U.S. Department
of Transportation
Federal Highway
Administration

LTPP Seasonal Monitoring Program

Site Monitoring Suspension
Status Report
Section 241634, Ocean City
Maryland

Report No. FHWA-TS-98-24-01

May 1998

SEASONAL MONITORING PROGRAM SUSPENSION STATUS REPORT
MARYLAND SECTION 241634

I. INTRODUCTION

The seasonal site 241634 near Ocean City, Maryland has had two rounds of data collection to date. The last round of data collection was from May 29, 1997 to April 08, 1998. See Table 1 for a summary of the data collected. The site was re-commissioned and suspended earlier than usual to accommodate the MDSHA's plan to overlay the pavement. On April 08, 1998, all site suspension activities were completed at this site according to LTPP directive SM-8 "Suspension of SMP Site Monitoring Activities." The site has been permanently dismantled as the monitoring plan has been fulfilled.

This report entitled "SMP Site Monitoring Suspension Status Report" details the suspension preparation activities, site specific conditions, and provides information pertinent to seasonal site 241634.

II. SUSPENSION PREPARATION ACTIVITIES

All the suspension preparation activities at site 241634 were conducted during the final site visit on April 08, 1998. A manual distress survey of the entire section and cross profile surveys were conducted. The site paint markings did not need to be refreshed. On this day three sets of FWD tests, one set of elevations, and a distress survey of the instrumentation area were conducted. The water table measurements and the manual resistivity measurements (2 and 4 point) were performed in the morning and afternoon. The onsite datalogger was downloaded before being dismantled. Two sets of TDR traces and resistance voltages were extracted by the mobile datalogger. The instrument hole and trench area were in good condition.

The air temperature probe, tipping bucket, and the upper part of the support pole were dismantled. The lead wires from the air temperature probe and tipping bucket were removed from the cabinet and sprayed with an anti-corrosive compound. The above ground conduit from the pole to the equipment cabinet was removed.

After all the wires were disconnected from the control panel, the panel was detached from the equipment cabinet with the CR10 datalogger, terminal strip, and the battery pack attached to it. The cabinet with spikes attached to it was removed from the ground. The TDR cables, resistivity cable, and the MRC lead wires were sprayed with anti-corrosion compounds and sealed with desiccant packs in airtight bags and buried at the cabinet location. After the last piezometer reading was recorded the pipe was cleaned and sealed with grease. The access cover and seat were cleaned and lubricated before being covered and brought up to grade with native soil.

The profilometer survey corresponding to close-out was conducted on February 25, 1998.

All the necessary suspension activities were completed on April 08, 1998. The dismantled equipment was removed from the site. The dismantled site contains all the underground instrumentation and the related cabling buried underground. Figure 1 shows the plan view of the site after completion of the close-out activities. The above ground instrumentation area was leveled. The MDSHA personnel were informed about the 2" galvanized pole base protruding out of the ground. They planned on removing the section protruding above ground.

III. SPECIAL SITE CONDITIONS

The installation of site 241634 closely followed the "LTPP Seasonal Monitoring Program: Instrumentation Installation and Data Collection Guidelines". During the installation of the piezometer/bench mark, the high water table and the liquid nature of the soil caused the hole to collapse as the augers were withdrawn from the hole. Hollow stem augers were then used to hold the soil in place once the desired depth was reached and the piezometer was placed through the center of the augers. The piezometer's base plate was replaced with a cap such that the installation could be done with the augers in place. During the drilling of the instrumentation hole a significant amount of water was encountered. A wet vacuum and sponges were used to remove as much moisture as was possible. Due to these wet conditions, compaction of the bottom layers was made considerably more difficult. It was not possible to consolidate the sandy soil to its initial state at the depths of TDR probes 9 and 10. The compaction was much more efficient once the wet soils were passed. This did not create a long term problem as expected, as there was very little, if any, settlement at the instrument hole location.

The site was scheduled for an overlay of approximately 40mm of asphalt. Prior to the paving the M_r coring was done according to FHWA Directive M-18 on April 29, 1998. The site will remain as a GPS section. The seasonal studies at this site have terminated.

IV. SUPPLEMENTAL INFORMATION

Figure 1 shows the locations of the installed instrumentation at the site after the close-out. The instrument hole is at Station 5+20 and the piezometer is at Station 4+00. Table 2 gives the elevations of the portion of test section 241634 that was used for elevation measurements. All offsets are measured from the PK nails found at the outside pavement edge.

