

Actual Quantities of Soil Investigation Performed

Borehole Location	Borehole Number	Driling Depth(m)	Penetration Test (nos.)	Undisturbed Soil Sampling (no.)	Unit Weight (no.)	Moisture Content (nos.)	Specific Gravity (nos.)	Liquid and Plastic Limits (nos.)	Gnading Analysis (nos.)	Unconfined Compression Test (no.)	Consolidation Test (no.)
Near Dutluur Pass	BH-1	10.26	8	1	_	_	1	l	l	t	I
	BH-1	11.20	11	ı	l	1	,-	ı	_	J	l
ogos river	BH-2	15.22	15	1	-	ı	l	l	I	i i	I
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	BH-1	12.33	12	-	ı	_	_	1	ı	-	1
7. 20. 20. 20.	BH-2	15.31	15	1		1	1	I	1	•	1
	BH-3	12.24	12	1	ı	1	1	1	1		I
	BH-4	3.00	_	<b>,</b>	1	_	-	<b>I</b>	l	+-	-
Tsenkher River	BH-1	9.35	6	ı	ı	1	1	l	1	ı	I
Urugun Valley	BH-1	19.40	19	ţ	-	1	1	-	·	ł	1
Urt Valley	BH-1	19.40	19	-	+	1	1	_	1	ı	!
Murun River	BH-1	15.45	15	ļ	l	3	3	-	င	ı	1
Swamp at Tsenkhermandal	1		1	ı	ı	ı	1	-	l	i I	l
Tota	_	143.16	135	_	-	6	10	5	6	1	1

### Actual Quantities of Material Tests on Bulk Soil Samples Performed

No.   Nample   Nampling   Location   Analysis   Gravity   Content   Plastic Limits   Compactories   City			<del></del>		0 1					
No.   No.   No.   Expression   No.   No.	No.	Sample	Sampling	Location	Grading	Specific	Moisture	Liquid and	Compaction**	Soaked
BCD-4	INO.	_						l	Test (Sieries)	CBR***
BCD-3					(108.)	(nos.)	(nos.)	(nos.)		(Sieries)
3 BCD-2					<u> </u>			<u> </u>	<u>l</u>	1
A   BCD-1					<u> </u>	ļ <u> </u>	<u> </u>		I	!
S   BC A-2   4739155   108737455   1   1   1   1   1   1   1   1   1					1	<u> </u>	1		<u> </u>	1
6 BCIA-IA 4741534 108732349					<u> </u>	1		<del></del>		1
RCIA-1B						<u> </u>	1	<u> </u>	<u> </u>	<u>-</u>
8 BC4A-5 47*41736 108*32*564						<u> </u>	1	1	<u> </u>	1
9   BC4A-4   47°45'384   108°37'606   1   1   1   1   1   1   1   1   1					<u> </u>		1			- !
10   BC4A-3   47*48*343   108*49*014   1   1   1   1   1   1   1   1   1	<del></del>				1	1		1 1	I	<u> </u>
11   BC4A-2   47°45′149   108°50′181   1   1   1   1   1   1   1   1   1					1	1	<u> </u>	<u> </u>	1	!
12	-				1	1	<del>                                     </del>	!	. <u>l</u>	
13   BCS-1   47*42*484   109*03*335   1   1   1   1   1   1   1   1   1	-				4		<u> </u>	1		
14   BC6-4   47"38"223   10"0"0"452   f   f   f   f   f   f   f   f   f						<u> </u>		<u> </u>	<del></del>	1
15   BC6-3	-					<del></del>	<u> </u>	1	I	
16   BC6-2   47°32′793   10°32′787   1   1   1   1   1   1   1   1   1						<u> </u>	ļ <u>.</u>			<u> </u>
17   BC6-1   47°28'961   109°29'967   1   1   1   1   1   1   1   1   1								<u> </u>	I	
18   BC7-1   47°27′955   109°34′863   1   1   1   1   1   1   1   1   1							<u> </u>	<u> </u>		1
19   BC7-2   47°27'244   109°41'328   1				109°29'967			<u> </u>			
20   BC8-1   47°25'497   109°51'133   1   1   1   1   1   1   1   1   1	-					1	1	ļ <u> </u>		
22   BC9-2   47°25'136   109°57'586   1   1   1   1   1   1   1   1   23   BC9-2   47°25'396   110°04'905   1   1   1   1   1   1   1   1   1						<u> </u>	1	<u>                                     </u>	1	
22   BC9-3   47°25'306   110°04'905   1   1   1   1   1   1   1   1   1						<del>                                       </del>		1	1	1
23   BC9-2   47°24′655   110°12′549   1   1   1   1   1   1   1   1   2   2						1		11	1	1
24   BC9-1   47°21°836   110°21°462   1   1   1   1   1   1   1   26   BC10-1   47°21°778   110°29°827   1   1   1   1   1   1   1   1   1					1	!	1		1	
25   BC   0-1   47°21'778   10°29'827   1   1   1   1   1   1   1   1   1						1		1		11
26 BC10-2 47°19′793 110°37′142 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					1	1	11	11	1	1
27 BC 4-1 47°45′814 108°51′149 No test was carried out.  28 BPD-5 47°42′208 107°50′500 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						1	1	1	1	1
28 BPD-5						<u> </u>	11	<u> </u>	1	1
29 BPD-4 47°41′533 107°54′975 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	27	BC 4-1	47°45'814	108°51'149	No test	was carri	ed out.		· <del></del>	
29 BPD-4 47°41′533 107°54′975 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	28	BPD-5	47°42'208	107°50'500	1	1	1	1	1	1
30 BPD-3					<u>_</u>	1	1	1	1	1
31 BPD-2 47°42'454 108°07'173 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					1	1	1	1	1	1
32   BPD-1   47°41′286   108°11′803   1   1   1   1   1   1   1   1   3   3					1	1	1	1	1	1
33   BP1A-2   47°38'712   108°16'600   1   1   1   1   1   1   1   1   34   BP1A-1   47°41'023   108°24'347   1   1   1   1   1   1   1   1   1						1	1	1	1	1
34         BPIA-1         47°41'023         108°24'347         1         1         1         1           35         BP3A-1         47°41'907         108°27'102         1         1         1         1         1           36         BP4A-5         47°43'005         108°39'724         1         1         1         1         1           37         BP4A-4         47°47'229         108°39'724         1         1         1         1         1         1           38         BP4A-3         47°48'458         108°46'637         1					1	1	1	1	1	1
35   BP3A-1   47°41′907   108°27′102   1   1   1   1   1   1   1   36   BP4A-5   47°43′005   108°34′922   1   1   1   1   1   1   1   1   37   BP4A-4   47°47′229   108°39′724   1   1   1   1   1   1   1   38   BP4A-3   47°48′458   108°46′637   1   1   1   1   1   1   1   1   39   BP4A-2   47°45′287   108°54′323   1   1   1   1   1   1   1   1   1	-				1	1	1	1	1	1
36         BP4A-5         47°43′005         108°34′922         1         1         1         1           37         BP4A-4         47°47′229         108°39′724         1         1         1         1         1           38         BP4A-3         47°48′458         108°46′637         1         1         1         1         1           39         BP4A-2         47°45′287         108°54′323         1         1         1         1         1           40         BP5-1         47°44′648         108°59′570         1         1         1         1         1           41         Tin mine2         47°43′299         109°03′973         1         1         1         1         1           42         Tin mine1         47°40′640         109°07′966         1         1         1         1         1         1           43         BP6-3         47°38′853         109°19′790         1					1	1	1	1	1	1
37   BP4A-4   47°47°229   108°39°724   1   1   1   1   1   1   1   1   38   BP4A-3   47°48°458   108°46′637   1   1   1   1   1   1   1   1   1	$\overline{}$				1	1	1	1	1	1
38         BP4A-3         47°48′458         108°46′637         1         1         1         1         1           39         BP4A-2         47°45′287         108°54′323         1         1         1         1         1           40         BP5-1         47°44′648         108°59′570         1         1         1         1         1           41         Tin mine2         47°43′299         109°03′973         1         1         1         1         1           42         Tin mine1         47°40′640         109°07′966         1         1         1         1         1           43         BP6-3         47°38′853         109°15′469         1         1         1         1         1           44         BP6-2         47°33′955         109°19′720         1         1         1         1         1           45         BP6-1         47°32′376         109°23′126         1					1	1	1	1	1	1
39 BP4A-2 47°45′287 108°54′323 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					1	1	1	1	1	1
40         BP5-1         47°44′648         108°59′570         1						1	1	1	1	1
41         Tin mine2         47°43'299         109°03'973         1<						1	1	1	1	1
42         Tin minel         47°40′640         109°07′966         1         1         1         1         1           43         BP6-3         47°38′853         109°15′469         1         1         1         1         1           44         BP6-2         47°33′955         109°19′720         1         1         1         1         1           45         BP6-1         47°32′376         109°23′126         1	-	_			1	1	1	1	1	1
43       BP6-3       47°38'853       109°15'469       1       1       1       1       1         44       BP6-2       47°33'955       109°19'720       1       1       1       1       1         45       BP6-1       47°32'376       109°23'126       1       1       1       1       1         46       BP7-1       47°28'185       109°32'330       1       1       1       1       1         47       BP7-2       47°27'193       109°39'934       1       1       1       1       1         48       BP7-3       47°26'642       109°44'519       1       1       1       1       1         49       BP8-1       47°27'095       109°47'594       1       1       1       1       1         50       BP9-3       47°24'313       110°01'365       1       1       1       1       1         51       BP9-2       47°24'239       110°14'123       1       1       1       1       1       1         52       BP9-1       47°23'083       110°27'021       1       1       1       1       1       1       1       1       1       1					1	<del></del>	1	1	1	1
44       BP6-2       47°33'955       109°19'720       1       1       1       1       1         45       BP6-1       47°32'376       109°23'126       1       1       1       1       1       1         46       BP7-1       47°28'185       109°32'330       1       1       1       1       1       1         47       BP7-2       47°27'193       109°39'934       1	-				1	1	1	1	1	1
45       BP6-1       47°32'376       109°23'126       1       1       1       1       1         46       BP7-1       47°28'185       109°32'330       1       1       1       1       1         47       BP7-2       47°27'193       109°39'934       1       1       1       1       1         48       BP7-3       47°26'642       109°44'519       1       1       1       1       1         49       BP8-1       47°27'095       109°47'594       1       1       1       1       1         50       BP9-3       47°24'313       110°01'365       1       1       1       1       1         51       BP9-2       47°24'331       110°01'365       1       1       1       1       1         51       BP9-2       47°24'339       110°14'123       1       1       1       1       1         52       BP9-1       47°23'190       110°20'311       1       1       1       1       1       1         53       BP10-2       47°23'083       110°27'021       1       1       1       1       1       1       1       1       1       1		_	-			1	1	1 1	1	1
46       BP7-1       47°28'185       109°32'330       1       1       1       1       1       1         47       BP7-2       47°27'193       109°39'934       1       1       1       1       1       1         48       BP7-3       47°26'642       109°44'519       1       1       1       1       1       1         49       BP8-1       47°27'095       109°47'594       1	=	_				<del></del>	1	1	<u> </u>	1
47         BP7-2         47°27′193         109°39′934         1	-		47°28'185		1	1	i	1	1	1
48       BP7-3       47°26′642       109°44′519       1       1       1       1       1         49       BP8-1       47°27′095       109°47′594       1       1       1       1       1         50       BP9-3       47°24′313       110°01′365       1       1       1       1       1         51       BP9-2       47°24′239       110°14′123       1       1       1       1       1         52       BP9-1       47°23′190       110°20′311       1       1       1       1       1         53       BP10-2       47°23′083       110°27′021       1       1       1       1       1         54       BP10-1       47°21′581       110°36′300       1       1       1       1       1         55       BPD-4'       47°41′257       107°54′455       No test was carried out.         56       BP 1A-1'       47°40′803       108°24′015       No test was carried out.					1	1	1	1	1	1
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\overline{}$				1	1	1	<del>-</del>	1	1
50         BP9-3         47°24'313         110°01'365         1         1         1         1         1           51         BP9-2         47°24'239         110°14'123         1         1         1         1         1         1           52         BP9-1         47°23'190         110°20'311         1         1         1         1         1         1           53         BP10-2         47°23'083         110°27'021         1         1         1         1         1         1           54         BP10-1         47°21'581         110°36'300         1         1         1         1         1         1           55         BPD-4'         47°41'257         107°54'455         No test was carried out.         No test was carried out.           56         BP 1A-1'         47°40'803         108°24'015         No test was carried out.					1	1		<u>i</u>	1	1
51       BP9-2       47°24'239       110°14'123       1       1       1       1       1         52       BP9-1       47°23'190       110°20'311       1       1       1       1       1       1         53       BP10-2       47°23'083       110°27'021       1       1       1       1       1       1         54       BP10-1       47°21'581       110°36'300       1       1       1       1       1       1       1         55       BPD-4'       47°41'257       107°54'455       No test was carried out.         56       BP 1A-1'       47°40'803       108°24'015       No test was carried out.					1	1	<del>                                     </del>	<del>                                     </del>	1	<u>·</u> 1
52       BP9-1       47°23′190       110°20′311       1       1       1       1       1         53       BP10-2       47°23′083       110°27′021       1       1       1       1       1       1         54       BP10-1       47°21′581       110°36′300       1       1       1       1       1       1       1         55       BPD-4'       47°41′257       107°54′455       No test was carried out.         56       BP 1A-1'       47°40′803       108°24′015       No test was carried out.					1	1	1	<del>                                     </del>	<u> </u>	1
53       BP10-2       47°23'083       110°27'021       1       1       1       1       1         54       BP10-1       47°21'581       110°36'300       1       1       1       1       1       1         55       BPD-4'       47°41'257       107°54'455       No test was carried out.         56       BP 1A-1'       47°40'803       108°24'015       No test was carried out.					<del>-                                    </del>	1	<del></del>	<del>  </del>	<u>_</u>	1
54         BP10-1         47°21'581         110°36'300         1         1         1         1         1           55         BPD-4'         47°41'257         107°54'455         No test was carried out.           56         BP 1A-1'         47°40'803         108°24'015         No test was carried out.		_			1	1	1	<del>  </del>	<u>_</u>	_ <del></del>
55         BPD-4'         47°41'257         107°54'455         No test was carried out.           56         BP 1A-1'         47°40'803         108°24'015         No test was carried out.					1	<del>                                     </del>	1	1	1	1
56 BP 1A-1' 47°40'803 108°24'015 No test was carried out.	-				No test	was carrie	ed out	<u> </u>	<u></u> !	<del></del> -
	-							<del>_</del>		
57 BP 4-1 47°46'726 108°57'184 No test was carried out.										
	J/							52	52	53
Total         57 samples         53			L			- 55	L 99		JJ	

Three test specimens were prepared using three different compaction energy,

BC: Samples taken alogn road alignment BP: Samples taken from possible borrow pits

Modified Proctor test

CBR test at the optimum water content of the modified Proctor test.

<sup>10, 25</sup> and 56 blows per layer

Actual Quantities of Aggregate Tests on Rock Samples

Stripping of	Mixture (nos.)	<del></del>	-	1	7
	Index (nos.)	1	-	1	ε
	and Absorption Test (nos.)	7	2	2	ဖွ
Soundness*	Test (nos.)	-	-	1	ဗ
Los Angeles	(nos.)	<b>,</b> -	1		က
Production of	Aggregate (nos.)	<del></del>	-	-	က
Sampling Location	Ш	108°25'846	109°07'966	110°23′202	
Sampling	z	47°42'932	47°40′640	47°23'308	
No Name of Sampling Location		Quarry at Tumur Ulgi Mt.	Stock Pile of Tailing Deposit (Boulder) at Ex-Tsenkhermandal Tin Mine	Delger Mt. at Murun	Total
g		-	2	က	

Soundness test by sodium sulphate\*\* One each for two different sizes of aggregate

### Actual Quantities of Sieving Analysis Performed on Sand Samples Taken from Possible Sources of Fine Aggregate

No.	Name of Samples	Samplin	g Location	Sieving Analysis
NO.	and/or Sampling Location	N	E	(nos.)
1	Zoomond Sand Pit	47°47'163	107°28'892	1
2	Kherlen River	47°41'765	108°28'999	1
3*	Ex-Tsenkhermandal Tin Mine	47°43'299	109°03'973	(1)
4	Gold Mine at Tsenkher	47°35'109	109°11'790	1
5	Murun	47°23'252	110°16'188	1
6	Undurkhaan Sand Pit	47°26'633	110°40'159	1
			Total	5(6)

<sup>\*</sup> This sample is same as the bulk soil sample for CBR test, Tin Mine-2.

