliters	MICRO	MICROBIOLOGICAL COLI_AP	ABSENCE / PRESENCE	TOTAL COLIFORM			
P	Coliform Presence	Distribution	112	26404	5/9/2024 12:00:00 AM	P	/100ml	Per 100 milliliters	MICRO	MICROBIOLOGICAL COLI_AP	ABSENCE / PRESENCE	TOTAL COLIFORM			
P	Coliform Presence	Distribution	112	15801	5/7/2024 12:00:00 AM	P	/100ml	Per 100 milliliters	MICRO	MICROBIOLOGICAL COLI_AP	ABSENCE / PRESENCE	TOTAL COLIFORM			

LevelType	LevelTypeName	Source	SrcDOEId	LabNum	SamNum	SamCollectDate	ResultQty	ResultColi	UOMCode	UOMName	AnalyteGroupCode	AnalyteGroupName	TestPanelCode	TestPanelName	AnalyteName
P	Coliform Presence	Distribution		111	83481	12/3/2024 12:00:00 AM	P	/100ml	Per 100 milliliters	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	TOTAL COLIFORM	
P	Coliform Presence	Distribution		111	40371	4/2/2024 12:00:00 AM	P	/100ml	Per 100 milliliters	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	TOTAL COLIFORM	
P	Coliform Presence	Distribution		112	01701	1/2/2024 12:00:00 AM	P	/100ml	Per 100 milliliters	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	TOTAL COLIFORM	
P	Coliform Presence	Distribution		064	01697	8/17/2000 12:00:00 AM	P	/100ml	Per 100 milliliters	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	TOTAL COLIFORM	
P	Coliform Presence	Distribution		064	01655	8/14/2000 12:00:00 AM	P	/100ml	Per 100 milliliters	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	TOTAL COLIFORM	
P	Coliform Presence	Distribution		064	71978	8/5/1997 12:00:00 AM	P	/100ml	Per 100 milliliters	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	TOTAL COLIFORM	

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LevelType       LevelTypeName   Source  SrcDOEId        LabNum  SamNum
SamCollectDate  ResultQty       ResultColi      UOMCode UOMName AnalyteGroupCode
AnalyteGroupName        TestPanelCode   TestPanelName   AnalyteName
MCL2    Secondary MCL   01      39G024  081     41975   11/24/1996 12:00:00 AM
0.4900          mg/L    Milligrams per Liter    IOC     INORGANIC CONTAMINANTS  IOC
COMPLETE INORGANIC ANALYSIS     IRON
MCL2    Secondary MCL   01      39G024  051     09706   4/14/1987 12:00:00 AM
2.9200          mg/L    Milligrams per Liter    IOC     INORGANIC CONTAMINANTS
ICHEM   PRE II/V INORGANIC ANALYSIS     IRON
MCL2    Secondary MCL   01      39G024  051     09706   4/14/1987 12:00:00 AM
0.3650          mg/L    Milligrams per Liter    IOC     INORGANIC CONTAMINANTS
ICHEM   PRE II/V INORGANIC ANALYSIS     MANGANESE
MCL2    Secondary MCL   02      39G025  052     16559   7/21/1988 12:00:00 AM
0.3700          mg/L    Milligrams per Liter    IOC     INORGANIC CONTAMINANTS
ICHEM   PRE II/V INORGANIC ANALYSIS     IRON
MCL2    Secondary MCL   02      39G025  052     16559   7/21/1988 12:00:00 AM
0.9140          mg/L    Milligrams per Liter    IOC     INORGANIC CONTAMINANTS
ICHEM   PRE II/V INORGANIC ANALYSIS     MANGANESE
P       Coliform Presence       Distribution            151     27954   9/4/2018
12:00:00 AM             P       /100ml  Per 100 milliliters     MICRO
MICROBIOLOGICAL COLI_AP ABSENCE / PRESENCE      TOTAL COLIFORM
P       Coliform Presence       Distribution            105     33960   11/2/2015
12:00:00 AM             P       /100ml  Per 100 milliliters     MICRO
MICROBIOLOGICAL COLI_AP ABSENCE / PRESENCE      TOTAL COLIFORM
P       Coliform Presence       Distribution            151     18728   7/1/2015
12:00:00 AM             P       /100ml  Per 100 milliliters     MICRO
MICROBIOLOGICAL COLI_AP ABSENCE / PRESENCE      TOTAL COLIFORM
P       Coliform Presence       Distribution            151     14725   6/1/2015
12:00:00 AM             P       /100ml  Per 100 milliliters     MICRO
MICROBIOLOGICAL COLI_AP ABSENCE / PRESENCE      TOTAL COLIFORM
P       Coliform Presence       Distribution            075     03133   8/20/2001
12:00:00 AM             P       /100ml  Per 100 milliliters     MICRO
MICROBIOLOGICAL COLI_AP ABSENCE / PRESENCE      TOTAL COLIFORM
P       Coliform Presence       Distribution            075     02763   6/13/2001
12:00:00 AM             P       /100ml  Per 100 milliliters     MICRO
MICROBIOLOGICAL COLI_AP ABSENCE / PRESENCE      TOTAL COLIFORM
P       Coliform Presence       Distribution            075     02265   8/6/1998
12:00:00 AM             P       /100ml  Per 100 milliliters     MICRO
MICROBIOLOGICAL COLI_AP ABSENCE / PRESENCE      TOTAL COLIFORM
MCL2    Secondary MCL   Distribution            052     06784   6/25/1981 12:00:00
AM      0.3700          mg/L    Milligrams per Liter    IOC     INORGANIC
CONTAMINANTS    ICHEM   PRE II/V INORGANIC ANALYSIS     IRON
MCL2    Secondary MCL   Distribution            052     06784   6/25/1981 12:00:00
AM      0.5800          mg/L    Milligrams per Liter    IOC     INORGANIC
CONTAMINANTS    ICHEM   PRE II/V INORGANIC ANALYSIS     MANGANESE
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