

**ENVIRONMENTAL COMPLIANCE & AREA COMPLETION PROJECTS (EC&ACP) STANDARD  
OPERATING PROCEDURES, VOL. I**
**Manual: C3**  
**Procedure: ER-IDS-019-056**  
**Revision: 2**  
**Effective Date: 06/01/2016**  
**Type-Class: Form**  
**Page: 1 of 3**
**HEAVY WATER COMPONENT TEST REACTOR (HWCTR) (770U) FIELD INSPECTION CHECKLIST**
**WORKING COPY**

This document is a Working Copy. Prior to start of work, verify this is the latest revision per the Procedure Index.



Verified By

06/26/2019

Date

**CAUTION**

The Inspector shall IMMEDIATELY notify the Post-Closure Manager and Environmental Compliance Authority if there has been a breach or compromise of the institutional controls of this waste unit. This notification shall be in accordance with Savannah River Site post-closure inspection procedures.

**NOTE**

1. Manual C3, ER-SOP-019, *Waste Unit Inspection and Maintenance*, shall be referred to for inspection details.
2. Steps in this checklist may be completed concurrently or in any order.

 **SCHEDULED**
 **UNSCHEDULED**

| <b>A = Satisfactory</b><br><b>X = Unsatisfactory (Explanation required)</b> |  | A or X | Observation/Corrective Action Taken |
|---|--|--------|-------------------------------------|
| 1.  | Verify area is accessible for authorized maintenance and inspections.  | A      |                                     |
| 2.  | Verify waste unit warning signs (4) are in acceptable condition, have correct information, and are legible from a distance of 25 feet. | A      |                                     |

Heavy Water Component Test Reactor (HWCTR) (770U) Field Inspection Checklist

Manual: C3  
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SCHEDULED                       UNSCHEDULED