### **Actual Quantities of Cement Stabilization Test Performed**

No.	Name of Samples	Samplin	g Location	Sieving Analysis
No.	and/or Sampling Location	N	Е	(nos.)
1	Zoomond Sand Pit	47°41'765	108°28'999	1
2	Kherlen River	47°24'239	108°14'123	1
			Total	2

### E-2. Drilling Logs

Projec	ŧ No.				F'	G oject The Fi	eosibility Stu	ly on	LLIN Type o		ing	L( Dry Cori		<u>;</u>			emar nomic Co	riks ne Penet	ration Te	st	
Hole N	lumbe	er Bi	l-t neor	Dullour Pass 107 57 017	_	Construc Road in		ern Arterial	Date	01/06/	101			_							
Water	Table		12 OU E		n				Driller	Ts, Gor	ışukh			_							
	m ni	H	EI .		Ē		ensity		emarks	Sam	pling		Dy:	nan	nic	Cone	Pen	etrat	ion	Test	
Scale in m	Elevation i	Depth in 1	Thickness	Legend	Type of Soil	Colour	Relative Density or Consistency		General Remarks	Depth in m.	Sample No.	N-Value Blows/30cm	Eac)	ws P		1			Valu 80		50
				Δ ×	Sitly Sand with Gravel			ΓiH (Rock fill) M	on size of					_				1			
1				Δ .×	with Gravel			rock fragments:	200mm												
3		2.10	2.10	Δ × ×	Silty Sond with Graves	Greyish Brown to Grey	Ver Dense	Grovel consists rock tragments length.	of weathered of 2 to 4cm in	145											
4				Δ × Δ ×						3.15 3.38		50/23 53/18		35			50 BLOW	S/23cm	_		
5				$\Delta \overset{\times}{\downarrow}$						4.15 4.35 5.15 5.32		54/17	i I	44				S/17cm			
6				Δ××						5.32 6.15 6.32		55/17		45				5/17cm			
7										7.15 7.31	0-5 <sub>KS</sub>	52/16	25	47	5/1		52 BLOW	5/16cm			
8	***************************************			Δ × ×						6.15 8.25	D-6 <sub>∞</sub>	50/10	31	50/10			50 6109	S/T0cm			
9_		9.50	7.40	$\stackrel{\triangle}{\overset{\times}{\overset{\times}}}$						9.15 9.32	_0-7 <sub>88</sub>	56/17	26	46	10/2		56 BLOW	S/17cm		_	
10		10.75	0.76	Δ <u>Δ</u> ×	Sitty Sand and Gravel -END C	F DRILLING-	Very Danse	Consisting of we tragments.	othered rock	10.15 10.26	Ç-8,	50/11	33	50/11			50 BI 09	15/11cm			
11 12																					
13															Ì				-		
14																					-
<u>15</u>																					
16																					
17	ŧ																				
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21 -															ŀ						-
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29																					<del>-</del>
30															}			<u> </u>			-
31	ed by			[			Chack	ed by:				i			Ar	nro	ed b				_

Project No.  Hole Number 8+1 at Togos River  Water Table \$17.5 m	Project The Feosibility Stu Construction of East Rood in Mongolia	DRILLIN  dy on Type o  Date  Driller		LOG Bry Coring	Remarks  D : Dynamic Cone Penetration Test A fazen zone was encountered
H H H H	ii nsity	marks	Sampling	Dynam	nic Cone Penetration Test
Scale in m Elevation in Depth in m Thickness ir	Type of Soil Colour Relative Density or Consistency	General Remarks	Depth in m- Sample No.	en 150 Each 15 Each 15 Each 15 Each 15	em 10 20 30 40 50
3 300 270 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Selty Sond Derit Erden Light Sond and Signet Brownish Grey Very Dense Sond and Brown to Clovel Brownish Grey Very Dense Brownish Grey Very Dense Brownish Grey Very Dense Sond and Brownish Grey Very Dense Sond and Brownish Grey Very Dense Sond and Sond Sond Sond Sond Sond Sond Sond So	Sand is fine grained. With pools at tap. With grovel at politica.  Sand is fine to medium grained. Growel: Submajara to subcounded gimes. Silmon. Glimn. Gli	118 D=1. 128 2.15 D=2. 2.15 D=3. 3.22 4.15 D=3. 3.22 4.15 D=3. 3.22 6.15 D=5.88	50/8 46 56/8 50/5 39 50/5 56/7 36 50/7 66/17 26 56 1 58/17 21 48 1 56/10 34 50/10	50 BLOWS/Rem 50 BLOWS/Rem 50 BLOWS/7em 50 BLOWS/7em
30 31					-

į		t No. Numbe Table		1-2 at Tog 6.6		From Pro	Dject The Fa Construct Road in	ion of Easte		G f Drill		LC Bry Corin	) G	-	Remar 0 : Oynanic Co		ilion Tesi	(	
	_	E		ii Ti		1		nsity ncy	marks	Sam	pling		Dyna	mic	Cone Pen	etrati	оп Т	l'est	
	Scale in m	Elevation in	Depth in m	Thickness i	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Depth in m.	Sample No.	N-Value Blows/30cm	Elows	em		60 3i - <i>N</i>	alue 0 4		0
			0.90	0.50	P	Silly Sond	Dark Brawn Grey		Sand is very fine grained. With roots and gravel.				+	+				<del>-</del>	
	1		1.06	0.70	0.00°	Sond and Gravel with Boulder Sand and	Slightly Brownish Grey	Very Dense	With boulders. Size of boulder:	1,15 1,23	Q-1,,	50/8	42 50/	8	50 BLOW	S/8cm		_	
	3				0 0 0 0 0	(ir gwel			Soud is fine to medium groined. Grovel: subrounded &mox 40mm. &prevailing < 15mm. With little sit throughout of the layer.	2.00 2.05	D-2	50/5 Forzen	6/5	+	-				
	4		4.00	3.00	, O					3.15 3.29	- D-3es		27 50/	Т	50 BLOW				-
	5				0°0 ×	Sity Sand and Gravel	Greyish Brown to Brown	Very Dense	Sand is fine to medium grained. Grovel: subrounded &max 30mm &prevailing < 15mm	415 428	-D 4 <sub>122</sub>	50/13	29 50/ 33 50/		50 BLOW				_
	6				000 X					5.15 5.27 6.15	0-3 <sub>K</sub>			10/2		.			-
Z	7	.	7.00	3.00	.00 ×	Clayev Sand	Grey to	Very Dense	Sand is fine to cookse grained	6,15 6,32 7,15 7,33				10/3	56 BLOV				
ŀ	8					Clayey Sand and Gravet	Greyish Brown	rely believe	Gravet: subrounded triax 60mm.  prevating < 10mm. Gravet content is law below 9m.	7.53 8.15 8.29	0.810		27 50/		50 BLOW	Ì	_		-
	9									9.15 9.26	6~6**	50/11	31 50/	11	50 BLOW	S/tiem			
	10									10.15 10.24	D-16	50/9	36 50/	,		5/9cm			
	11		11 QG		°°0 0°°(×	S≇ty Sand and Gravel	Grey to Light Brownish Grey	Very Dense	Moterial is some as above layer except fine content. This tayer	11,15 F1.23	_D-11 <sub>a</sub> ,	50/8	38 50/	5	50 BLOW	5/8cm			
	12								contains mare silt.	12.15 12.35	€-12 <sub>10</sub>	54/20	21 44	10/5	54 BLÖV	\$/20cm			
	13 14						,			13:15 13:24	D-13	50/9	38 50/	9		15/9em			
	15				.00. .00. 					14.15 14.29	-D-14 <sub>E</sub>	50/14	31 50/		50 BLOW		7	_	
ĺ	16		15,22	4,22	• ~(_)k · ·	-END C	F DRILLING-			15.15 15.22	D-15_	50/7	37 50/	7	50 BEOM	\$/7cm			-
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		Numbe Table		<u> -1 of Khe</u>  -1,0		n	Road in	Mongotia	<u>Date</u> Driller	26/95/	01 & <u>27/</u>	05/01		_		Forzen belween	2.0 and 2	,5m		
		£		Е				sity ncy		Sam	oling		Dyi	nam	ic (	Cone Per	netrat	ion 1	ľest	
	Scale in m	Elevation in	Depth in m	Thickness in	Legend	Type of Soil	Colour	Relative Density or Consistency	Generai Remarks	Depth in m.	Sample No.	N. Value Blows/30cm	Esci	#8 Pe				Value 0 4		0
	97		D	L	-1	Sand with			Sand is line to course grained.			E E	15	15	2					
₹	_ <u>1</u>				ه م	Grayel			Grover: Subrounded \$max 100mm spreading < 30mm. Very lew sit and clay content throughout of the layer,	1.15 1.40 2.00	<u>D=18</u> D=2	50/25 50/5		27	23/10	50 BLG	<b>4</b> S/25cm			
	3		3.50	3.50	p 0 0 0					2.00 2.05 3.15 3.38	0-38	Forzen 50/23	15	32	8/8	50 61.0	WS/25cm			
	4		4.00	0.50	0 <sub>0</sub> 0°	Sand Sand and Grayel	Light Brown Light Brown	Very Dense Very Dense	Sand is fine to medium grained. Sand is fine to coarse grained. Subcoanded gravel amount 70 mm.	1.38 4.15 4.35		51/20			10/5		MS/20cm			
	5 6		5.00	1.00	, ×	Sitty Spad with Grovet	Bioish Grey	Very Dense	Subrounded gravel arrox, 70mm, oprevoiling < 25mm. Sand is fine grained, Gravel: subrounded arrox, 40mm.	5.15 5.35	0-5 <sub>10</sub>	56/20	20	39	1/5	50 BLQ	S/20cm			
	7		6 50	1,50	××	Sility Sond with Gravel	Bluish Grey to light	Very Dense	prevailing< 40mm	6.15 6.33	D-615	56/18		46 9 54	16/5		NS/18cm NS/20cm			_
	8				α α × × α α α ×		Brownish Grey		sity throughout of the layer. Gravel: subrounded Smox. 60mm Sprewaling< 20mm. Gravel content is high at 9m and 10m.	7.15 7.35 8.15 8.35		51/20			2/5		45/20cm			
	9				50° ×				With sond lease between 8.5m and 9m.	9.15 9.27	D-9 <sub>183</sub>	50/12	35	50/12	_	50 BL0	5/12cm			
	10				× ۵۰۰ × « × ۵۰۰ ×					10.15 10.26	D-10 <sub>20</sub>				4		S/Nom			<b> </b> 
	12		12.33	5.83	× × ×					11.15 11.28 12.15	0 11 <sub>E</sub>	50/13 58/18		50/13 48	10/3		#S/13cm #S/18cm			-
	13		12,00			-END C	F DRILLING-			12.15 12.33				2	7		10,100			
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Projec Hole l Water	lumbe		i–2 at Kh .–1.ū	erlen River J		Construct	asibility Stud		f Drill	ing /01 & 29/	<b>L(</b> Dry Coei 'as/ai		7 - -		Remar D : Dynamic Co Forzeo belween :	ne Peneti		st	
ш	n m	g	ii m		Soil		ensity	emarks	Samj	pling		Dy	nan	nic	Cone Per				
Scale in 7	Elevation	Depth in	Thickness	Legend	Type of Sc	Colour	Relative Density or Consistency	General Remarks	Depth in m.	Sample No.	N-Value Blows/30cm	Eac Eac	h 15			50 3	Valu 30	e 40 (	50
¥ 1				000 000	Sand and Gravet	Light Brown		Sand is fine to coarse grained. Gravet: Subrounded Immus 40mm prevoitings 10mm, Very lew sht and clay content throughout at the layer.	† 15 1.43	D-1 <u>E</u>	50/28	6	22	28/13	50 BLO1	18/28cm			
3				6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0					2.00 2.06	D-2	50/8		10	11 /0					
4				o o o					3.15 3.36 4.15 4.33		50/21 50/18			11/8 7/3		S/21cm S/18cm			-
6		5.50	5 50	0 ×	Sity Sand and Grovel	Bluish Grey to slightly	Very Dense	Sand is time grained. Very sity inroughout at the lover.	5.15 5.32 5.15		56/17 50/14			ا :		S/17cm S/14cm			
7				O × O ×		Brownish and Bluish Grey		sity throughout at the layer, Gravet: subrounded from Max 70mn apprevaling < 20mm. Gravet Content is low at 6 and 9m.	6.15 6.29 7.15 7.27		50/12		50/12			S/12cm	_		
9				`Ç *^ ○			,		8.15 9.27 9.15	D-8 <sub>x</sub>	50/12 50/14		50/12 50/14		50 BLO	S/12cm			
10				O <sub>co</sub> ×					9.29 10.15 10.32	D-10 N			46	10/2	56 ELO				
12_				0, × 0, × 0, ×					11,15 11,32 12,15	<u>- 0-11</u> 20	50/17		58 29		SO BLOW	S/17cm S/22cm			-
13				0 × 0 × 0 × 0 ×					12.15 12.37 13.15 13.33	0-12K			42		50 BLOW				-
15		15,31	9.81	Oa ×	į				14 15 14.35 15.15 15.31	0-14 ES			39 42		SO BLOW				-
16 17					-ENO C	Γ DRILL <b>a</b> ng−			15.31										
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m ci	l I	in ma		==		nsity	marks	Samı	oling		Dyı	nam	ic	Cone Per	netrat	ion '	Test	
Scale in m Elevation ir		Thickness	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Depth in m	Sample No.	ы-чалье Вомя/Збел	Blo Esch	115 115 45 45 115			80 3			0
7	0.50	0.50	,x, <sup>5</sup> ,y,°°°	Grganic Clayey Sat	Black	Very Søtt	With sit, With very fine sond,	0.50	UD-1	Recov	HV =	3f rm				_		_
2			× × × × ×	Saily Clay	Park Grey	(Very Soft)	High maisture content Flostic. With very fine send throughout of the layer, With subrounded grovel below 2m.	0.50 0.90 1.00 1.10 2.00 2.08	D-1	50/10 50/8 50/8								-
3 4	3.00 4.00	2.50	0 ×	Sand and Grovel	Greyish Brown	Very Dense	Sand is fine to coose grained.  Gravet: subrounded Armax 50mm  prevailings: 10mm.	3.15 3.36		50/21	16	36	14/6	50 BLG	WS/21cm			-
5	5.00	1.00	000	Clayey Sand with Grovel	Grey	Very Dense	Gravel: subrounded & max 50mm. & prevailing 20mm.	4.15 4.40		50/25		29			WS/25cm	_		-
6	6.00	100	00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Sond with Grovel Sity Sond	Brawn Bluish Grey	Very Dense Very Dense	Sand is fine to coarse grained. Gravel: subrounded dymax 80mm dyprevallings 10mm.	5.15 5.32 6.15 6.30		50/17 50/15	18	43 50/15	.,,,		WS/17cm WS/15cm		>	-
7			20 X	with Grovel	musir orey	very believe	Sand is fine groined. Very silly throughout of the layer Grovel: subrounded &max 30mm. ≺évailing < 10mm	7.15		51/16	20	46	5/1		<b>€</b> 5/16cm		/	
8			o × ×				presenting a remini	7.31 8.15 8.31		53/16	23	48	5/1	53 BLC	<b>#</b> 5/16cm		/	
9			ο α × ×					9.15 9.33	- D-9 <u>E</u>	51/18	19	41	10/3	51 BL0	NS/18cm			
10	10.50	4.50	× × ×	Cand and	Light	Very Dense	Sond is fine to coorse grained.	10.15 10.39	D-10 N	50/16	24	45	5/1	50 BLC	<b>4</b> 5/16cm	_		
11	11.50	1 00		Sand and . Gravel Sity Sand	Brownish Grey Light Brownish Grey	Very Dense	Bravel: subrounded ∳max 90mm. ∳preva¥ing< 20mm.	11.15 11.29	<u> 9 11 es</u>	- 1		50/14	$\dashv$	50 BLÖ	₩S/14cm	_		-
13	12.24	6.74	Olokî		Brownish Grey F DRILLING-	,	Sond is fine groined. Very sity. Grovet: subrounded max 30mm	12.15 12.24	D-12_	50/9	30	50/9	$\dashv$	50 81.0	♥5/9cm	_		_
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Hole No	umber	BH-4 ot KI	neden River			ction of East Mangalia	en Arteriol Date	30/05,						TTOZEN DE	et ween	1.0 OHO 2	, Offi		
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	E			_		Relative Density or Consistency	General Remarks	Sam	pling		2)			00110	7 011	.cci u	.1011	1000	
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li a	Elevation	Thickness	Legend	e of	Colour	ative Cons	leral	Depth b m.	Sample No.	Value s/30c	Eac	h. 15	cur	10	) 2	0 3	30 4	10 E	0
Scale	<u> </u>	Thickn	Leg	Туре	Col	Reli		Q q	N.	N-Value Blows/30cm	15cm	my31	15cm						
7		0.50	, , , , , , , , , , , , , , , , , , ,	Sitty Sand	Donk Grey	ļ	With many roots of the first 10cm. With organic tragment Geographic with grower												1
7 1	0.5		OOO	Sand and Crovel	Grey Dark Grey	ļ	.₩ith siit. <b>å</b> max 60mm.	7	1	1									
2			ĬŢ,	Silly Clay	Dut orey		Occasionally with fine grained. Grabvel # max 30mm, Thin lay of gravel at 1.5 and 2.0m	r											7
			\_\x	•			or grose or 1.5 one 2.0m												
3 -	2.8		10-	Sorid with			фтох Инт.					İ							
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		No.				<u> </u>	Constru	tion of East	ern Arteriol				ng	_		Forzen between			,,	
		umbe			enfetter River		ROGU III	Mongotio	Date	24/90/	Of & 25/	vojui		_						
ma	ter	Table	:A	-6.90		n			Driller			<u> </u>	_	_	,					_
	គ	E E	Е	in m		Soil		ensity tency	General Remarks	Sam	pling		_			Cone Pei				
	Scale in	Elevation	Depth in	Thickness	Legend	of o	Colour	Relative Density or Consistency	neral }	Depth in m	Sample No.	N-Value Blows/30cm	Eaci	ws F h 15	em			Valu		0
	Š	ם	<u>D</u> EJ	2	ş	Туре		P. O.	e Ge		0.	호	15cm	17. E.X	l.Scm					
	+		0.15	0.15	0 0	Sand and	Dark Grey Grey		Sond is line grained. With								_	T	П	
<u> </u>	1_		1.00	0.85	° 0°.	Grovel			with boulders, dimax 110mm, diprevoiling < 60mm,	115				~	44	(2.8)				
-	2				0 0 0 X	Sitty Sond with Grovel	Light Brownish Grey	Very Dense	oprevoiling < 60mm.  Consisting of subrounded and subangular gravel on the subangular gravel of the subangular gravel of the subangular gravel on the subangular gravel on the subangular graveling < 20mm.	1.15 1.42 2.00 2.15	D-18	50/27 50/15 Forzen			22/12	50 8,0	₩S/27cm			
-	3		3.00 3.50	2.00 0.50	α α × ×	Silty Sond with Growel	Light Brownish Grey	Dense		3.15 3.45	D-3		18		19					
_	4		4.00	0.50	, x	Sitty Clay	provinge Grey		Consisting of subrounded and suborquilar gravel ** Prevailing < Terrin: Very subv.								ļ	ļ	$\Delta$	
_	5		5.00	1.00	0 0 X X	Sitly Sand with Grovet	Light Brown		Material is as upper layer but silt content is less.	4.15 4.45	D-4		15		33		WS/30cm	_		
-	6				,ª0(× 0°× ×	Sity Sand and Gravel	Yellowish Brown to Brown	Very Dense	Consisting of subrounded and subongular gravel omax 80mm. oprevaling < 30mm.	5.15 5.40 6.15 6.35		50/25 50/20			21/10 15/5		WS/25cm WS/20cm	ļ	,	
-	7		7.00	2.00		Silty Sand	Light	Very Dense	Consisting of subrounded and	6.35 7.15 7.54	D=7 <sub>K</sub>			41			S/19cm	-		
-	8				[a]	and Crovel	Brownish Grey to Light Brown	, , , , , ,	subangular gravel &max 50mm, &prevailing < 20mm. With layers of fine to medium	8,15	D-8 N		16	45	5/2		#S/17cm	ļ <u>-</u>		
-	9		9.35	2.35	oox •				grained sond.	9.15 9.35	- <del>D-9</del> 10	50/20	15	40	10/5	50 BLO	WS/20cm			
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Hol	e N	No. umbe Table	N47°	al Urgun 38°666 8.0	E109 8'977			eosibiily Slu tion of Eost Mongolia				L( Dry Cori	<u>) (</u>	<u>J</u> - -		Rema  D : Dynamic C A cone with of apex is used. Forzen between Final cosing de	ione Penel 0.5mm in 2.0 and	dia. End 2.5m	st 60 olon	gle of
	Ē	in m	ш	in m		Soil		Density stency	Remarks	Sam	pling		Dy	nan	nic	Cone Per	netra	tion	Test	
	<u> </u>	Elevation	Depth in r	Thickness	Legend	Type of Sc	Colour	Relative Density or Consistency	General R	Depth in m	Sample No.	N-Value Blows/30cm	Eacl	h 15				Valu 30		50
F	-		0.30 0.80	0.50	0 °×	Sifty Sond Sond and Scavel	Filack Light Brown		Sond is very fine grained. Very Silty. Roots at top.			-								
	2		0.00	0.39	× × × × × × × × × × × × × × × × × × ×	Sitty Sand	Brown	Very Dense	Sand is fine to medium grained. subangular and subrounded gravel Amax 70mm. Aprevailing < 40mm.	1,15 1,45 2,00 2,15	0-18 0-2 <sub>8</sub>	4-	8 50/15	21	32	53 BLC	DWS/30cm			
	3		2.90	2.10	0 °	Send and Gravet	Brown to Yellowish	Very Dense	Sand mainly consists of fine to medium sand. Size of grovet: max 80mm, aprevailing < 40m Higher grovet content at top.		D-3 R	80	15	35	45	80 BLC	0 <b>4</b> S/30cm		_	
	<b>4</b>		4.00	1.10	×	Silty Sand	Brown Reddish Brown to Brown	Dense to Very Dense	Sond is coarse grained. Size of gravet #max BOmm.  ### prevailing < 30mm.  Sand is line to medium grained.	4.15 4.28	0-4 <sub>xx</sub>			50/13		50 BLC	9#5/13cm		Z	-
<u> </u>	6								Trace of subrounded gravel below 4.8m. Immax 40mm. Exceeding < 30mm.	5 15 5.45 6.15 6.41	D-5	56 50/26	21	20	16 27/11	50 BLC	WS/26cm			
-	7 T		2.00	4.00	* × ×					7.15 7.40	(J/)	54/25	10	24	30/10	54 BLC	W5/25cm	=		
1 -	9		8.50	ชี.5ชี	×		Reddish Brown Reddish Brown		Noist Plastic Traces of sand Sand is fine to coarse grained. With gravel. Amox 25mm. Apprehalong < 10mm.	8.15 8.45 9.15	0-8		4 g	6 18	16	•<				
10	0		9.50	1,00	× × × × ×	Cloyey Sit	Reddish Brown	Stiff to Very Stiff	operavising < 10mm.  Moist, Plastic, Troces of sand and decomposed fine gravel.	9.15 9.45 10.15 10.45	D-10		3	6	7	•				
12	7				×					11,15 11,45	D-11	15	4	?	8	•				
15			13.50	4.00	*** ***					12.15 12.45 13.15	D-13 №		5	<u>8</u>	1 <u>0</u> 8		<b>)</b>			-
14	7		14.50	1.00	× × × × × × × ×	Claryey Sitt	Reddish Brown		With same sand. Moist. Plastic.	13.45 14.15 14.45	D-14	21	7	g	12					
15		-			× × ×	Silty Sand	Yellomsh Brown		Sand is fine to coorse grained. Very sirty throughout of the layer. Trace of subnounded to subangular grower up to 18m. More arayel below 18m. ##max	15.15 15.45	D-15	52	t0	22	30	52 BLO	WS/30cm			_
17	7				× × ×				More gravel below 18m. фmax 40mm. фргеий⊎ing < 10mm.	16.15 16.45 17.15 17.45	D-16		10	25 21	32 30		MS/30cm MS/30cm	ļ	/ /	
1 <u>6</u>					* * * *					18.15 18.43	D-18K		ā	28	22/13	56 BL0	WS/28cm	-		
50			19.40	4.90	::::* <u>`</u>	-END Q	F DRELLING-			19.15 19.40	_ C-19	51/25	13	31	20/10	51 SL0	MS/25cm	_		
21	]																			
23	1																			
24	1																			
2 <u>5</u>																				
27																				-
26									+					ŀ				ļ		
30																				
31	$\neg$																			-

