



ESHID-602064

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Date: **DEC 12 2016**
Symbol: ADESH: 16-210
LA-UR: 16-29042
Locates Action No.: N/A

Mr. John E. Kieling, Chief
Hazardous Waste Bureau
New Mexico Environmental Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87595-6303

Subject: Supplemental Environmental Project, Water Line Improvement and Metering Upgrade Work Plan Regarding Settlement Agreement and Stipulated Final Order HWB-14-20, Addendum 4

Dear Mr. Kieling:

This letter transmits the work plan associated with a supplemental environmental project as directed in the Settlement Agreement and Stipulated Final Order HWB-14-20, Addendum 4, entered into by the New Mexico Environment Department (NMED) (Complainant), the U.S. Department of Energy (DOE), and Los Alamos National Security, LLC (LANS) (Respondents) on January 22, 2016. Paragraph 41 of the Stipulated Final Order requires the Department of Energy to expend \$10 million to replace aging potable water distribution lines and install metering equipment for the Los Alamos National Laboratory potable water distribution systems.

The *Addendum 4 Los Alamos National Laboratory Water Line Improvement and Metering Upgrade Work Plan*, Enclosure 1, provides a description of subprojects associated with the installation of metering equipment and a strategy and schedule for implementation of the subprojects. The Respondents would be pleased to meet with Hazardous Waste Bureau personnel to discuss and explain the documentation included herein.

DEC 12 2016

If you have comments or questions regarding this submittal, please contact John C. Bretzke (LANS) at (505) 665-3867 or Peter Maggiore (DOE, NA-LA) at (505) 665-5025.

Sincerely,



Michael T. Brandt, DrPH, CIH
Associate Director
Environment, Safety & Health
Los Alamos National Security, LLC
Los Alamos National Laboratory

Sincerely,



Kimberly Davis Lebak
Manager
Los Alamos Field Office
U.S. Department of Energy

MTB/JCB/ARG/MPH:tav

Enclosure 1: Addendum 4 Los Alamos National Laboratory Water Line Improvement and Metering Upgrade Work Plan

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Upgrade Work Plan Regarding Settlement Agreement and Stipulated Final Order
HWB-14-20, Addendum 4**

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ENCLOSURE 1

Addendum 4

Los Alamos National Laboratory

Water Line Improvement and Metering Upgrade Work Plan

ADESH: 16-210

LA-UR-16-29042

DEC 12 2016

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Addendum 4

Los Alamos National Laboratory Water Line Improvement and Metering Upgrade

Work Plan

I. Introduction

The Department of Energy (DOE) shall expend \$10 million to replace aging potable water distribution lines and install metering equipment for Los Alamos National Laboratory (LANL) potable water distribution systems. The project will replace several distribution lines in the main campus area (Technical Area 3) of the LANL as well as distribution lines in other areas of LANL. The project will also install water meters on high usage buildings to meter consumption and install water meters in select locations to improve detection of abnormal water usage that may be indicative of a leak in the system.

II. Purpose/Objectives of Project

The objective of this supplemental environmental project (SEP) is to reduce potential for future potable water losses, minimize reportable spills, and enhance water conservation efforts at LANL.

III. Description of Project Team

The scope of the LANL Potable Line Replacement SEP has been developed through a project core team led by the New Mexico Environment Department (NMED) with designees from the following entities:

NMED Drinking Water Bureau (DWB)

NMED Construction Programs Bureau (CPB)

NMED Hazardous Waste Bureau (HWB)

National Nuclear Security Administration (NNSA)

Los Alamos National Security, LLC (LANS)

IV. Project/Scope

a. Description of the Subprojects

i. Replace Aging Potable Water Lines

Four phases have been identified that have an estimated total cost of between \$8.25-9 million including design, project management, overhead costs, and construction. The four phases to be evaluated through the design process, as shown in the attached drawing, are:

- A. This phase distribution line begins in the area of Diamond Dr. / W. Jemez Road intersection and continues east along E. Jemez Road, crosses E. Jemez Road and ends at the LANSCE meter.
- B. This phase distribution line begins approximately 450 ft. west of Bikini Atoll Dr. / W Jemez intersection, heads east to the intersection of W. Jemez Rd. and Bikini Atoll Dr. where it turns south along Bikini Atoll Dr. and ends at the intersection of Mercury and Bikini Atoll Dr.
- C. This phase includes several distribution lines in the area beginning at the intersection of Diamond and Pajarito Rd. and ends in the TA-48 area.
- D. This phase distribution line begins at the intersection of W. Jemez Rd and Pajarito Rd. and ends at the intersection of Mercury and Pajarito Rd.

