



Quality Engineering | Valued Relationships

Morrison Hershfield

## **2013 City of Winnipeg Regional and Local Street Renewals – Portage Avenue Package (I3-C-03)**

**Prepared for:**

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Attention: Ron Bruce

**Distribution:**

**Project Number:**

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Final Report



Quality Engineering | Valued Relationships

April 9, 2013

Our File No. 0035 007 00

Ron Bruce  
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25 Scurfield Blvd, Unit 1  
Winnipeg, MB R3Y 1G4

**RE: Pavement Structure Investigation Report for  
2013 City of Winnipeg Regional and Local Street Renewals – Portage Ave Package**

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TREK Geotechnical Inc. is pleased to submit our Report for the pavement structure investigation on Portage Avenue from St. John's Ambulance Way to Sherburn Avenue.

Please contact the undersigned if you have any questions. Thank you for the opportunity to serve you on this assignment.

Sincerely,

**TREK Geotechnical Inc.**

**Per:**

A handwritten signature in blue ink, appearing to read "Nelson Ferreira".

Nelson Ferreira  
Geotechnical Engineer, Principal  
Tel: 204.975.9433 ext. 103

cc: Stephen Renner (TREK Geotechnical)

## Revision History

Revision No.	Author	Issue Date	Description
0	SLR	April 10, 2013	Final Report

## Authorization Signatures

Prepared By:

  
Stephen Renner, C.E.T  
Geotechnical Technologist,

Reviewed By:



Nelson Ferreira, P.Eng.  
Geotechnical Engineer, Principal



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## **1.0 Introduction**

This report summarizes the results of the pavement structure investigation completed for the proposed 2013 City of Winnipeg Regional and Local Street Renewal (PW File #: 13-C-03) on Portage Avenue between St. John's Ambulance Way and Sherburn Avenue. Information regarding the asphalt and concrete is provided.

## **2.0 Pavement Structure Investigation and Laboratory Program**

A total of 40 test holes were drilled on Portage Avenue from St. John's Ambulance Way to Sherburn Avenue at the locations shown on Figure 01 and Figure 02. The test holes were drilled in order to determine the pavement conditions for rehabilitation of the road segment.

The pavement structure investigation was conducted March 11 to March 14, 2013. The pavement structure (asphalt or concrete) was cored by Quality Coring Ltd. using a portable coring drill press equipped with a hollow 150 mm diameter diamond core drill bit. Core samples were retrieved and the thickness was logged at TREK's materials testing laboratory. Intact core samples of the entire pavement structure (asphalt overlaying concrete) could not be retrieved at 15 of the 40 locations due to drilling and pavement conditions. However, the presence of concrete was confirmed at 11 of the 15 locations, but not the thickness. The remaining 4 locations, the presence of concrete below the asphalt could not be determined with certainty. These locations are noted accordingly in the pavement structure summary table included in Appendix A. Photos of the concrete and asphalt cores are included in Appendix B.

Test hole locations shown on the figures are based on measured distances from the nearest curb and monument (i.e. light post, fire hydrant, catch basin, etc.)

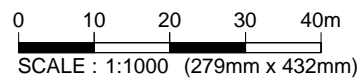
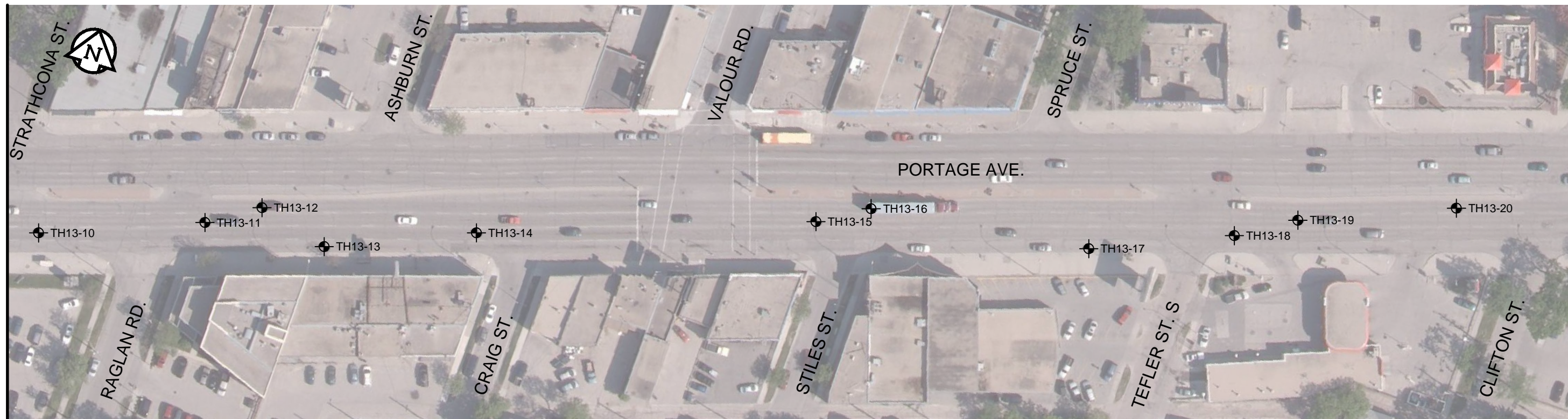
## Figures

