



**LAND USE CONTROL IMPLEMENTATION PLAN
ENGINEERING DEVELOPMENT LABORATORY SWMU 85
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
KENNEDY SPACE CENTER**



FACILITY: Engineering Development Laboratory
Solid Waste Management Unit No. 85

CONTAMINANTS: Vinyl Chloride Contamination In Groundwater

CONTROL: Prohibit Groundwater Use

PURPOSE OF LAND USE CONTROL IMPLEMENTATION PLAN

This Land Use Control Implementation Plan (LUCIP) has been prepared to inform current and potential future users of the Engineering Development Laboratory (EDL) of institutional controls that have been implemented at the site¹. Although there are no current unacceptable risks to human health or the environment associated with the EDL, institutional land use controls (LUCs) are necessary to prohibit the use of groundwater from the site to ensure an acceptable risk to human health. Controls will include periodic inspection, condition certification and agency notification.

WHY LAND USE CONTROLS ARE NEEDED

A human health assessment was completed as part of a Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI). The only chemical of concern retained for potential human health risk during the RFI is vinyl chloride in groundwater.

SITE DESCRIPTION

The EDL is a NASA-operated facility that consists of six permanent structures constructed from 1966 to 2001 (Figures 1 and 2). The EDL Building (M7-409) was constructed to support astronaut training for the Apollo Program, including the use of mock-ups such as the Lunar Lander. This building is currently being used as office space, a prototype machine shop and material testing, and for development activities. The Equipment Building (M7-409A) houses a large bank of electrical transformers. This building is currently used for the storage of refurbished compressors and office space. The former Generator Building (M7-409B) was constructed in December 1968, but is no longer used as a generator facility and is now classified as a storage building. The International Space Station Center Tour Stop Concession Building (M7-459) was constructed in December 1998 and provides food, restrooms, and retail items for visitors on the KSC tour. The Tour Stop Concession Building was constructed in the former location of two cooling towers, which provided climate control for the EDL from 1966 until 1994.

¹ This LUCIP summarizes institutional controls regarding the NASA EDL Site. For detailed information on the site, consult the EDL administrative file, which is available for review by contacting the KSC Environmental Program Office at telephone number (321) 867-8411.

The cooling towers were designated PRL #66 and a Solid Waste Management Unit (SWMU) Assessment (SA) and Confirmation Sampling (CS) were performed from 1995 to 2000. The Storage Buildings (M7-460 and M7-460A) were constructed in July 2001. The buildings are a staging annex for the EDL and are used to stage and kit the Mobile Launch Platform Hazardous Gas Detection System. KSC performed an RFI in 2005 to determine the nature and extent of contamination from SWMU No. 85, EDL.

SITE LOCATION

The EDL is located on the northern portion of Merritt Island, between the Indian and Banana Rivers in Brevard County, Florida. The EDL is south of the Space Station Processing Facility on the eastern site of E Avenue, in the KSC Industrial Area. The EDL is found in Section 5, Township 23S, Range 37E, as shown on the 7.5-minute Orsino topographic quadrangle map (USGS 1986). The groundwater use control area covered by the LUCIP is shown on Figure 2. Coordinates of the corners of the LUC are provided in the State Plane Coordinate System NAD 1983 meters, Florida East.

SITE CONTAMINATION AND CONTROL

Groundwater at the site contains vinyl chloride above the Florida Department of Environmental Protection (FDEP) groundwater

cleanup target level. A Preliminary Risk Evaluation (PRE) indicated that the estimated lifetime excess cancer risk for the hypothetical future resident is 3.8×10^{-6} , which exceeds FDEP's acceptable excess lifetime risk of 1×10^{-6} . This assumes use of site groundwater as a drinking water source. There is no current use of site groundwater and therefore no exposure or current risk. The past, current and projected future land use of the EDL is industrial in nature. However, LUCs are required to prohibit potential future residential use of groundwater at the site. Indoor air quality shall be evaluated prior to any construction within the groundwater use control area.

DECISION DOCUMENT

A Statement of Basis (SB) establishes institutional controls as a component of the remedy for the site. The SB for the site, KSC document number KSC-TA-7919, is available for review by contacting the KSC Environmental Program Office at telephone number (321) 867-8411.

IMPLEMENTATION

Institutional controls will be implemented by the KSC Environmental Program Office in accordance with their RCRA permit and a Land Use Control Assurance Plan included in a Memorandum of Agreement (MOA)² between NASA, FDEP, and EPA, effective February 23, 2001. Upon approval of this LUCIP, it will be incorporated into

² By separate MOA effective February 23, 2001, with the EPA and FDEP, KSC, on behalf of NASA, agreed to implement Center-wide, certain periodic site inspections, condition certification, and agency notification procedures designed to ensure the maintenance by Center personnel of any site-specific LUCs deemed necessary for future protection of human health and the environment. A fundamental premise underlying execution of that agreement was that through the Center's substantial good faith compliance with the procedures called for herein, reasonable assurances would be provided to EPA and FDEP as to the permanency of those remedies which included the use of specific LUCs.