At the time of suspension TDR sensor number five was the only sensor that was not functioning (Trace shown in Figure 2). This probe has not been functioning since October of 1997. The plots from ONSFIELD, MOBFIELD and SMPCHECK follow expected trends and produce expected values. Pictures from the site suspension are provided at the end of this document.

TABLE 1: SUMMARY OF ROUND TWO SOUTHERN LOOP SMP DATA COLLECTION TO DATE

Agency Code | 2 4 |
LTPP Section I.D. | 1 6 3 4 |
Location Ocean City, MD

Test Date dd/mmm/yy	Visit Ident./ Code	ONSITE Data: Pav Temp.	ONSITE Data: Ambient Temp.	ONSITE Data: Rainfall	MOBILE Data: Moisture (TDR)	MOBILE Data: Frost Depth (Resist.)	Manual Data: Backup Pav. Temp.	Manual Data: Backup Moisture (TDR)	Manual Data: Frost Depth 2 - point	Manual Data: Frost Depth 4 - point	Manual Data: Water Table	Manual Data: Surface Elev.	Manual Data: Joint Open.	Manual Data: Joint Fault.	FWD Data: Surface Layer Temp.	FWD Data: No. of Cycles/Visit: OWP	FWD Data: No. of Cycles/Visit: ML	FWD Data: No. of Cycles/Visit: PE	Distress Data: Manual	Distress Data: PASCO	Profile Data: Profiler	Profile Data: Dipstick	Comments
29-May-97	A	X	X	X	X	X			X	X	X	X			X	1	1				09-Jun-97		Re-commission
26-Jun-97	B	X	X	X	X	X					X				X	1	1						
30-Jul-97	C	X	X	X	X	X			X	X	X	X			X	1	1						Solar panel installed
04-Sep-97	D	X	X	X	X	X					X				X	1	1						
01-Oct-97	E	X	X	X	X	X			X	X	X	X			X	4	3		X		01-Oct-97	X	
12-Nov-97	F	X	X	X	X	X			X	X	X	X			X	3	3						Reset to std. time
17-Dec-97	G	X	X	X	X	X					X				X	3	3						
21-Jan-98	A	X	X	X	X	X			X	X	X	X			X	4	4				22-Jan-98		IH survey
25-Feb-98	B	X	X	X	X	X			X	X	X	X			X	3	3				25-Feb-98		IH survey
18-Mar-98	C	X	X	X	X	X																	no traffic control due to rain
08-Apr-98	D	X	X	X	X	X			X	X	X	X			X	3	3		X			X	IH survey, Decommission

Table 2. Surface Elevation Measurements

LTPP Seasonal Monitoring Study	State Code	[24]
Surface Elevation Measurements	Test Section Number	[1634]

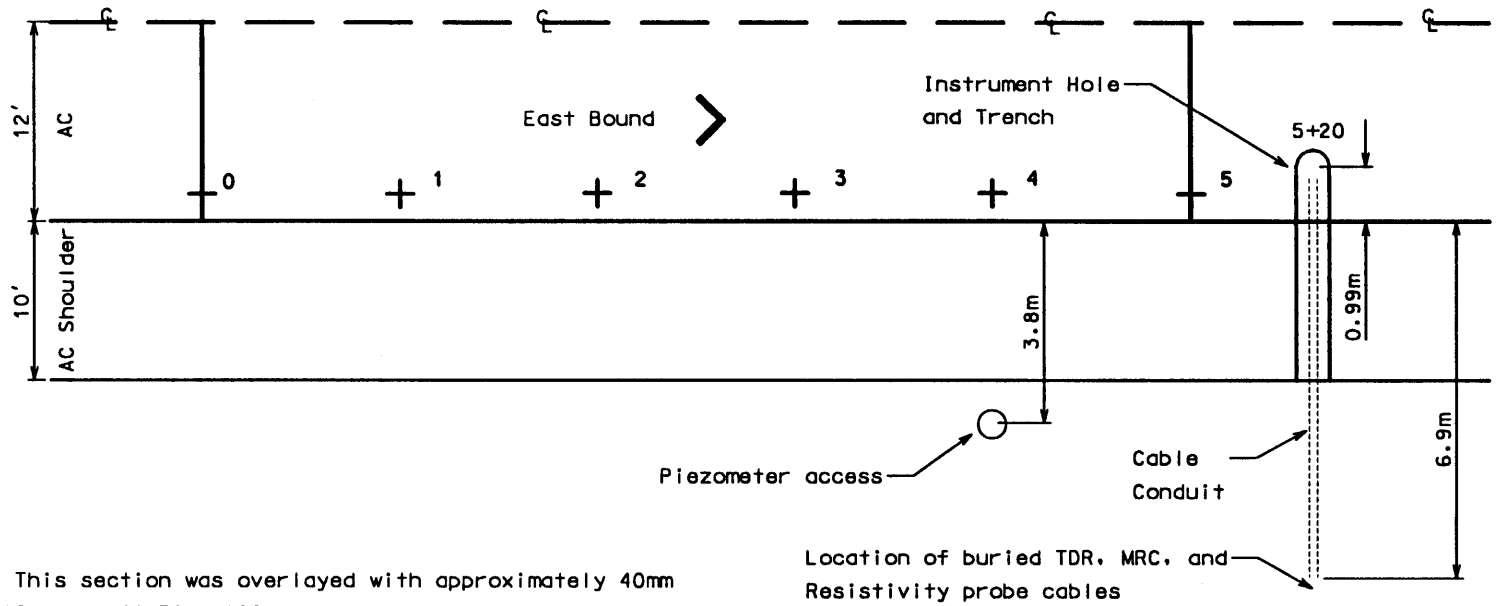
Survey Date	April 08, 1998
Surveyed By	SC
Surface Type	AC
Benchmark	Observation Piezometer - 1.000 meters - assumed

