

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
TOWNSHIP: Village of Lake Linden
TOWN: 55N
RANGE: 32W
SECTION: 5
LOCATION DESCRIPTION: On Lake in Backwater Area C&H Lake Linden Operations

DATE: 5-29-15
DRILLER: Brian Lower
GEOLOGIST: Aaron Berndt
DRILL METHOD: Vibracore
TOTAL DEPTH: 3.75' in 11' of water

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Silt Dark Brown to Black			0'-6"	Sediment sample	
					1'-3'	Sediment sample	
		Silt Reddish-Brown				3'-3.75'	Sediment sample
		E.O.B.					
			5				

VERTICAL DATUM:
GRD. ELEVATION:
T.O.C.:
S.W.L.:
CASING:
SCREEN:
WELL DEPTH:
COMPLETION NOTES:

LATITUDE: 47.19636772
LONGITUDE: -88.4045138
PROJECTION:
NORTHING: 741060.951
EASTING: 317715.634



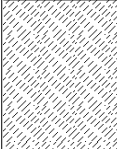

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
 TOWNSHIP: Schoolcraft
 TOWN: 55N
 RANGE: 32W
 SECTION: 5

DATE: 5-29-15
 DRILLER: Brian Lower
 GEOLOGIST: Aaron Berndt
 DRILL METHOD: Vibracore
 TOTAL DEPTH: 1.5' in 10.75' of water

LOCATION DESCRIPTION: On Lake in Backwater Area C&H Lake Linden Operations

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Silt Dark Brown to Black, wood debris			0'-6"	Sediment sample	
		Silt Reddish-Brown, wood debris			1'-1.5'	Sediment sample	
		E.O.B.					
			5				

VERTICAL DATUM:
 GRD. ELEVATION:
 T.O.C.:
 S.W.L.:
 CASING:
 SCREEN:
 WELL DEPTH:
 COMPLETION NOTES:

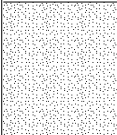

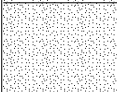

LATITUDE: 47.19645463
 LONGITUDE: -88.40338311
 PROJECTION:
 NORTHING: 741067.986
 EASTING: 317801.543

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
TOWNSHIP: Schoolcraft
TOWN: 55N
RANGE: 32W
SECTION: 5
LOCATION DESCRIPTION: On Lake in Backwater Area C&H Lake Linden Operations

DATE: 5-29-15
DRILLER: Brian Lower
GEOLOGIST: Aaron Berndt
DRILL METHOD: Vibracore
TOTAL DEPTH: 1.5' in 2.3' of water

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Sand Dark Brown to Black, fine to medium grained, silty			0'-6"	Sediment sample	
		Sand Tan, fine to medium grained			1'-1.5'	Sediment sample	
		E.O.B.					
			5				

VERTICAL DATUM:
GRD. ELEVATION:
T.O.C.:
S.W.L.:
CASING:
SCREEN:
WELL DEPTH:
COMPLETION NOTES:

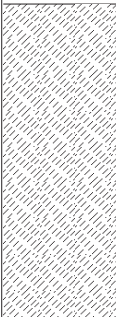
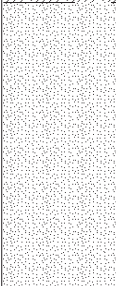
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LONGITUDE: -88.39993785
PROJECTION:
NORTHING: 740920.508
EASTING: 318058.148

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
 TOWNSHIP: Village of Lake Linden
 TOWN: 55N
 RANGE: 32W
 SECTION: 6
 LOCATION DESCRIPTION: On Lake in Backwater Area C&H Lake Linden Operations

DATE: 5-29-15
 DRILLER: Brian Lower
 GEOLOGIST: Aaron Berndt
 DRILL METHOD: Vibracore
 TOTAL DEPTH: 4' in 10.9' of water

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Silt Dark Brown to Black			0'-6"	Sediment sample	
		Sand Reddish-Brown, fine grained			1'-3'	Sediment sample	
					3'-4'	Sediment sample	
		E.O.B.					
			5				

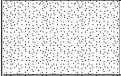

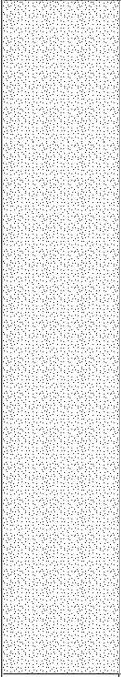



VERTICAL DATUM:	LATITUDE: 47.1949586
GRD. ELEVATION:	LONGITUDE: -88.40456155
T.O.C.:	PROJECTION: MichGeoRef
S.W.L.:	NORTHING: 740900.586
CASING:	EASTING: 317703.770
SCREEN:	
WELL DEPTH:	
COMPLETION NOTES:	

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
TOWNSHIP: Village of Lake Linden
TOWN: 55N
RANGE: 32W
SECTION: 5
LOCATION DESCRIPTION: On Lake in Lake Linden Sands Area C&H Lake Linden Operations

DATE: 5-29-15
DRILLER: Brian Lower
GEOLOGIST: Aaron Berndt
DRILL METHOD: Vibracore
TOTAL DEPTH: 5' in 2.75' of water

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Sand Dark Brown to Black, fine grained, silty			0'-6"	Sediment sample	
		Sand Reddish-Brown, fine grained, silty					
					1'-3'	Sediment sample, duplicate sample 1'-3'	
					3'-5'	Sediment sample	
		E.O.B.	5				

VERTICAL DATUM:
GRD. ELEVATION:
T.O.C.:
S.W.L.:
CASING:
SCREEN:
WELL DEPTH:
COMPLETION NOTES:

LATITUDE: 47.19453135
LONGITUDE: -88.40272412
PROJECTION:
NORTHING: 740852.805
EASTING: 317844.904

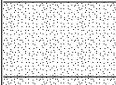

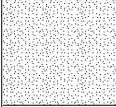

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
TOWNSHIP: Schoolcraft
TOWN: 55N
RANGE: 32W
SECTION: 5