Although the terms and conditions of the MOA are not specifically incorporated or made enforceable herein by reference, it is understood and agreed by NASA KSC, EPA and FDEP that the contemplated permanence of the remedy reflected herein shall be dependent upon the Center's substantial good faith compliance with the specific LUC maintenance commitments reflected herein. Should such compliance not occur or should the MOA be terminated, it is understood that the protectiveness of the remedy concurred in may be reconsidered and that additional measures may need to be taken to adequately ensure necessary future protection of human health and the environment.

the permit by reference. Property transfer (if conducted in the future) will be conducted in accordance with Section X of the MOA. KSC's Environmental Program Office will provide KSC's Master Planning Office with survey coordinates of the LUCs. Restrictions will specify limitations on development and reuse for the area for as long as LUCs are necessary to protect human health and the environment.

MONITORING

Quarterly inspections to monitor that the institutional controls specified herein are in place and operating will be conducted by KSC's Environmental Program Office. The inspection will verify that groundwater is not used as drinking water.

REPORTING

KSC's Environmental Program Office will submit annual reports to EPA and FDEP certifying retention of the implemented LUCs.

ENFORCEMENT

KSC's Environmental Program Office will be responsible for stopping any activities at KSC that are not compliant with this LUCIP.

MAINTENANCE

The LUCIP shall remain in place until a land use change is implemented and the concerns managed by the LUCIP are mitigated; or there is a discovery, based upon analytical evidence, that scenarios managed by the LUCIP are no longer a concern. Any change in LUC management must be approved by the EPA and FDEP and implemented by modification of NASA's operating permit.

