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March 2017

Floodplain Assessment for the Middle Los Alamos Canyon Aggregate Area Investigations in Technical Area 02 at Los Alamos National Laboratory

Prepared by: Environmental Protection and Compliance Division,
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Los Alamos National Laboratory.

Prepared for: U.S. Department of Energy
Environmental Management
Los Alamos Field Office

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ACRONYMS AND TERMS

AOC	Area of Concern
BMP	Best Management Practice
CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
LANL	Los Alamos National Laboratory
SWMU	Solid Waste Management Unit
TA	Technical Area

INTRODUCTION

This floodplain assessment was prepared in accordance with 10 Code of Federal Regulations (CFR) 1022 *Compliance with Floodplain and Wetland Environmental Review Requirements*, which was promulgated to implement the U.S. Department of Energy (DOE) requirements under Executive Order 11988 *Floodplain Management* and Executive Order 11990 *Wetlands Protection*. According to 10 CFR 1022, a 100-year floodplain¹ is defined as “the lowlands adjoining inland and coastal waters and relatively flat areas and flood prone areas of offshore islands.” In this action, DOE is proposing to collect soil investigation samples and remove contaminated soil within and around selected solid waste management units (SWMUs) and areas of concern (AOCs) near and within a 100-year floodplain at Los Alamos National Laboratory (LANL). The work is being performed to comply with corrective action requirements under the 2016 Compliance Order on Consent².

The project is located at Technical Area (TA)-02 in Los Alamos Canyon. TA-02 was used to house a series of research reactors from 1943 through 2003. Building 02-001, the main reactor building, was constructed in 1943. It housed five separate nuclear reactors; three iterations of water boiler type reactors located on the east side of the building, and one plutonium-fueled reactor followed by an enriched uranium reactor. A number of facilities were constructed over the years to support the TA-02 research activities. The facility was active from 1943 through 1993.

The objective of the project is to complete corrective actions and ecotoxicology study fieldwork at three legacy waste sites within TA-02, Middle Los Alamos Canyon Aggregate Area: AOC 02-011(d), AOC 02-011(a)(ii), and SWMU 02-005. The goal of this proposed action is to appropriately characterize and remediate these sites to ensure there is no unacceptable human health or ecological risk associated with contaminants of potential concern previously released during legacy operations.

The DOE prepared this floodplain assessment to evaluate the potential impacts of implementing the proposed action within a floodplain, as required by 10 CFR 1022.

PROJECT DESCRIPTION

The proposed action being assessed in this document occurs in TA-02 in the bottom of Los Alamos Canyon. The DOE proposes to conduct soil sampling at AOC 02-011 (d), AOC 02-011(a)(ii), and SWMU 02-005, and excavate soils in AOC 02-011(a)(ii) as part of a corrective actions effort. Additional shallow surface soil samples (soil grab samples) will be collected throughout the TA-02 area, including within the floodplain, to perform ecotoxicology studies

¹ A 100-year floodplain is a base floodplain with a 1.0 percent chance of flooding in any given year.

² The 2016 Compliance Order on Consent (Consent Order) between the State of New Mexico Environment Department and DOE Environmental Management provides for specified compliance requirements for all of the solid waste management units, areas of concern, canyons, and watershed aggregates included in the Consent Order.

(Figures 1 and 2). The excavation boundaries in AOC 02-011(a)(ii) are slightly within the delineated 100-year floodplain. The project will use a variety of techniques for soil sampling and remediation efforts to include hand/digging, standard hand auger/sampling, excavation using machinery such as backhoe and front end loader and small drill rig. Heavy equipment will traverse the floodplain and spoils piles will be staged in the floodplain within developed or previously disturbed areas (e.g., existing paved roads and parking areas). The project will utilize and maintain appropriate best management practices (BMPs) to contain excavated materials, and all pollutants, including oil from machinery/vehicles. The project will stabilize disturbed areas as appropriate at the end of the project.

FLOODPLAIN IMPACTS

The proposed excavation is less than 0.25 acres in size and only a small part of it occurs in the floodplain. The total amount of possible disturbance to the floodplain will be less than 0.25 acres and that estimate includes disturbance from soil excavation, all auger and soil samples, spoils piles, and access across the floodplain. The entire project site is previously disturbed, including the floodplain. There are several stormwater controls already installed from previous work in the area.

Negative, short-term direct effects from the project will be mitigated and minimized by the implementation of the following best management practices for work in floodplains during construction.

- Support structures such as personnel trailers will not be installed within the floodplain.
- Any disturbed areas will be revegetated with an appropriate native seed mix or plants within 30 days or at the beginning of the growing season after construction is completed.
- All trash and debris (e.g., construction material) will be removed from the floodplain after construction is complete.
- Do not store hazardous materials, chemical, fuels, and oils within the floodplain unless it's a paved area.