DATE: 5-29-15
DRILLER: Brian Lower
GEOLOGIST: Aaron Berndt
DRILL METHOD: Vibracore
TOTAL DEPTH: 1.25' in 3' of water

LOCATION DESCRIPTION: On Lake in Backwater Area C&H Lake Linden Operations

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Sand Dark Brown to Black, fine to medium grained, silty			0'-6"	Sediment sample	
		Sand Tan, fine to medium grained, silt stringers at 0.7' and 1'			1'-1.25'	Sediment sample	
		E.O.B.					
			5				

VERTICAL DATUM:
GRD. ELEVATION:
T.O.C.:
S.W.L.:
CASING:
SCREEN:
WELL DEPTH:
COMPLETION NOTES:

LATITUDE: 47.19480761
LONGITUDE: -88.39973112
PROJECTION:
NORTHING: 740876.566
EASTING: 318072.474

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-12-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

DRILL METHOD: Vibracore

SECTION: 8

TOTAL DEPTH: 3' in 30' of water

LOCATION DESCRIPTION: On Lake in Lake Linden Sands Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
		Silt Dark brown to black, sandy		0'-6"			
		Silt Reddish-brown, clayey		1'-3'			
		E.O.B.					
			5				

VERTICAL DATUM:
GRD. ELEVATION:
T.O.C.:
S.W.L.:
CASING:
SCREEN:
WELL DEPTH:
COMPLETION NOTES:

LATITUDE: 47.19156789
LONGITUDE: -88.39581486
DATUM: MiGeoRef
NORTHING: 740507.285
EASTING: 318342.248

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-11-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

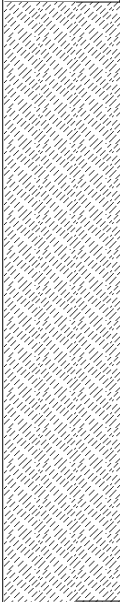
DRILL METHOD: Vibracore

SECTION: 8

TOTAL DEPTH: 4' in 20' of water

LOCATION DESCRIPTION: On Lake in Lake Linden Sands Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
		Silt Dark brown, sandy	0'-6"				
			1'-3'				
				3'-4'			
		E.O.B.	5				

VERTICAL DATUM:
GRD. ELEVATION:
T.O.C.:
S.W.L.:
CASING:
SCREEN:
WELL DEPTH:
COMPLETION NOTES:

LATITUDE: 47.19189741
LONGITUDE: -88.39486955
DATUM: MiGeoRef
NORTHING: 740542.1043
EASTING: 318431.1547

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 6-15-14

TOWNSHIP:

DRILLER: Brian Lower

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

DRILL METHOD: Vibracore

SECTION: 8

TOTAL DEPTH: 2.1' in 3' of water

LOCATION DESCRIPTION: On Lake in Lake Linden Sands Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
	Sand	Reddish-brown, fine to medium		0'-6"			
				1'-2.1'		Duplicate sample taken at 1'-2.1'	
		E.O.B.					
			5				

VERTICAL DATUM:

GRD. ELEVATION:

T.O.C.:

S.W.L.:

CASING:

SCREEN:

WELL DEPTH:

COMPLETION NOTES:

LATITUDE: 47.18153743

LONGITUDE: -88.39993376

DATUM: MiGeoRef

NORTHING: 739402.9364

EASTING: 318012.508

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 6-15-14

TOWNSHIP:

DRILLER: Brian Lower

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

DRILL METHOD: Vibracore

SECTION: 8

TOTAL DEPTH: 2' in 16' of water

LOCATION DESCRIPTION: On Lake in Lake Linden Sands Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID
							ppb
		Lake Bottom	0				1 100
	Sand	Reddish-brown, fine		0'-6"			
				1'-2'			
		E.O.B.					
			5				

VERTICAL DATUM:
 GRD. ELEVATION:
 T.O.C.:
 S.W.L.:
 CASING:
 SCREEN:
 WELL DEPTH:
 COMPLETION NOTES:

LATITUDE: 47.18204071
 LONGITUDE: -88.40390005
 DATUM: MiGeoRef
 NORTHING: 739468.0306
 EASTING: 317713.8156

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 6-15-14

TOWNSHIP:

DRILLER: Brian Lower

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

DRILL METHOD: Vibracore

SECTION: 6

TOTAL DEPTH: 2.5' in 2.5' of water

LOCATION DESCRIPTION: On Lake in Lake Linden Sands Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID
							ppb
		Lake Bottom	0				1 100
	Sand	Reddish-brown, fine to medium	0'-6"				
			1'-2.5'				
		E.O.B.					
			5				

VERTICAL DATUM:

GRD. ELEVATION:

T.O.C.:

S.W.L.:

CASING:

SCREEN:

WELL DEPTH:

COMPLETION NOTES:

LATITUDE: 47.18784236

LONGITUDE: -88.40472113

DATUM: MiGeoRef

NORTHING: 740114.4282

EASTING: 317671.3588

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 6-15-14

TOWNSHIP:

DRILLER: Brian Lower

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

DRILL METHOD: Vibracore

SECTION: 6

TOTAL DEPTH: 2'

LOCATION DESCRIPTION: On Lake in Lake Linden Sands Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID
							ppb
		Lake Bottom	0				1 100
		Sand Reddish-brown, fine to medium	0'-6"				
			1'-2'			Duplicate sample taken at 1'-2'	
		E.O.B.					
			5				

VERTICAL DATUM:

GRD. ELEVATION:

T.O.C.:

S.W.L.:

CASING:

SCREEN:

WELL DEPTH:

COMPLETION NOTES:

LATITUDE: 47.18825094

LONGITUDE: -88.40500421

DATUM: MiGeoRef

NORTHING: 740160.4728

EASTING: 317651.3102

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-11-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

DRILL METHOD: Vibracore

SECTION: 6

TOTAL DEPTH: 4.3' in 22.5' of water

LOCATION DESCRIPTION: On Lake in Lake Linden Sands Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
		Silt Dark brown		0'-6"			
		Silt Reddish-brown					
				1'-3'			
				3'-4.3'			
		E.O.B.	5				

