

IDAHO MUSEUM OF MINING AND GEOLOGY



Field Trip Road Log

October 5, 2013; Geology of Snake and Big Wood Rivers

Leader: Terry Maley

Note: odometers vary, mileages are approximate. Also, GPS values vary over time, but the listed points will get you within visual range of the features described.

Special Note: This is a far-ranging field trip and stop-to-stop mileages are not practical. Some mileages will be given from landmarks (stop lights, intersections, exits) to assist in route finding and trip maps will focus on local areas around stops, where necessary.

To Stop 1: From the Museum, proceed to I-84 via Warm Springs Ave. to Broadway (this is faster than going east on Warm Springs to Highway 21), turn east on freeway toward Twin Falls. Exit the Freeway at **Exit 121** toward King Hill on Old US 30, zero odometer and drive east on Old Highway 30; at about 1.4 to 2.0 miles note the massive sedimentary deposits of ancient Lake Idaho in the huge road cut on the left. Stop 1 is at mile 8.6 (GPS N42.98132; W115.16331). This is an enormous gravel bar from the Bonneville Flood. The “melon gravels” here were ripped from the walls of the Snake River Canyon at Twin Falls; the gravels are about 150 feet deep at this point. Looking across the valley, you can see the gravel deposits on the far side at the same elevation. About $\frac{3}{4}$ of a cubic mile of basalt was torn from the canyon walls and deposited here where the flow slowed. This stop is on Map 1.

To Stop 2: Drive about two miles to Stop 2 (GPS N42. 95563; W115.14855). Looking to the right, you can see what were formerly called “pressure ridges” in a lava flow. The more proper term is “tumuli” and represents not horizontal pressure, but vertical pressure from lava flowing under a partly solidified crust. Each will have a fracture down the center. When you rejoin the freeway, there are even better examples of tumuli on both sides of the highway as we proceed east toward Bliss. This stop is on Map 1.

To Stop 3: Continue on Old Highway 30 and enter the freeway heading east in less than a quarter-mile. Proceed on the freeway to Exit 137, zero odometer and head toward Bliss. At mile 2.7 turn **Right** on 1st Avenue. Head down the hill to a turnout at Stop 3 (GPS N42.91739; W114.95116), about 0.5 miles from the last turn. This overlooks the famous 1993 “Bliss Landslide.” The ancient Snake River had been dammed by lava flows just downstream and had created a lake at this point with deposition of a lot of clay (the “Yahoo Clay”), which can be seen on the other side of the road from the turnout. The clay is very slippery when wet and it is thought that irrigation on the bluff above the slide led to instability in the soil that led to the slide. You can see the slide scarp up to the right, the typical rotated blocks of the slide mass and “sag

ponds” that form in the low areas behind the blocks. The slide actually went all the way across the Snake River and dammed it for a while before it was cut through. You can see the remnant of the toe of the slide on the far side of the river just above the bridge. Looking across the canyon you can also see multiple landslides on the far side. This stop is on Map 2.

To Stop 4: Zero odometer and continue down the road and go straight at the bottom of the hill on River Road. Take River Road for about 4.7 miles to Stop 4 (GPS N.42.86547; W114.89689) at a large parking area adjacent to the Malad River Power Plant. At this stop, lava from McKinney Butte flowed into the dammed Snake River and formed vitrified (glassy) pillow basalts that are easily viewed just across River Road and Old Highway 30 from the parking lot. The lava flowed 30 miles from the Butte to get to this point about 70,000 years ago! Looking up the cliffs, you can see non-vitrified basalt that was deposited above the water level and has a totally different appearance (dull, not glassy). There is no map for this stop.