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**LEGEND :**

⊕ TEST HOLE (TREK, 2013)

**NOTES :**

1. TEST HOLE LOCATIONS SHOWN ARE BASED ON MEASURED DISTANCES FROM THE NEAREST CURB AND MONUMENT (I.E. LIGHT POST, FIRE HYDRANT, CATCH BASIN, ETC.)

Figure 01

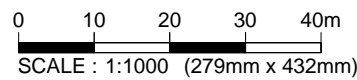
Test Hole Location Plan 1/2

Portage Avenue from St. John's Ambulance Way to Clifton St.

Tableid (279mm x 432mm)

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**LEGEND :**

● TEST HOLE (TREK, 2013)

**NOTES :**

1. TEST HOLE LOCATIONS SHOWN ARE BASED ON MEASURED DISTANCES FROM THE NEAREST CURB AND MONUMENT (I.E. LIGHT POST, FIRE HYDRANT, CATCH BASIN, ETC.)

**Figure 02**

Test Hole Location Plan 2/2

Portage Avenue from Clifton St. to Sherburn St.



**Appendix A**

**Pavement Structure Summary Table**

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**2013 City of Winnipeg Regional and Local Street Renewals**  
**PW File #: 13-C-03**  
**Pavement Structure Investigation**

Test Hole No.	Test Hole Location (Street Name)	Pavement Surface		Pavement Structure Material	
		Type	Thickness (mm)	Type	Thickness (mm)
TH13-01	3m E of 1st LP on corner of Empress and Portage Ave., 1m N of curb in curb lane	Asphalt	64	Concrete	222
TH13-02	22m E of 2nd LP on corner of Empress and Portage Ave., 1m N of curb in curb lane	Asphalt	171	Concrete	134
Th13-03	12m E of 3rd LP on corner of Empress and Portage Ave., 5m N of curb in 2nd lane	Asphalt	159	Presence of Concrete Unknown	
TH13-04	8.7m E of 4th LP on corner of Empress and Portage Ave., 1.5m S of median in median lane	Asphalt	51	Concrete	229
TH13-05	55m E of 4th LP on corner of Empress and Portage Ave., 1m N of curb in curb lane	Asphalt	279	Concrete	Unknown
TH13-06	7.5m E of 1st LP eastside of Empress Overpass, 5m N of curb in 2nd lane	Asphalt	229	Presence of Concrete Unknown	
TH13-07	3.8m E of 2nd LP eastside of Empress Overpass, 2m S of median in median lane	Concrete	254		
TH13-08	18.6 W of 4th LP eastside of Empress Overpass, 1.2m of median in turning lane	Asphalt	86	Concrete	218
TH13-09	3.7m E of 4th LP eastside of Empress Overpass, 1m of curb in curb lane	Asphalt	127	Presence of Concrete Unknown	
TH13-10	17.3m W of 5th LP eastside of Empress Overpass, 4.9m of curb in 2nd lane	Asphalt	126	Concrete	153
TH13-11	25m W of 1st LP of Raglan Rd. and Portage Ave., 5m S of median in 3rd lane	Asphalt	241	Concrete	83
TH13-12	11m W of 1st LP of Raglan Rd. and Portage Ave., 1.5m S of median in median lane	Asphalt	197	Concrete	Unknown
TH13-13	4m E of 1st LP of Raglan Rd. and Portage Ave., 1.5m N of curb in curb lane	Asphalt	159	Concrete	178
TH13-14	2m W of 2nd LP of Raglan Rd. and Portage Ave., 4.9m N of curb in 2nd lane	Asphalt	165	Concrete	Unknown
TH13-15	13m W of 1st LP of Stiles St. and Portage Ave., 5m S of median in 3rd lane	Asphalt	191	Concrete	152
TH13-16	Northside of 1st LP off Stiles St. and Portage Ave., 1.7m S of median in median lane	Asphalt	191	Concrete	165
TH13-17	13.7E of 2nd LP of Stiles St. and Portage Ave., 1m N of curb in curb lane	Asphalt	57	Concrete	235
TH13-18	4.4m E of 1st LP of Tefler St. S and Portage Ave., 4.2m N of curb in 2nd lane	Asphalt	146	Concrete	Unknown
TH13-19	20m E of 1st LP of Tefler St. S and Portage Ave., 8m N of curb in 3rd lane	Asphalt	152	Concrete	172
TH13-20	19.6m E of 2nd LP of Tefler St. S and Portage Ave., 1.6m S of median in median lane	Asphalt	197	Presence of Concrete Unknown	

