Homestake Surface Array Reconnaissance Report

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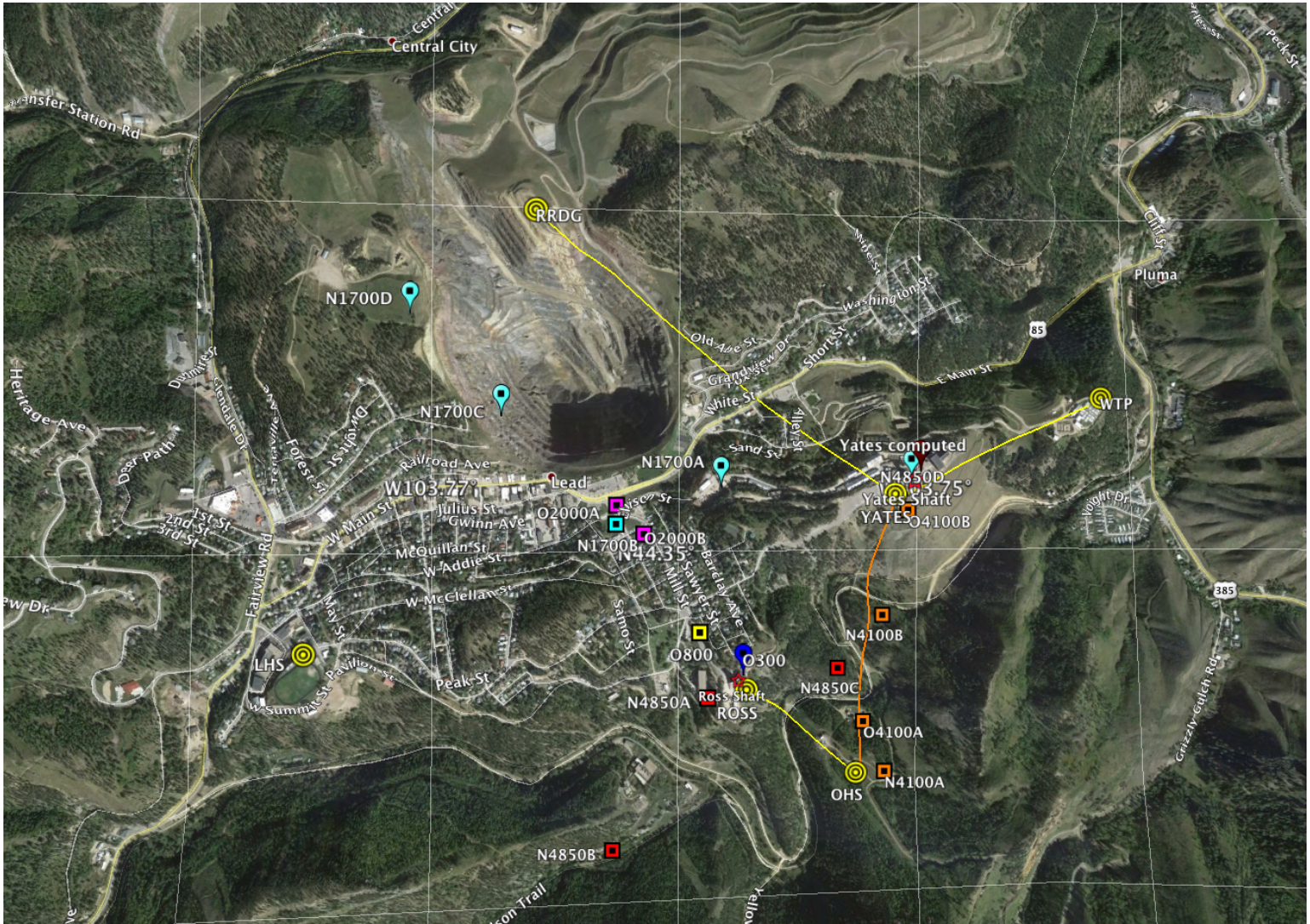
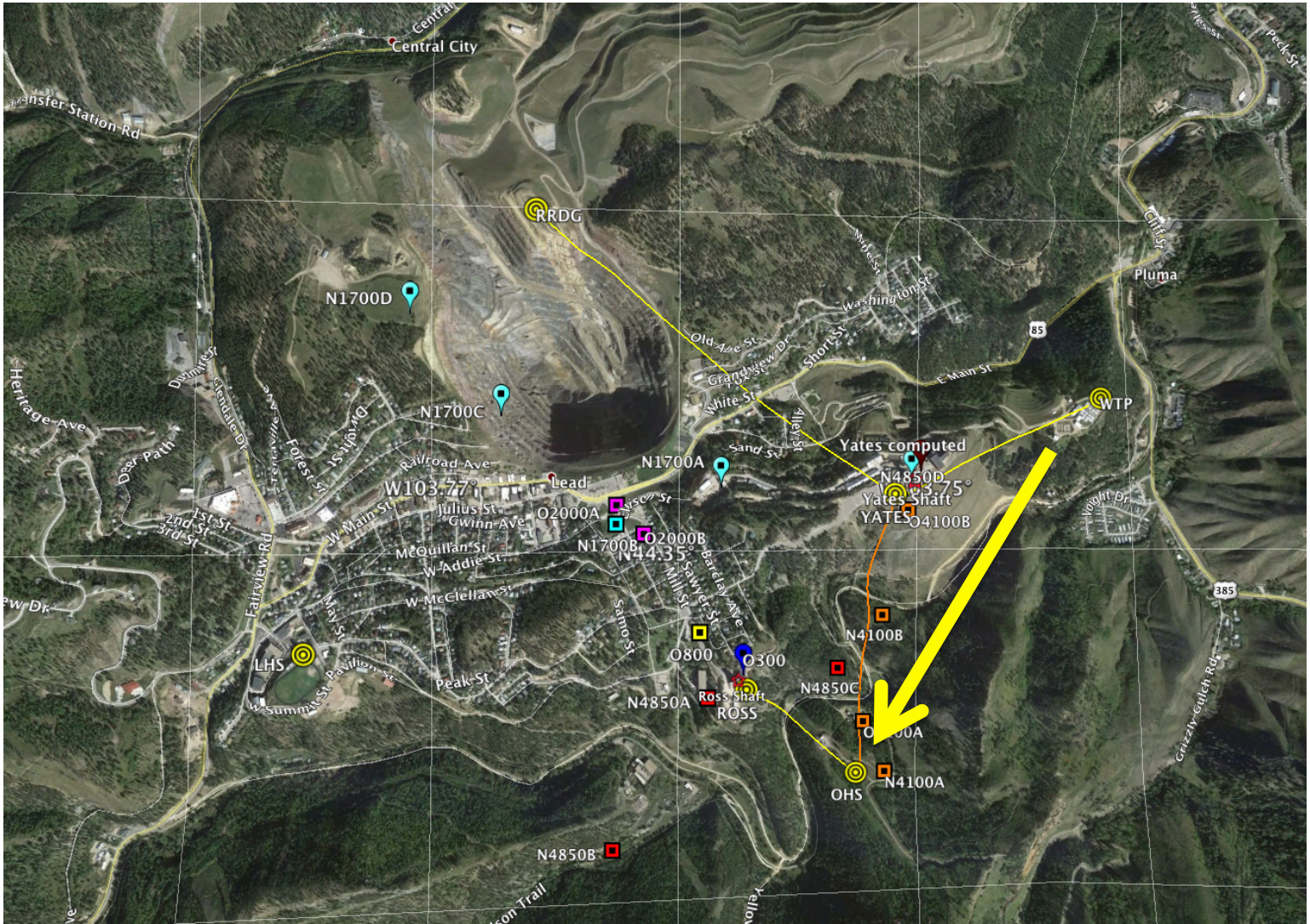
Overview