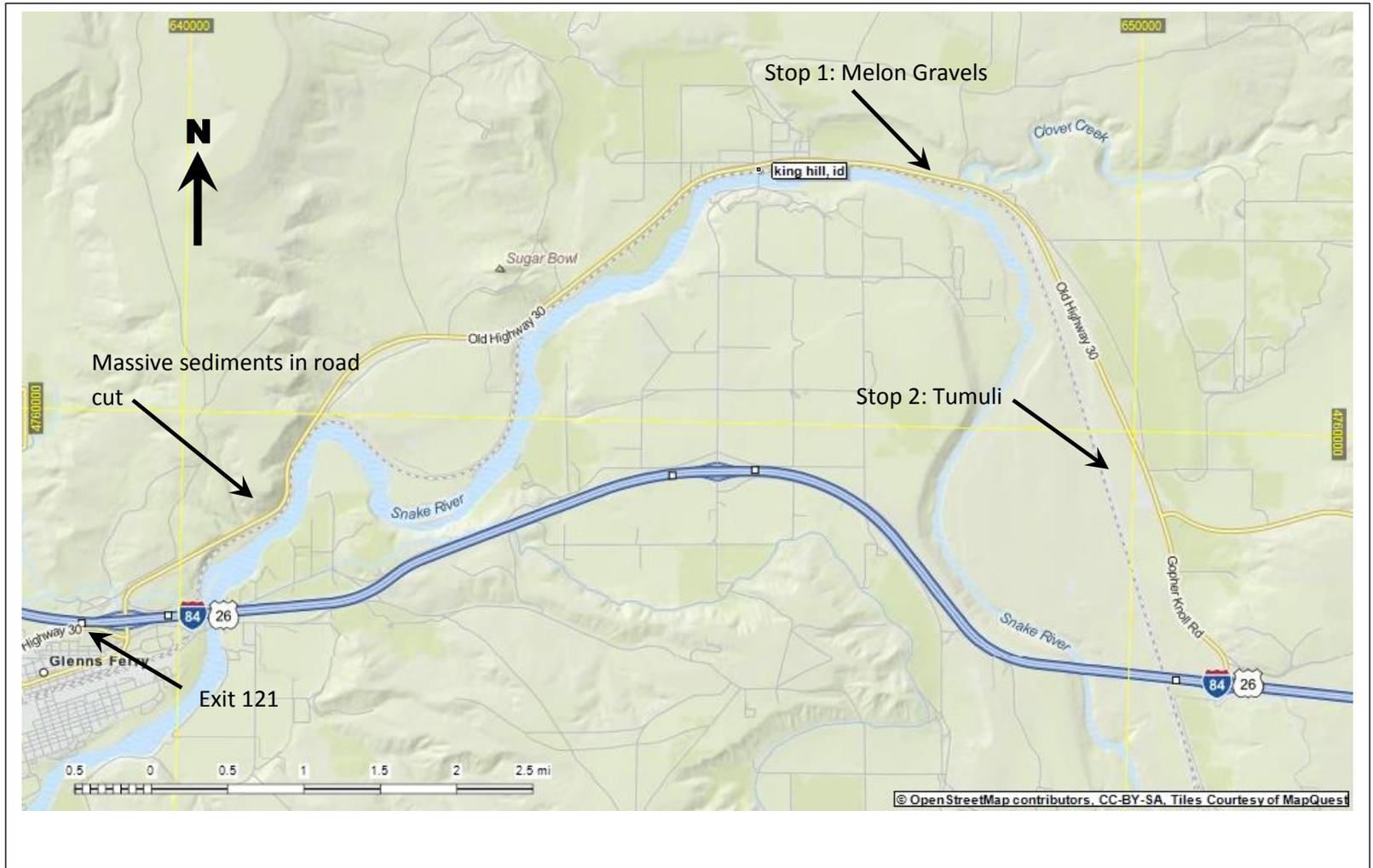
To Stop 5: Leave the parking area and turn Left on Old Highway 30 and drive up out of the canyon, admiring the views of massive lava flows on both sides of the Snake River Canyon. At the top of the grade, rejoin I-84 and proceed east again toward Twin Falls. In a short time, you will cross the Malad Gorge, which is a worthy stop for another time; there are interesting information kiosks, a great view of the Gorge from a high bridge and a nice park with restrooms. Continue on to Exit 173 (Highway 93) and go toward Twin Falls. Just before coming to the Perrine Bridge turn **Right** at a stop light onto Golf Course Road. Zero odometer and drive 0.7 miles to a parking area on the left (GPS N42.61653; W114.46070). Walk about 70 yards on an obvious path to a fenced viewing area. This is the “Blue Lakes Chasm” where Bonneville Flood waters that had overtopped the Snake River Canyon near Rupert and flowed overland, creating “scablands”, re-entered the Canyon. This is part of the area where basalt was eroded from the canyon walls and then deposited on the “melon gravel” bar at Stop 1. The Canyon would have been full at this point, but the re-entering water created a maelstrom of a whirlpool that eroded the basalt. The chasm wall contains an ancient channel of the Snake River that had been filled with basalt long before the Flood. This stop is on Map 3.