**2013 City of Winnipeg Regional and Local Street Renewals**  
**PW File #: 13-C-03**  
**Pavement Structure Investigation**

Test Hole No.	Test Hole Location (Street Name)	Pavement Surface		Pavement Structure Material	
		Type	Thickness (mm)	Type	Thickness (mm)
TH13-21	7.7m E of 1st LP of Clifton St. and Portage Ave., 1m N of curb in curb lane	Asphalt	95	Concrete	235
TH13-22	Northside of 2nd LP of Clifton St. and Portage Ave., 4.2m N of curb in 2nd lane	Asphalt	178	Concrete	146
TH13-23	22m E of 2nd LP of Clifton St. and Portage Ave., 4.6m S of median in 3rd lane	Asphalt	235	Concrete	102
TH13-24	13m W of 1st LP of Camden PL. and Portage Ave., 4m S of median in 4th lane	Asphalt	133	Concrete	203
TH13-25	28m E of 1st LP of Camden PL. and Portage Ave., 1m N of curb in curb lane	Asphalt	89	Concrete	229
TH13-26	16.6m W of 1st LP of Newman St. and Portage Ave., 4.9m N of curb in 2nd lane	Asphalt	114	Concrete	Unknown
TH13-27	10.5m W of 2nd LP of Newman St. and Portage Ave., 4.4m S of median in 3rd lane	Asphalt	159	Concrete	133
TH13-28	14.3m E of 2nd LP of Newman St. and Portage Ave., 1.8m S of median in median lane	Asphalt	203	Concrete	159
TH13-29	16.2m E of 1st LP of Basswood Pl. and Portage Ave., 1m N of curb in curb lane	Asphalt	152	Concrete	159
TH13-30	15m E of 2nd LP of Basswood Pl. and Portage Ave., 4.6m N of curb in 2nd lane	Asphalt	127	Concrete	171
TH13-31	15m W of 1st LP of Sprague St. and Portage Ave., 4.8m S of median in 3rd lane	Asphalt	127	Concrete	Unknown
TH13-32	13.5m W of 2nd LP of Sprague St. and Portage Ave., 1.6m S of median in median lane	Asphalt	102	Concrete	248
TH13-33	11m W of LP# 2-048-636, 1m N of curb in curb lane	Asphalt	152	Concrete	191
TH13-34	6.8m E of LP# 2-048-636, 4.3m N of curb in 2nd lane	Asphalt	83	Concrete	Unknown
TH13-35	3m W of 2nd LP of Greenwood Pl. and Portage Ave., 4.7m S of median in 3rd lane	Asphalt	127	Concrete	Unknown
TH13-36	10.7m E of LP# 2-048-638, 1.9m S of median in median lane	Asphalt	102	Concrete	Unknown
TH13-37	5.6m E of 2nd LP of Dominion St. and Portage Ave., 4.6m N of curb in 2nd lane	Asphalt	133	Concrete	Unknown
TH13-38	Northside of 1st LP of Garfield St. and Portage Ave., 1m N of curb in curb lane	Asphalt	140	No Concrete Present	
TH13-39	21.3m E of 1st LP of Garfield St. and Portage Ave., 5m S of median in 3rd lane	Asphalt	102	Concrete	146
TH13-40	7.7m E of 2nd LP of Garfield St. and Portage Ave., 1m S of median in median lane	Asphalt	127	Concrete	Unknown