Hole	ct No. Numbe Table	N47 3	of Urt Val 1'228 E .+8.6	109 <sup>0</sup> 24'872	F	Oject The Fo Construc Road in	tion at Easte		T G f Drill 21/05/		L.(	) ( ing	7 		Remarks  D: Organic Cone Peneliotion Test Costing depth: 15m Seepage of water of 12.5m Fazen between 2.3 and 5.0m The sample of 17m could not be recovered due to coving of the walls
E	in m	E	in m		Soil		ensity	emarks	Sam	pling			Sta	nda	rd Penetration Test
Scale in	Elevation	Depth in	Thickness	Legend	Type of S	Colour	Relative Density or Consistency	General Remarks	Depth in m	Sample No.	N-Value Blows/30cm	Eac	ms P h 15 wsp		N - Value 10 20 30 40 50
		6.40	0.40		Sittly Sand Sand with Graves	Dark Grey Light Brown	Very Dense	With roots at top. Subangulai gravet: Jamax 80mm. Porevalling < 20mm.							
2		1.50 2.00 2.50 2.75	1,10 0.50	 	Clayey Sand	Reddish Brown Light Brown	Very Dense	Moist. Gravel: subangular/subrounded gravet. liquider at battom #200mm spresoiling < 30mm.	1.15 1.45 2.00 2.10	D-1.8 D-2		9 50/10	24	30	54 BLOWS/10cm 50 BLOWS/10cm
3		2.75	0.50 0.25	* ×	Crovel Clayey Sand and Grovel Saty Clay	Light Brown Reddish Brown Reddish Brown	Stiff	Gravel: Prints 60mm.  Opresching < 30mm.  Gravel: Prints 80mm.	3 15 3.45	D-3 E	13	7	7	6	
5				×××			Medium	Apprevaling < 40mm. With boulder, max 120mm. Noist Traces of subangular a ove throughout of the layer. Amax 80mm. Oprevaling < 10mm. Trace of fine soud througout of	4.15 4.45	C-4		2	2	2	•
6				× × ×				Trace of the sand throughout of the layer. Sandy Clay between 7.0 and 7.8m.	5.15 5.45 6.15 6.45	D-58 D-68		3	5	5	
8				×			Stiff to Very Stiff		7.15 7.45	0-7	18	5	8	10	
Z 9				×					8.15 8.45 9.15	D-8 N		3	5	8	
10				**					9.45 10.15 10.45	0-10		11		13	
11 12				×××					11,15 11,45	D-11	11		5	6	
13		12.50	9.75	× × × × ×	Sandy Sitt	Reddish Brown	Stiff to Very Stiff	Sound is very time grokned.	12.15 12.45 13.15 13.45	D-12		3	6 6	8	
14 15		14.50	2.00	× × × ×	Clayey Sand	Reddish Brown	Very Dense	Gravel is subangular to	14,15 14,45	D-14	fB.	4	7	9	
16				000	willhi Growel			subrounded type. Sprevoiling < 30mm. Trace of boulder throughout of the layer. Very clayey throughout of the layer.	15.23 16.15 16.27	D-15	50/8	46 52	50/B 50/12	$\dashv$	SU BLOWS/dem
17				0					17 15 17.25	0-17	50/10	50	50/10		50 BLOWS/TOCK
18	,	17.90			Clayey Sand and Grove	Light Brown	Very Dense	Sand is fine to corase grained. Gravel: subrounded to subangular, \$\pi\rms 50mm, \$\prevailing < 10mm, Less clay.	18 15 18.40	D-18E	53/25	25	28	25/10	53 BLOWS/25cm
20		19.40	1.50		- END C	F DRILLING-		ontent in of upper layer.							
<u>21</u> 22															
23															
24								,							
25 26															
27															
28															
30															_
31	red by						Ch -	ed by:							proved by:

	Hole	et No. Numbe Table		H-1 at <b>M</b> ui L-0.35	iun River	-	Constru Road in	ction of East Mongolia		f Drill	/01 - 10/	<u>L</u> ( Dry Cor	)(	<u>J</u>		Rem D: Dynamic Forzen belwe	Corre Pene		est	
	a	i.i	E	E E		Soil			emarks	Sam	pling		Dy	nan	nie	Cone P	enetra	tion	Test	
	Scale in n	Elevation	Depth in r	Thickness	Legend	Type of Sc	Colour	Relative Density or Consistency	General Remarks	Depth In m	Sample No.	N-Value Blows/30cm	Eac	ones P h 15 E		10		Valu 30		50
Ž			0.40	0.40 0.40	×××	Sility Sand Sandy Silt Sand and Gravel	Grey Slock		Top 10mm with roots. Sand is very line grained.						-		T			
	2		_ 1.30	0.50	0°0 0°0	Sond and Gravel	Light Grey Light Brown		Plastic. High moisture content with organic fragments. Sond is line to coarse grained. Amor. 300mm.	1.15 1.20 2.15	D-1_ D-2	50/5 50/3		50/5 50/3				1		
	3 4		3.90	1.70	og ×	Silty Sond and Gravel	Brownish Grey	Dense	Sond is fine to coarse grained, With boulder, Imax 150mm, Prevailing < 30mm, Imax 100mm Imax 100mm	2.18 3.15 3.45	D-3 N	44	7	20	24			-	<b> </b>	-
	5				0 p 0 p	Sand with Gravel	light Brown to Brown	Dense to Yery Dense	Sand is first to coorse grained.  omax 40mm. oprevoking < 10mm.	4,15 4,45 5.15	D-4	47 56	7 8	25 25	22 51		L045/30cm		1	-
	6		5.80	1.80	00 * *	Silty Sond and Gravel	Light Bluish Grey	Very Densa	With boulder occasionally omas: 130mm. oprevaling < 30mm. Less gravel contents at 7 m	5.45 6.15 6.40		105/25		55			1.0 <b>W</b> S/250			
	8				× ×				,	7.15 7.40 8.15		108/25 110/20		58 60			LO <b>WS/2</b> 50	<u> </u>		
	9	-	8.50 9.00	2.7D 6.50	× 00°	Sitty Clay Sitty Sand and Gravel	Light Bluish Grey	Very Dense	With boulder occasionally Pmax 130mm, Aprevailing < 30mm, Less gravel contents at 9m	8.15 8.35 9.15 9.46		105/25			50/10		RLOWS/25c			-
	1 <u>0</u> 11		10.80	2.50	00.* 00.* *	S#ly Clay	Yellowish		Less graves contents at 9m  Moist, Traces of sand seams.	10.15 10.38 11.15	D-1018			58		108 (	\$ <b>.0W</b> S/23c			
	12		11.50	0.70	×	Sond	Brown Brown Bluish Grey	Medium	Sand is very line grained. With some silt of bottom.	11.15 11.45 12.15 12.45	D-11 D-12	32 20	10 6	20	12		\ \ \	<u> </u>		
	13 14			7.00		,				13.15 13.45 14.15	0-13	23	7	10	13		1			
	15		15.45	3-00 6-95	°%,	Sand and Graves	Bluish Grey	Dense	Sand is fine to coarse grained. Gravel is subangular one dia, 15 to 25mm.	14.45 15.15 15.45	D 14 D	31	9	12	15		-	-		-
	16 17				į	-END Q	F DARLLING-											ļ		
	18																			-    -
	19 20								į								T	ļ		
	21																	<u> </u>		-
	23																			
	24					ļ											-			
	25 26																			
	27																-			
	28												COTT A VALLE		ŀ		1			
	30 -																-			
	31 Prepai	red by	<u>":</u>					Check	ed by:						AF	proved	by:			_

### E-3. Summary of Laboratory Soil Tests

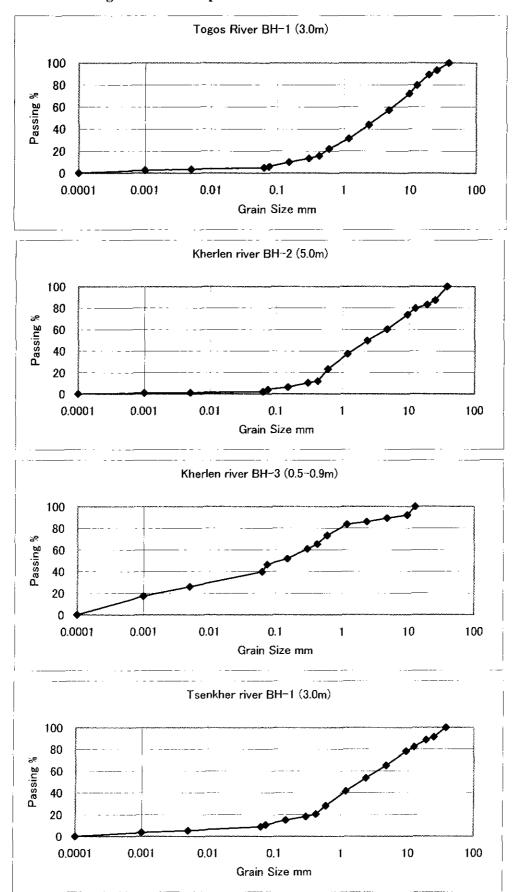
Summary of Laboratory Soil Tests on Samples Collected from Boreholes