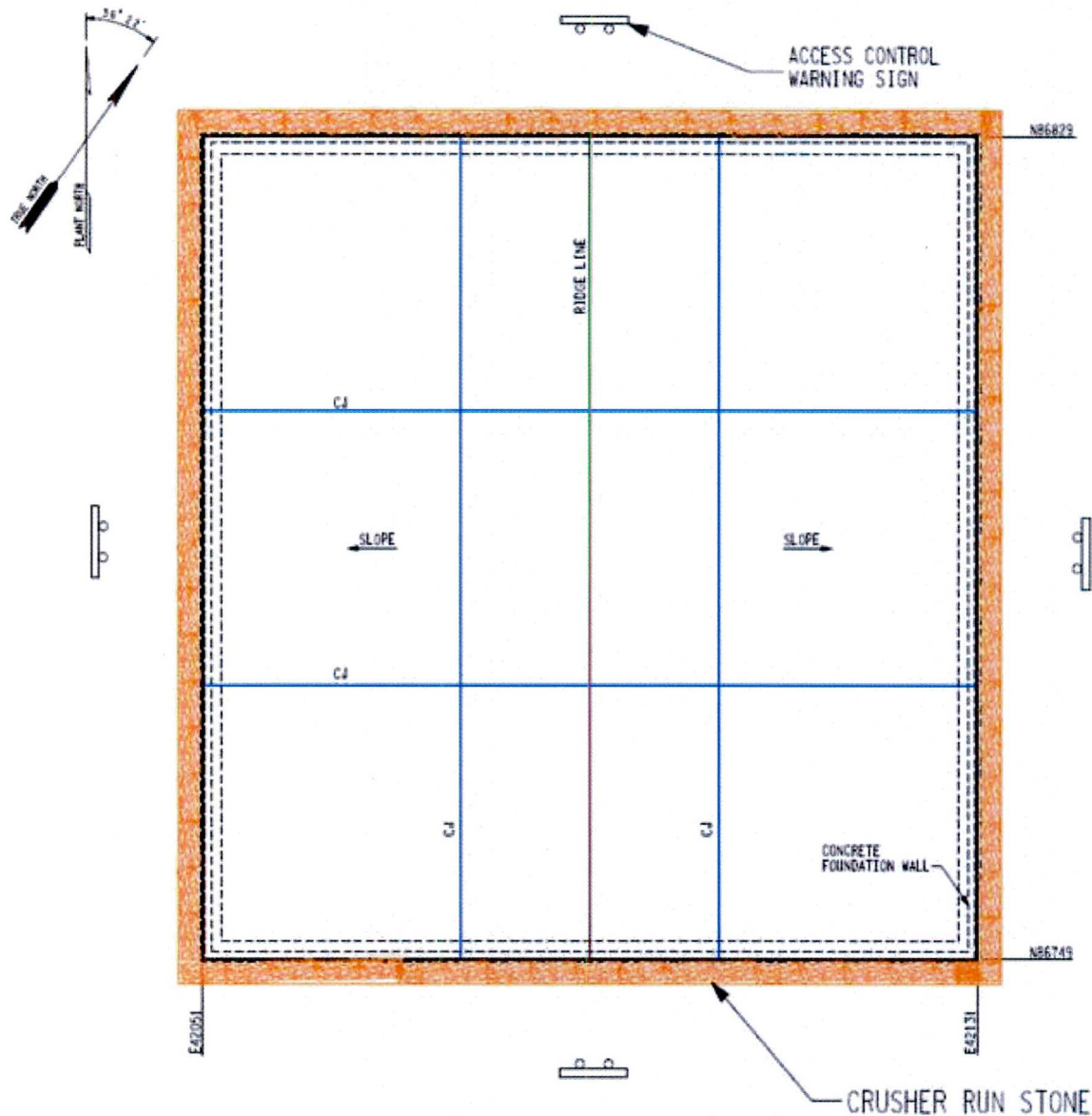
| A = Satisfactory<br>X = Unsatisfactory (Explanation required)   |  | A or X                    | Observation/Corrective Action Taken      |
|---|--|---------------------------|--|
| <b>NOTE:</b> Step 3 should be performed at 3 months, 6 months, and then Annually from the effective date of this procedure, until such time that it can be assured that the slab is stable and no further crack growth is expected. |  |                           |  |
| 3.  | Verify concrete slab does not have cracks larger than 0.5 mm wide and are not projected through the slab (more than 15 centimeter deep) ( <b>REFER TO</b> note prior to step).   | A                         | Please see attached: SRNS-E3520-00003-SM |
| 4.  | Verify excessive deterioration of concrete cover has not occurred and cover is free of vegetation.   | A                         |  |
| 5.  | Verify signs of erosion or depression (subsidence) are not present. ( <b>REFER TO</b> <i>Corrective Measures Implementation Report (CMIR)/ Remedial Action Completion Report (RACR), Section 7, Item 5</i> ) SRNS-RP-2010-01524. | A                         |  |
| 6.  | Verify that there are no unauthorized excavations, digging, or construction activities within the HWCTR boundaries.  | A                         |  |
| 7.  | Other  | <b>NO FURTHER ENTRIES</b> |  |

CPC 06/26/2019

| Inspected By                             |  |                             |
|--|--|-----------------------------|
| Charles P. Carter<br><i>(Print Name)</i> | <i>Charles P. Carter</i><br><i>(Signature)</i> | 06/26/2019<br><i>(Date)</i> |

| Review By Post-Closure Manager          |   |                         |
|---|---|-------------------------|
| George W. Joyner<br><i>(Print Name)</i> | <i>George W. Joyner</i><br><i>(Signature)</i> | 7/8/19<br><i>(Date)</i> |

Map of Heavy Water Component Test Reactor (HWCTR) (770U)



NOTES:

~~NO FURTHER ENTRIES~~

**SRNS-E3520-2017-00003-SM**

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January 30, 2017

TO: William B. Griffin 730-4B  
FROM: F.A. Intriago 730-2B/2169  
CC: S.A. Carey 730-2B/2176  
M. Patel 730-2B/2185

**HWCTR Concrete Cap**

**Purpose:** Structural Mechanics (SM) was asked to evaluate if the concrete cap for the Heavy Water Components Test Reactors (HWCTR) is acceptable “as is” with further recommendations for monitoring.

**Discussion:** Surface cracks occurred on the concrete cap that had been placed over the footprint of the Heavy Water Components Test Reactor (HWCTR) facility located in B-Area at the Savannah River Site (SRS) soon after placement in 2011. SM provided an initial evaluation (Ref 1) after a review of the design documents and walk down of the HWCTR concrete cap; See Figures 1 through 6.