VERTICAL DATUM:
 GRD. ELEVATION:
 T.O.C.:
 S.W.L.:
 CASING:
 SCREEN:
 WELL DEPTH:
 COMPLETION NOTES:

LATITUDE: 47.18860746
 LONGITUDE: -88.40547174
 DATUM: MiGeoRef
 NORTHING: 740201.162
 EASTING: 317617.1174

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 6-16-14

TOWNSHIP:

DRILLER: Brian Lower

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

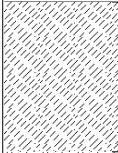

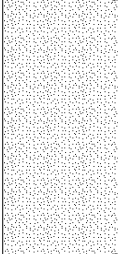
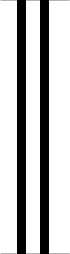
DRILL METHOD: Vibracore

SECTION: 6

TOTAL DEPTH: 2.7' in 14' of water

LOCATION DESCRIPTION: On Lake in Lake Linden Sands Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
		Silt Reddish-brown		0'-6"			
		Sand Reddish-brown, silty, fine		1'-2.7'			
		E.O.B.					
			5				

VERTICAL DATUM:
 GRD. ELEVATION:
 T.O.C.:
 S.W.L.:
 CASING:
 SCREEN:
 WELL DEPTH:
 COMPLETION NOTES:

LATITUDE: 47.18891668
 LONGITUDE: -88.40606326
 DATUM: MiGeoRef
 NORTHING: 740236.8855
 EASTING: 317573.3746

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-11-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

DRILL METHOD: Vibracore

SECTION: 6

TOTAL DEPTH: 4' in 24' of water

LOCATION DESCRIPTION: On Lake in Lake Linden Sands Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
		Silt Dark brown		0'-6"			
		Silt Reddish-brown, clayey		1'-3'			
				3'-4'		Duplicate sample taken at 3'-4'	
		E.O.B.	5				

VERTICAL DATUM:

GRD. ELEVATION:

T.O.C.:

S.W.L.:

CASING:

SCREEN:

WELL DEPTH:

COMPLETION NOTES:

LATITUDE: 47.18849123

LONGITUDE: -88.406047

DATUM: MiGeoRef

NORTHING: 740189.585

EASTING: 317573.1582

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-12-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

DRILL METHOD: Vibracore

SECTION: 6

TOTAL DEPTH: 3.5' in 20' of water

LOCATION DESCRIPTION: On Lake in Lake Linden Sands Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
		Silt Dark brown		0'-6"			
		Silt Reddish-brown, clayey					
				1'-3'			
				3'-3.5'			
		E.O.B.					
			5				

VERTICAL DATUM:
GRD. ELEVATION:
T.O.C.:
S.W.L.:
CASING:
SCREEN:
WELL DEPTH:
COMPLETION NOTES:

LATITUDE: 47.18875752
LONGITUDE: -88.40608744
DATUM: MiGeoRef
NORTHING: 740219.261
EASTING: 317571.002

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-12-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

DRILL METHOD: Vibracore

SECTION: 6

TOTAL DEPTH: 2.7' in 4' of water

LOCATION DESCRIPTION: On Lake in Lake Linden Sands Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
		Sand Reddish-brown, silty, fine, wood debris at 0.6'	0'-6"				
		Sand Reddish-brown, silty, poorly sorted	1'-2.7'			Dark gray staining around 1.6'	
		E.O.B.	5				

VERTICAL DATUM:
 GRD. ELEVATION:
 T.O.C.:
 S.W.L.:
 CASING:
 SCREEN:
 WELL DEPTH:
 COMPLETION NOTES:

LATITUDE: 47.18875298
 LONGITUDE: -88.40691288
 DATUM: MiGeoRef
 NORTHING: 740220.671
 EASTING: 317508.477

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-12-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

DRILL METHOD: Vibracore

SECTION: 6

TOTAL DEPTH: 2.4' in 2' of water

LOCATION DESCRIPTION: On Lake in Lake Linden Sands Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
	Lithologic Log	Sand Brown, poorly sorted		0'-6"			
		Sand Brown, poorly sorted, few pebbles		1'-2.4'			
		Sand Brown, poorly sorted					
		E.O.B.					
			5				

VERTICAL DATUM:

GRD. ELEVATION:

T.O.C.:

S.W.L.:

CASING:

SCREEN:

WELL DEPTH:

COMPLETION NOTES:

LATITUDE: 47.18898030

LONGITUDE: -88.40676790

DATUM: MiGeoRef

NORTHING: 740245.587

EASTING: 317520.23

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 6-16-14

TOWNSHIP:

DRILLER: Brian Lower

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

DRILL METHOD: Vibracore

SECTION: 6

TOTAL DEPTH: 2' in 22' of water

LOCATION DESCRIPTION: On Lake in Lake Linden Processing Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
	LITHOLOGIC LOG	Sand Reddish-brown, fine		0'-6"			
		Sand Reddish-brown, poorly sorted					
				1'-2'			
		E.O.B.					
			5				

VERTICAL DATUM:

GRD. ELEVATION:

T.O.C.:

S.W.L.:

CASING:

SCREEN:

WELL DEPTH:

COMPLETION NOTES:

LATITUDE: 47.18794425

LONGITUDE: -88.40681175

DATUM: MiGeoRef

NORTHING: 740130.5965

EASTING: 317513.3824



BOREHOLE LOG

BORING/WELL: CHLL-SD 21

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-10-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

DRILL METHOD: Vibracore

SECTION: 6

TOTAL DEPTH: 0.5' in 3' of water

LOCATION DESCRIPTION: On Lake in Lake Linden Processing Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
		Sand Reddish-brown, silty, poorly sorted	0'-6"				
		E.O.B.					