Sampling depth (m)         3.0         5.0         0.5 to 0.9         3.0         4.0         8.0         4.0         9.0         10.1         0.4 to 0.9         4.0         9.0         10.1         0.0         <	Borehole No.	Togos River BH-1	Kherlen River BH-2	Kherlen River BH-3	Tsenkher River BH-1	Urugun Valley BH-1	Urt Valley BH-1	Murun River BH-1	Murun River BH-1	Murun River BH-1	Swamp at Tsenkhermandal
Content (%)         7.3         7.7         28.8         8.1         17.4         20.9         9.1         39.6"         8.3           1.0         2.68         2.68         2.66         2.65         2.69         2.67         2.83         2.69         2.67         2.69         2.69         2.67         2.69         2.67         2.67         2.69         2.67         2.67         2.69         2.67	Sampling depth (m)	3.0	5.0	0.5 to 0.9	3.0	4.0	8.0	0.4 to	6.0 c	4.0	0.15
n³/s         2.68         2.65         2.67         2.68         2.66         2.65         2.69         2.67         2.67           n³/s         -         -         1.763         -         -         -         -         -         -         -           %         -         1.763         -         14.8         28.5         -         3.0         -         -         -           %         -         1.69         -         12.1         18.1         -         21.6         -         -         -         -         -           %)         43         40         11         35         2         5         5         10         -         1         -           %)         43         40         11         35         2         5         38         18         8         8           tent (%)         6         4         47         10         51         4         11         4         11           xx	Natural Moisture Content (%)	7.3	1.7	28.8	8.1	17.4	20.9	9.1	39.6**	8.3	ı
n³)         -	Specific Gravity	2.68	2.65	2.57	2.67	2.68	2.66	2.65	2.69	2.67	2.68
%         -         -         -         -         14.8         28.5         -         32.0         -           %         -         -         16.9         -         12.1         18.1         -         21.6         -           %         -         -         5.0         -         3         10         -         11.0         -           %         43         43         4         11         35         2         5         5         18         8         8           Itent(%)         6         4         47         10         51         44         61         78         81         8           sification         SW-SM         SW-SM         ML         CL         SW         SW-SM         8           xx         -         -         -         -         -         -         -         -         -           spressive         -	Wet Density (g/cm³)	-	ı	1.763	-		-	-	-	-	ı
%)         -         16.9         -         12.1         18.1         -         21.6         -           %)         -         -         5.0         -         3         10         -         10         -         10         -         10         -         10         -         10         -         10         -         10         -         10         -         10         -         10         -         10         -	Liquid Limit (%)	1	ı	22.0	-	14.8	28.5	-	32.0	-	18.8
%)         43         40         11         35         2         5         18         8           %)         43         40         11         35         2         5         38         18         8           tent         51         56         42         55         47         44         61         78         81           tent         6         4         47         10         51         1         4         11         8           siffcation         SW-SM         SW-SM         SW-SM         ML         CL         SW         SW-SM         SW-SM           pressive         -         -         15.0         -         -         -         -         -         -	Plastic Limit (%)	1	1	16.9	-	12.1	18.1	-	21.6	£	6.3
%)         43         40         11         35         2         5         18         8         8           tent (%)         51         56         42         55         47         44         61         78         81         8           tent (%)         6         4         47         10         51         1         4         11         8         11         8           sification         SW-SM         SW-SM         SW-SM         ML         CL         SW         SW-SM         SW-SM           xx         -         -         -         -         -         -         -         -         -           ressive         -         -         -         -         -         -         -         -	Plasticity Index	1	ı	5.0	-	3	10	ı	10	-	13
tent (%)         6         4         42         55         47         44         61         78         81         81           tent (%)         6         4         47         10         51         1         4         11         4         11           sification         SW-SM         SW-SM         SW-SM         ML         CL         SW         SW-SM         SW-SM           sx         -         0.18         -         -         -         -         -         -         -           pressive         -         15.0         -         -         -         -         -         -         -	Gravel Content* (%)	43	40	11	35	2	5	38	18	8	,
trent (%)         6         4         47         10         51         51         1         4         11           sification         SW - SM         SW - SM         ML         CL         SW         SW - SM           sx         -         -         0.18         -         -         -         -         -           pressive         -         15.0         -         -         -         -         -         -	Sand Content (%)	51	95	42	55	47	44	19	78	81	•
sification         SW-SM         SC-SM         SW-SM         ML         CL         SW         SW-SM           ex         - <td< td=""><td>Clay and Silt Content (%)</td><td>9</td><td>4</td><td>47</td><td>10</td><td>51</td><td>15</td><td>1</td><td>4</td><td>11</td><td>ı</td></td<>	Clay and Silt Content (%)	9	4	47	10	51	15	1	4	11	ı
ex	Unified Soil Classification	SW - SM	MS	SC-SM	SW - SM	ML	TO	SW	SW	SW - SM	CL
pressive 15.0	Compression Index	1	ı	0.18	,	I	-	-	-	-	ı
	Unconfined Compressive Strength (KN/m²)	,	1	15.0	ı	1	ı	ı	1	ı	ı

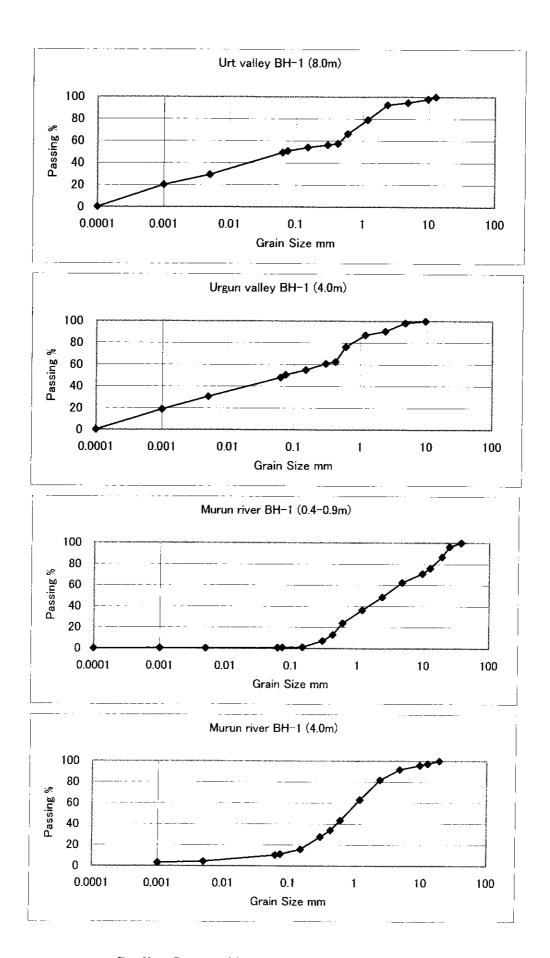
\* Retained on a 4.75mm sieve

<sup>\*\*</sup> Sample contains organic matter.

### E-4. Grading Curves of Samples

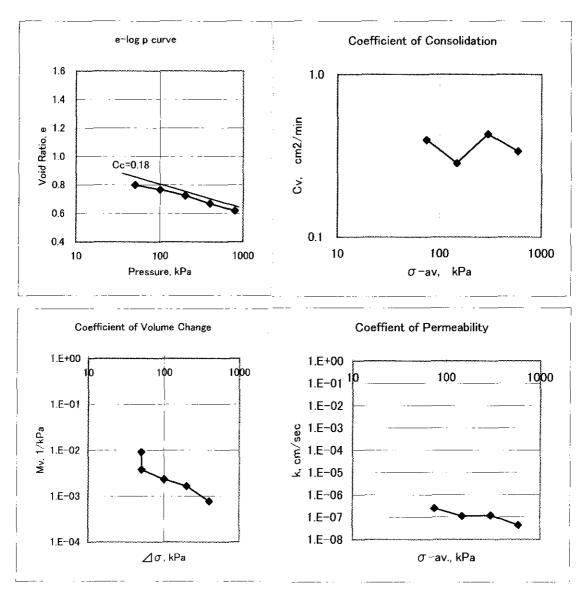


**Grading Curves of Samples Taken from Boreholes** 



**Grading Curves of Samples Taken from Boreholes** 

### E-5. Consolidation Test Results



Consolidation Test Results (BH-3 at Kherlen River)

Initial condition of soi	1	Final condition of soil
Gs	2.58	2.58
W, %	28.8	18.8
е	0.88	0.62
γt, g/cm³	1.763	1.89
$\gamma$ d, g/cm3	1.37	1.59
Sr, %	84	78
Hs,mm	13.26	13.26

Settlement,mm

		Setuemen	Ļ,111311			
Presure,kPa Time, m	0	50	100	200	400	800
0	<u>~</u>	0.040	1.140	1.587	2.125	2.865
0.1		0.205	1.210	1.760		
					2.360	3.110
0.25		0.390	1.215	1.770	2.375	3.125
0.5		0.505	1.220	1.780	2.395	3.140
1		0.622	1.250	1.787	2.505	3.200
2		0.690	1.280	1.822	2.535	3.245
4		0.860	1.325	1.880	2.565	3.270
8		0.935	1.370	1.935	2.600	3.300
15		1.041	1.415	1.980	2.620	3.350
30		1.057	1.440	2.010	2.660	3.400
60		1.085	1.475	2.035	2.700	3.445
120		1.117	1.547	2.045	2.745	3.480
900		1.137	1.580	2.107	2.845	3.527
1440	0	1.140	1.587	2.125	2.865	3.532
f	1.88	1.799	1.765	1.725	1.669	1.619
e <sub>f</sub>	0.88	0.799	0.765	0.725	0.669	0.619
t <sub>50</sub>		_	3.00	4.00	2.50	3.00
h-average	2.50	2.44	2.36	2.31	2.25	2.18
Cv, cm²/min			0.39	0.28	0.43	0.34
Mv, /kPa		9.1E-03	3.8E-03	2.3E-03	1.6E-03	7.6E-04
k, cm/s			2.5E-07	1.1E-07	1.2E-07	4.3E-08
⊿σ, kPa		50	50	100	200	400
σ−average, kPa		25	75	150	300	600

Summary of Consolidation Test Results (BH-3 at Kherlen River)