Compliance with the Migratory Bird Treaty Act requires that no vegetation removal occurs during the peak bird breeding season, May 15 through July 31, unless biological resources staff at LANL have conducted a nest check to ensure that there are no nesting birds present. If active nests are found, the nest tree or shrub will be left until the nesting is complete.

There will be negative, short-term direct effects to the floodplain from the vehicle and heavy equipment access compacting the soil and causing vegetation loss. Erosion, sediment transport, and flood hazard will return to pre-construction conditions once the project is completed and vegetation restored. This project will not affect the natural floodplain processes.

No long-term negative direct or indirect impacts to the 100-year floodplain are expected under the proposed project. No effects to lives or property associated with floodplain disturbance are anticipated.

ALTERNATIVES

The only viable alternative to the proposed action is a no action alternative. This alternative was not selected because it would not allow DOE to fulfill its requirements under the Compliance Order on Consent. The reduction of potential migration of chemicals is an important goal of LANL's operational practices.

CONCLUSIONS

This project will not result in long-term adverse impacts to the 100-year floodplain. Temporary disturbance within the floodplain will cease following completion of construction activities. Best management practices will be implemented. This proposed project will not significantly modify existing elevations and flow paths within the floodplain from pre-project conditions to post-project conditions or result in other long-term negative impacts to the floodplain and its functionality. No effects to lives and property associated with floodplain modifications are anticipated.

In accordance with 10 CFR Part 1022, a Statement of Findings based on the information in this document will be published and available for public comment. This statement will include a brief description of the proposed project, an explanation of why it is located in a floodplain, the alternatives considered, a statement indicating if the action conforms to state and local floodplain requirements, and a brief description of the steps to be taken to minimize potential harm within the floodplain.

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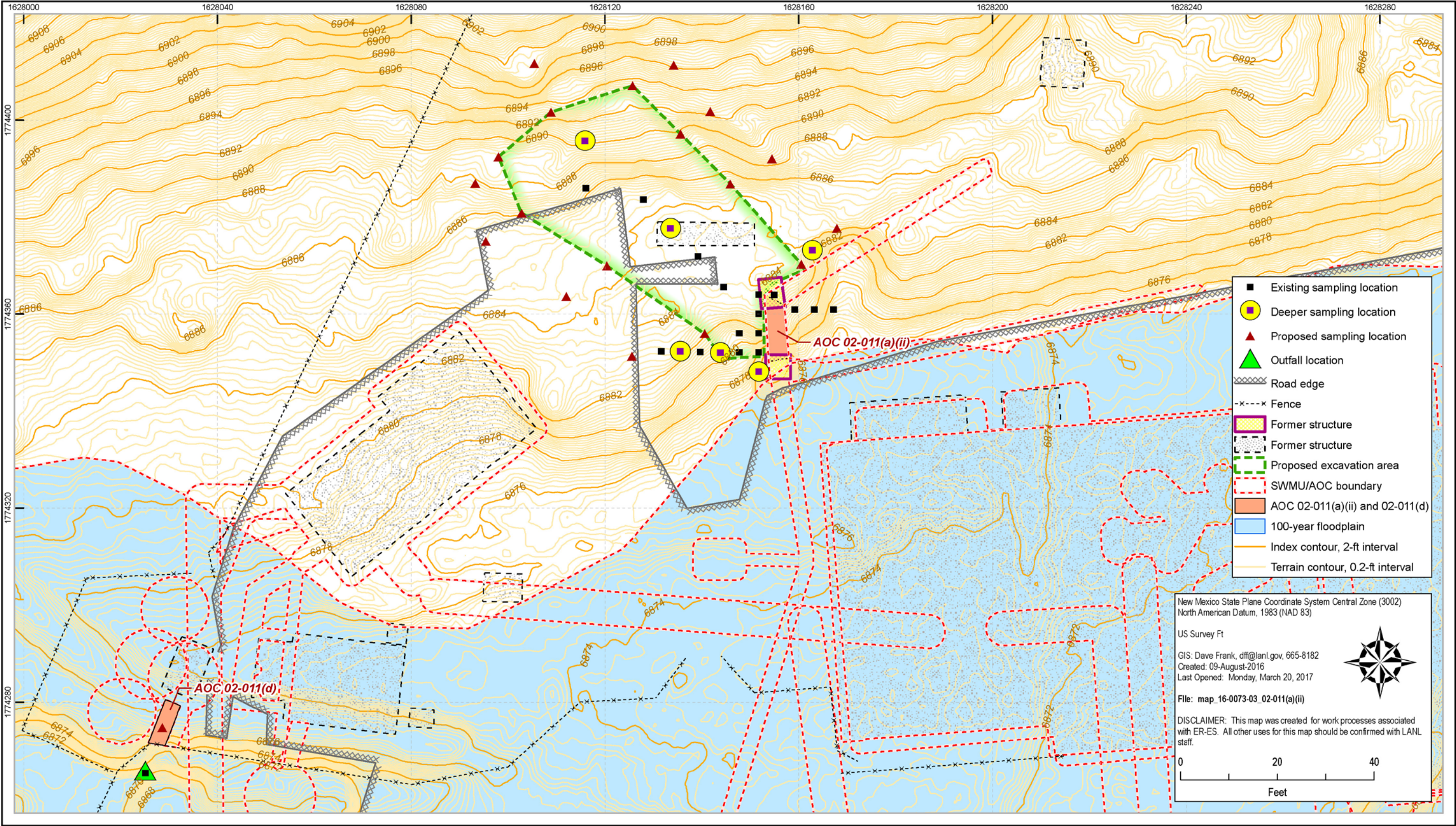