To minimize disruption to the operating site, replacement techniques are expected to include a range of construction techniques including, but not limited to: slip lining, pipe bursting, horizontal directional drilling, and open trench. The final construction scope and schedule will be based on an engineering design and construction estimate as described in Section V below.

ii. Installation of Metering Equipment

This Subproject will install approximately \$1-1.75 million in water metering equipment to more fully assess the demand in high use facilities and to meter several segments of the distribution piping network to monitor for abnormal water usage and high flows to help identify potable water supply losses. The Subproject is estimated to install between 20 and 100 water meters and associated information technology to report water use to a central information management system. The final construction scope and schedule will be based on an engineering design and construction estimate, as described in Section V below.

b. Justification for each Subproject

i. Replace Aging Potable Water Lines

LANL has over 825,000 linear feet of water distribution piping with nearly \$100 million in deferred maintenance costs associated with them. Most of this piping was installed between the late 1940's and the mid 1970's and consists of steel and cast iron pipe in diameters up to 14 inches. The pipes have been subject to cracking and pitting causing water leaks throughout the system. In addition to increased water usage, water leaks have the potential to cause erosion and impact watercourses across the Laboratory.

To determine the scope of this Subproject, piping replacement was selected based on age as the primary criterion, and past experience with leaks was used as the secondary criterion.

ii. Metering Installation

Metering equipment installation will increase the amount and quality of the water usage information at LANL that will help send conservation signals to the Laboratory users, and can help identify areas with conservation opportunities and identify abnormal water consumption that may indicate a leak in the system. The information obtained through these meters will also help prioritize future distribution system maintenance and improvements. The scope of metering installation Subproject will be adjusted as appropriate to meet the \$10 million commitment.

V. Acquisition Strategy

a. General description of acquisition strategies evaluated

Los Alamos National Security, LLC (LANS), will develop and execute contracts for project work using a design, bid, build approach with subcontractor support for the design and construction phases. In the first phase LANS will award a design contract to an engineering firm for development of the final design, recommend construction approaches, and a construction estimate and schedule. Subsequently, in the second phase, LANS will award a construction contract for execution of the design and construction engineering support.

b. Description of option(s) chosen and justification

The design, bid, build approach through LANS was chosen to enable DOE to initiate design efforts this calendar year. The design, bid, build approach provides a sound design and construction estimate as the basis for determining which water lines will be replaced and which meters will be installed. This approach will be used to develop the design and scope for construction of both Subprojects. The final design, construction scope and schedule, for both Subprojects once approved by NMED, will be incorporated as Attachment A to this Addendum.

c. Cost Breakdown for the total Project (Estimate)

i. Design Contract	\$750,000
ii. Project Management and Project Support [†]	\$1,290,000
iii. Construction Contract	\$7,060,000
iv. Contingency*	\$900,000

[†]Project Support includes design and code compliance reviews, construction safety support, field engineering and inspections, engineering review during construction

*After construction of the water distribution line Subproject any remaining funds will be applied to the meter installation Subproject.

VI. Schedule

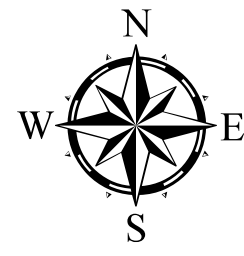
The schedule outlines a series of interim milestones and a final deliverable due to NMED. Interim milestones before the deliverable date are for progress tracking between DOE and NMED and not enforceable. DOE may adjust the interim milestones dates. DOE will involve NMED during the design phase, and include as part of the 90% design review to ensure NMED is in agreement with the final design and construction plan.

a. Interim Milestones

- | | |
|--|-------------|
| i. Work Plan Approved | |
| ii. Award Design Contract | i +10 weeks |
| iii. Complete Design and Construction Estimate | ii+36 weeks |

b. Deliverable

Submit final construction scope and schedule to NMED for approval 58 weeks after work plan approval. The approved construction scope and schedule will be attached as Attachment A to Addendum 4, posted to the LANL Electronic Public Reading Room, and shall be fully enforceable in accordance with paragraph 45 of the Settlement Agreement. DOE will request a time extension from NMED as needed, per the Settlement Agreement.