# Material Test Results of Bulk Soil Samples Taken along Road Alignment

CBR-value (%)	95%MDD 98%MDD	7 11	- 5	- 24	14 19	1.1	+1																				
MDD C		2.229	2.125	1.753	1.830	1.855	2000	C77.	2.083	2.083	2.083 2.076 1.932	2.083 2.076 1.932 2.161	2.223 2.083 2.076 1.932 2.161 2.199	2.083 2.083 1.932 2.161 2.199 2.223	2.083 2.083 2.076 1.932 2.161 2.199 2.223 2.127	2.223 2.083 2.076 1.932 2.161 2.199 2.223 2.127	2.083 2.083 2.076 1.932 2.161 2.199 2.127 2.126 2.119	2.083 2.083 2.076 1.932 2.161 2.199 2.126 2.126 2.119	2.083 2.083 2.076 1.932 2.161 2.199 2.127 2.126 2.119 1.961 2.050	2.083 2.083 2.076 1.932 2.161 2.199 2.126 2.126 2.119 1.961 1.961 1.969	2.083 2.083 2.076 1.932 2.161 2.199 2.127 2.126 2.119 1.961 1.961 1.969	2.083 2.083 2.076 1.932 2.161 2.199 2.127 2.126 2.119 1.961 1.969 1.969 2.050 2.050	2.083 2.083 2.076 1.932 2.161 2.199 2.127 2.126 2.119 1.961 1.969 2.007 2.050 2.050	2.083 2.083 2.076 1.932 2.161 2.199 2.126 2.126 2.126 2.136 2.050 1.969 1.969 2.007 2.085 2.085	2.083 2.083 2.076 1.932 2.161 2.199 2.223 2.126 2.126 2.119 1.961 1.969 2.050 2.085 2.085 2.085 2.085	2.083 2.083 2.083 1.932 2.161 2.199 2.126 2.126 2.119 1.961 1.961 1.963 2.007 2.085	2.083 2.083 2.083 2.076 1.932 2.161 2.199 2.126 2.126 2.119 1.961 1.963 2.050 2.019 2.053 2.019 2.053 2.019 2.053
Wopt M		4.8 2.	6.2 2.	11.5   1.	14.1	4.6   1.	43 2	-			<del></del>	<del></del>	<del></del>			<del></del>	<del></del>	<del></del>	<del></del>	<del></del>	<del></del>	<del></del>	<del></del>	<del></del>		<del></del>	<del></del>
Wn W		5.2 4	4.9 (	5.6 1	4.8 1.	4.4   4	4.2																				
V dI	<u> </u>	10   5	7 6	_	2 4		3 6						<del> </del>	<del>  - - - - - </del>						<del></del>							
LL %)	(%)	30	27	Non plastic	12	Non plastic	19		16	16 3 Non plastic	16 Non pla 24	16 Non plas 24 25	16 Non plas 24 25 29	16 Non plas 24 25 29 18	16 Non plas 24 25 29 29 32	16 Non plas 24 25 29 29 18 32 32	16 Non plas 24 25 29 18 18 22 21 28	16 Non plan 24 25 29 29 18 32 21 21 28	16 Non pla 24 25 25 29 18 18 32 21 21 21 28 28 28 28 29 29 20 20 20 20 20 20 20 20 20 20 20 20 20	16 Non pla 24 25 25 29 32 21 21 19 19 32 32 32 32 33 33 33 33 33 33 33 33 33	16 Non plan 24 25 25 29 32 21 19 19 32 33 33 33 33 33 33 33 33 33 33 33 33	16 Non plan 16 17 18 18 19 19 32 25 25 29 29 29 29 33 33 33 33 33 33 33 33 33 33 33 33 33	Non pla 24 16 24 25 25 25 29 29 20 29 21 28 22 25 23 23 31 31 31 32 32 33 33 33 33 33 34 35 35 35 36 36 36 37 36 36 38 36 38 36	Non plan 24 24 24 25 25 25 25 25 23 33 33 33 2 26 26 26 26 26 26 26 26 26 26 26 26 2	16 Non plan 24 24 25 25 25 29 31 31 32 33 33 35 35 36 37 37 36 37 37 37 37 37 37 37 37 37 37 37 37 37	Non plan 24 24 24 25 25 25 25 25 25 25 25 25 25 25 25 25	16 Non plan 16 16 17 17 17 16 16 16 17 17 17 17 17 17 17 17 17 17 17 17 17
<b>%</b>	F	21	11	10	27	15   1	12		11																<del>╶╎┊╏╏╏</del> ┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼	<del>╶╎┊╎╎╎╎╎</del> ┼┼┼┼┼	
Analysis (%	S	21	54	37	59	37	46		09	09	60 67 72	60 67 39	60 67 72 39 36	60 67 72 39 36 30	60 67 72 39 36 30 41	60 67 72 39 36 30 41 42	60 67 72 39 36 30 41 41 43	60 67 72 72 72 73 39 30 30 41 42 43 43 44 43 44 43 44 44 44 44 44 44 44	60 67 67 39 30 30 41 43 43 45 45 56	67 67 72 39 39 39 41 41 42 43 45 45 45 45 47 47 48 48 48 48 48 48 48 48 48 48 48 48 48	67 67 72 39 39 39 41 42 43 44 43 44 45 47 47 47	67 667 667 667 667 667 667 667 667 667	67 67 67 67 67 67 67 67 67 67 67 67 67 6	60 67 67 67 67 69 69 69 69 69 69 69 69 69 69	67 67 667 667 667 667 667 667 667 667 6	67 67 667 667 667 667 667 667 667 667 6	60 67 67 67 67 67 67 67 67 67 67
Ana	G	28	35	53	14	52	42	+ -	29	29	29 25 10	29 25 10 47	29 25 10 47 29	29 25 10 47 29 56	29 10 10 29 29 56 20	29 25 10 10 29 29 56 20 23	29 25 10 10 29 56 20 23 10	25 25 10 10 29 29 20 20 20 20 10 10	25 25 10 10 29 20 20 20 20 20 10 10	25 25 10 10 47 47 20 20 20 20 20 10 10 10 8	25 25 10 10 47 47 29 20 20 20 20 10 10 10 10 56	25 25 10 10 20 20 20 23 23 10 10 10 10 56 56 56 56 56 56 56 57 57 57 57 57 57 57 57 57 57 57 57 57	25 25 10 10 10 20 20 23 23 23 10 10 10 10 10 33 23 23 23 23 23 23 23 23 23 23 23 23	25 25 10 10 10 20 20 20 20 20 10 10 10 10 10 32 56 56 56 56 56 56 56 56 56 56 56 56 56	25 25 10 10 47 47 47 65 20 20 20 20 20 10 11 10 11 10 11 10 11 10 11 10 11 10 10	25 25 10 10 47 47 47 65 56 56 56 10 10 10 10 10 10 10 10 10 10 10 10 10	25 25 10 10 47 47 23 23 23 10 10 10 10 10 17 47 47 47 47 47 47 47 47 47 47 47 47 47
Soil	Classification	A-2-4	A-2-4	A-1-a	A-2-4	A-1-a	A-1-b		A-1-b	A-1-b A-1-b	A-1-b A-1-b A-2-4	A-1-b A-1-b A-2-4 A-1-b	A-1-b A-1-b A-2-4 A-1-b A-2-4	A-1-b A-1-b A-2-4 A-1-b A-2-4 A-1-a	A-1-b A-2-4 A-2-4 A-1-b A-2-4 A-1-a A-6	A-1-b A-2-4 A-1-b A-1-a A-1-a A-1-a A-2-4	A-1-b A-1-b A-2-4 A-1-b A-1-a A-1-a A-2-4 A-2-4 A-2-4	A-1-b A-1-b A-2-4 A-1-a A-1-a A-1-a A-6 A-2-4 A-4 A-4	A-1-b A-1-b A-2-4 A-1-a A-1-a A-6 A-2-4 A-4 A-4 A-4 A-4	A-1-b A-1-b A-1-b A-1-a A-1-a A-6 A-6 A-2-4 A-4 A-4 A-4	A-1-b A-2-4 A-1-b A-1-a A-1-a A-6 A-2-4 A-4 A-4 A-4 A-4 A-4	A-1-b A-1-b A-2-4 A-1-a A-1-a A-1-a A-2-4 A-4 A-4 A-4 A-4 A-4 A-4 A-4 A	A-1-b A-1-b A-1-b A-1-a A-1-a A-1-a A-4 A-4 A-4 A-4 A-4 A-4 A-4 A-4	A-1-b A-1-b A-1-b A-1-a A-1-a A-1-a A-2-4 A-4 A-4 A-4 A-4 A-4 A-4 A-4 A	A-1-b A-1-b A-1-b A-1-b A-2-4 A-1-a A-2-4 A-4 A-2-4 A-4 A-2-4 A-4 A-2-6 A-2-4 A-4 A-2-6 A-2-6 A-2-6 A-	A-1-b A-1-b A-1-b A-1-b A-2-4 A-1-a A-2-4 A-2-4 A-2-4 A-4 A-2-6 A-	A-1-b A-1-b A-1-b A-1-b A-2-4 A-1-a A-4 A-4 A-4 A-4 A-2-4 A-4 A-2-4 A-2-4 A-2-4 A-2-4 A-2-4 A-2-4 A-2-6 A-2-4 A-2-6 A-2-4 A-2-6 A-2-4 A-2-6 A-2-6 A-2-4 A-2-6 A-2-
Geological	CHIL	Aeolian /Talus deposits	Talus/ fan deposits	Fluvial deposit	Alluvial deposit	Fluvial deposit	Alluvial deposit	1	┼	<del>  </del> -	<del>   </del>		Fluvial deposit  Terrace deposit  Terrace or fluvial deposits  Talus deposit (diorite origin)  Talus deposit (diorite origin)	Fluvial deposit Terrace deposit Terrace or fluvial deposits Talus deposit (diorite origi Talus deposit (diorite origi Talus deposit origi Talus or weathered diorite	Fluvial deposit Terrace deposit Terrace or fluvial deposits Talus deposit (diorite origi Talus deposit (diorite origi Talus or weathered diorite Fluvial deposit	Fluvial deposit Terrace deposit Terrace or fluvial deposits Talus deposit (diorite origi Talus deposit (diorite origi Talus or weathered diorite Fluvial deposit Aeolian / fluvial deposits	Fluvial deposit Terrace deposit Terrace or fluvial deposits Talus deposit (diorite origi Talus deposit (diorite origi Talus or weathered diorite Fluvial deposit Aeolian / fluvial deposits Aeolian / fluvial deposits	Fluvial deposit  Terrace deposit  Terrace or fluvial deposits  Talus deposit (diorite origin)  Talus deposit (diorite origin)  Talus or weathered diorite  Fluvial deposit  Aeolian / fluvial deposits  Aeolian / fluvial deposits  Aeolian / fluvial deposits  Aeolian / fluvial deposits	Fluvial deposit  Terrace deposit  Terrace or fluvial deposits  Talus deposit (diorite origin)  Talus or weathered diorite  Fluvial deposit  Aeolian / fluvial deposits  Aeolian/fluvial dep.s (diorite origin)  Aeolian/fluvial dep.s (diorite origin)  Lake deposit	Fluvial deposit  Terrace deposit  Terrace of fluvial deposits  Talus deposit (diorite origin)  Talus or weathered diorite  Fluvial deposit  Aeolian / fluvial deposits  Aeolian/fluvial dep.s (diorite origin)  Aeolian/fluvial dep.s (diorite origin)  Lake deposit  Aeolian or alluvial deposits	Fluvial deposit  Terrace deposit  Terrace of fluvial deposits  Talus deposit (diorite origin)  Talus or weathered diorite  Fluvial deposit  Aeolian/fluvial deposits  Aeolian/fluvial dep.s (diorite origin)  Aeolian/fluvial dep.s (diorite origin)  Lake deposit  Aeolian or alluvial deposits  Aeolian or alluvial deposits	Fluvial deposit  Terrace deposit  Terrace or fluvial deposits  Talus deposit (diorite origin)  Talus or weathered diorite Fluvial deposit  Aeolian / fluvial deposits  Aeolian / fluvial dep.s (diorite origin)  Aeolian / fluvial dep.s (diorite origin)  Aeolian / fluvial dep.s (diorite origin)  Lake deposit  Aeolian or alluvial deposits  Alluvial deposit	Fluvial deposit  Terrace deposit  Terrace or fluvial deposits  Talus deposit (diorite origin)  Talus or weathered diorite Fluvial deposit  Aeolian / fluvial deposits  Aeolian/fluvial dep.s (diorite origin)  Aeolian/fluvial dep.s (diorite origin)  Lake deposit  Aeolian or alluvial deposits  Alluvial deposit  Fluvial deposit  Aeolian / lake deposits	Fluvial deposit  Terrace deposit  Terrace of fluvial deposits  Talus deposit (diorite origin)  Talus or weathered diorite Fluvial deposit  Aeolian/fluvial deposits  Aeolian/fluvial deposits  Aeolian/fluvial deposit  Aeolian/fluvial deposit  Aeolian or alluvial deposits  Alluvial deposit  Fluvial deposit  Fluvial deposit  Fluvial deposit  Fluvial deposit	Fluvial deposit  Terrace deposit  Terrace of fluvial deposits  Talus deposit (diorite origin)  Talus or weathered diorite  Fluvial deposit  Aeolian / fluvial deposits  Aeolian/fluvial deposit  Aeolian/fluvial deposit  Aeolian or alluvial deposits  Alluvial deposit  Fluvial deposit  Fluvial deposit  Fluvial deposit  Fluvial deposit  Fluvial deposit	Fluvial deposit  Terrace deposit  Terrace of fluvial deposits  Talus deposit (diorite origin)  Talus or weathered diorite  Talus or weathered diorite  Fluvial deposit  Aeolian/fluvial deposits  Aeolian/fluvial deposits  Aeolian/fluvial deposit  Aeolian or alluvial deposit  Alluvial deposit  Fluvial deposit	Fluvial deposit  Terrace deposit  Terrace of fluvial deposits  Talus deposit (diorite origin)  Talus or weathered diorite  Talus or weathered diorite  Fluvial deposit  Aeolian/fluvial deposits  Aeolian/fluvial deposits  Aeolian/fluvial deposit  Aeolian or alluvial deposits  Alluvial deposit  Fluvial deposit  Aeolian or fan deposit  Fluvial deposit  Fluvial deposit  Fluvial deposit  Fluvial deposit
Sampling Denth (m)	Deptii (iii)	0.3 to 0.7	0.45 to 1.00	0.2 to 0.4	0.45 to 1.00	0.30 to 1.00	0.25 to 0.60		0.05 to 1.00	~~-		0.40 to 0.75 0.42 to 084 0.25 to 0.70	0.40 to 0.75 0.40 to 0.75 0.42 to 084 0.25 to 0.70 0.30 to 1.00	0.40 to 0.75 0.40 to 0.75 0.42 to 084 0.25 to 0.70 0.30 to 1.00 0.30 to 1.00	0.40 to 0.75 0.40 to 0.75 0.42 to 0.84 0.25 to 0.70 0.30 to 1.00 0.20 to 0.50	0.40 to 0.75 0.40 to 0.75 0.42 to 0.84 0.25 to 0.70 0.30 to 1.00 0.30 to 1.00 0.20 to 0.50 0.15 to 0.40	0.65 to 1.00 0.40 to 0.75 0.42 to 0.84 0.25 to 0.70 0.30 to 1.00 0.30 to 1.00 0.20 to 0.50 0.15 to 0.40 0.20 to 0.40	0.40 to 1.00 0.40 to 0.75 0.42 to 0.84 0.25 to 0.70 0.30 to 1.00 0.20 to 0.50 0.15 to 0.40 0.15 to 0.50	0.65 to 1.00 0.40 to 0.75 0.42 to 0.84 0.25 to 0.70 0.30 to 1.00 0.20 to 0.50 0.15 to 0.40 0.20 to 0.40 0.20 to 0.40 0.20 to 0.40 0.20 to 0.40 0.20 to 0.50 0.30 to 1.00 0.30 to 1.00 0.30 to 1.00 0.30 to 0.50	0.65 to 1.00 0.40 to 0.75 0.42 to 0.84 0.25 to 0.70 0.30 to 1.00 0.20 to 0.50 0.15 to 0.40 0.20 to 0.40 0.20 to 0.40 0.20 to 0.40 0.20 to 0.40 0.20 to 0.50 0.30 to 0.50 0.35 to 0.55 0.35 to 0.55	0.65 to 1.00 0.40 to 0.75 0.42 to 0.84 0.25 to 0.70 0.30 to 1.00 0.30 to 1.00 0.20 to 0.50 0.15 to 0.40 0.15 to 0.40 0.15 to 0.50 0.15 to 0.50 0.30 to 0.65 0.25 to 0.55 0.25 to 0.55	0.65 to 1.00 0.40 to 0.75 0.42 to 0.84 0.25 to 0.70 0.30 to 1.00 0.30 to 1.00 0.20 to 0.50 0.15 to 0.40 0.15 to 0.40 0.15 to 0.65 0.30 to 0.65 0.30 to 0.65 0.25 to 0.65 0.25 to 0.65	0.40 to 0.75 0.40 to 0.75 0.42 to 0.84 0.25 to 0.70 0.30 to 1.00 0.20 to 0.50 0.15 to 0.40 0.15 to 0.40 0.15 to 0.65 0.30 to 0.65 0.25 to 0.65 0.20 to 0.65 0.20 to 0.65 0.20 to 0.65 0.20 to 0.65	0.65 to 1.00 0.40 to 0.75 0.42 to 0.84 0.25 to 0.70 0.30 to 1.00 0.30 to 1.00 0.20 to 0.50 0.15 to 0.40 0.15 to 0.65 0.35 to 0.65 0.25 to 0.65 0.25 to 0.65 0.25 to 0.65 0.20 to 0.65 0.20 to 0.65 0.30 to 0.65 0.25 to 0.65 0.25 to 0.65 0.25 to 0.65 0.20 to 0.65 0.20 to 0.65 0.20 to 0.65	0.65 to 1.00 0.40 to 0.75 0.42 to 0.84 0.25 to 0.70 0.30 to 1.00 0.20 to 0.50 0.15 to 0.40 0.15 to 0.65 0.25 to 0.65 0.25 to 0.65 0.25 to 0.45 0.20 to 0.55 0.25 to 0.45 0.20 to 0.55 0.20 to 0.55 0.25 to 0.45 0.20 to 0.55 0.20 to 0.55 0.20 to 0.55 0.20 to 0.55 0.20 to 0.55	0.65 to 1.00 0.40 to 0.75 0.42 to 0.84 0.25 to 0.70 0.30 to 1.00 0.30 to 1.00 0.20 to 0.50 0.15 to 0.40 0.15 to 0.40 0.15 to 0.40 0.15 to 0.65 0.20 to 0.65 0.20 to 0.65 0.20 to 0.65 0.20 to 0.65 0.20 to 0.65 0.20 to 0.65 0.20 to 0.65 0.20 to 0.65 0.20 to 0.65 0.20 to 0.60 0.30 to 0.60 0.30 to 0.60 0.30 to 0.75	0.65 to 1.00 0.40 to 0.75 0.42 to 0.84 0.25 to 0.70 0.30 to 1.00 0.30 to 1.00 0.20 to 0.40 0.15 to 0.40 0.15 to 0.65 0.20 to 0.65 0.25 to 0.65 0.25 to 0.65 0.20 to 0.65 0.20 to 0.65 0.20 to 0.65 0.20 to 0.65 0.20 to 0.65 0.20 to 0.65 0.20 to 0.65 0.30 to 0.60 0.30 to 0.60 0.30 to 0.50 0.30 to 0.50 0.30 to 0.50 0.30 to 0.50
Location	E	107°52'556	107°57'712	47°42'803 108°03'387	108°10'105	47°39'155   108°17'453	_	108°23'352	4		J J		108°32'564 108°37'606 108°44'014 108°50'181	108°32'564 108°37'606 108°44'014 108°50'181 108°57'347	47°41'736 108°32'564 47°45'384 108°37'606 47°48'343 108°44'014 47°47'154 108°50'181 47°42'484 109°03'335	108°32'564 108°37'606 108°44'014 108°57'347 109°03'335 109°09'452	47°41'736 108°32'564 47°45'384 108°37'606 47°48'343 108°44'014 47°47'154 108°50'181 47°45'149 108°57'347 47°42'484 109°03'335 47°38'223 109°09'452 47°38'223 109°015'285	108°32°564 108°37°606 108°47°114 108°50°181 108°57°347 109°03°335 109°03°35 109°15°285	108°32'564 108°37'606 108°44'014 108°57'347 109°03'335 109°09'452 109°15'285 109°22'787	47°41'36 108°32'564 47°45'384 108°37'606 47°48'343 108°44'014 47°47'154 108°57'347 47°42'484 109°03'335 47°38'223 109°09'452 47°35'065 109°15'285 47°35'065 109°22'787 47°32'793 109°22'787 47°28'961 109°29'967 47°28'961 109°34'863	47°41'736     108°32'564       47°45'384     108°37'606       47°48'343     108°44'014       47°47'154     108°57'347       47°42'484     109°03'335       47°42'484     109°09'452       47°38'223     109°09'15'285       47°35'065     109°15'285       47°32'793     109°22'787       47°28'961     109°34'863       47°27'955     109°41'328	47°41'736 108°32'564 47°45'384 108°32'564 47°48'343 108°44'014 47°47'154 108°57'347 47°42'484 109°03'335 47°42'484 109°03'335 47°38'223 109°09'452 47°38'223 109°09'452 47°38'223 109°09'453 47°38'223 109°09'453 47°38'249 109°29'967 47°28'961 109°29'967 47°27'955 109°34'863 47°27'244 109°41'328	47°41'736 108°32'564 47°45'384 108°32'564 47°48'343 108°44'014 47°47'154 108°50'181 47°42'484 109°03'335 47°32'793 109°09'452 47°32'793 109°22'787 47°32'793 109°29'967 47°27'955 109°34'863 47°27'244 109°41'328 47°27'244 109°51'133 47°25'136 109°57'586	47°41'736     108°32'564       47°45'384     108°32'564       47°48'343     108°44'014       47°47'154     108°57'347       47°42'484     109°03'335       47°32'065     109°15'285       47°32'793     109°22'787       47°32'794     109°29'967       47°27'244     109°41'328       47°25'497     109°51'133       47°25'136     109°57'586       47°25'136     109°57'586	47°41'36     108°32'564       47°41'36     108°32'564       47°48'343     108°44'014       47°45'149     108°57'347       47°42'484     109°03'335       47°38'223     109°09'452       47°35'065     109°15'285       47°32'793     109°29'967       47°27'955     109°41'328       47°27'244     109°41'328       47°25'497     109°51'133       47°25'306     110°04'905       47°25'306     110°04'905       47°25'306     110°04'905	108°32'564 108°37'606 108°4'014 108°57'347 109°03'335 109°15'285 109°22'787 109°22'787 109°24'863 109°41'328 109°51'133 109°51'586 110°04'905	47°41'736 108°32'564 47°45'384 108°37'606 47°48'343 108°44'014 47°45'149 108°57'347 47°42'484 109°03'335 47°32'793 109°09'452 47°32'793 109°22'787 47°32'793 109°22'787 47°25'961 109°29'967 47°25'136 109°57'586 47°25'136 109°57'586 47°25'136 109°51'133 47°25'136 109°57'586 47°25'136 109°57'586 47°25'306 110°04'905 47°25'306 110°04'905 47°25'306 110°04'905
Sampling Location		47°41'227	47°43'023	47°42'803	47°41'570	47°39'155	47°41°533	47°41'533		47°41,736	47°41'736 47°45'384	47°41'736 47°45'384 47°48'343	47°41'736 47°45'384 47°48'343 47°47'154	47°41'736 47°45'384 47°48'343 47°47'154 47°45'149	47°41'736 47°45'384 47°48'343 47°47'154 47°45'149 47°42'484	47°41'736 47°45'384 47°48'343 47°47'154 47°45'149 47°42'484 47°38'223	47°41'736 47°45'384 47°48'343 47°47'154 47°45'149 47°42'484 47°38'223 47°38'223	47°41'736 47°48'384 47°48'343 47°47'154 47°42'484 47°38'223 47°38'223	47°41'736 47°48'343 47°48'343 47°42'154 47°42'484 47°38'223 47°35'065 47°35'965	47°41'736 47°48'343 47°48'343 47°47'154 47°42'484 47°38'223 47°32'793 47°32'793 47°28'961 47°28'961	47°41'736 47°45'384 47°48'343 47°47'154 47°42'484 47°38'223 47°38'205 47°38'961 47°28'961 47°28'961 47°28'961	47°41'736 47°45'384 47°48'343 47°47'154 47°42'484 47°38'223 47°38'223 47°38'961 47°28'961 47°27'955 47°27'955	47°41'736 47°48'343 47°48'343 47°42'149 47°42'484 47°38'223 47°35'793 47°28'961 47°27'955 47°27'955 47°27'244 47°27'244 47°27'25'136	47°41'736 47°48'343 47°48'343 47°48'149 47°42'484 47°38'223 47°32'065 47°32'793 47°27'955 47°27'955 47°27'955 47°25'497 47°25'306	47°41'736 47°48'343 47°48'343 47°42'149 47°42'484 47°38'223 47°32'065 47°32'793 47°27'955 47°27'955 47°27'955 47°25'136 47°25'306 47°25'306	47°41'736 47°45'384 47°48'343 47°42'149 47°42'484 47°38'223 47°32'793 47°28'961 47°27'244 47°27'244 47°25'136 47°25'136 47°25'136 47°25'306	47°41'736 47°45'384 47°48'343 47°47'154 47°42'484 47°38'223 47°38'205 47°28'961 47°28'961 47°28'961 47°28'961 47°28'961 47°28'961 47°28'961 47°28'961 47°28'961 47°28'961 47°28'961 47°28'961 47°28'961 47°28'961 47°28'961 47°28'961 47°28'965
						BC1A-2	BCIA-1A	BC1A-1B	-	5	5 4	ν 4 ω	v 4 v 2	BC4A-5 BC4A-4 BC4A-3 BC4A-2 BC4A-1	v 4 v 2 -	\$ 4 \tilde{c} 2 -1	5 4 6 2 -	5 4 6 5 - 1	7 4 5 7 1 1 2 3 4 5	2 4 2 3 4 2	2 4 5	3C4A-5 3C4A-4 3C4A-3 3C4A-2 3C4A-1 3C5-1 BC6-4 BC6-3 BC6-2 BC6-1 BC7-1 BC7-1	2 4 6 2 1 1 2 2 3 4 6 2	2 4 6 2 1 1 2 3 4 5	3C4A-5 3C4A-4 3C4A-3 3C4A-1 3C5-1 3C5-1 BC6-4 BC6-2 BC6-2 BC6-1 BC6-1 BC7-1 BC7-1 BC8-1 BC8-1	1 2 3 4 8	3C4A-5 3C4A-4 3C4A-4 3C4A-2 3C4A-1 3C4A-1 3C5-1 BC6-4 BC6-2 BC6-1 BC6-2 BC6-1 BC6-1 BC7-1 BC7-1 BC7-1 BC9-3 BC9-3 BC9-3

Plasticity index	Non plastic	Natural moisture content	Optimum moisture content determined by Modified Proctor test	Maximum dry density determined by Modified Proctor test
ďI	NP	Wn	Wopt	MDD
Gravel content	Sand content	Particles finer than 0.075mm	Liquid limit	

