



## LAND USE CONTROL IMPLEMENTATION PLAN

### NATIONAL AERONAUTICS AND SPACE ADMINISTRATION KENNEDY SPACE CENTER BREVARD COUNTY, FLORIDA

**FACILITY:** Visitor Complex Maintenance Area  
Solid Waste Management Unit 099

**CONTAMINANTS:** Total Benzo(a)Pyrene Equivalents (BaP TEQ) in Soil and  
Isopropylbenzene in Groundwater

**CONTROL:** Prohibit Residential Soil and 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 Visitor Complex Maintenance Area (VCMA) of institutional controls that have been implemented at the site<sup>1</sup>. Although there are no current unacceptable risks to human health or the environment associated with the VCMA, institutional land use controls (LUCs) are necessary to prohibit residential soil and groundwater use at the site. Controls will include periodic inspection, condition certification and agency notification.

#### WHY LAND USE CONTROLS ARE NEEDED

Human health and ecological risk assessments were completed as part of a Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI). Chemicals of concern identified for human health risk during the RFI that exceeded Florida Department of Environmental Protection (FDEP) and Environmental Protection Agency (EPA) cleanup target levels were Total Benzo(a)Pyrene Equivalents (BaP TEQ) in soil and isopropylbenzene in groundwater.

#### SITE DESCRIPTION

The VCMA is a NASA-subcontractor operated facility that was built to support the Visitor Complex. The VCMA consists of office, storage, and maintenance buildings and also has an open storage area on the western side of the site and bus wash and maintenance facilities on the northeast side. Past and current operations at the VCMA include equipment and material storage, equipment and fleet maintenance, and fleet fueling.

#### SITE LOCATION

The VCMA is located on NASA Parkway West between the KSC Industrial Area and U.S. 1. The site is bordered by wooded property to the north, the KSC Visitor Complex to the east, wooded property and retention ponds to the south, and wooded property to the west. (Figure 1). The groundwater use control area covered by the LUCIP is shown on Figure 2. The soil use control areas are shown on Figures 3 and 4. Coordinates of the corners of the LUC are provided on Figure 2, Figure 3, and Figure 4 in the US State Plane Coordinate System NAD 1983, meters, Florida East.

<sup>1</sup> This LUCIP summarizes institutional controls regarding the NASA VCMA. For detailed information on the site, consult the VCMA administrative file, which is available for review by contacting the KSC Environmental Assurance Branch at telephone number (321) 867-8411.

## **SITE CONTAMINATION AND CONTROL**

BaP TEQ are present in soil above FDEP's Residential Soil Cleanup Target Level (SCTL) but are less than FDEP's Industrial SCTL. The past, current, and projected future land use of the VCMA is industrial in nature. LUCs are therefore required to prohibit residential use/exposure to soils. In addition, isopropylbenzene in groundwater is present above FDEP's Groundwater Cleanup Target Level (GCTL) but less than the FDEP Natural Attenuation Default Concentration. Since groundwater exceeds the GCTL, LUCs prohibiting the use of groundwater are required until the GCTLs are achieved. The current and project land use of the VCMA does not include the use of site groundwater; therefore, there is no exposure or current risks.

## **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-10370, is available for review by contacting the KSC Environmental Assurance Branch at telephone number (321) 867-8411.

## **IMPLEMENTATION**

Institutional controls will be implemented by the KSC Environmental Assurance Branch in accordance with their RCRA permit and a

Land Use Control Assurance Plan included in the Memorandum of Agreement (MOA)<sup>2</sup> between NASA, FDEP, and EPA, effective February 23, 2001. Upon approval of this LUCIP, it will be incorporated into 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 Assurance Branch 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 Assurance Branch. The inspections will verify that no residential use is occurring.

## **REPORTING**

KSC's Environmental Assurance Branch will submit annual reports to FDEP certifying retention of the implemented LUCs.

## **ENFORCEMENT**

KSC's Environmental Assurance Branch will be responsible for stopping any activities at

<sup>2</sup> 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 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 until 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.