STATION	PE m offset 0.00m	OWP m offset 0.76m	ML m offset 1.83m	IWP m offset 2.74m	ILE m offset 3.66m
3+00	1.4175	1.4350	1.4575	1.4725	1.4775
3+25	1.4250	1.4400	1.4700	1.4800	1.4925
3+50	1.4425	1.4550	1.4775	1.4875	1.4900
3+75	1.4425	1.4600	1.4850	1.4975	1.5150
4+00	1.4525	1.4650	1.4875	1.5025	1.5050
4+25	1.4625	1.4750	1.4975	1.5100	1.5225
4+50	1.4750	1.4825	1.5050	1.5150	1.5175
4+75	1.4975	1.5050	1.5275	1.5400	1.5500
5+00	1.4950	1.5175	1.5425	1.5525	1.5525
5+15	1.5050	1.5150	1.5400	1.5425	1.5625
5+20	1.5000	1.5175	1.5425	1.5525	1.5550
5+25	1.5075	1.5200	1.5450	1.5575	1.5700

PE	Pavement Edge
OWP	Outer Wheel Path
ML	Mid Lane
IWP	Inner Wheel Path
ILE	Inner Lane Edge

Note: Offsets are measured from the PK nails at the outside of the pavement stripe at the pavement edge.

Figure 1. Plan view of Section 241634 - Post Suspension



Notes: 1. This section was overlayed with approximately 40mm of AC on April 30, 1998.
2. This drawing reflects the conditions after the close-out conducted on April 08, 1998, and prior to the overlay.

SCALE:	N.T.S.
PLOT DATE:	21.5.98
CREATED BY:	D.S.