To Stop 6: Retrace your route along Golf Course Road, cross Highway 93 and zero odometer. Go about 2.5 miles from Highway 93 on what is now called Shoshone Falls Road to a parking area on the right (GPS N42.60035; W114.40460), just before the road drops down into the canyon. Walk about 100 yards toward the river to a convenient spot with a good view of Shoshone Falls – this is a good lunch spot. (This could be a good place to see the Falls in the spring at high flows without the crowds and fee at the Idaho Power park on the other side of the river). From here you can see the light colored rhyolite that forms the cap of the falls, being more resistant to erosion than the overlying basalt of the Canyon. The rhyolite is about 10 million years old and is part of the Twin Falls eruptive center that is a component of the hot-spot track of the eastern Snake River Plain. This stop is on Map 3.

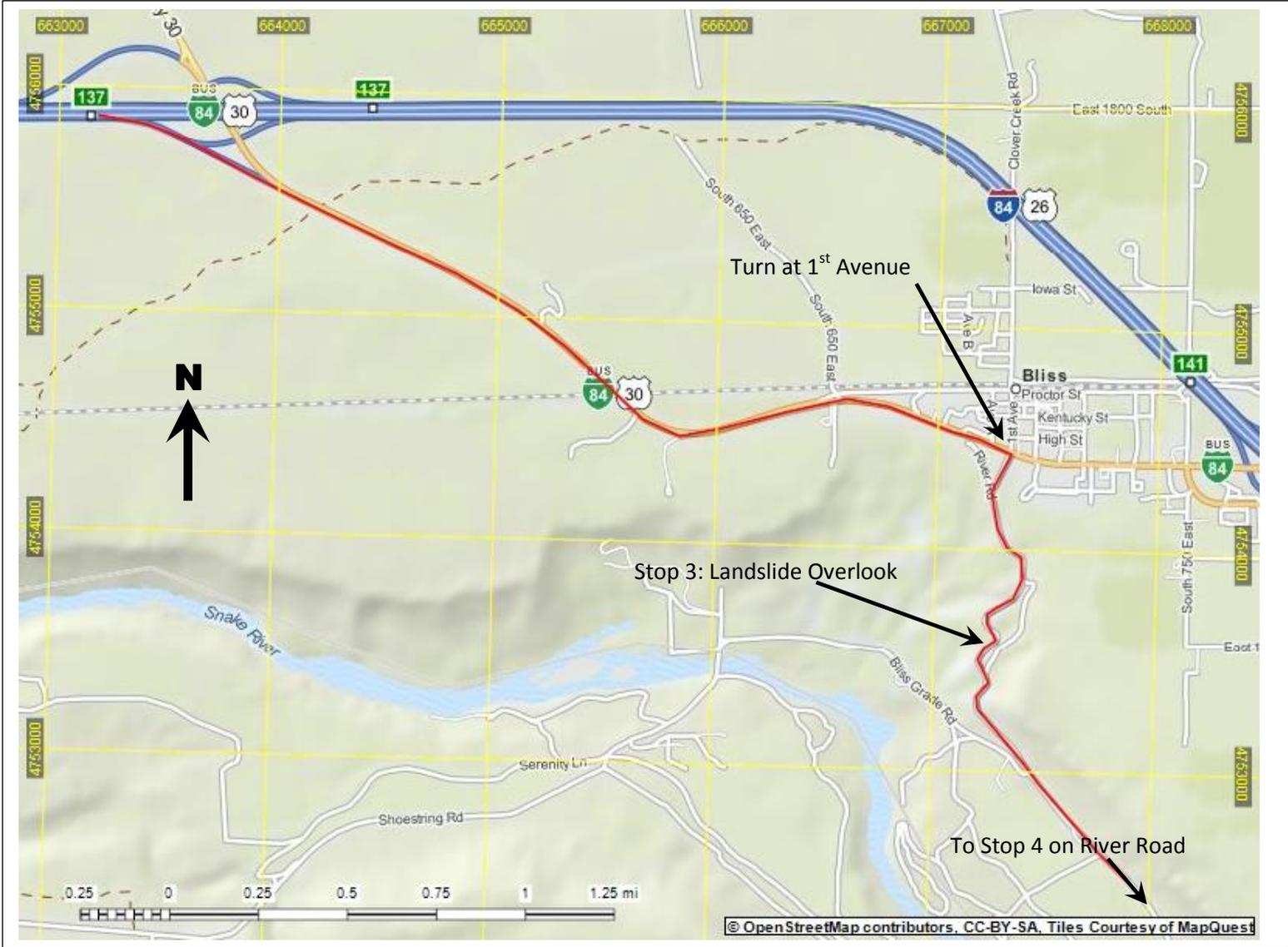
To Stop 7: Return to Highway 93 and turn **Right** toward Shoshone (it is about 23 miles to Shoshone from the turn) and the road becomes Highway 75 past the Interstate. Zero odometer at the junction of Highway 26 with Highway 75 in Shoshone and proceed about 18 miles to a turnoff on the left to a kiosk at Stop 8 (GPS N43.13142; W32460); this is just before the bridge over the Big Wood River. After reading the informative panels at the kiosk (Terry Maley was instrumental in saving this area for public enjoyment and provided most of the geologic information on the site), follow the paved and then dirt path on the left side of the parking area about 175 yards to the channel of