Material Test Results of Bulk Soil Samples Taken from Possible Borrow Pits

	_														
Sample	Complina	Togethon	2 11 7 7		AASHTO	<u>ن</u> 	Grading		TT	Wn	u u	Wopt	MDD		
ė.	amdinec	Samping Location	Geological Unit	Fresent Statous	Soil	Ana	Analysis (%)		d <sub>I</sub> (%)	(%) 	<u>ئ</u>	· %	g/cm3	CBR-value (%)	ne (%)
	Z	Е			Сіаѕѕіпсацоп	Ö	8	12		, 				0000	200
BPD-5	47°42°	107°50′	Weathered shale	In operation	A-1-a	85	-	╫	Non plastic	c 4 8	2,66	03	2.048	UUIWayee	MWW.
BPD-4	47°41'227	107°52°	Weathered granite & shale	Abandoned borrow pit	A-1-b	99	17	1	26 6	╀	╁	4	2.045	200	23
BPD-3	47°42'207	108°00°	Talus deposit (granite origin)	No borrow pit	A-2-4	77	15	- ∞	╀	$\vdash$	十	28/2	2.059	14	36
BPD-2	47°42'454	108°07′	Terrace deposit	No borrow pit	A-2-4	44	41	15	L	1	╁	5.5	2.073	;	27
BPD-1	47°41′286	108°11'	Terrace deposit	Close to abandoned b.p	A-1-b	50	30	20	L	+		10.4	2.167	<u>~</u>	29
BPIA-2	47°38'712	108°16′	Alluvial deposit	Close to abandoned b.p	A-1-b	33	99	11	20 6	5.	8 2.68	3.5	2.182	5	) oc
BPIA-1	47°41'023	108°24	Talus deposit (granite origin)	No borrow pit	A-1-b	22	99	12	22 5	4.	_		2.093	5	6
BP3A-1	47°41'907	108°27′	Ialus deposit & weathered granite Abandon	Abandoned borrow pit	A-1-b	47	30	23	17 2	5.1	1 2.72	5	2.067	15	25
BP4A-5	47°43'005	108°34′	Talus deposit (gramte origin)	No borrow pit	A-1-b	38	20	12	30 5	5.3	3 2.69	4.4	2.139	1	27
DF4A-4	47~47.229	108°39°	lalus deposit (diorite origin)	No borrow pit	A-1-b	38	49	13 []	Non plastic	io 5.6	5 2.68	5.5	2.199	,	3
BP4A-3	47°48'458	108°46′	Talus or terrace deposit	No borrow pit	A-1-b	42	45	13	21 8	4.6	H	8.4	2,104	,	20
BP4A-2	47°45'287	108°54°	Talus deposit (granite origin)	No borrow pit	A-1-b	34	48	<u>8</u> 2	16 NP	ļ.,	⊢	6.1	2,178	<u>«</u>	36
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	47°44°648	108°59°	Fluvial deposit	Abandoned borrow pit	A-2-4	99	34	10	25 10	2.1	┢	5.4	2.23		20
H H	47°43'299	109°03′		Tailing waste	A-1-b	31	63	<u>و</u> آ	Non plastic	2	2.61	2.9	2.081	6	13
III	47°40′640	寸		Tailing waste	A-1-a	62	36	2 N	Non plastic	lo 1.8	$\vdash$	9	2.134	6	13
550-3	47°38′853	寸	ngm)	Garbage dumping ground	A-2-4	9	26	14	6 67	2.	2 2.70	5	2.15	  -	25
18P6-2	47°33'955	109°19′	Weathered granite rock	Abandoned borrow pit	A-1-b	39	37	24 N	Non plastic	2.5	5 2.71	8.2	1.965		25
BP6-1	47°32'376	寸	Weathered sedimentary rock	Abandoned borrow pit	A-2-4	43	30	27	18 2	2.3	H	4	2.246	<b>,</b>	9
137/-1	47°28°185	109°32′	Weathered shale	Abandoned borrow pit	A-1-b	70	11	19	31 6	2.1	2.71	5.4	2.334	16	21
BP7-2	47°27′193	934	Talus deposits & weathered Sedimentary rock	Abandoned borrow pit	A-2-4	50	16	34	25 9	3 3	2.72	0 4	ر 180	•	
BP7-3	47°26'642	109°44′	igin)	No borrow pit	A-1-a	4	15	╀	-	4.9	2.67	8.6	2.105	6 ,	۱ ا
BP8-1	47°27′095	十	Talus deposit (shale origin)	Abandoned borrow pit	A-1-a	71	16	13		2.2	╀	9.2	1 759	-	10
BP9-3	47°24'313	7	Fluvial deposits	Abandoned borrow pit	A-1-b	57	22	21	26 1	2.4	╁	16.6	1.839		13
BP9-2	47°24'239	7	Alluvial deposit	Abandoned borrow pit	A-1-b	21	71	8	Non plastic	╙	$\vdash$	5.6	1.957	•	13
BP9-1	47°23′190	寸	Fluvial deposit	Abandoned borrow pit	A-1-b	30	48	22	17 4	2.4	<del> </del>	6.1	2.217	,	12
BP10-2	47°23'083		Fluvial deposit	Abandoned borrow pit	A-1-a	88	14	28	25 1	4.7	7.67	11.8	2.11	,	
<b>BF</b> 10-1	147°21'5811	110°36°	Talus deposit & weathered diorite In operation	In operation	A-1-b	48	36	16	22 4	4.8	2.68	6.2	2.304	,	20

G Gravel content
S Sand content
NP Non plastic
F Particles finer than 0.075mm Wn Natural moisture content
LL Liquid limit
Gs Specific Gravity
Work Octions and additional content

Wopt Optimum moisture content determined by Modified Proctor test MDD Maximum dry density determined by Modified Proctor test

### E-7. Summary of Results of Index Property Test on Bulk Soil Samples

Classification A-2-6 A-1-b A-1-a A-1-a A-1-b A-1-b A-1-b A-2-4 A-2-4 A-2-4 A-2-4 A-2-4 A-2-4 A-2-4 A-2-4 A-2-4 A-1-a A-2-4 9-Y A-4 A-4 9-Y A-4 Soil A-4 Non plastic Ż Non plastic Non plastic 19 15 14 10 Ip 9 9 9 9 9 9 9 6 9 2 00 V 16 12 8 30 19 24 25 29 18 32 28 32 25 32 37 35 26 26 36 28 H 23 21 31 13.8 38.8 34.8 47.8 47.6 50.4 10.8 17.6 35.0 13.9 47.3 25.4 29.3 21.9 12.0 16 . . 45 21.1 27 22.9 16.6 23.6 40.0 40.8 52.2 54.3 31.6 56.9 59.9 10.9 16.4 13.1 17.8 33.7 15.7 39.7 15.1 52.1 28.7 17.1 33.1 33 23.4 48.6 16.6 47.8 56.5 20.5 28.0 74.2 26.9 29.6 65.2 17.3 19.7 46.2 0.300 26.4 22.1 48.7 55.3 49.7 62.7 39.7 99 42.1 21.1 37 0.425 27.8 52.8 53.3 40.4 61.4 60.2 48.2 24.4 38.2 33.9 72.4 35.4 81.7 24.7 18.4 52.2 46.2 74.7 24.1 33.7 66.7 09 22 Result (Present passing at each sieve) 42 61 72.3 9.99 56.9 45.4 55.9 26.5 73.0 8.09 78.4 27.8 88.4 31.6 57.8 69.5 75.2 42.2 32.7 27.7 54.1 82.1 45 75 21 51.8 63.6 62.6 36.2 1.18 43.2 41.4 32.8 63.2 68.3 81.8 82.3 87.4 868 50.2 94.9 84.7 79.1 68.7 55.7 69.1 38 33 89 89 2.36 8.89 8.06 92.9 51.6 84.4 98.5 8.9/ 49.5 88.4 60.5 71.9 72.6 80.9 96.2 59.7 77.2 94.8 57.3 45.5 90.7 98.2 42.7 83.1 79 50 72 84.8 9.66 63.8 57.6 8.69 8.76 78.3 57.8 66.5 85.8 68.0 84.2 48.8 85.2 98.1 677 85.8 85.7 81.2 84.7 94.7 96.7 99.2 100 95 96 9.06 87.6 9.06 98.4 6.66 89.0 9.5 55.8 74.2 78.5 86.2 94.5 74.8 95.6 98.3 94.2 76.2 Ó 7.76 100 65.3 86.7 99.5 100 100 8 89 Sieving Test 91.7 12.5 59.6 90.6 97.6 95.8 91.2 90.5 89.0 6.86 84.4 6.67 91.3 6.99 97.4 83.3 99.1 82.2 100 100 100 100 87 9.89 97.6 72.9 99.5 90.5 99.5 94.2 85.9 93.9 98.2 96.3 82.3 100 90.2 90.1 19 100 96 91.3 81.2 95.4 94.0 96.5 98.4 92.5 88.2 100 100 100 75.7 100 100 100 9 25 37.5 96.2 100 100 100 001 8 100 8 88 50.0 8 100 0.20 to 0.70 0.40 to 0.75 0.25 to 0.70 0.30 to 1.00 0.30 to 1.00 0.20 to 0.50 0.15 to 0.40 0.20 to 0.40 0.25 to 0.35 0.25 to 0.45 0.20 to 0.55 0.20 to 0.45 0.30 to 0.50 0.30 to 0.75 0.20 to 0.60 0.30 to 0.50 0.65 to 1.00 0.15 to 0.50 0.30 to 0.65 0.30 to 1.00 0.25 to 0.60 0.42 to 084 0.45 to 1.00 0.45 to 1.00Depth (m) 0.2 to 0.4 0.3 to 0.7 108°44'014 109°41'328 109°51'133 109°03'335 109°09'452 109°57'586 110°12'549 108°23'352 108°32'564 108°37'606 108°50'181 109°15'285 109°22'787 109°29'967 109°34'863 110°04'905 110°29'827 110°37'142 107°57'712 108°10'105 108°17'453 108°23'352 108°57'347 110°21 462 107°52'556 108°03'387 Sampling Location 47°47'154 47°35'065 47°22'836 47°41'736 47°45'149 47°42,484 47°38'223 47°32,793 47°27'244 47°25'136 47°25'306 47°24'655 47°21'778 47°19'793 47°41'570 47°39'155 47°41'533 47°45'384 47°48'343 47°27'955 47°43'023 47°42'803 47°41'533 47°25'497 47°41'227 47°28'961 BC1A-1B BCIA-1A BC10-2 BC1A-2 BC4A-5 **BC4A-4** BC4A-3 BC4A-2 BC4A-1 Sample BC8-2 BC9-2 BC10-1 BCD-3 BC6-4 BC6-3 BC9-3 BC6-2 BCD-2 BCD-1 BC5-1 BC6-1 BC7-1 BC7-2 BC8-1 BCD-4 BC9-1

Optimum moisture content determined by Modified Proctor test

Natural moisture content

Particles finer than 0.075mm

S F I

Liquid limit

Gravel content Sand content

Plasticity index Non plastic Maximum dry density determined by Modified Proctor test

NP Wn Wopt MDD

Summary of Results of Index Property Tests on Bulk Soil Samples Taken along Road Alignment

Summary of Results of Index Property Tests on Bulk Soil Samples Taken from Possible Borrow Pits

Sample	Samuline	Sampling Location				Sievin	ing Toc	+ Poent	· (Proce	int nace	ingot	io do oo	(0.10)				1		5.0
No.	Z	H	50.0	37.5	25	19	12.5	125 95 475 236 118 06 040	4.75	2 36	1 18 at	0.6	0.425	0 300	0.15	270.0	38	ďI	5011 Classification
BPD-5	47°42'208	107°50'500	75.8	89	58	48	38.1	30.5	22.8	15.1	12.1	10.8	10.2	9.9	9.2	7.9		Plastic	A-1-a
BPD-4	47°41'227	107°52'556	100	89.4	82.5	73.4	64.8	58.2	46.2	35.4	29.2	23.5	20.2	19	17.9	17.4	26	9	A-1-b
BPD-3	47°42'207	$\rightarrow$		100	85.7	77.7	66.2	56.2	37.6	25.6	18.3	15.0	12.5	11.5	9.2	7.7	23	8	A-2-4
BPD-2				100	87.6	84.9	82.2	9.92	8.69	8.19	49.7	39.7	31.1	27.6	20.3	14.6	26	8	A-2-4
BPD-1				100	81.5	73.7	73.4	6.79	58.6	9.05	43.3	37.3	32.5	36.2	24.7	20.4	23	9	A-1-b
BP1A-2	47°38'712	108°16'600			100	99.5	7.86	96.3	9.68	71.5	51.8	38.5	31.5	24.4	17.4	11.11	20	9	A-1-b
BPIA-1	47°41'023	47°41'023 108°24'347			100	97.6	94.8	93.5	89.3	79.9	65.3	44.9	36	29.2	18.5	12.2	22	5	A-1-b
BP3A-1	47°41'907				100	94.7	5.06	85.5	74	55	44.9	39.2	34.6	32.4	28.6	22.6	17	2	A-1-b
BP4A-5				100	86	96.7	76	85.2	74.4	63.2	53.7	42.1	33.9	26.6	18.4	11.6	30	S	A-1-b
BP4A-4				100	99.4	98.0	92.3	85.0	73.7	63.0	53.8	43.7	34.5	26.3	19.0	12.9	Non F	Plastic	A-1-b
BP4A-3					100	94.2	89.7	81.2	9.07	59.1	46.6	36.1	27.3	22.3	16.8	13.3	21	5	A-1-b
BP4A-2	47°45'287				100	99.0	94.2	89.7	75.4	67.4	60.4	48.1	38.1	29.3	23.1	17.8	16	È	A-1-b
BP5-1	47°44'648			100	8.96	87.2	80.8	76.5	57.3	45.9	39.9	32.4	23.1	17.1	12.1	10.4	25	10	A-2-4
Tin mine2						100	98.5	96.4	6.98	72.9	55.1	40.3	27.3	19.0	9.2	5.7	ΙĒ	Plastic	A-1-b
Tin mine1			84.2	75.4	91.6	66.1	60.1	56.8	49.2	40.0	32.5	27.2	23.6	22.1	19.5	2.3	Non Plastic	Plastic	A-1-a
BP6-3	47°38'853	_		100	84.8	75.3	69.3	59.8	48.6	41.9	35.6	31.4	24.4	20.1	1.91	13.7	29	6	A-2-4
BP6-2	47°33'955	109°19'720				100	66	94.5	8.62	62.8	49.5	34.8	31.8	28.5	26.8	24.3	Non Plastic	lastic	A-1-b
BP6-1	47°32°376	109°23'126	100	94.3	93.4	92.3	88	81.3	29	59.1	45.6	37.1	34.4	31.1	29.3	26.6	18	2	A-2-4
BP7-1	47°28'185	109°32'330	88.4	78.0	74.4	65.0	53.1	47.5	41.7	31.7	26.0	23.4	22.4	21.7	20.4	19.4	31	9	A-1-b
BP7-2	47°27'193	109°39'934	100	92.7	78.3	0.69	65.3	62.4	55.9	51.1	47.1	45.0	41.0	39.7	37.0	34.0	25	6	A-2-4
BP7-3	47°26'642	109°44′519	93.5	85.3	73.8	64.6	50.9	45.7	35.1	28.6	23.2	19.2	16.6	15.2	12.6	11.1	27	5	A-1-a
BP8-1	47°27'095	109°47'594	8	74.6	65.7	60.3	62.2	46.3	35.4.	30.0	25.2	21.4	20.3	18.4	15.0	12.8	19	4	A-1-a
BP9-3	47°24'313	110°01'365		100	98	77.3	68.7	63.1	51.8	44.8	38.7	32.7	27.5	25.2	22.5	20.5	26	-	A-1-b
BP9-2	47°24'239	110°14′123		001	90.3	86.5	98	83.8	81.4	79.9	79.3	60.1	44.3	32.7	14.1	9.7	Non P	Plastic	A-1-b
BP9-1	47°23′190	110°20′311		901	95.4	92.3	89.1	87.1	81.0	72.4	62.4	54	47.1	38.6	28	22.2	17	4	A-1-b
BP10-2	47°23'083	110°27'021	6.86	96.5	87.8	81.7	70.2	61.5	41.4	30.2	23.2	19.7	16.9	15.9	12.4	10.3	25	-	A-1-a
BP10-1	47°21'581	110°36'300	82.6	80.2	77.6	75.9	73.4	2.69	62.3	53	45.2	32.1	26.2	22.2	18.1	16	22	4	A-1-b
ტ	Gravel	Gravel content			I	ø.	Plastici	Plasticity index											
S	Sand content	ontent			Z	NP	Non plastic	stic											
፲	Particl	Particles finer than 0.075mm	0.075m	Œ,	~	Vn	Natural	Natural moisture content	e conten	+									
TT	Liquid limit	limit			>	Vopt	Optimu	Optimum moisture content determined by Modified Proctor test	ure conta	ent deter	mined t	y Modi	ified Pro	ctor test					
					2	1DD	Maxim	Maximum dry density determined by Modified Proctor test	ensity d	etermine	d by M.	odified	Proctor	test					