Water Line Improvement and Metering Upgrade

LOS ALAMOS NATIONAL LABORATORY

Phase Descriptions

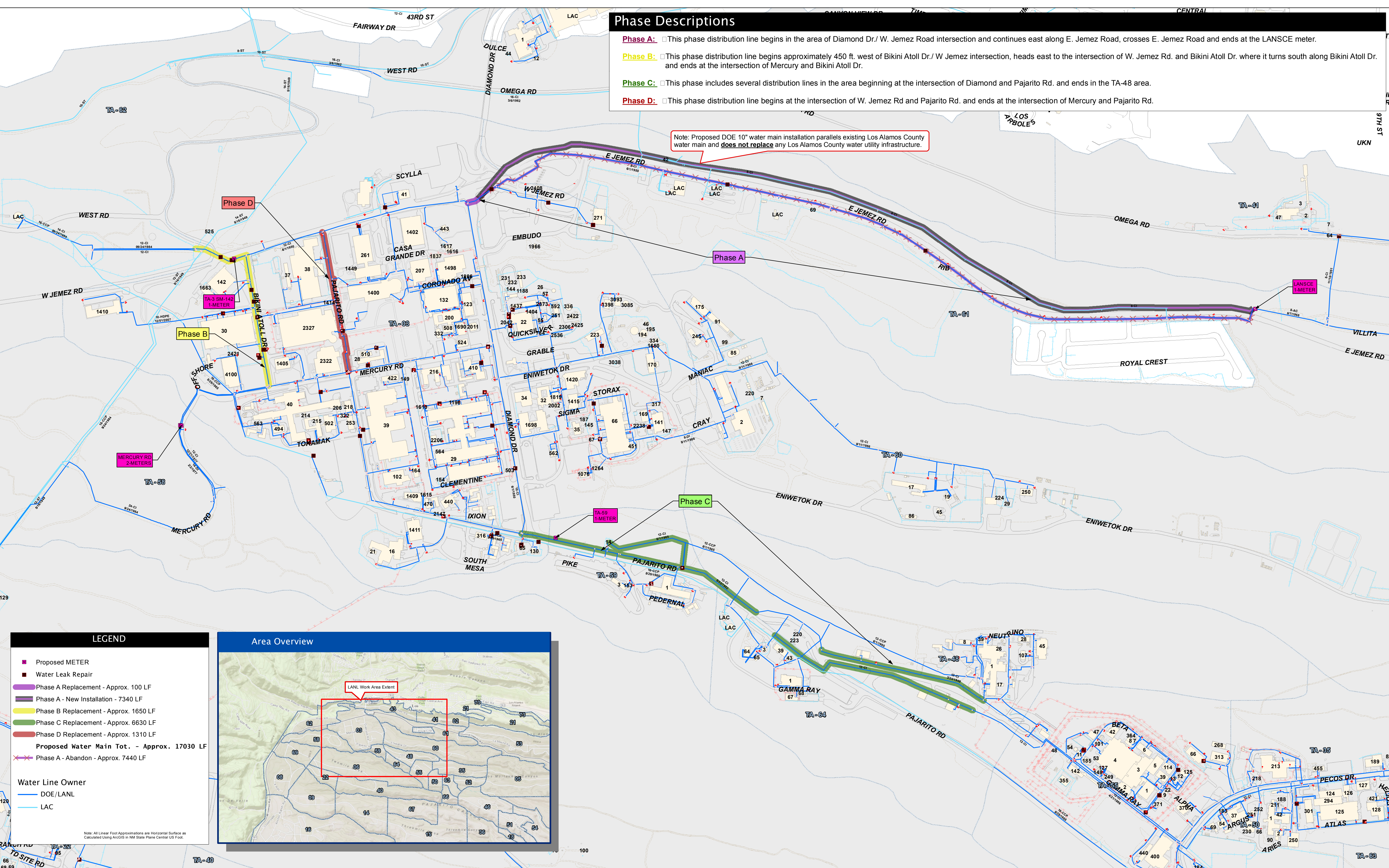
Phase A: This phase distribution line begins in the area of Diamond Dr./ W. Jemez Road intersection and continues east along E. Jemez Road, crosses E. Jemez Road and ends at the LANSCE meter.

Phase B: This phase distribution line begins approximately 450 ft. west of Bikini Atoll Dr./ W Jemez intersection, heads east to the intersection of W. Jemez Rd. and Bikini Atoll Dr. where it turns south along Bikini Atoll Dr. and ends at the intersection of Mercury and Bikini Atoll Dr.

Phase C: This phase includes several distribution lines in the area beginning at the intersection of Diamond and Pajarito Rd. and ends in the TA-48 area.

Phase D: This phase distribution line begins at the intersection of W. Jemez Rd and Pajarito Rd. and ends at the intersection of Mercury and Pajarito Rd.

Note: Proposed DOE 10" water main installation parallels existing Los Alamos County water main and **does not replace** any Los Alamos County water utility infrastructure.



LEGEND

- Proposed METER
- Water Leak Repair
- Phase A Replacement - Approx. 100 LF
- Phase A - New Installation - 7340 LF
- Phase B Replacement - Approx. 1650 LF
- Phase C Replacement - Approx. 6630 LF
- Phase D Replacement - Approx. 1310 LF
- Proposed Water Main Tot. - Approx. 17030 LF
- Phase A - Abandon - Approx. 7440 LF

Water Line Owner

- DOE/LANL
- LAC

Note: All Linear Foot Approximations are Horizontal Surface as Calculated Using ArcGIS in NW State Plane Central US Foot.

Area Overview