On December 19, 2016 a walk down was performed by Favio Intriago, Shawn Carey, and Guy Baldwin. Personnel indicated the concrete cap for the HWCTR located in B-area. The concrete at the surface of the concrete cracks has spalled a small amount through freeze/thaw weather conditions but the crack width, length, and pattern are consistent with the conditions that were found in 2011; See Figures 7, 8, and 9. The cracks are presently tight and do not appear to project through the slab. Water penetration, if any, would be negligible considering the crack widths and sloped surface, Ref. 2. This can be observed in Figures 10 and 11, as water is directed to the edges of the slab after a rain event that occurred on the previous days before the walk down.

**Conclusion:** The existing slab can perform the function of shedding water due to its sloped top surface and not allow any water to pond which could potentially be an issue with water migration. The slab should be monitored every 5 years for crack growth and progression. This is consistent with the 5 year period that has spanned since the initial observations.

**References:** 1. SDD-2011-00075, “HWCTR CONCRETE CAP CRACKING”  
2. C-CC-B-00150, REV. 1 “HEAVY WATER COMPONENTS TEST REACTOR POST DECOMMISSIONING CLOSURE CAP CONCRETE COVER AND FOUNDATION CONCRETE”

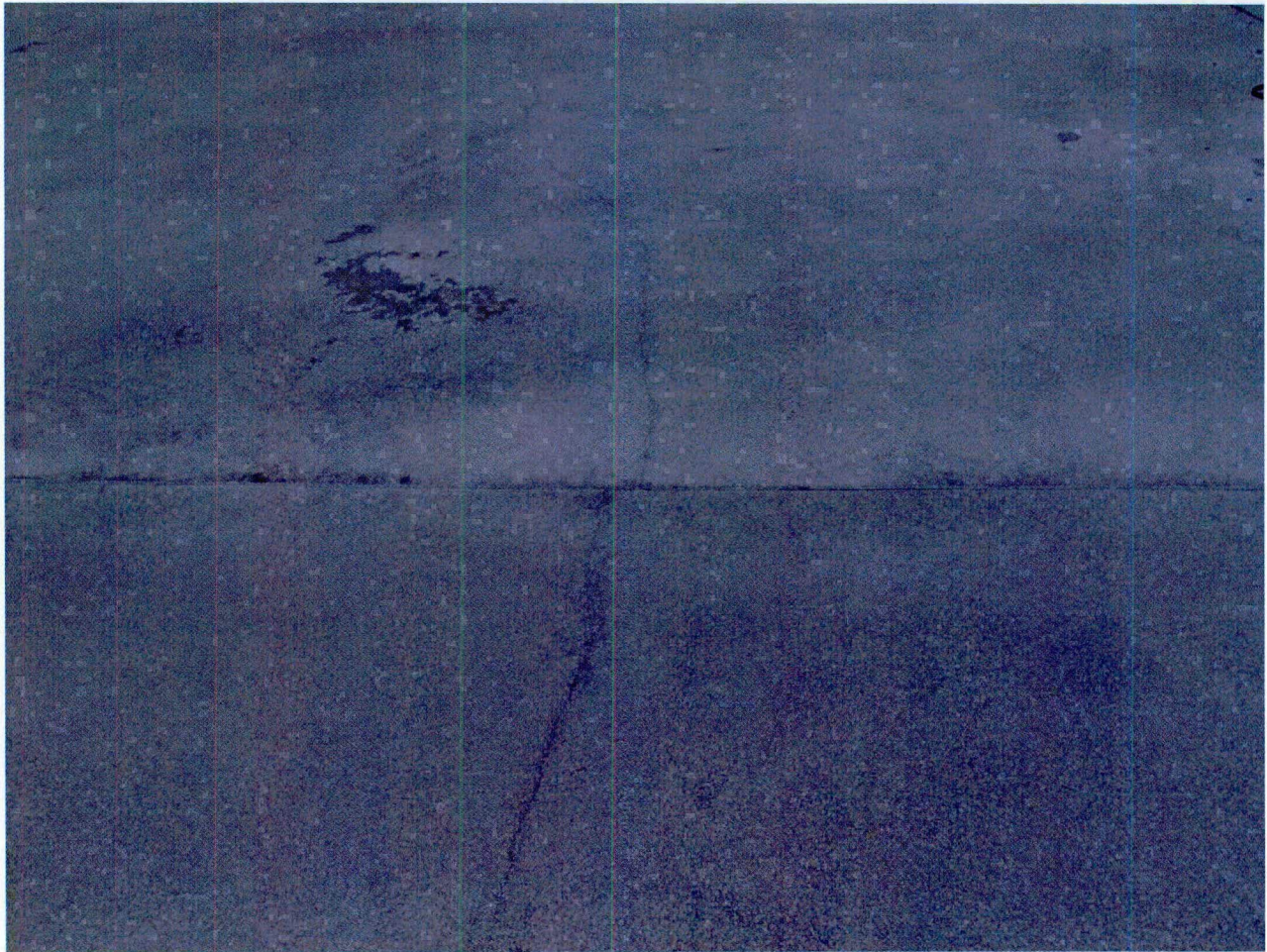


Figure 1. June 20, 2011 Picture 1



Figure 2. June 20, 2011 Picture 2