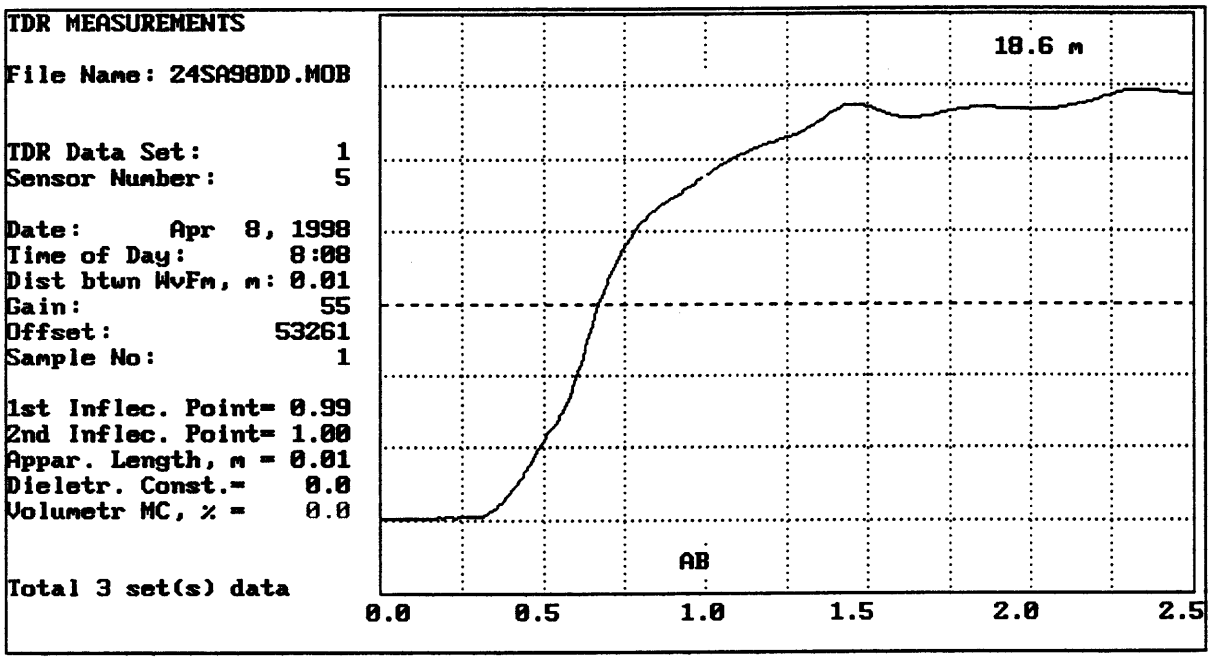


Figure 2: Faulty TDR sensor #5

Photo 1: Section 241634 - Pre-Overlay

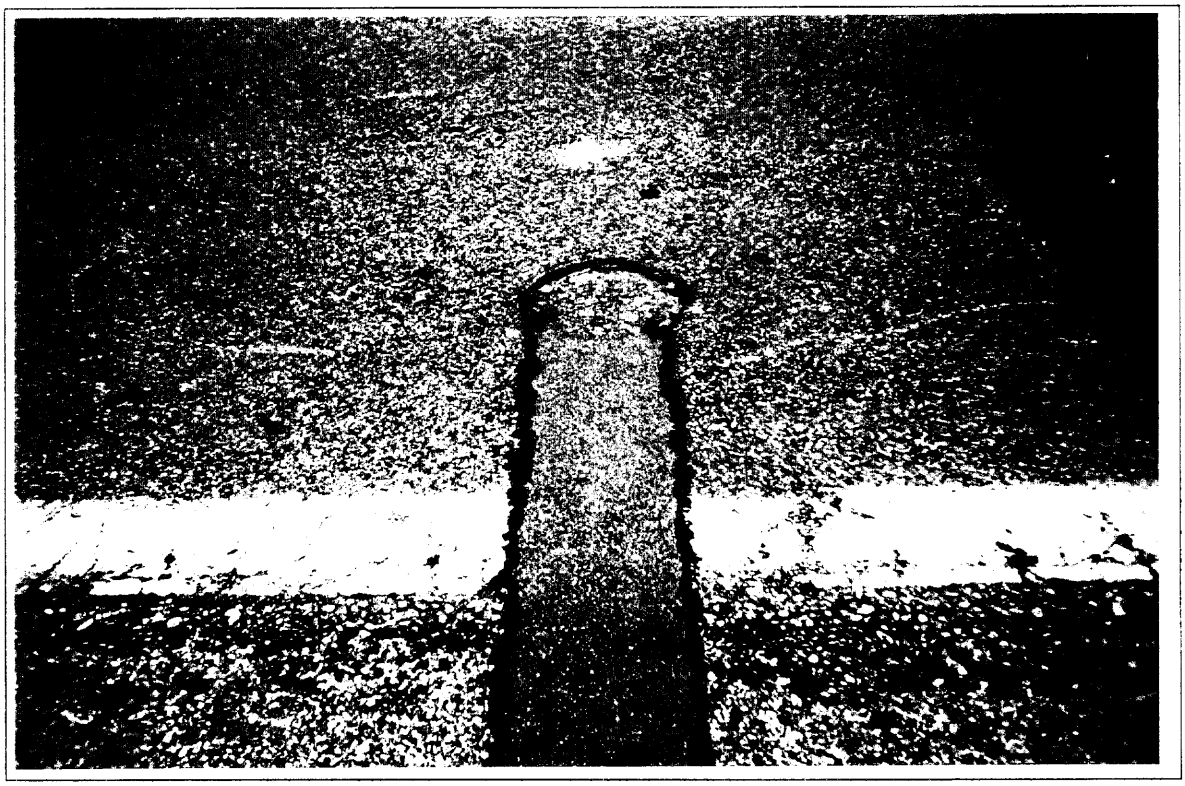


Photo 2: Instrument Hole Area - Pre-Overlay

Photo 3: Equipment Cabinet and Weather Pole Location - Post Suspension

Photo 4: Piezometer Location - Post Suspension