the Big Wood River. This site should be visited in the fall, when the reservoir is drawn down and there is no flow in the channel. Enter the channel and walk upstream (**Left**); in about 150 yards you will enter the deeply incised channel in basalt that gives the “Black Canyon” its name. You can walk and clamber for about another 100 yards through a wonderland of remarkable erosional features until you reach a steep wall. You can also go downstream toward the highway, but there is a drop-off just beyond the bridge. There is no map for this stop.

To Stop 8: Return to Highway 75 and turn Left toward Hailey/Ketchum. Continue north on Highway 75 to downtown Hailey. About 0.5 miles beyond the “zig-zag” in Hailey, turn **Left** on Bullion Street to Stop 9 in a trailhead parking area (GPS N43.51682; W114.32228), on the right just beyond the Big Wood River bridge. From the trailhead parking lot, walk about 85 yards down to the river bank and to a grey outcrop in the near bank. This is the Wood River Formation limestone, which was moved to this location in a fault block from 70 – 80 miles to the west. The Wood River formation is overlain by the Challis Volcanics, which are overlain by the Milligan Formation, which is shale. Unfortunately, the limestone here is not very reactive to 10% HCL, because of containing lots of other sediments and organics. If you look closely at the outcrop closest to the river channel, you can see pebbles that were incorporated into the limestone from underlying deposits – this indicates that this area was at the base of the Wood River Formation. There is no map for this stop.