Summary of Aggregate Tests Results for Rock Samples

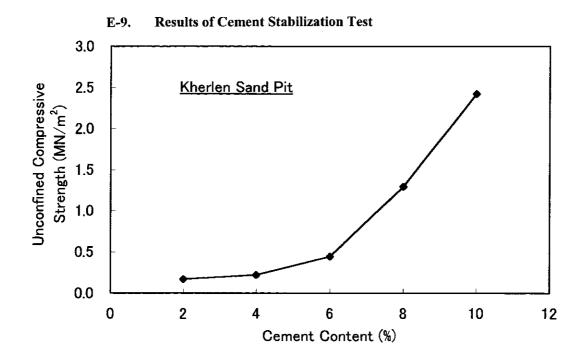
Name of Sampling	Sampling	Sampling Location		Soundness*	Los Angeles	Flafvness	Specific	Water	Bitumen
Location	Z	A	Iype of Material	(%)	Abrasion (%)	Index**	Gravity***	Absorption*** (%)	Coated Area**** (%)
Quarry at Tumur Ulgi Mt.,	47°42'032	108075'847	Granodiorite framente	·	8	Ş	2.64	1.1	307
Kherlen	100			4	0.0	0.7	2.61	2.0	SK/
Stock Pile of Tailing Denosits (Boulder) at	47°40'640	109°03'973	Alluvial boulder stones	C	×	11	2.54	1.6	, <b>v</b>
Tsenkhermandal				1	2	=	2.52	1.8	262
Delger Mt. at Murin	47°24'301	110°35'800	Boulder size of weathered	ć	7.01	ç	2.56	1.5	
	10017		the Delger mountain	٧	†.	2	2.54	1.9	1

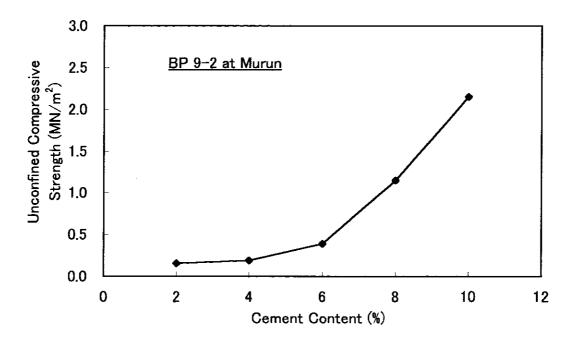
By sodium sulphate

\*\* Aggregates passing a 37.5mm sieve and retained on a 10.0mm sieve \*\*\* Above the line : size 4.75mm to 1.75mm

Above the line: size 4.75mm to 12.5mm Below the line: size 19.0mm to 37.5mm

\*\*\* After 30 minutes immersion into water kept  $80 \pm 1^{\circ}$ C





Results of Cement Stabilization Test

## Record of Test Pit for Bulk Soil Sampling

Sample No.:BCD-4

Coordinates N:47°41'227

E:107°52'556

Depth	Type of	Color	Description	
(m)	Soil			
			With some gravel up to 30 cm from the ground	
			surface. Gravel: Rock fragments Max.size: 150 mm	0.30
0.40	Sandy Silt	Dark Brown	Dark Brown   Prevailing size: <20mm. With roots at top	
		Dark Brown	Dark Brown Trace of gravel (rock fragments).	Sampling
09.0	Sandy Silt	to Brown	Material is same as the upper layer.	
	Sandy Silt		Max.size: 80mm	0.70
08.0	with Gravel Brown	Brown	Prevailing size: <30mm	
		Slightly		
	Silty Sand	Greenish	Very silty	-
1.00	with Gravel Green	Green		

Grac	ling Analysis	(%)	ĽĽ	Ιb	Wn	Wopt	MDD	CBR-V	CBR-Value (%)
ئ	S	Ŧ	(%)		(%)	(%)	g/cm³	95%MDD	08%WDD
58	21	21	30	10	5.2	4.8	2.23	7	11

Sample No.:BCD-3

Coordinates N:47°43'023

E:107°57'712

Depth	Type of	Color	Description	
(m)	Soil			
			Sand is very fine grained. With roots througout	
0.35	Silty Sand	Silty Sand Dark Brown of the layer.	of the layer.	
		Brown to Dark	Brown to Dark Sand is very fine grained. With subanguler gravel,	
	Silty Sand Brownish		max: ø 100mm, ø prevailing <30mm.	
0.45	with Gravel   Yellow	Yellow		0.45
		Yellowish	Sand is very fine grained.	
		Brown to	Trace of rock fragments and subanguler gravels.	Sampling
1.00	Silty Sand	Light Brown	Silty Sand Light Brown max.size: 80mm, prevailing size: <25mm.	1.00

G	Grading Analysis	(%)	ΓΓ	qI	Wn	Wopt	MDD	CBR-Value (%)	lue (%)
Ð	S	A	(%)		(%)	(%)	g/cm³	95%MDD   98%MDD	98%MDD
35	54	11	27	6	4.9	6.2	2.125	•	5
G	Gravel content	#		dI.	Plasticity index	×			
S	Sand content			Wn	Naitonal moisture content	sture content			
<b>1</b>	Particles finer	than 0.075mm	ـــ	Wopt	Opimum moig	sture content d	letermined by	Opimum moisture content determined by Modified Proctor test	or test
ΓΓ	Liquid Limit			MDD	Mazimum dry	density deteri	mined by Moc	Mazimum dry density determined by Modified Proctor test	St

도 : Coordinates N: Gully close to BCD-3 Sample No.: -

Depth	Type of	Color	Description
(m)	Soil		
		Black to	Sand is very fine grained. With roots
0.15	Silty Sand	Dark Brown	Dark Brown Occasionally with rock fragments.
		Yellowish	
		Brown to Light	Brown to Light Very silty, with rock fragments
	Silty Sand	Brown with	
0.50	with Gravel	with Gravel Whitish Parts	
0.80	Silty Sand		Very silty. Sand is very fine grained.
0.85	Silty Sand		With some rock fragments.
	Sand &		Gravel: Subgranuler to subrounded.
1.00	Gravel		ø max: 40mm, ø prevailing <20mm.

SampleNo.:BCD-2

Coordinates N:47°42'803

E:108°03'387

Depth	Type of	Color	Description
(m)	Soil		
0.10	Silty Sand	Dark Brown	Dark Brown With roots. Sand is very fine grained.
	Sand & Gravel		
0.20	with Silt	Dark Brown	Dark Brown Fluvial deposits
			Fluvial deposits
	Silty Sand		Sand is very fine to fine grained. Gravel: Subanguler
0.40/0.60	with Gravel		to subrounded. o prevailing <20mm.
			Fluvial deposits
	Silty Sand &		Sand is very fine grained. Silt content is less than
0.80	Gravel		that in the upper layer, ø prevailing <30mm.
			Fluvial deposits
	Sand &	Yellowish	Sand is fine grained. Gravel: Subanguler to
1.00	Gravel	Brown	subrounded ø max: 50mm, ø prevailing <20mm.

	Gra	Grading Analysis (	(%)	$\Gamma\Gamma$	Ip	Wn	Wopt	MDD	CBR-Value (%)	lue (%)
	ی	S	F	(%)		(%)	(%)	g/cm <sup>3</sup>	95%MDD 98%MDD	08%WDD
4 ,	53	37	10	Non Plastic Non Plastic	Non Plastic	5.6	11.5	1.753	1	24
G		Gravel conten	<b>+</b>		dı dı	Plasticity index	*			
S		Sand content			Wn	Naitonal moisture content	ture content			
<u> </u>		Particles finer that	than 0.075mm	я	Wopt	Opimum mois	sture content d	letermined by	Opimum moisture content determined by Modified Proctor test	or test
LL		Liquid Limit			MDD	Mazimum dry	density deter-	mined by Mod	Mazimum dry density determined by Modified Proctor test	st

SampleNo.:BCD-1 Coordinates N:47°41'570

E:108°10'105

Depth (m)	Type of Soil	Color	Description	
0.20	Silty Sand	Dark Brown	Silty Sand Dark Brown With roots. Very silty. Sand is very fine grained.	
			Sand is very fine grained. Silt content is less than	
0.40	Silty Sand	Dark Brown	Silty Sand Dark Brown that in the upper layer. Trace of gravel.	
			Sand is very fine to fine grained. With some fine	
0.45	Silty Sand Brown	Brown	subrounded quartz particles.	0.45
		Light Brown	Light Brown Sand is very fine grained.	Sampling
1.00	Silty Sand Grey	Grey	With very silty portions.	1.00

į	Gra	Grading Analysis	(%)	ΓΓ	$_{ m Ip}$	Wn	Wopt	MDD	CBR-Value (%)	due (%)
	ئ	S	F	(%)		(%)	(%)	g/cm³	QQW%86   QQW%56	98%WDD
	4	59	27	12	Non Plastic	4.8	14.1	1.83	ı	19
ڻ ن		Gravel content			Ip	Plasticity index	×			
S		Sand content			Wn	Naitonal moisture content	ture content			
<u>-</u>		Particles finer th	than 0.075mm		Wopt	Opimum mois	ture content d	etermined by	Opimum moisture content determined by Modified Proctor test	or test
ΓΓ		Liquid Limit			MDD	Mazimum drv	density detern	nined by Mod	dazimum dry density determined by Modified Proctor test	<del>t</del>

SampleNo.:BC 1A-2

Coordinates N:47°39'155

E:108°17'453

Depth	Type of	Color	Description	
(m)	Soil			
0.15	Silty Sand	Dark Brown	Silty Sand Dark Brown With roots. Sand is very fine grained.	
	Sand & Gravel		With roots. Gravel: Subrounded to Subanguler	
0.30	with Silt	Dark Brown	Dark Brown ø max: 80mm, ø prevailing <30mm.	0.30
			Fluvial deposits	1
		Yellowish	Sand is fine to coarse grained. ø max: 80mm.	Sampling
		Brown to	ø prevailing <40mm.	
1.00	Sand & Gravel Brown		Moist througout of the layer.	1.00

### Material Test Results

	Gra	Grading Analysis ('	(%)	$\Gamma\Gamma$	Ip	Wn	Wopt	MDD	CBR-Value (%)	due (%)
	G	S	F	(%)		(%)	(%)	g/cm³	95%MDD 98%MDD	98%WDD
	52	37	15	Non Plastic	Non Plastic Non Plastic	4.4	4.6	1.855	ı	14
G		Gravel content			ď	Plasticity index	×			
Ø		Sand content			Wn	Naitonal moisture content	sture content			
<u> </u>		Particles finer tl	r than 0.075mm	Ħ	Wopt	Opimum mois	sture content d	etermined by	Opimum moisture content determined by Modified Proctor test	or test
TT		Liquid Limit			MDD	Mazimum dry	density deterr	nined by Mod	Mazimum dry density determined by Modified Proctor test	st

SampleNo.:BC 1A-1

Coordinates N:47°41'534

E:108°23'349

nc		ery fine grained.	some roots.	he layer.	Sampling	yer, but less	0.65	B	
Description		Silty Sand Dark Brown Very silty. With roots. Sand is very fine grained.	Sand is very fine grained. With some roots.	Silty Sand Dark Brown Silt content is less than that in the layer.	Sand is very fine grained.	Material is same as the upper layer, but less	silt content.	Fluvial deposits	
Color		Dark Brown		Dark Brown		Greenish	Brown		
Type of	Soil	Silty Sand	•	Silty Sand			Silty Sand	Sand with	
Depth	(m)	0.15		0.35			9.65		

### Material Test Results

Sampling

Sample	Gra	ding Analysis	(%)	TT	Ip	Wn	Wopt	MDD	CBR-V	CBR-Value (%)
	9	S	Ŧ	(%)		(%)	(%)	g/cm <sup>3</sup>	<b>QQW%5</b> 6	<b>QQW</b> %86
A	42	46	12	61	3	4.2	4.3	2.223	1	17
В	67	09	11	16	3	9.7	9	2.083	ŧ	25

it Plasticity index	Wn Naitonal moisture content	than 0.075mm Wopt Opimum moisture content determined by Modified Proctor test	MDD Mazimum dry density determined by Modified Proctor test
vel content	d content	ticles finer than 0.0'	iquid Limit
	<b>d</b> r		The P Wn N Wopt C

S S F

Sample No.:BC 4A-5

Coordinates N:47°41'736

E:108°32'564

Depth	Type of	Color	Description	
(m)	Soil			
0.15	Silty Sand	Dark Brown	Dark Brown With roots. Sand s fine grained.	
			Sand is fine grained.	
0.20/0.30	Silty Sand	Dark Brown	Dark Brown Less silt content in comparison with the upper layer.	0.30
			Sand is fine grained.	
		Dark Brown	Dark Brown With some silt and trace of gravel with less than	
0.40	Sand	to Brown	50mm in diameter.	
			Sand is fine grained.	Sampling
0.50	Sand	Brown	With some gravel. Moist.	
	Sand &		With subanguler gravel, ømax 90mm,	,-
0.75	Gravel	Brown	ø prevailing <40mm, Moist.	0.75
	Sand & Gravel			
	to Sand with Yellowish	Yellowish	Clean, Moist. Sand is fine grained.	
1.00	Gravel	Brown	ø max: 150mm, ø prevailing <60mm.	

	Gradin	Grading Analysis (%	(%)	$\Gamma\Gamma$	Ip	Wn	Wopt MDD	MDD	CBR-Value (%)	due (%)
S		S	124	(%)		(%)	(%)	gwo/B	95%MDD	95%MDD 98%MDD
25	5	26	8	Non Plastic   Non Plastic	Non Plastic	4.0	4.5	2.076	ı	7
				=						
ŗ	Ğ	Gravel content			ďI	Plasticity index	×			
S	Saı	sand content			Wn	Naitonal moisture content	ture content			
<b>E</b>	Paı	rticles finer 1	Particles finer than 0.075mm		Wopt	Opimum mois	sture content d	etermined by ]	Opimum moisture content determined by Modified Proctor test	or test
LL	Lic	Liquid Limit			MDD	Mazimum dry	density detern	mined by Mod	Mazimum dry density determined by Modified Proctor test	sst

Sample No.:BC 4A-4

Coordinates N:47°45'384

E:108°37'606

Depth	Type of	Color	Description	
(m)	Soil			
0:30	Silty Sand	Dark Brown	Silty Sand Dark Brown With roots. Sand is very fine grained.	
			Sand is fine grained.	
		Greyish Brown	Greyish Brown With some roots up to this layer	
0.42	Silty Sand to Brown		Less silt content in comparison with the upper layer.	0.42
		Light Brown to		
		Light Brownish	Light Brownish Sand is fine grained.	
0.80	Sand	Grey	With some silt at top of this layer.	08.0
1.00	Sand	Brown	Sand is fine grained.	Sampling

Ę.	Grading Analysis (%	(%)	TT	ďI	Wn	Wopt	MDD	CBR-V <sub>2</sub>	CBR-Value (%)
G	S	F	(%)		(%)	(%)	g/cm³	00W%56	95%MDD   98%MDD
10	72	18	24	2	4.6	9	1.932	1	10
G	Gravel content	ıt		ďI	Plasticity index	×			
S	Sand content			Wn	Naitonal moisture content	sture content			
<b>-</b>	Particles finer	Particles finer than 0.075mm		Wopt	Opimum mois	sture content d	letermined by	Opimum moisture content determined by Modified Proctor test	tor test
LL	Liquid Limit			MDD	Mazimum dry	density deteri	mined by Moc	Mazimum dry density determined by Modified Proctor test	st

Record of Test Pit for Bulk Soil Sampling

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Coordinates N: E. No. BC4A-4 + 7.6km along the existing trail

Depth (m)	Type of Soil	Color	Description
0.15	Sandy Silt	Dark Brown	Sandy Silt Dark Brown With roots, very silty
		Light Brownist	Light Brownish Sand is very fine grained.
0.50	Sandy Silt   Grey	Grev	Moist

Sample No.:BC 4A-3

Coordinates N:47°48'343

E:108°44'014

Depth (m)	Type of Soil	Color	Description	
			Sand is very fine grained. With roots at top.	
0.25	Silty Sand Brown	Brown	Very silty.	0.25
			Sand is fine to coarse grained. Very silty.	
0.70	Silty Sand Brown	Brown	Occasionally with angular gravel, omax, 50mm.	0.70
			Decomposed diorite	Sampling
			Sand is fine to coarse grained.	
	Sand & Gravel		Gravel: Angular rock fragments.	
1.00	with Silt	Brown	Max.size: 80mm, prevailing size <20mm.	

	<b>Grading Analysis</b>	(%)	TT	ď	Wn	Wopt	MDD	CBR-Va	CBR-Value (%)
G	S	H	(%)		(%)	(%)	g/cm <sup>3</sup>	168/WDD 98%WDI	10W%86
47	39	14	25	9	7.0	8.9	2.161		30
Ç	Gravel conten	nt		dI.	Plasticity index	×			
S	Sand content			Wn	Naitonal moisture content	ture content			
<b>-</b>	Particles finer	Particles finer than 0.075mm	-	Wopt	Opimum mois	sture content d	etermined by	Opimum moisture content determined by Modified Proctor test	or test
ΓΓ	Liquid Limit			MDD	Mazimum dr	density detern	mined by Mod	Mazimum dry density determined by Modified Proctor test	Į.

Sample No.:BC 4A-2

Coordinates N:47°47'154

E:108°50'181

1				
1.00	Max.size: 50mm, prevailing size<15mm.	Brown	with Gravel Brown	1.00
	Light Greenis Gravel: Angular diorite fragments.	Light Greenia	Silty Sand	
	Sand is very fine to fine grained.			
0.30	Silty Sand Dark Brown comprison with the upper layer. Dry.	Dark Brown	Silty Sand	0.30
	Sand is very fine grained. Less silt content in			
	Silty Sand Dark Brown With roots. Sand is very fine grained. Very silty.	Dark Brown	Silty Sand	0.15
			Soil	(m)
	Description	Color	Type of	Depth

Material Test Results

Sampling

	Gra	<b>Grading Analysis</b>	(%)	TT	Ip	Wn	Wopt	MDD	CBR-Value (%)	ılue (%)
	G	S.	14	(%)		(%)	(%)	g/cm³	95%MDD	95%MDD 98%MDD
	29	36	35	29	5	4.9	5.4	2.199	1	10
ŭ		Gravel conten	ıt		ď	Plasticity index	×			
S		Sand content			Wn	Naitonal moisture content	sture content			
<b>1</b>		Particles finer	r than 0.075mm		Wopt	Opimum mois	Opimum moisture content determined by Modified Proctor test	etermined by	Modified Proct	or test
LL		Liquid Limit			MDD	Mazimum dry	Mazimum dry density determined by Modified Proctor test	nined by Mod	lified Proctor to	st

Sample No.:Gully developed on the slope of Pass (UB side)

Depth (m)	Type of Soil	Color	Description
	Sandy Silt to		With roots at top. Sand is very fine grained.
),30	Silty Sand	Black	Silty sand is prevailing.
			Hetrogeneous layer.
	Silty Sand		Sand is very fine to medium grained, originated from
	with Gravel to		decomposed diorite. Gravel content is variable
	Silty Sand	Yellowish	from place to place. Gravel: diorite fragments.
08.0	& Gravel	Brown	Prevailing size <50mm.