VERTICAL DATUM:

GRD. ELEVATION:

T.O.C.:

S.W.L.:

CASING:

SCREEN:

WELL DEPTH:

COMPLETION NOTES:

LATITUDE: 47.187633652

LONGITUDE: -88.407534538

DATUM: MiGeoRef

NORTHING: 740097.707

EASTING: 317457.170



BOREHOLE LOG

BORING/WELL: CHLL-SD 22

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 6-16-14

TOWNSHIP:

DRILLER: Brian Lower

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

DRILL METHOD: Vibracore

SECTION: 6

TOTAL DEPTH: 1.5' in 3' of water

LOCATION DESCRIPTION: On Lake in Lake Linden Processing Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
		Sand Reddish-brown, poorly sorted		0'-6"			
				1'-1.5'			
		E.O.B.					
			5				

VERTICAL DATUM:
GRD. ELEVATION:
T.O.C.:
S.W.L.:
CASING:
SCREEN:
WELL DEPTH:
COMPLETION NOTES:

LATITUDE: 47.18752254
LONGITUDE: -88.4082893
DATUM: MiGeoRef
NORTHING: 740087.1794
EASTING: 317400.051

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-10-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

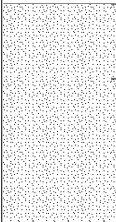

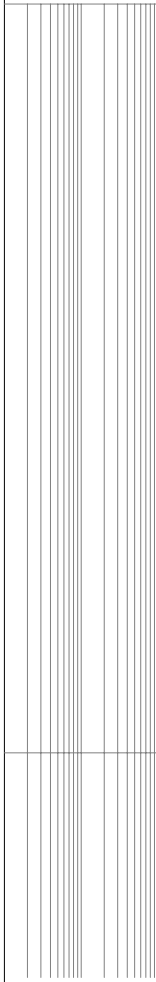

DRILL METHOD: Vibracore

SECTION: 6

TOTAL DEPTH: 1.5' in 6' of water

LOCATION DESCRIPTION: On Lake in Lake Linden Processing Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID
							ppb
		Lake Bottom	0				1 100
		Sand Dark brown, silty, fine, some wood debris	0'-6"				
		Sand Reddish-brown, silty, fine	1'-1.5'				
		E.O.B.	5				

VERTICAL DATUM:
 GRD. ELEVATION:
 T.O.C.:
 S.W.L.:
 CASING:
 SCREEN:
 WELL DEPTH:
 COMPLETION NOTES:

LATITUDE: 47.18725446
 LONGITUDE: -88.4090053
 DATUM: MiGeoRef
 NORTHING: 740059.0611
 EASTING: 317344.9147

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-11-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

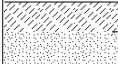
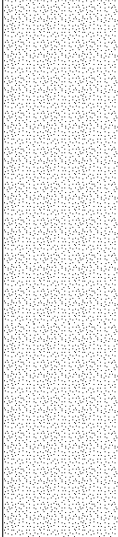
DRILL METHOD: Vibracore

SECTION: 6

TOTAL DEPTH: 4' in 36' of water

LOCATION DESCRIPTION: On Lake in Lake Linden Processing Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
		Silt Dark brown		0'-6"			
		Sand Reddish-brown, silty, fine					
				1'-3'			
				3'-4'			
		E.O.B.					
			5				

VERTICAL DATUM:

GRD. ELEVATION:

T.O.C.:

S.W.L.:

CASING:

SCREEN:

WELL DEPTH:

COMPLETION NOTES:

LATITUDE: 47.18623018

LONGITUDE: -88.40944532

DATUM: MiGeoRef

NORTHING: 739946.2985

EASTING: 317308.1016

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-10-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

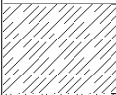

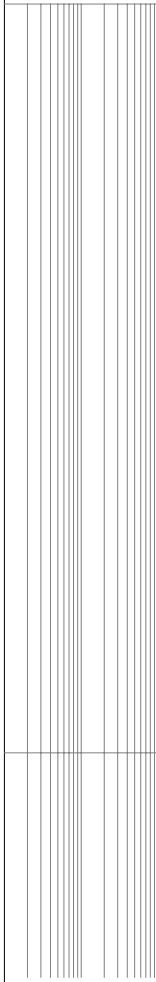
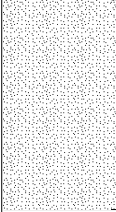

DRILL METHOD: Vibracore

SECTION: 6

TOTAL DEPTH: 2' in 44' of water

LOCATION DESCRIPTION: On Lake in Lake Linden Processing Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID
							ppb
		Lake Bottom	0				1 100
		Silt Dark brown, clayey		0'-6"			
		Sand Reddish-brown, silty, poorly sorted		1'-2'			
		E.O.B.					
			5				

VERTICAL DATUM:
 GRD. ELEVATION:
 T.O.C.:
 S.W.L.:
 CASING:
 SCREEN:
 WELL DEPTH:
 COMPLETION NOTES:

LATITUDE: 47.18488075
 LONGITUDE: -88.41092995
 DATUM: MiGeoRef
 NORTHING: 739799.8433
 EASTING: 317191.0655

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-10-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

DRILL METHOD: Vibracore

SECTION: 6

TOTAL DEPTH: 2.3' in 50' of water

LOCATION DESCRIPTION: On Lake in Lake Linden Processing Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
	LITHOLOGIC LOG	Sand Reddish-brown, silty, fine		0'-6"			
		Sand Reddish-brown, silty, poorly sorted					
		Sand Reddish-brown, silty, fine		1'-2.3'			
		E.O.B.					
			5				

VERTICAL DATUM:

GRD. ELEVATION:

T.O.C.:

S.W.L.:

CASING:

SCREEN:

WELL DEPTH:

COMPLETION NOTES:

LATITUDE: 47.184386639

LONGITUDE: -88.411468664

DATUM: MiGeoRef

NORTHING: 739746.142

EASTING: 317148.163

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-9-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

DRILL METHOD: Vibracore

SECTION: 6

TOTAL DEPTH: 3' in 42' of water

LOCATION DESCRIPTION: On Lake in Lake Linden Processing Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
		Silt Dark brown, clayey		0'-6"			
		Silt Reddish-brown, silty					
				1'-3'		Duplicate sample taken at 1'-3'	
		Sand Reddish-brown, clayey, fine-medium					
		Sand Reddish-brown, silty, poorly sorted					
		E.O.B.					
			5				

VERTICAL DATUM:

GRD. ELEVATION:

T.O.C.:

S.W.L.:

CASING:

SCREEN:

WELL DEPTH:

COMPLETION NOTES:

LATITUDE: 47.18406071

LONGITUDE: -88.412117951

DATUM: MiGeoRef

NORTHING: 739711.6515

EASTING: 317093.6333

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-11-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

DRILL METHOD: Vibracore

SECTION: 7

TOTAL DEPTH: 5' in 23' of water

LOCATION DESCRIPTION: On Lake in Hubbell Coal Dock Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
		Silt Dark brown		0'-6"			
		Silt Reddish-brown, clayey					
				1'-3'			
				3'-5'			
			5				
		E.O.B.					