- Trip of opportunity – family reunions in SD
- At Sanford Lab June 30-July1
- Accompanied by Tom Regan
- Written reports on 8 locations for 6 sites (2 options for Ross and Yates)
- Best to load Google Earth kmz file you should have received to go with next slides
- Discuss Ross and Yates last
- Discuss 3 outer station option

What you should see with Google Earth



OHS – Oro Hondo Substation

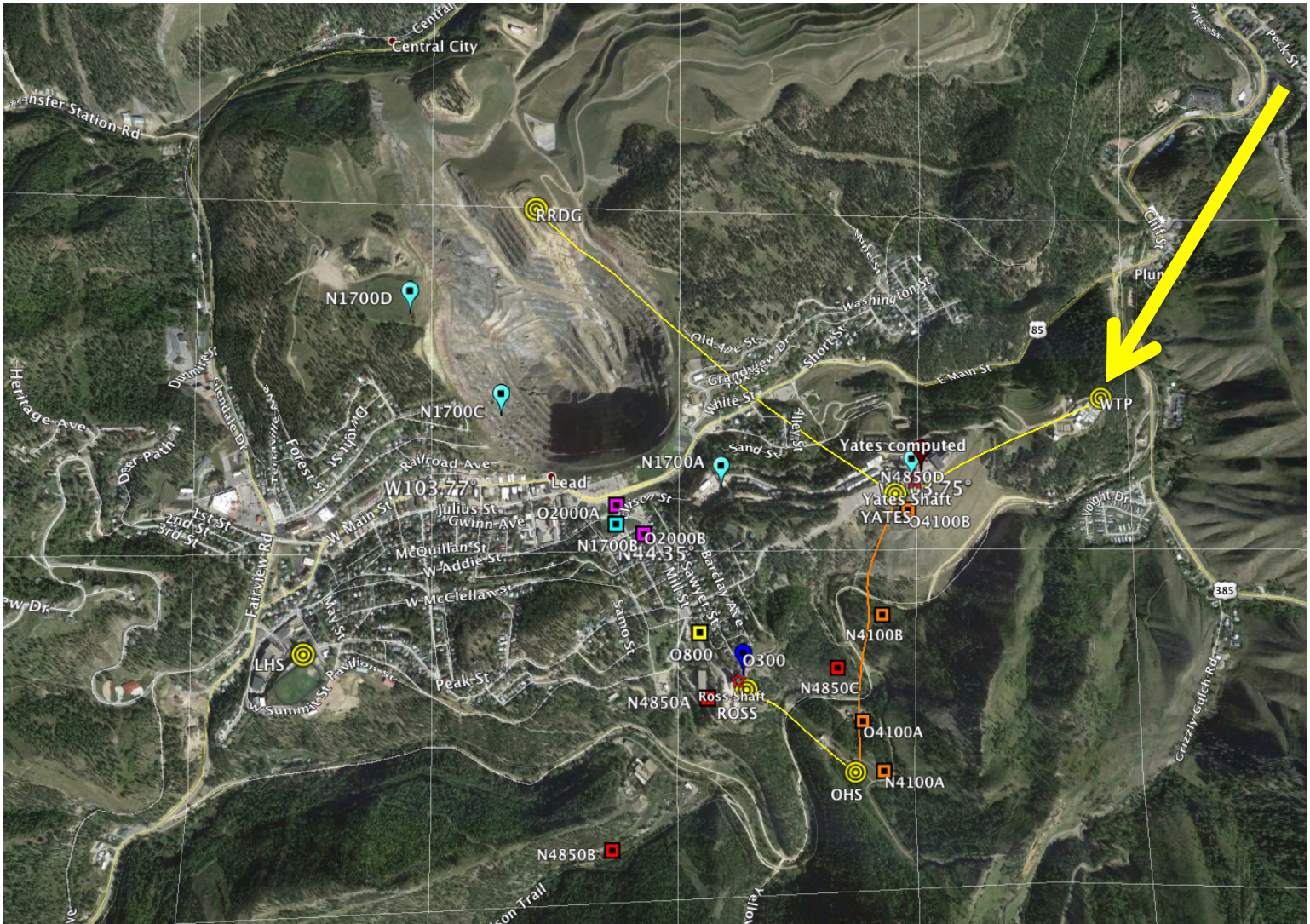


OHS – Ross in background

OHS – Oro Hondo Substation

- RF telemetry to Yates or Ross possible
- Good site for solar
- May be on up to 2 m of fill (unclear)
- Lab property but road maintained by Barrick
- Lab has easement for access and key