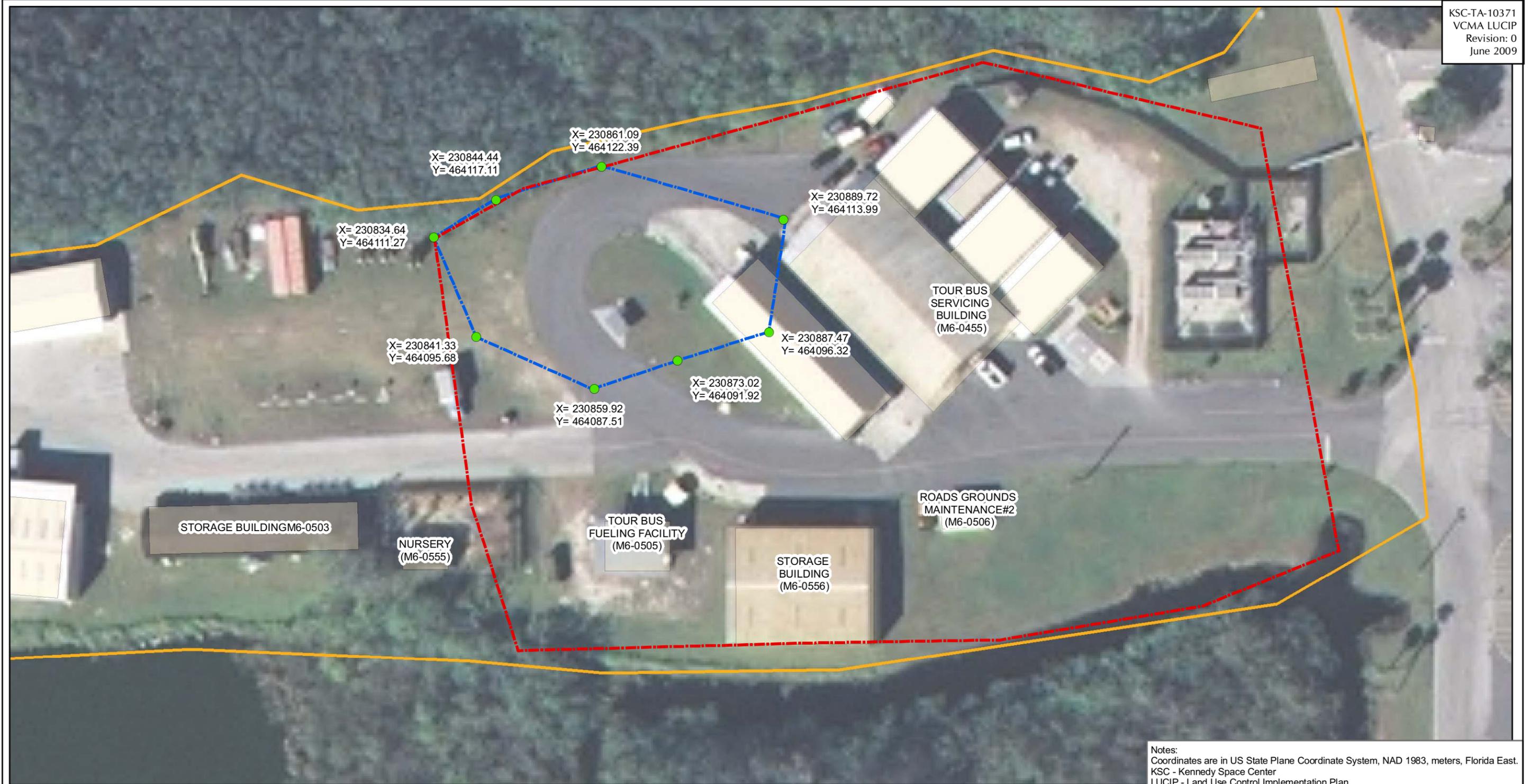


### Site Location Map Land Use Control Implementation Plan

Visitor Complex Maintenance Area  
NASA Kennedy Space Center, Florida

- Notes:  
KSC - Kennedy Space Center  
LUCIP - Land Use Control Implementation Plan  
NASA - National Aeronautics and Space Administration  
VCMA - Visitor Complex Maintenance Area  
VAB - Vehicle Assembly Building

Figure 1



X= 230834.64  
 Y= 464111.27

X= 230844.44  
 Y= 464117.11

X= 230861.09  
 Y= 464122.39

X= 230889.72  
 Y= 464113.99

X= 230841.33  
 Y= 464095.68

X= 230887.47  
 Y= 464096.32

X= 230859.92  
 Y= 464087.51

X= 230873.02  
 Y= 464091.92

STORAGE BUILDING M6-0503

NURSERY  
 (M6-0555)

TOUR BUS  
 FUELING FACILITY  
 (M6-0505)

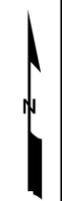
STORAGE  
 BUILDING  
 (M6-0556)

ROADS GROUNDS  
 MAINTENANCE#2  
 (M6-0506)

TOUR BUS  
 SERVICING  
 BUILDING  
 (M6-0455)

Notes:  
 Coordinates are in US State Plane Coordinate System, NAD 1983, meters, Florida East.  
 KSC - Kennedy Space Center  
 LUCIP - Land Use Control Implementation Plan  
 NASA - National Aeronautics and Space Administration  
 SWMU - Solid Waste Management Unit  
 VCMA - Visitor Complex Maintenance Area

- Legend**
- Assessment Area
  - Existing Structure
  - Groundwater LUCIP Area
  - SWMU 20 Boundary
  - Coordinate Location



**Groundwater Land Use Control Area  
 Land Use Control Implementation Plan**

Visitor Complex Maintenance Area  
 NASA Kennedy Space Center, Florida

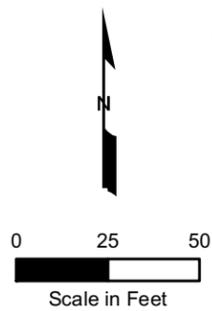
**Figure 2**



Notes:  
 Coordinates are in US State Plane Coordinate System, NAD 1983, meters, Florida East.  
 LUCIP - Land Use Control Implementation Plan  
 NASA - National Aeronautics and Space Administration  
 VCMA - Visitor Complex Maintenance Area

**Legend**

- Assessment Area
- Existing Structure
- Soil Land Use Control Area
- Coordinate Location



**Soil Land Use Control Area  
 Land Use Control Implementation Plan**

Visitor Complex Maintenance Area  
 NASA Kennedy Space Center, Florida

**Figure 3**

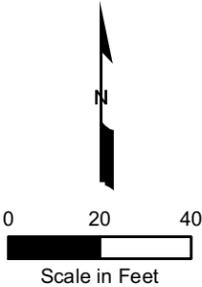


- Legend**
- Assessment Area
  - Existing Structure
  - Soil Land Use Control Area
  - Coordinate Location

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**Soil Land Use Control Area  
 Land Use Control Implementation Plan**

Visitor Complex Maintenance Area  
 NASA Kennedy Space Center, Florida



**Figure 4**