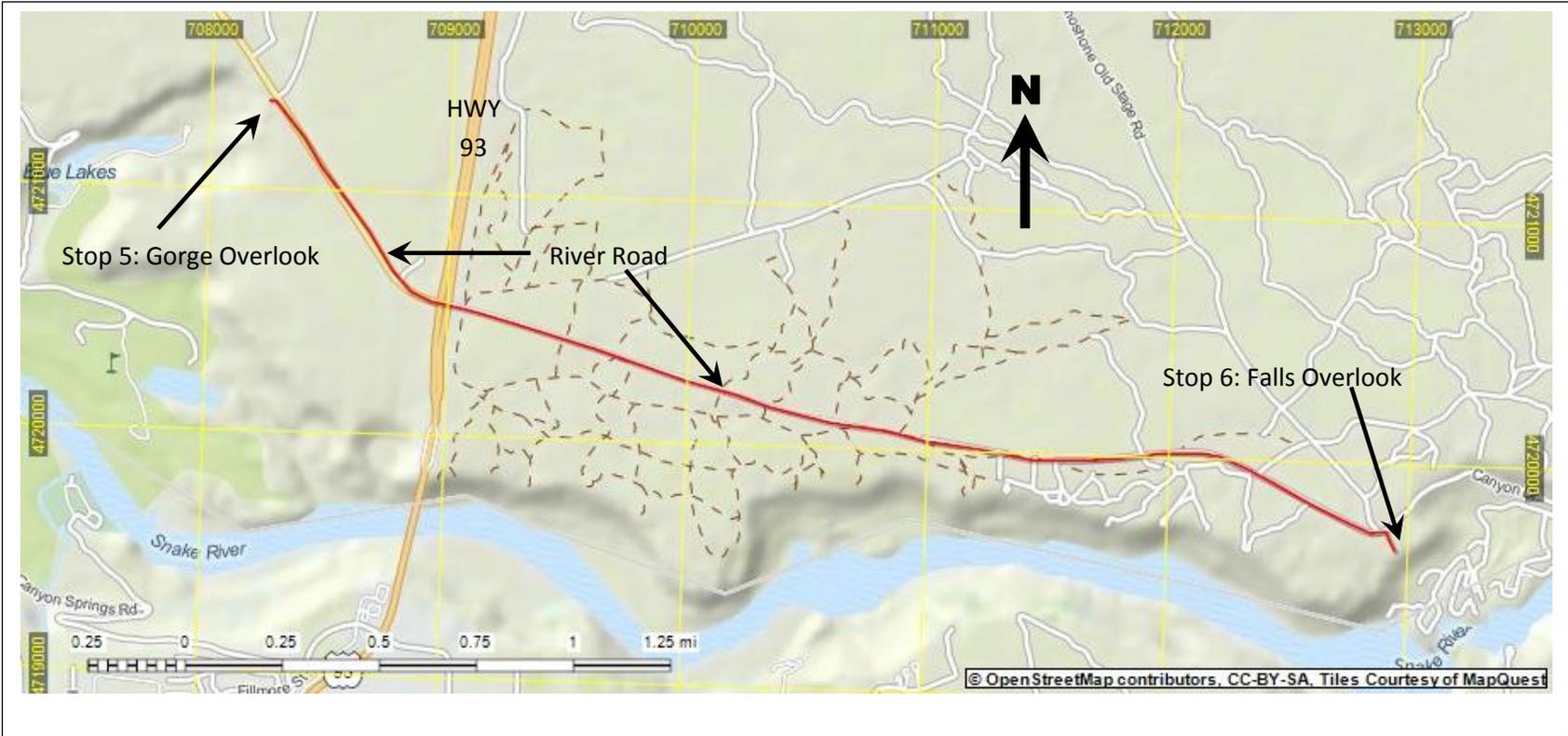
To Stop 9: Return to Highway 75, turn **Left** and drive into Ketchum and turn **Right** on Sun Valley Road (one block past 2nd Street), zero odometer here. Drive up Sun Valley Road, which becomes Trail Creek Road, for about 7 miles to a turn-off on the **Left** (GPS N43.76117; W28143). You are now on a glacial terrace from the last ice age. The mountains here are “thrust plate argillite” that is about 700 million years old. The valley here exhibits a classic glacial U-shape contour. There is no map for this stop.



Map 1



Map 2



Map 3