WTP-Water Treatment Plant

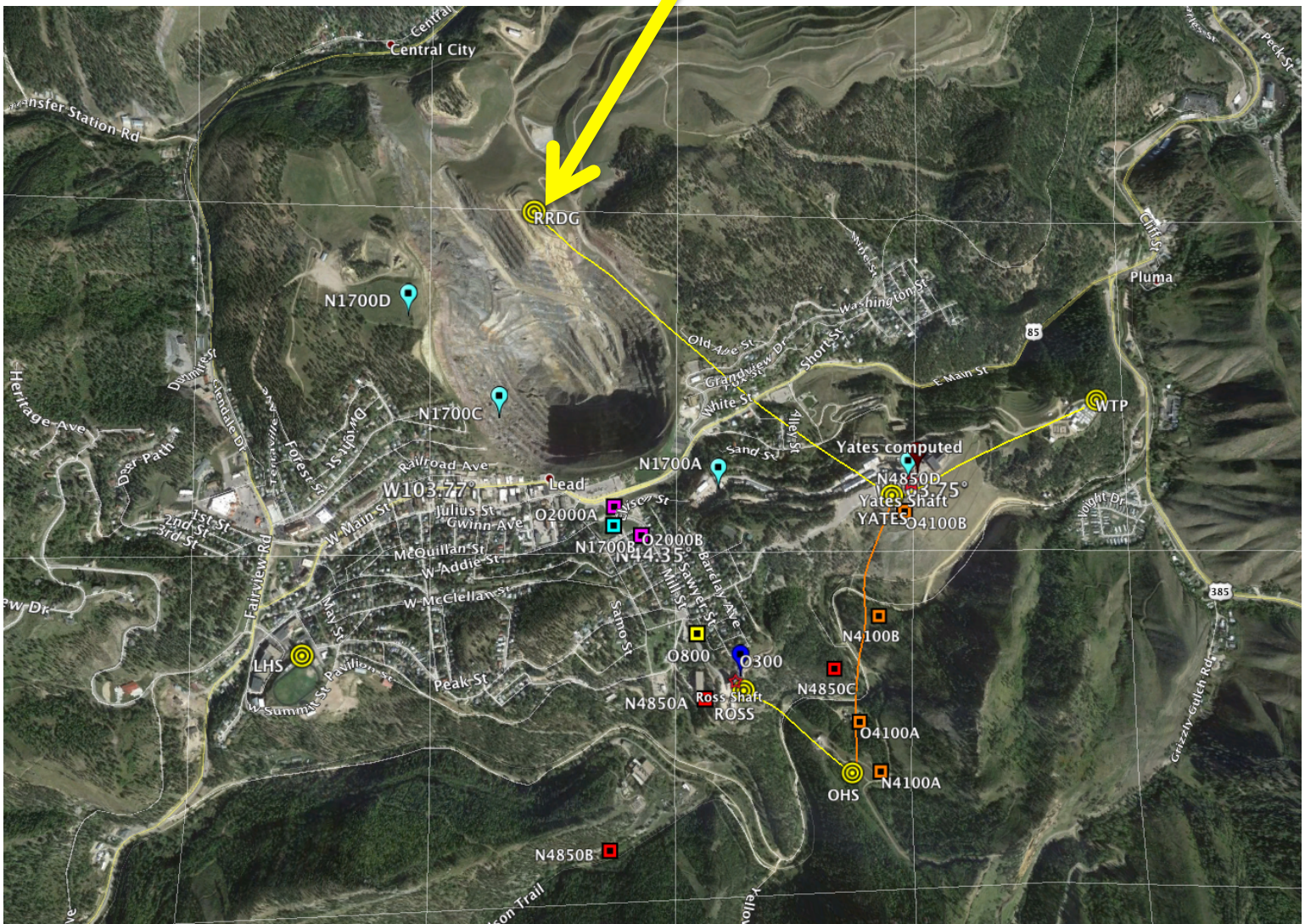


WTP – bad stuff in background
Clear on other sides

WTP – Water Treatment Plant

- Bedrock site
- Good site for solar
- At northeast edge of Sanford Property
- Close to water treatment plant a problem, but all flat spots in area are impacted by people