Figure 3. June 20, 2011 Picture 3



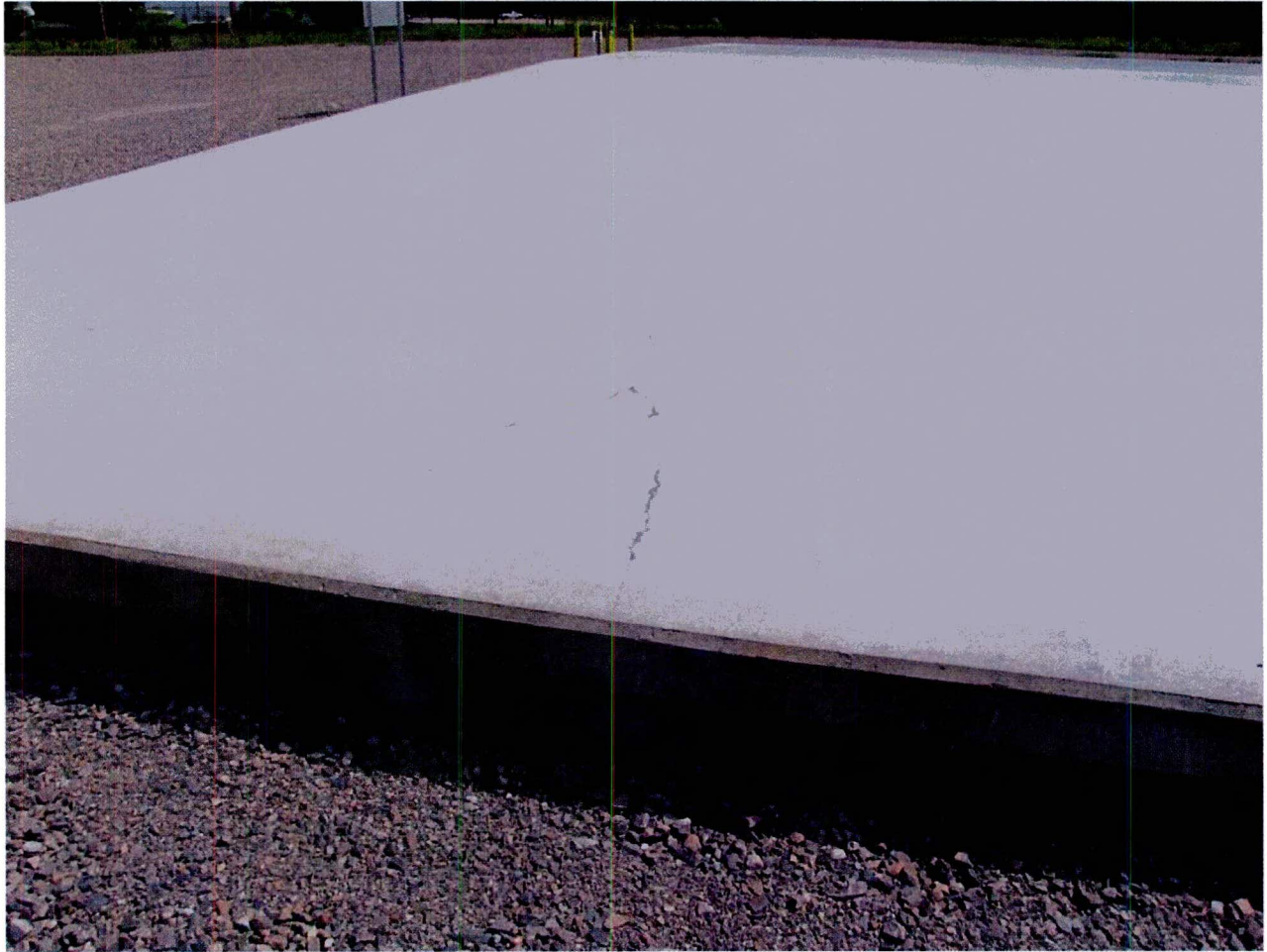


Figure 5. August 16, 2011 Picture 2

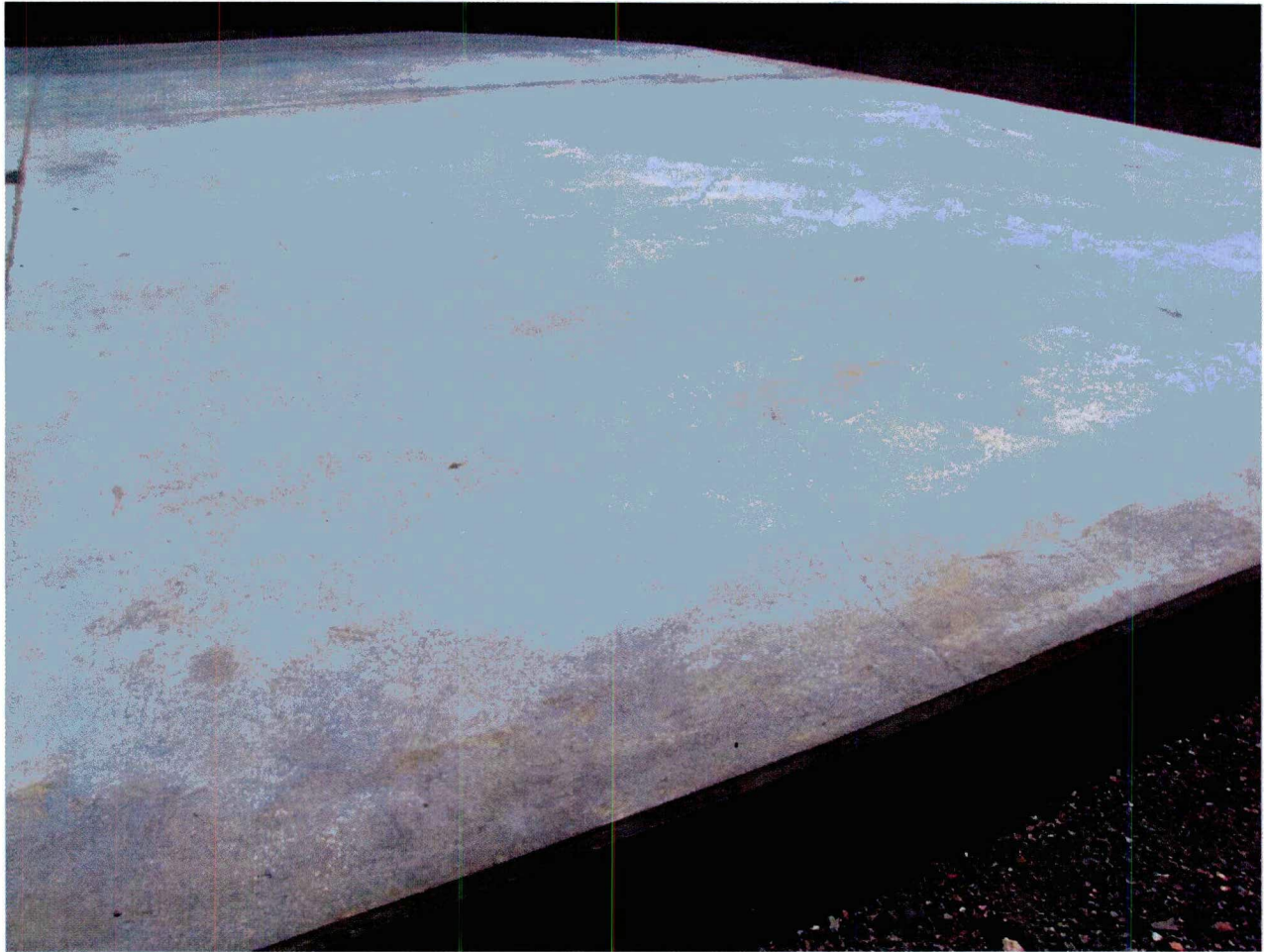


Figure 6. August 16, 2011 Picture 3

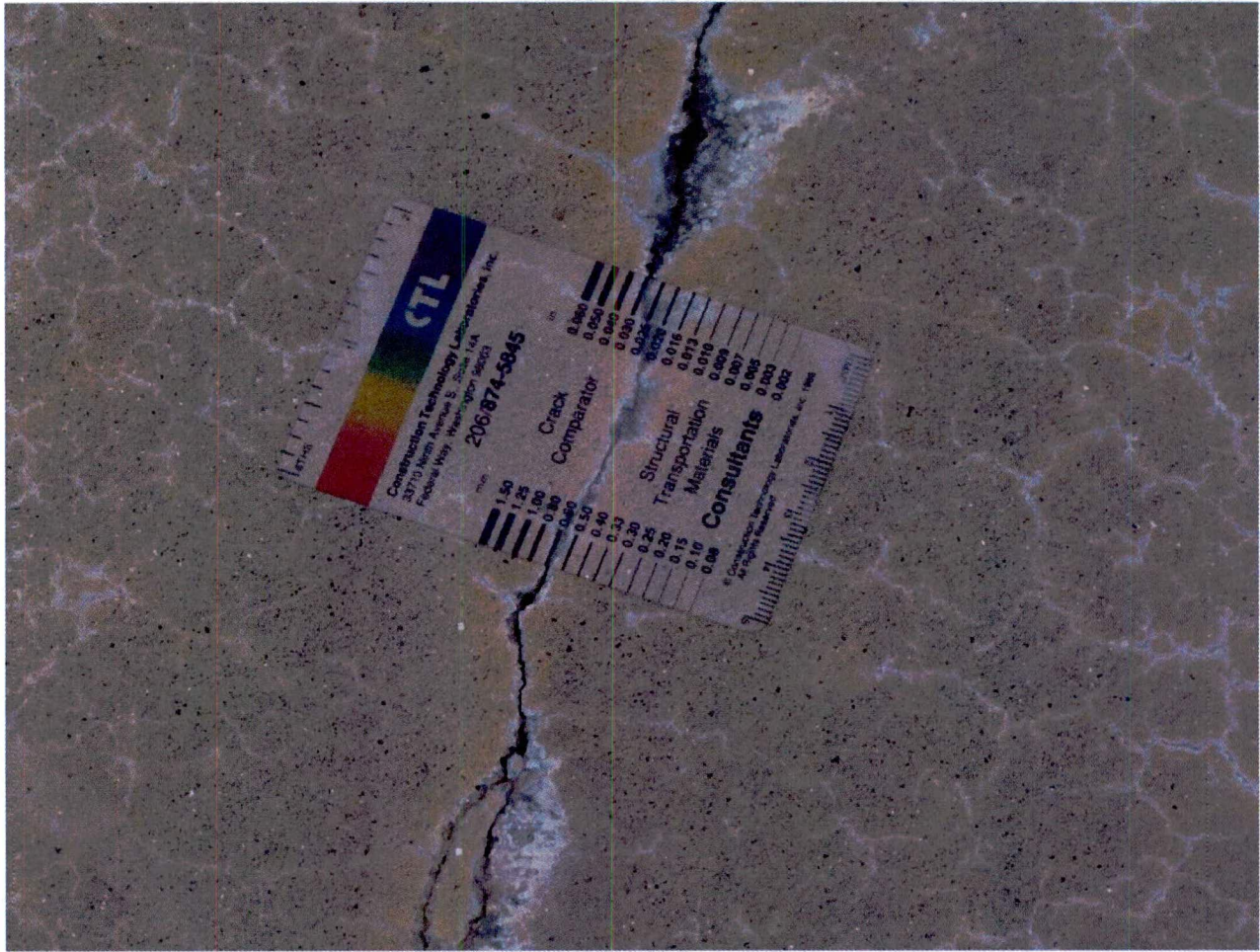


Figure 7. December 19, 2016 Picture 1



Figure 8. December 19, 2016 Picture 2



Figure 9. December 19, 2016 Picture 3



Figure 10. Water Shedding Picture 1



Figure 11. Water Shedding Picture 2

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