## **Appendix B**

### **Photographs of Pavement Core Samples**

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Photo 1: Asphalt and Concrete Core Sample from Test Hole TH13-01



Photo 2: Asphalt and Concrete Core Sample from Test Hole TH13-02



Photo 3: Asphalt Core sample from Test Hole TH13-03



Photo 4: Asphalt and Concrete Core sample from Test Hole TH13-04



Photo 5: Asphalt Core sample from Test Hole TH13-05



Photo 6: Asphalt Core sample from Test Hole TH13-06



Photo 7: Concrete core sample from Test Hole TH13-07



Photo 8: Asphalt and Concrete Core Sample from Test Hole TH13-08





Photo 9: Asphalt Core Sample from Test Hole TH13-09



Photo 10: Asphalt and Concrete Core Sample from Test Hole TH13-10

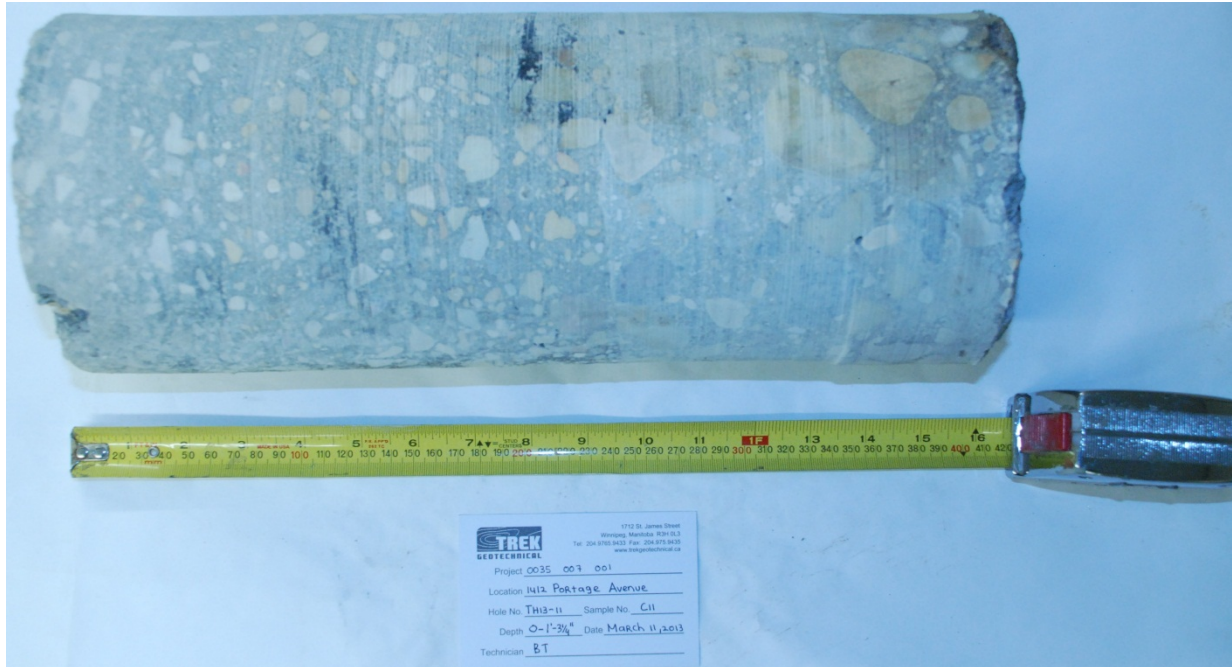


Photo 11: Asphalt and Concrete Core Sample from Test Hole TH13-11



Photo 12: Asphalt Core Sample from Test Hole TH13-12



Photo 13: Asphalt and Concrete Core Sample from Test Hole TH13-13



Photo 14: Asphalt Core Sample from Test Hole TH13-14



Photo 15: Asphalt and Concrete Core Sample from Test Hole TH13-15

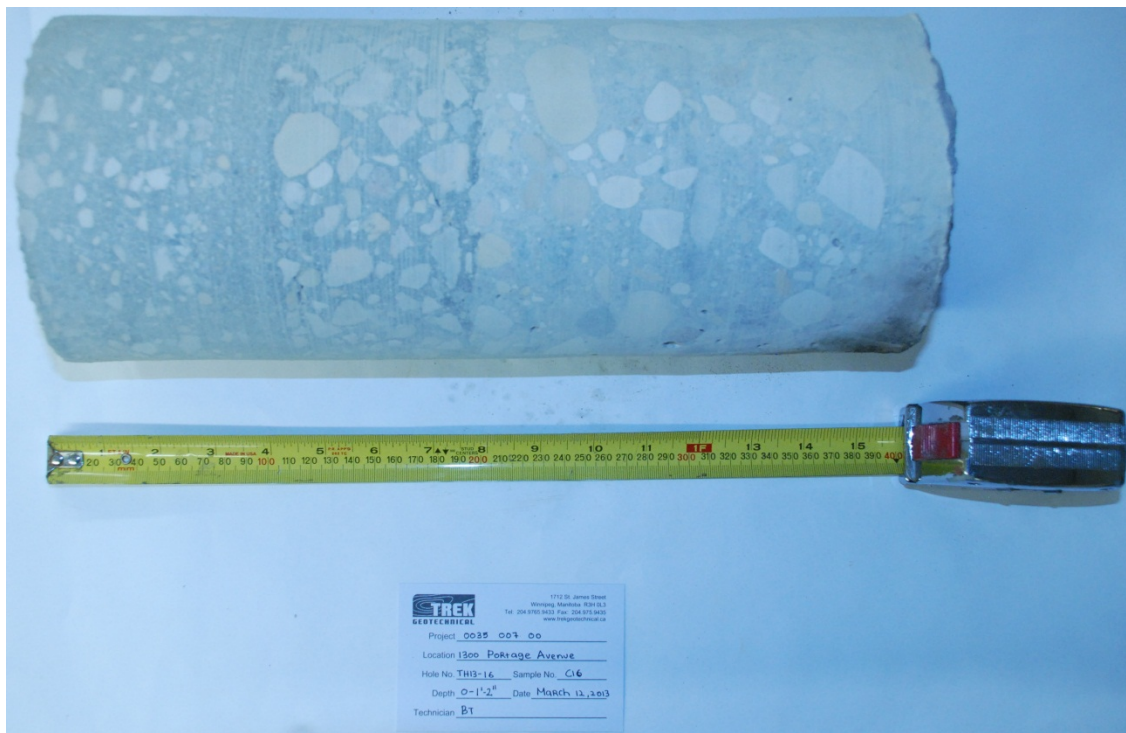


Photo 16: Asphalt and Concrete Core Sample from Test Hole TH13-16



Photo 17: Asphalt and Concrete Core Sample from Test Hole TH13-17



Photo 18: Asphalt Core Sample from Test Hole TH13-18



Photo 19: Asphalt and Concrete Core Sample from Test Hole TH13-19