RRDG – Rhyolite Ridge

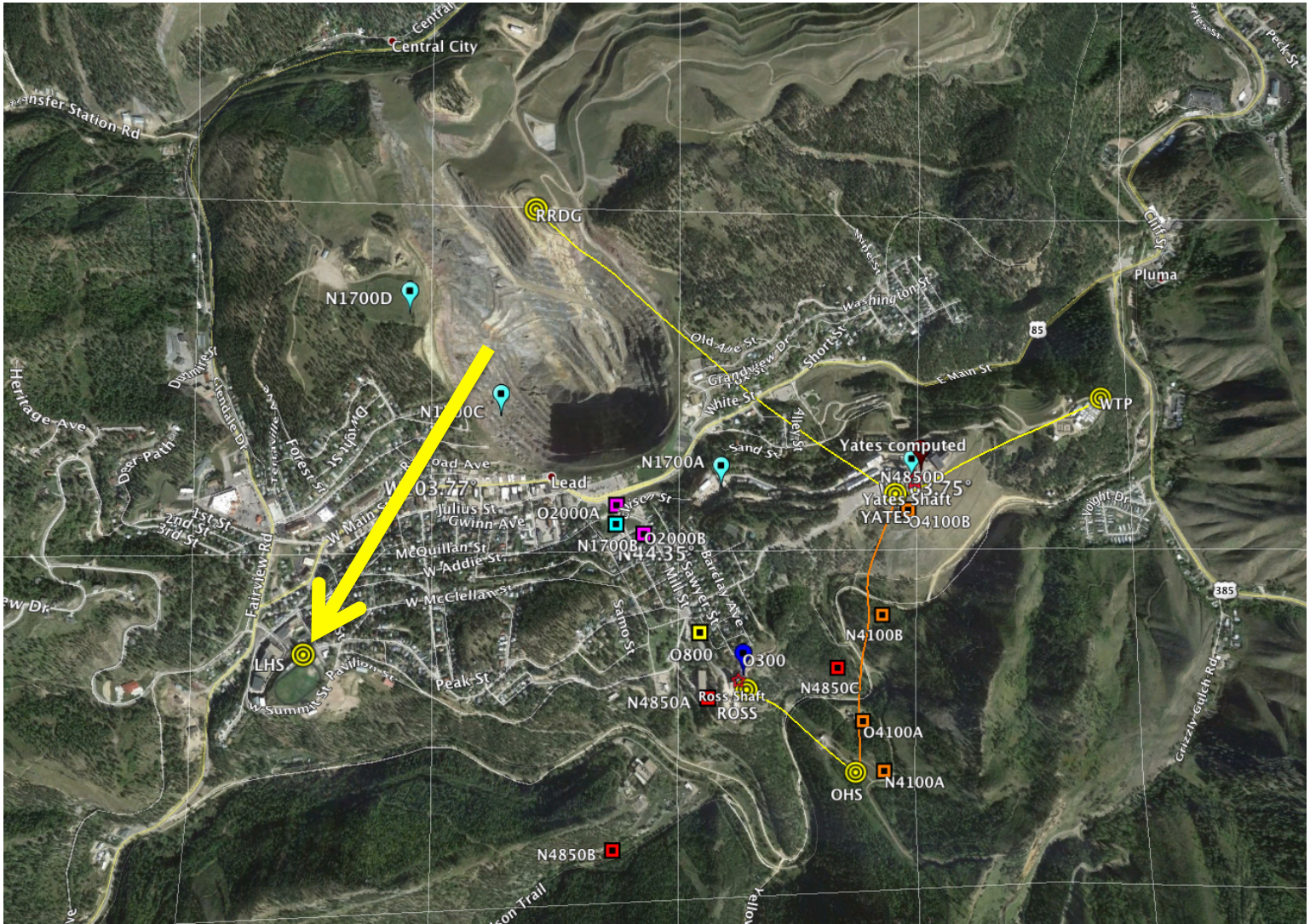


RRDB – Yates and Ross visible

RRDG - Rhyolite Ridge

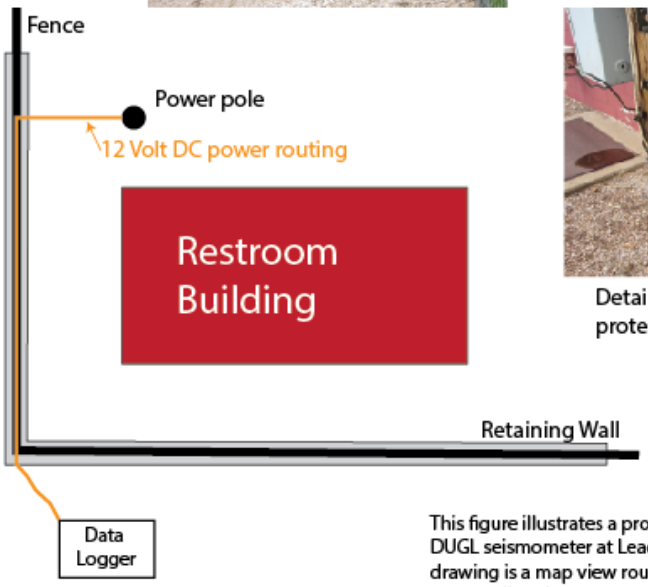
- At summit of peak on north side of open pit
- Close to zero soil cover
- Perfect line of site to Yates for RF telemetry
- 4WD road on Barrick property
- Permit process in progress
- Wind could be an issue here
- Should be very quietest site of this set

LHS – Lead High School



DC Power Routing for Lead High School Site

Detail showing existing GFI protected 110 V outlet



This figure illustrates a proposed power system for the DUGL seismometer at Lead High School. The center drawing is a map view roughly to scale. The pictures surrounding the map are views of the site. Orange solid lines are used to display the proposed routing of a 12 V DC line. This would start from a 110 V GFI protected outline illustrated at left. We would plug a small battery charger in that outlet which outputs 12 V DC charging current. on demand to the data logger. We proposed routing the cable up the pole (top figure) to near an existing crossover (upper left) where we would follow the same path to the top of the fence, this would route west on top of the fence (lower left), and down the corner of the fence and retaining wall to the proposed recorder location.