VERTICAL DATUM:

GRD. ELEVATION:

T.O.C.:

S.W.L.:

CASING:

SCREEN:

WELL DEPTH:

COMPLETION NOTES:

LATITUDE: 47.18099976

LONGITUDE: -88.41457429

DATUM: MiGeoRef

NORTHING: 739376.795

EASTING: 316885.607

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-11-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

DRILL METHOD: Vibracore

SECTION: 7

TOTAL DEPTH: 5' in 24' of water

LOCATION DESCRIPTION: On Lake in Hubbell Coal Dock Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
		Silt Reddish-brown		0'-6"			
				1'-3'		Duplicate sample taken at 1'-3'	
					3'-5'		
		E.O.B.	5				

VERTICAL DATUM:
GRD. ELEVATION:
T.O.C.:
S.W.L.:
CASING:
SCREEN:
WELL DEPTH:
COMPLETION NOTES:

LATITUDE: 47.18054817
LONGITUDE: -88.41492188
DATUM: MiGeoRef
NORTHING: 739327.439
EASTING: 316857.738

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-12-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

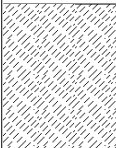




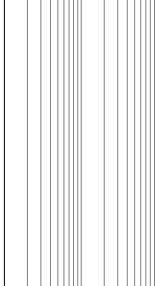
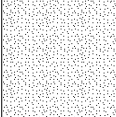

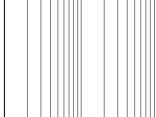
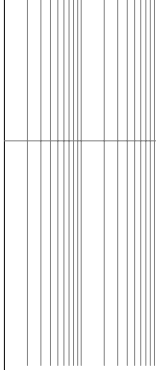
DRILL METHOD: Vibracore

SECTION: 7

TOTAL DEPTH: 4' in 25' of water

LOCATION DESCRIPTION: On Lake in Hubbell Coal Dock Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
		Silt Reddish-brown, sandy, clayey		0'-6"			
		Silt Reddish-brown, clayey		1'-3'			
		Sand Tan, fine to medium, wood debris around 3.7'		3'-4'			
		E.O.B.	5				

VERTICAL DATUM:
GRD. ELEVATION:
T.O.C.:
S.W.L.:
CASING:
SCREEN:
WELL DEPTH:
COMPLETION NOTES:

LATITUDE: 47.17912870
LONGITUDE: -88.41605254
DATUM: MiGeoRef
NORTHING: 739172.387
EASTING: 316767.251

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-12-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W


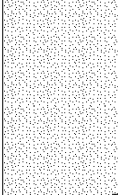
DRILL METHOD: Vibracore

SECTION: 7

TOTAL DEPTH: 3' in 27' of water

LOCATION DESCRIPTION: On Lake in Hubbell Coal Dock Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
		Silt Light brown, chunk of coal on top		0'-6"			
		Silt Reddish-brown, clayey					
		Sand Tan, poorly sorted, pebbles at 3'		1'-3'		Duplicate sample taken at 1'-3'	
		E.O.B.					
			5				

VERTICAL DATUM:

GRD. ELEVATION:

T.O.C.:

S.W.L.:

CASING:

SCREEN:

WELL DEPTH:

COMPLETION NOTES:

LATITUDE: 47.17867571

LONGITUDE: -88.41646583

DATUM: MiGeoRef

NORTHING: 739123.029

EASTING: 316734.400

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-12-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

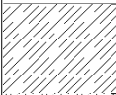
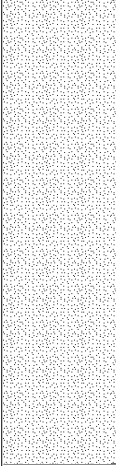
DRILL METHOD: Vibracore

SECTION: 7

TOTAL DEPTH: 3.7' in 27' of water

LOCATION DESCRIPTION: On Lake in Hubbell Coal Dock Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID
							ppb
		Lake Bottom	0				1 100
		Silt Reddish-brown, sandy	0'-6"				
		Sand Tan, fine to medium	1'-3'				
			3'-3.7'				
		E.O.B.					
			5				

VERTICAL DATUM:
 GRD. ELEVATION:
 T.O.C.:
 S.W.L.:
 CASING:
 SCREEN:
 WELL DEPTH:
 COMPLETION NOTES:

LATITUDE: 47.17823617
 LONGITUDE: -88.41693405
 DATUM: MiGeoRef
 NORTHING: 739075.292
 EASTING: 316697.434

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-11-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

DRILL METHOD: Vibracore

SECTION: 7

TOTAL DEPTH: 3.4' in 33' of water

LOCATION DESCRIPTION: On Lake in Hubbell Coal Dock Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
		Silt Dark brown, sandy		0'-6"			
		Silt Reddish-brown, sandy					
				1'-3'			
		Sand Light brown to tan, poorly sorted		3'-3.4'			
		E.O.B.					
			5				

VERTICAL DATUM:

GRD. ELEVATION:

T.O.C.:

S.W.L.:

CASING:

SCREEN:

WELL DEPTH:

COMPLETION NOTES:

LATITUDE: 47.17694454

LONGITUDE: -88.41854807

DATUM: MiGeoRef

NORTHING: 738935.9641

EASTING: 316586.9676

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-8-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

DRILL METHOD: Vibracore

SECTION: 7

TOTAL DEPTH: 4.5' in 48' of water

LOCATION DESCRIPTION: On Lake in Hubbell Smelter Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
		Silt Reddish-brown, clayey		0'-6"			
				1'-3'		Duplicate sample taken at 1'-3'	
				3'-4.5'			
		E.O.B.	5				

VERTICAL DATUM:

GRD. ELEVATION:

T.O.C.:

S.W.L.:

CASING:

SCREEN:

WELL DEPTH:

COMPLETION NOTES:

LATITUDE: 47.17613498

LONGITUDE: -88.41831316

DATUM: MiGeoRef

NORTHING: 738845.4846

EASTING: 316601.9917

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-8-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W


DRILL METHOD: Vibracore

SECTION: 7

TOTAL DEPTH: 2' in 43' of water

LOCATION DESCRIPTION: On Lake in Hubbell Smelter Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID
							ppb
		Lake Bottom	0				1 100
		Silt Reddish-brown, clayey	0'-6"				
			1'-2'				
		E.O.B.					
			5				

VERTICAL DATUM:
 GRD. ELEVATION:
 T.O.C.:
 S.W.L.:
 CASING:
 SCREEN:
 WELL DEPTH:
 COMPLETION NOTES:

LATITUDE: 47.1756862
 LONGITUDE: -88.41875849
 DATUM: MiGeoRef
 NORTHING: 738796.6695
 EASTING: 316566.7247

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-8-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

DRILL METHOD: Vibracore

SECTION: 7

TOTAL DEPTH: 5' in 45' of water

LOCATION DESCRIPTION: On Lake in Hubbell Smelter Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
		Silt Dark brown		0'-6"			
		Silt Reddish-brown, clayey					
				1'-3'			
				3'-5'			
			5				
		E.O.B.					

VERTICAL DATUM:
GRD. ELEVATION:
T.O.C.:
S.W.L.:
CASING:
SCREEN:
WELL DEPTH:
COMPLETION NOTES:

LATITUDE: 47.17531293
LONGITUDE: -88.41935229
DATUM: MiGeoRef
NORTHING: 738756.5892
EASTING: 316520.469

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-8-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

DRILL METHOD: Vibracore

SECTION: 7

TOTAL DEPTH: 4.5' in 43' of water

LOCATION DESCRIPTION: On Lake in Hubbell Smelter Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
		Silt Dark brown		0'-6"			
		Silt Reddish-brown, clayey					
				1'-3'			
		Silt Dark brown		3'-4.5'		Duplicate sample taken at 3'-4.5'	
		E.O.B.	5				

VERTICAL DATUM:
GRD. ELEVATION:
T.O.C.:
S.W.L.:
CASING:
SCREEN:
WELL DEPTH:
COMPLETION NOTES:

LATITUDE: 47.17495733
LONGITUDE: -88.41998
DATUM: MiGeoRef
NORTHING: 738718.5508
EASTING: 316471.7043

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 6-14-14

TOWNSHIP:

DRILLER: Brian Lower

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

DRILL METHOD: Vibracore

SECTION: 7

TOTAL DEPTH: 6' in 74' of water

LOCATION DESCRIPTION: On Lake in Hubbell Smelter Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
		Silt Reddish-brown, clayey		0'-6"			
				1'-3'			
				3'-5'			
			5				
		E.O.B.					

VERTICAL DATUM:
 GRD. ELEVATION:
 T.O.C.:
 S.W.L.:
 CASING:
 SCREEN:
 WELL DEPTH:
 COMPLETION NOTES:

LATITUDE: 47.17389502
 LONGITUDE: -88.42158855
 DATUM: MiGeoRef
 NORTHING: 738604.2961
 EASTING: 316346.2209

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 6-14-14

TOWNSHIP:

DRILLER: Brian Lower

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

DRILL METHOD: Vibracore

SECTION: 7

TOTAL DEPTH: 5' in 50' of water

LOCATION DESCRIPTION: On Lake in Hubbell Smelter Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
		Silt Reddish-brown, clayey	0'-6"				
			1'-3'				
			3'-5'				
		Silt Dark brown	5				
		E.O.B.					

VERTICAL DATUM:

GRD. ELEVATION:

T.O.C.:

S.W.L.:

CASING:

SCREEN:

WELL DEPTH:

COMPLETION NOTES:

LATITUDE: 47.17423279

LONGITUDE: -88.42222241

DATUM: MiGeoRef

NORTHING: 738643.2994

EASTING: 316299.3632

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-9-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

DRILL METHOD: Vibracore

SECTION: 7

TOTAL DEPTH: 4.1' in 43' of water

LOCATION DESCRIPTION: On Lake in Hubbell Smelter Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
		Silt Brown, clayey	0'-6"				
		Silt Reddish-brown, clayey	1'-3'				
			3'-4'				
		E.O.B.	5				

VERTICAL DATUM:
GRD. ELEVATION:
T.O.C.:
S.W.L.:
CASING:
SCREEN:
WELL DEPTH:
COMPLETION NOTES:

LATITUDE: 47.17400000
LONGITUDE: -88.423016700
DATUM: MiGeoRef
NORTHING: 738618.309
EASTING: 316232.241

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-15-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

DRILL METHOD: Vibracore

SECTION: 6

TOTAL DEPTH: 2.3' in 30' of water

LOCATION DESCRIPTION: On Lake in Lake Linden Processing Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
		Sand Dark brown, silty, fine, stained gray at 0.5'-2.3'		0'-6"			
						Stained gray at 0.5'-2.3'	
		E.O.B.					
			5				

VERTICAL DATUM:

GRD. ELEVATION:

T.O.C.:

S.W.L.:

CASING:

SCREEN:

WELL DEPTH:

COMPLETION NOTES:

LATITUDE: 47.18432837

LONGITUDE: -88.41218146

DATUM: MiGeoRef

NORTHING: 739741.39

EASTING: 317094.399

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-15-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W