Sample No.:BC 4A-1

Coordinates N:47°45'149

E:108°57'347

Depth	Type of	Color	Description	
(m)	Soil			
			With roots. Sand is very fine grained.	
0.10	Silty Sand	Dark Brown	Silty Sand Dark Brown With some rock fragments.	
	Sand &		Gravel consists of weathered brown coloured rock	
	Gravel		fragments. Max.size: 80mm,	
0.30	with Silt	Dark Brown	Dark Brown   Prevailing size<40mm.	0.30
			Decompored diorite	
			Material is same as the upper layer.	Sampling
	Sand &		Max.size: 60mm, Prevaling size <40mm.	
1.00	Gravel	Brown	With clayey portion at 1m.	1.00

	Gra	Grading Analysis	(%)	LL	ďI	Wn	Wopt	MDD	CBR-Value (%)	thue (%)
	G	S	K	(%)		(%)	(%)	g/cm³	QQW%86   QQW%S6	08%WDD
	56	30	14	18	7	4.6	\$	2.223	15	20
Ç		Gravel content			ď	Plasticity index	*			
S		Sand content			Wn	Naitonal moisture content	ture content			
<u> </u>		Particles finer that	than 0.075mm		Wopt	Opimum mois	sture content d	etermined by ]	Opimum moisture content determined by Modified Proctor test	or test
LL		Liquid Limit			MDD	Mazimum dry	density detern	nined by Mod	Mazimum dry density determined by Modified Proctor test	st

Sample No.:BC 4-1

Coordinates N:47°45'814

E:108°51'149

Depth	Type of	Color	Description	
(m)	Soil		_	
			With roots. Sand is very fine grained.	
0.30	Silty Sand	Dark Grey	Silty Sand Dark Grey Trace of gravel.	0.20
	Sand with	Brown to	Brown to Sand is fine grained. With angular granite fragments;	
09.0	Gravel	Yellowish Brown	Yellowish Brown Prevailing size <25mm, Silty at the top.	09:0
			Sand is fine grained. Gravel: granite fragments.	Sampling
	Sand &	Yellowish	Occasionally with boulder	
1.00	Gravel	Brown	Max.size: 180mm, Prevailing size <30mm.	

Sample No.:BC 5-1

Coordinates N:47°42'484

E:109°03'335

Depth	Type of	Type of Color Description	Description	
(m)	Soil			
0.20	Silty Sand	Dark Brown	Silty Sand Dark Brown Very silty. Sand is very fine grained. With roots.	0.20
		Dark Brown		
	Silty Sand	to Yellowish	to Yellowish Gravel: subanguler to subgrounded.	
0.50	& Gravel	Brown	ø max: 200mm, ø prevailing <30mm.	0.50
	Sand with Yellowish		Sand is fine grained. Gravel: subanguler to	Sampling
1.00	Gravel	Brown	subrounded. ø max: 90mm, ø prevailing <30mm.	

Gra	ading Analysis	(%)	$\Gamma\Gamma$	Ip	Wn	Wopt	MDD	CBR-V	CBR-Value (%)
Ð	S	F	(%)		(%)	(%)	£wɔ/ā	95%MDD	95%MDD   98%MDD
20	41	39	32	14	5.1	7.8	2.127	6	11
ָט	Gravel content	±		aI	Plasticity index	X			

G	S	F	(%)		(%)	(%)	g/cm3	g/cm3   95%MDD   98%M	M%86
20	41	39	32	14	5.1	8.7	2.127	6	11
Ç	Gravel content	#		dI.	Plasticity index	×			
S	Sand content			Wn	Naitonal moisture content	ture content			
<u></u>	Particles finer	iner than 0.075mm	e	Wopt	Opimum mois	Opimum moisture content determined by Modified Proctor test	etermined by 1	Modified Proct	or test
T.I.	Liamid Limit			MDD	Mazimum dr	Mazimum dry density determined by Modified Practor test	nined by Mod	ified Proctor to	ţ,

Sample No.:BC 6-4

Coordinates N:47°38'223

E:109°09'452

Depth	Type of	Color	Description	
Œ)	Soil			
			Sand is very fine grained. With roots up to 15cm	0.15
0.30	Silty Sand	Dark Brown	Dark Brown from the ground surface.	
		Brownish	Sand is fine to medium grained. With some fine	
0.40	Silty Sand	Grey	gravel. With some roots.	0.40
			Fluvial deposits	Sampling
			With some roots up to 50cm, from the ground	
	Silty Sand		surface. Gravel: Subrounded	
0.55	& Gravel	Light Brown	Light Brown o max.size: 50mm, o prevailing <10mm.	
	Sand with		Fluvial deposits	
0.70	Gravel	Light Brown	Light Brown o max.size: 30mm, o prevailing <10mm.	
			Fluvial deposits	
08.0	Sand	Light Brown	Light Brown Sand is fine grained. With some gravel.	
			Material is same as the upper layer, but moisture	
1.00	Sand	Light Brown	Light Brown content is higher.	

5	Grading Analysis (%	(%)	13	d.	Wn	Wopt	MDD	CBR-Value (%)	lue (%)
ڻ	S	<u>1</u> 24	(%)		(%)	(%)	g/cm³	95%MDD	95%MDD 98%MDD
23	42	35	21		10.4	7.6	2.126	•	4
ڻ	Gravel content	#		d <b>t</b>	Plasticity index	×			
S	Sand content			Wn	Naitonal moisture content	sture content			
<u></u>	Particles fines	Particles finer than 0.075mm		Wopt	Opimum mois	sture content c	letermined by	Opimum moisture content determined by Modified Proctor test	or test
ΓΓ	Liquid Limit			MDD	Mazimum dry	density deter	mined by Moc	Mazimum dry density determined by Modified Proctor test	sst

Sample No.:BC 6-3

Coordinates N:47°35'065

E:109°15'285

Depth (m)	Type of Soil	Color	Description	
0.15	Silty Sand	Dark Brown	Dark Brown Sand is very fine grained. Very silty. With roots.	0.20
			Sand is very fine to fine grained.	
0.30	Silty Sand	Dark Brown	Silty Sand Dark Brown Trace of roots.	
			Sand is fine to medium grained. Sand is derined form	0.40
0.50	Silty Sand	Dark Brown	Dark Brown weathered granite. Trace of roots.	Sampling
		Slightly	Residual soil of granite rock	
	Sand with	Greenish	Sand is fine to coarse grained. With fine gravel size	
1.00	Gravel	Grey	granite fragments througout of the layer.	

	Gra	Grading Analysis	(%)	TT	I	Wn	Wopt	MDD	CBR-V	CBR-Value (%)
	75	S	F	(%)		(%)	(%)	g/cm <sup>3</sup>	95%MDD 98%MDD	10W%86
1	0	43	47	28	9	9.2	6	2.119	ı	61
Ç		Gravel content	ţ		ď	Plasticity index	×			
S		Sand content			Wn	Naitonal moisture content	sture content			
¥		Particles finer	r than 0.075mm	1	Wopt	Opimum moi	sture content d	letermined by	Opimum moisture content determined by Modified Proctor test	tor test
LL		Liquid Limit			MDD	Mazimum dr.	v density deten	mined by Moc	Mazimum dry density determined by Modified Proctor test	z <del>t</del>

Sample No.:BC 6-2

Coordinates N:47°32'793

E:109°22'787

Depth	Type of	Color	Description	
(m)	Soil			
			With roots. Sand is very fine grained.	
0.15	Silty Sand	Dark Brown	Silty Sand Dark Brown Trace of rock fragments, size < 20mm.	0.15
			Sand is very fine grained.	
			Trace of rock fragments, size < 40mm.	
0.50	Silty Sand	Dark Brown	Silty Sand Dark Brown With roots up to 65cm form the ground surface.	♦ 0.50
		Slightly	Sand is very fine to fine grained.	Sampling
		Greenish	Less silt content in comparison with the	
1.00	Silty Sand	Silty Sand Light Brown upper layer.	upper layer.	

	Grading Analysis (%	(%)	TT	Ip	Wn	Wopt	MDD	CBR-V <sub>2</sub>	CBR-Value (%)
G	S	F	(%)		(%)	(%)	g/cm³	95%MDD	95%MDD 98%MDD
10	45	45	32	10	6	12.6	1.961	ı	4
ڻ	Gravel content	<u>.</u>		ď	Plasticity index	*			
S	Sand content			Wn	Naitonal moisture content	ture content			
<b>Ξ</b>	Particles finer	Particles finer than 0.075mm		Wopt	Opimum mois	sture content d	etermined by	Opimum moisture content determined by Modified Proctor test	or test
ΓΓ	Liquid Limit			MDD	Mazimum dry	density deten	mined by Mod	Mazimum dry density determined by Modified Proctor test	St.

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Sample No.:BC 6-1

Coordinates N:47°28'961

E:109°29'967

Depth	Type of	Color	Description	
(m)	2011			
			With roots. Sand is very fine grained.	
0.30	Silty Sand	Dark Brown	Dark Brown With some angular gravel, size 15 to 20mm.	0.30
	1		Material is same as the upper layer, but less	;
0 40	Silty Sand	Dark Brown	Silty Sand Dark Brown gravel content.	Sampling
		Light Grey	Sand is very fine to fine grained. Trace of subanguler	
		to Light	to subrounded gravel. 6 max: 10mm.	0.65
0.80	Silty Sand	Brown Grey	Brown Grey Trace of organic fragments.	
	Silty Sand		Sand is fine to coarse grained.	
0.95	with Gravel	with Gravel Light Grey	o max: 70mm, o prevailing <25mm.	
	Clayey Silt			
1.00	with Sand	Light Brown		_

Sample No.:BC

19°34'863

:BC 7-1		Coordinates	Coordinates N:47°27'955 E:109°34'863	3
Depth (m)	Type of Soil	Color	Description	
			With roots. Sand is very fine grained. Very silty.	y silty.
0.25	Silty Sand	Dark Brown	Dark Brown Trace of fine gravel.	
		Dark Brown Very silty.	Very silty.	
0.35	Silty Sand	to Brown	Sand is very fine grained.	
	Sandy	Greenish Gre Very silty.	Very silty.	
0.55	Clayey Silt	mottled White	mottled White Trace of fine gravel size rock fragments.	
	Silty with		Sand is fine grained.	
1.00	Sand	Grey	Trace of rock fragments, size<10mm.	

5	Grading Analysis (	(%)	TT	ď	Wn	Wopt	MDD	CBR-V	CBR-Value (%)
ئ		<b>E</b>	(%)		(%)	(%)	g/cm³	95%MDD	95%MDD 98%MDD
∞	44	48	31	9	7.1	11.1	1.969	6	14
Ç	Gravel content	Ħ		Ip	Plasticity index	×			
S	Sand content			Wn	Naitonal moisture content	ture content			
<u> </u>	Particles finer	Particles finer than 0.075mm		Wopt	Opimum mois	sture content c	determined by	Opimum moisture content determined by Modified Proctor test	tor test
LL	Liquid Limit			MDD	Mazimum dry	density deter	mined by Mod	Mazimum dry density determined by Modified Proctor test	est

Sample No.:BC 7-2

Coordinates N:47°27'244

E:109°41'328

Depth	Type of	Color	Description	
(m)	Soil			
	Silty Sand		With roots at top. Sand is fine grained.	
	with Gravel Brown		With rock fragments, 20 to 30mm in length.	
	Silty Sand	Light Brown	Light Brown Sand is fine grained.	0.25
			Very Silty.	
	Sandy Silt	Light Grey	Sandy Silt Light Grey Sand is very fine grained. Moist.	0.45
		Reddish	Moist.	Sampling
	Silt	Brown	Mottled white.	

	Grading Analysis (%)	(%)	LL	Ip	Wn	Wopt	MDD	CBR-Vi	CBR-Value (%)
5	S	<b>E</b>	(%)		(%)	(%)	g/cm³	95%MDD 98%MDD	98%MDD
5	47	48	32	9	8.4	11.6	1.956	•	3
			: :						
5	Gravel content	<b>#</b>		d <sub>I</sub>	Plasticity index	X			
S	Sand content			Wn	Naitonal moisture content	sture content			
<u> </u>	Particles finer	Particles finer than 0.075mm		Wopt	Opimum moi	sture content c	letermined by	Opimum moisture content determined by Modified Proctor test	tor test
TT	Liquid Limit			MDD	Mazimum dr	q density deter-	mined by Moc	Mazimum dry density determined by Modified Proctor test	est

Sample No.:BC 8-1

Coordinates N:47°25'497

E:109°51'133

Depth (m)	Type of Soil	Color	Description	
			Sand is very fine grained.	
0.20	Silty Sand Brown	Brown	With roots (up to 45cm from the ground surface).	0.20
			Gravel: Angular to subanguler	
	Silty Sand		ø max: 150mm, ø prevailing <30mm.	
0.55	& Gravel	Light Grey	Origin of gravel: Slate, shale.	<b>★</b> 0.55
		Slightly		Sampling
	Silty Sand	Greenish		
1.00	& Gravel	Light Grey	Light Grey Material is same as the upper layer.	

	<b>Grading Analysis</b>	(%)	TT	qI	Wn	Wopt	MDD	CBR-V	CBR-Value (%)
G	S	Ā	(%)		(%)	(%)	g/cm³	95%MDD	95%MDD 98%MDD
52	32	16	37	61	3.4	7.6	2.157		21
ŗ	Gravel conten	ıţ		d <b>I</b>	Plasticity index	×			
S	Sand content			Wn	Naitonal moisture content	ture content			
<u> </u>	Particles finer	r than 0.075mm		Wopt	Opimum moi	sture content d	letermined by	Opimum moisture content determined by Modified Proctor test	or test
ΓΓ	Liquid Limit			MDD	Mazimum dr	density deter	mined by Moc	Mazimum dry density determined by Modified Proctor test	st

#### Chandgana Steppe /7km/

## Record of Test Pit for Bulk Soil Sampling

Sample No.:BC 8-2

Coordinates N:47°25'136

E:109°57'586

			The state of the s	
Depth	Type of	Color	Description	
(m)	Soil			
			With roots. Sand is very fine grained.	0.20
0.40	Silty Sand	Dark Brown	Silty Sand Dark Brown Trace of fine gravel. Very silty.	_
			Moist.	0.45
	Silty Sand	Light Brownish	Light Brownish Gravel: subanguler	Sampling
1.00	& Gravel	Grey	$\emptyset$ prevailing size $\leq 15$ mm.	

	Gra	Grading Analysis	(%)	LL	dΙ	Wn	Wopt	MDD	CBR-Value (%)	lue (%)
	G	S	F	(%)		(%)	(%)	g/cm³	QQW%86   QQW%S6	MWW 86
	32	39	29	35	2	5.9	5.6	2.085	5	13
Ċ		Gravel conten	_		dI	Plasticity index	×			
Ø		Sand content			Wn	Naitonal moisture content	ture content			
<u> </u>		Particles finer	than 0.075mm	u	Wopt	Opimum mois	sture content d	etermined by ]	Opimum moisture content determined by Modified Proctor test	or test
LL	_	Liquid Limit			MDD	Mazimum dry	density deterr	nined by Mod	Mazimum dry density determined by Modified Proctor test	st

#### Chandgana Steppe /20km/

## Record of Test Pit for Bulk Soil Sampling

Sample No.:BC 9-3

Coordinates N:47°25'306

E:110°04'905

Depth (m)	Type of Soil	Color	Description	
			Sand is fine to medium grained. With many roots for	
			the first 5cm. With some coarse sand particles,	
0.30	Silty Sand	Dark Grey	Silty Sand Dark Grey @ 1.0 to 2.0mm.	0.3
		Light Brownish	Light Brownish Sand is fine grained.	Sampling
0.50	Sand	Grey	With some silt.	<b>→</b>
				0.5
	Sand		Sand mainly consists of fine grained particles.	
1.50	with Gravel Brown	Brown	Gravel: ø prevailing <4mm.	

	Gra	<b>Grading Analysis</b>	(%)	TT	Ip	Wn	Wopt	MDD	CBR-Value (%)	lue (%)
	ڻ	S	<b>1</b> 24	(%)		(%)	(%)	g/cm³	QQW%86   QQW%56	<b>00W%86</b>
	3	75	22	26	9	6.5	9.8	2.019	•	13
ß		Gravel content	<b>+</b> -		ďI	Plasticity index	×			
Ø		Sand content			Wn	Naitonal moisture content	sture content			
<u> </u>		Particles finer	r than 0.075mm		Wopt	Opimum moi	Opimum moisture content determined by Modified Proctor test	letermined by	Modified Proct	or test
LL		Liquid Limit			MDD	Mazimum dr	Mazimum dry density determined by Modified Proctor test	mined by Mod	ified Proctor te	st