Figure 1. Proposed work around AOCs 02-011(d) and 02-011(a)(ii) in relation to the 100-year floodplain.

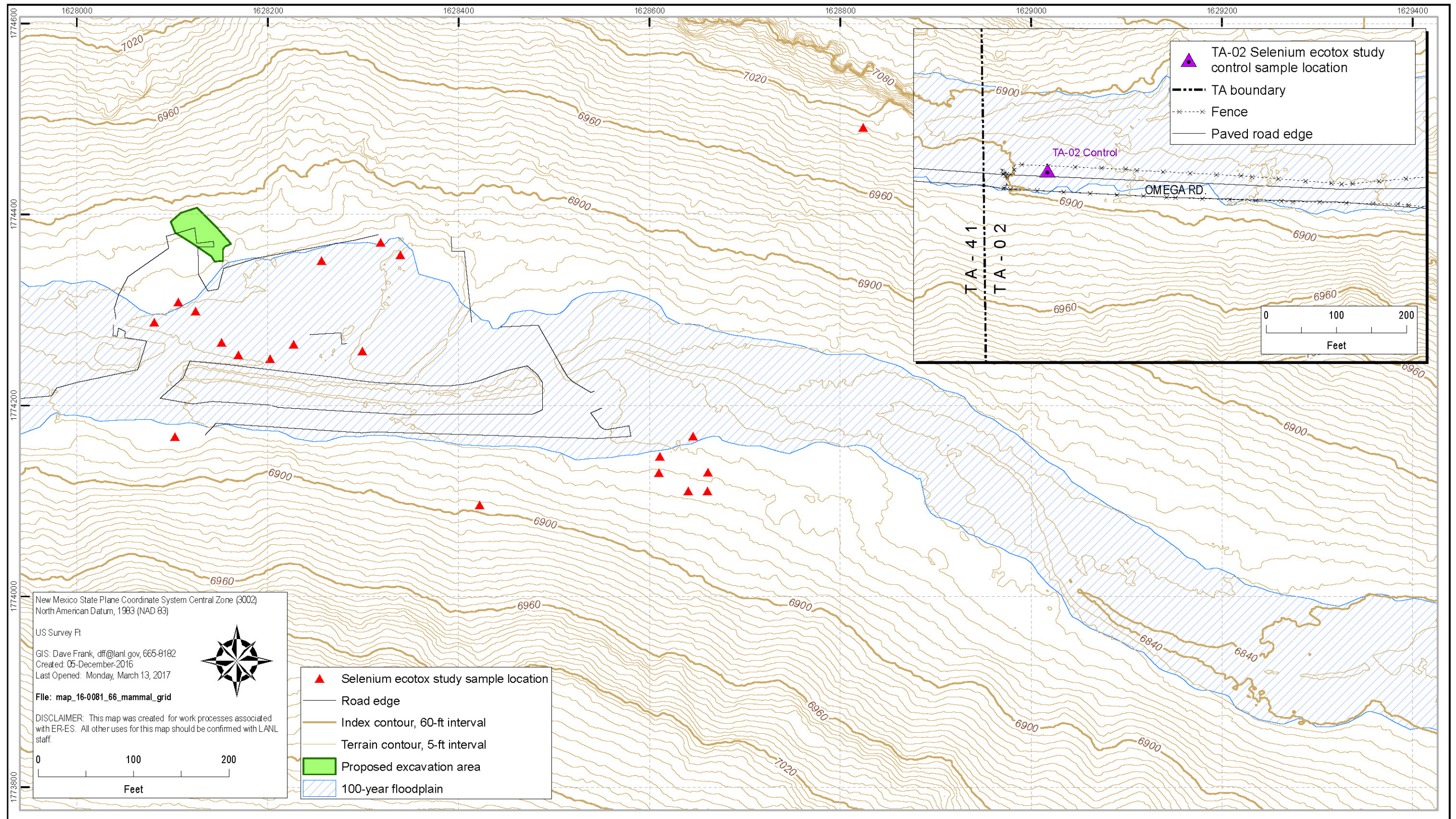


Figure 2. Proposed ecotox sampling locations in relation to the 100-year floodplain.