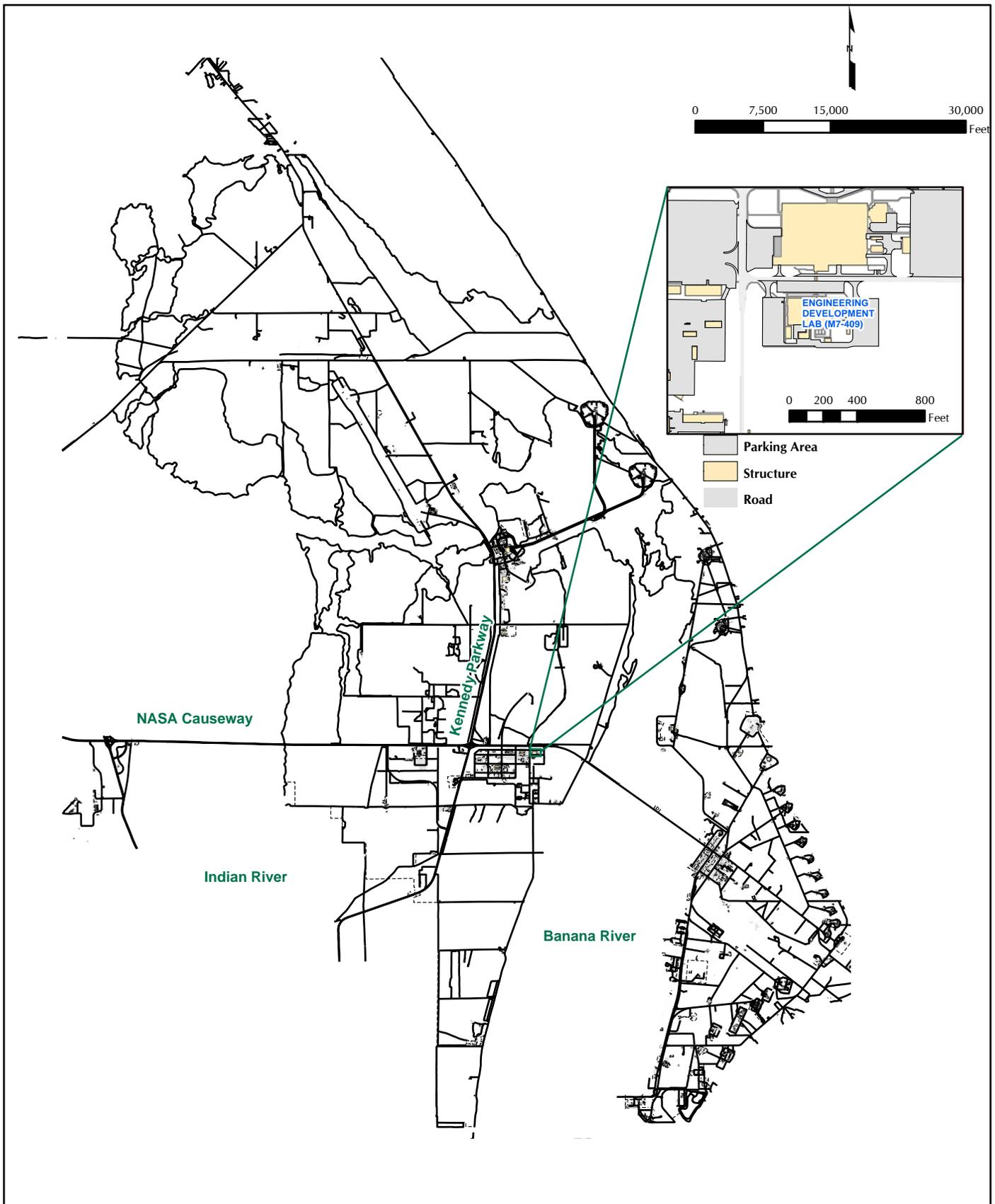


Figure 1
Location Map
Engineering Development Laboratory (EDL; SWMU 85)

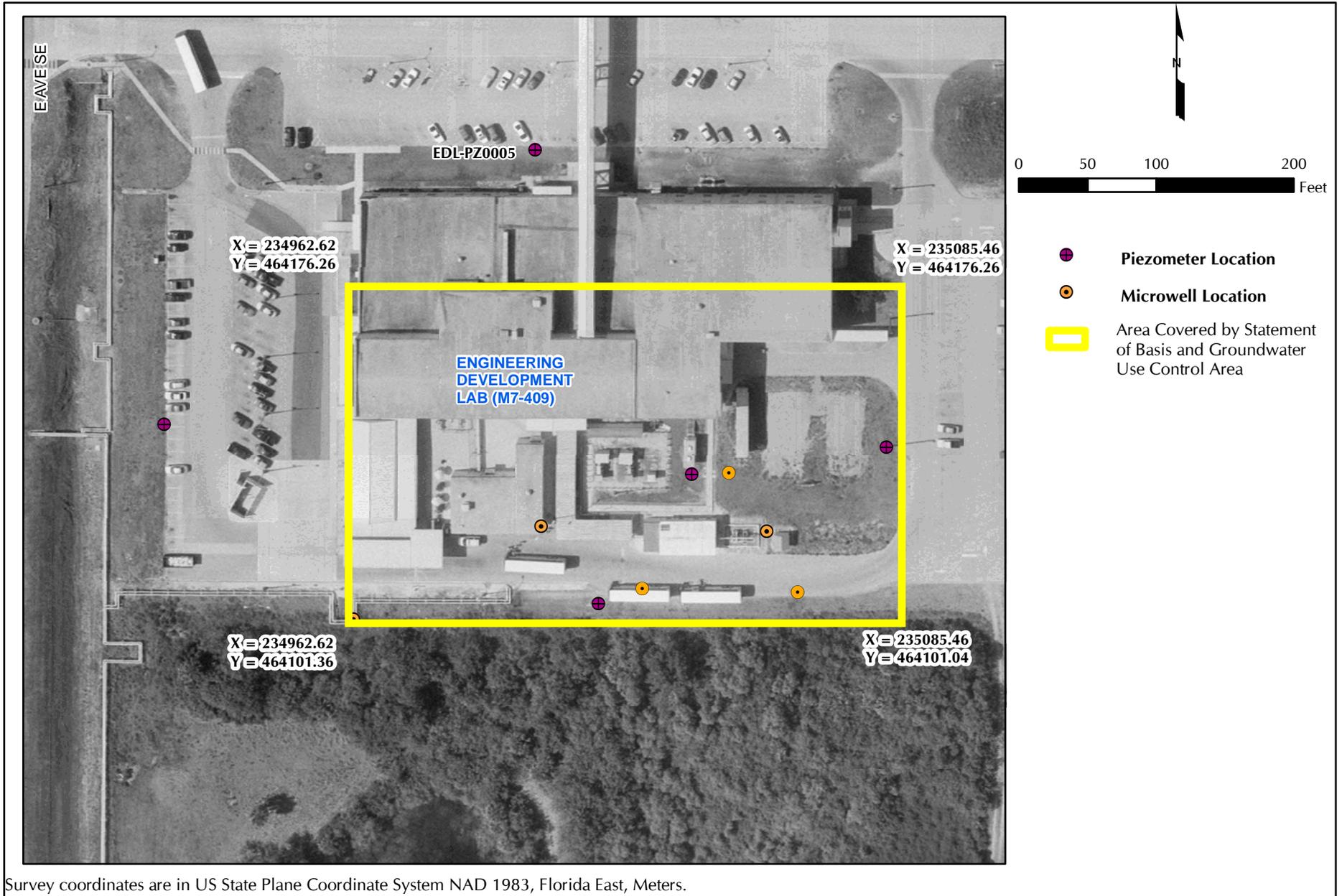


Figure 2
Site Map
Engineering Development Laboratory (EDL; SWMU 85)