LHS – Lead High School

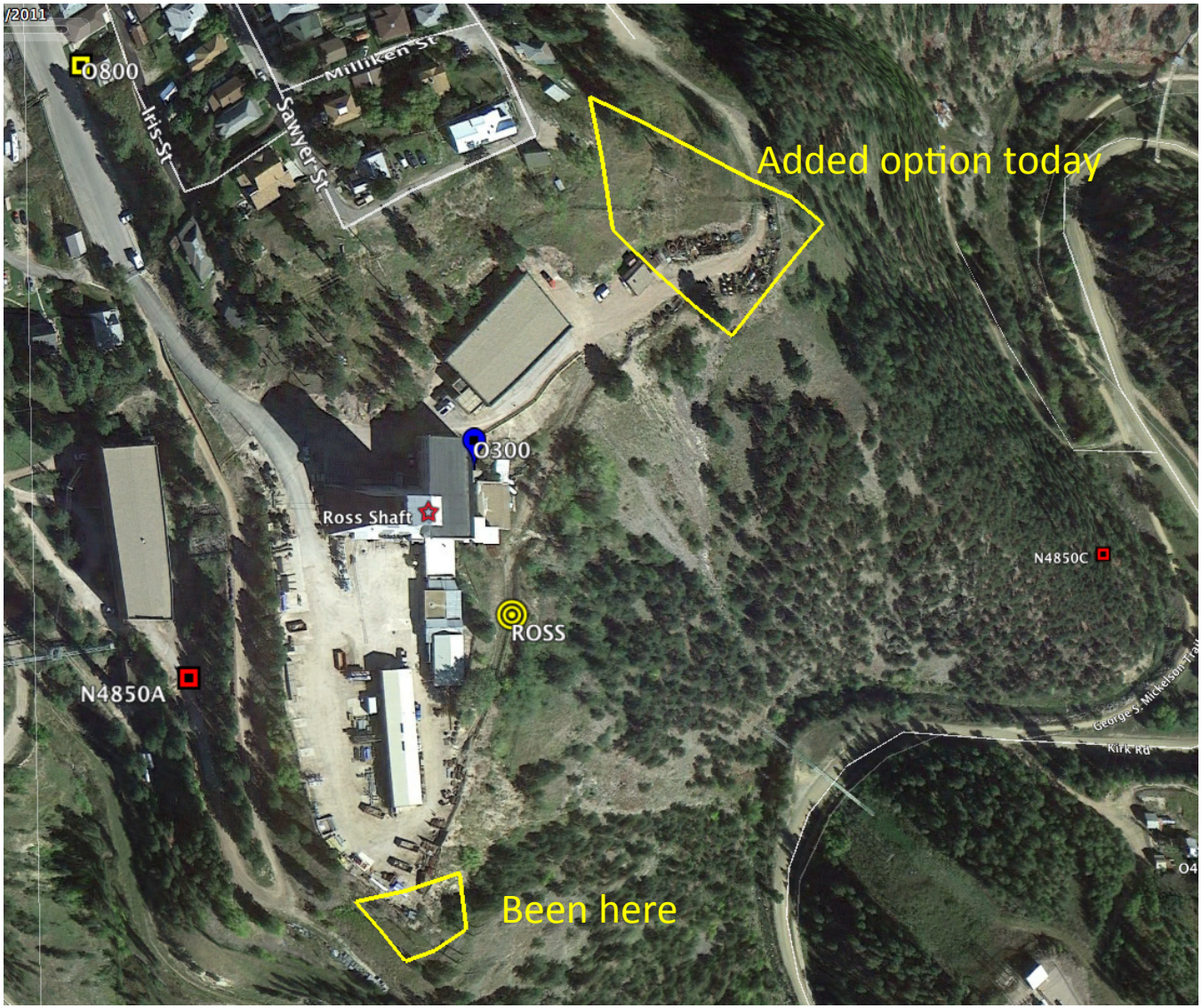
- Met with School Superintendent – very supportive
- Expecting school board approval
- Important local outreach activity – working on contacts with school science teachers
- Planning student involvement in site prep and installation
- Expect to run radio link from site to school internet
- AC power – run 12 V line to site as shown in next slide

ROSS and YATES

- Problems
  - Master GPS timing constraint
  - All that machinery
  - Parking lots
- Discussion question
  - IRIS is willing to supply us with an extra Q330 we can use only for station master
  - Fair sites possible within 100 m or so of both shafts: recommend deploying ROSS and YATES sites there

Yates Remote Option

ROSS Remote Options



Discussion 2: Outer Ring

- Propose 3 outer ring locations (map next)
  - Needed for aperture for array processing
  - Can afford them with our budget
- These would be standalone (not real time)
  - Record only to local disk
  - Download every 2 to 3 months
- Had 1 hour to try to find sites
  - Found one landowner home, turned me down
  - County GIS site shows large fraction are summer or ski homes
  - Followup needed in Sept if we choose to do this

Where to put these?