Photo 20: Asphalt Core Sample from Test Hole TH13-20



Photo 21: Asphalt and Concrete Core Sample from Test Hole TH13-21



Photo 22: Asphalt and Concrete Core Sample from Test Hole TH13-22



Photo 23: Asphalt and Concrete Core Sample from Test Hole TH13-23



Photo 24: Asphalt and Concrete Core Sample from Test Hole TH13-24





Photo 25: Asphalt and Concrete Core Sample from Test Hole TH13-25



Photo 26: Asphalt Core Sample from Test Hole TH13-26



Photo 27: Asphalt and Concrete Core Sample from Test Hole TH13-27



Photo 28: Asphalt and Concrete Core Sample from Test Hole TH13-28



Photo 29: Asphalt and Concrete Core Sample from Test Hole TH13-29



Photo 30: Asphalt and Concrete Core Sample from Test Hole TH13-30



Photo 31: Asphalt and Concrete Core Sample from Test Hole TH13-31



Photo 32: Asphalt and Concrete Core Sample from Test Hole TH13-32



Photo 33: Asphalt and Concrete Core Sample from Test Hole TH13-33



Photo 34: Asphalt and Concrete Core Sample from Test Hole TH13-34



Photo 35: Asphalt Core Sample from Test Hole TH13-35



Photo 36: Asphalt and Concrete Core Sample from Test Hole TH13-36



Photo 37: Asphalt and Concrete Core Sample from Test Hole TH13-37



Photo 38: Asphalt Core Sample from Test Hole TH13-38



Photo 39: Asphalt and Concrete Core Sample from Test Hole TH13-39



Photo 40: Asphalt and Concrete Core Sample from Test Hole TH13-40