DRILL METHOD: Vibracore

SECTION: 7

TOTAL DEPTH: 0.9' in 35' of water

LOCATION DESCRIPTION: On Lake in Hubbell Smelter Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0			Boring in location of circuit board material	
	<p>Silt Dark brown</p> <p>Sand Reddish-brown, poorly sorted, slag?</p>			0'-6"			
		E.O.B.					
			5				

VERTICAL DATUM:

GRD. ELEVATION:

T.O.C.:

S.W.L.:

CASING:

SCREEN:

WELL DEPTH:

COMPLETION NOTES:

LATITUDE: 47.17412448

LONGITUDE: -88.42327342

DATUM: MiGeoRef

NORTHING: 738633.723

EASTING: 316219.379

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-15-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W


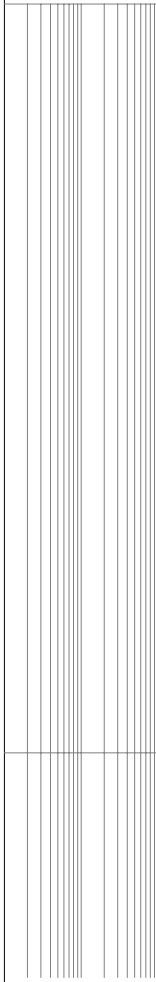



DRILL METHOD: Vibracore

SECTION: 7

TOTAL DEPTH: 3' in 51' of water

LOCATION DESCRIPTION: On Lake in Hubbell Smelter Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID
							ppb
		Lake Bottom	0				1 100
		Silt Dark brown		0'-6"			
		Silt Reddish-brown					
		Sand Reddish-brown, silty, poorly sorted					
		Silt Reddish-brown, clayey		1'-3'			
		E.O.B.					
			5				

VERTICAL DATUM:

GRD. ELEVATION:

T.O.C.:

S.W.L.:

CASING:

SCREEN:

WELL DEPTH:

COMPLETION NOTES:

LATITUDE: 47.17383174

LONGITUDE: -88.42302683

DATUM: MiGeoRef

NORTHING: 738600.627

EASTING: 316237.055

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-15-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 32W





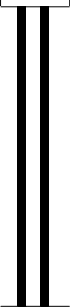

DRILL METHOD: Vibracore

SECTION: 7

TOTAL DEPTH: 3.4' in 62' of water

LOCATION DESCRIPTION: On Lake in Hubbell Smelter Area C&H Lake Linden Operations

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
		Silt Reddish-brown, sandy, clayey		0'-6"			
		Sand Reddish-brown, Medium to coarse, slag?					
		Silt Reddish-brown, clayey		1'-3'			
				3'-3.4'			
		E.O.B.					
			5				

VERTICAL DATUM:
GRD. ELEVATION:
T.O.C.:
S.W.L.:
CASING:
SCREEN:
WELL DEPTH:
COMPLETION NOTES:

LATITUDE: 47.173603
LONGITUDE: -88.4229569
DATUM: MiGeoRef
NORTHING: 738575.053
EASTING: 316241.568

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 6-14-14

TOWNSHIP:

DRILLER: Brian Lower

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 33W



DRILL METHOD: Vibracore

SECTION: 12

TOTAL DEPTH: 1' in 48' of water

LOCATION DESCRIPTION: On lake in Hubbell Slag Dump and Beach Area

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
		Silt Reddish-brown		0'-6"			
		Sand Dark brown, silty, a lot of wood debris, refusal at 1'		.75'-1'			
		E.O.B.	5				

VERTICAL DATUM:

GRD. ELEVATION:

T.O.C.:

S.W.L.:

CASING:

SCREEN:

WELL DEPTH:

COMPLETION NOTES:

LATITUDE: 47.17134587

LONGITUDE: -88.4264484

DATUM: MiGeoRef

NORTHING: 738332.4786

EASTING: 315969.341

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 6-14-14

TOWNSHIP:

DRILLER: Brian Lower

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 33W

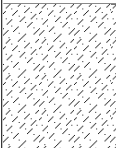

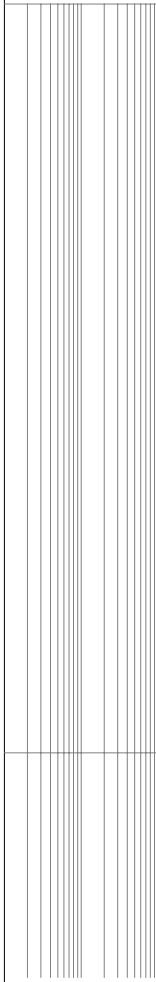


DRILL METHOD: Vibracore

SECTION: 12

TOTAL DEPTH: 1.5' in 24' of water

LOCATION DESCRIPTION: On Lake in Hubbell Slag Dump and Beach Area

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID
							ppb
		Lake Bottom	0				1 100
		Silt Reddish-brown, sandy		0'-6"			
		Sand Dark brown, poorly sorted, a lot of wood debris		1'-1.5'			
		E.O.B.					
			5				

VERTICAL DATUM:

GRD. ELEVATION:

T.O.C.:

S.W.L.:

CASING:

SCREEN:

WELL DEPTH:

COMPLETION NOTES:

LATITUDE: 47.17176789

LONGITUDE: -88.42718304

DATUM: MiGeoRef

NORTHING: 738381.0788

EASTING: 315915.138

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-8-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 33W

DRILL METHOD: Vibracore

SECTION: 12

TOTAL DEPTH: 3' in 24' of water

LOCATION DESCRIPTION: On Lake in Hubbell Slag Dump and Beach Area

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
		Sand Dark brown, silty, fine, some wood debris		0'-6"			
		Silt Dark brown, sandy, some wood debris					
		Sand Dark brown, silty, fine-medium		1'-3'		Duplicate sample taken at 1'-3'	
		Sand Tan, poorly sorted,					
		E.O.B.					
			5				

VERTICAL DATUM:

GRD. ELEVATION:

T.O.C.:

S.W.L.:

CASING:

SCREEN:

WELL DEPTH:

COMPLETION NOTES:

LATITUDE: 47.171321919

LONGITUDE: -88.427663336

DATUM: MiGeoRef

NORTHING: 738332.598

EASTING: 315876.805

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 7-9-14

TOWNSHIP:

DRILLER: Dan Peabody

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 33W



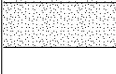


DRILL METHOD: Vibracore

SECTION: 12

TOTAL DEPTH: 2.5' in 27' of water

LOCATION DESCRIPTION: On Lake in Hubbell Slag Dump and Beach Area

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
		Sand Dark brown, silty, fine		0'-6"			
		Sand Dark brown, silty, fine-medium		1'-2.5'			
		Wood debris					
		Sand Dark brown, silty, fine-medium					
		E.O.B.					
			5				

VERTICAL DATUM:
 GRD. ELEVATION:
 T.O.C.:
 S.W.L.:
 CASING:
 SCREEN:
 WELL DEPTH:
 COMPLETION NOTES:

LATITUDE: 47.17095995
 LONGITUDE: -88.4290461
 DATUM: MiGeoRef
 NORTHING: 738295.6896
 EASTING: 315771.2309

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton

DATE: 6-14-14

TOWNSHIP:

DRILLER: Brian Lower

TOWN: 55N

GEOLOGIST: Aaron Berndt

RANGE: 33W

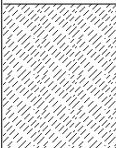
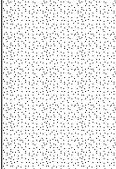



DRILL METHOD: Vibracore

SECTION: 12

TOTAL DEPTH: 4.5' in 24' of water

LOCATION DESCRIPTION: On Lake in Hubbell Slag Dump and Beach Area

ERNIE ID#

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE ID	SAMPLE TYPE	NOTES	PID ppb 1 100
		Lake Bottom	0				
		Sand Dark brown		0'-6"			
		Sand Reddish-brown, fine to medium		1'-3'			
		Silt Reddish-brown clayey					
		Sand Reddish-brown poorly sorted		3'-4.5'			
		Silt Reddish-brown clayey					
		E.O.B.	5				

VERTICAL DATUM:
GRD. ELEVATION:
T.O.C.:
S.W.L.:
CASING:
SCREEN:
WELL DEPTH:
COMPLETION NOTES:

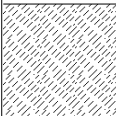

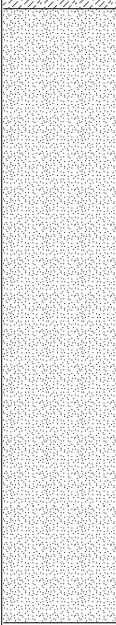


LATITUDE: 47.17065588
LONGITUDE: -88.42975295
DATUM: MiGeoRef
NORTHING: 738263.5676
EASTING: 315716.6395

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
 TOWNSHIP: Village of Lake Linden
 TOWN: 55N
 RANGE: 32W
 SECTION: 6
 LOCATION DESCRIPTION: On Lake in Lake Linden Sands Area C&H Lake Linden Operations

DATE: 5-29-15
 DRILLER: Brian Lower
 GEOLOGIST: Aaron Berndt
 DRILL METHOD: Vibracore
 TOTAL DEPTH: 4.9' in 4.75' of water

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Silt Dark Brown to Black			0'-6"	Sediment sample	
		Sand Reddish-Brown, fine grained, silty			1'-3'	Sediment sample	
					3'-4.9'	Sediment sample	
		E.O.B.	5				

VERTICAL DATUM:
 GRD. ELEVATION:
 T.O.C.:
 S.W.L.:
 CASING:
 SCREEN:
 WELL DEPTH:
 COMPLETION NOTES:

LATITUDE: 47.19426599
 LONGITUDE: -88.4047263
 PROJECTION:
 NORTHING: 740827.967
 EASTING: 317692.395

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
 TOWNSHIP: Village of Lake Linden
 TOWN: 55N
 RANGE: 32W
 SECTION: 6
 LOCATION DESCRIPTION: On Lake in Lake Linden Sands Area C&H Lake Linden Operations

DATE: 5-27-15
 DRILLER: Brian Lower
 GEOLOGIST: Aaron Berndt
 DRILL METHOD: Vibracore
 TOTAL DEPTH: 4.9' in 8.2' of water

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	-1		7.2'	Water sample at 8.2' below the water surface/1' above lake bottom	Water sample 15.91 °C 8 pH 130 ORPmV 0.122 mS/cm 9.4 NTU 11.23 mg/L DO 117.5 %DO
		Silt Dark Brown, sandy			0'-6"	Sediment sample	
		Sand Reddish-Brown, fine grained, silty					
		Silt Reddish-Brown			1'-3'	Sediment sample, duplicate sample 1'-3'	
			-4		3'-4.9'	Sediment sample	
		E.O.B.					

VERTICAL DATUM:
 GRD. ELEVATION:
 T.O.C.:
 S.W.L.:
 CASING:
 SCREEN:
 WELL DEPTH:
 COMPLETION NOTES:



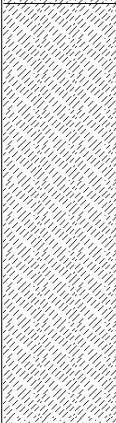

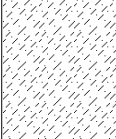

LATITUDE: 47.18909634
 LONGITUDE: -88.40654548
 PROJECTION:
 NORTHING: 740257.899
 EASTING: 317537.050

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
 TOWNSHIP: Village of Lake Linden
 TOWN: 55N
 RANGE: 32W
 SECTION: 6
 LOCATION DESCRIPTION: On Lake in Lake Linden Sands Area C&H Lake Linden Operations

DATE: 5-27-15
 DRILLER: Brian Lower
 GEOLOGIST: Aaron Berndt
 DRILL METHOD: Vibracore
 TOTAL DEPTH: 5' in 14' of water

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	-1		13'	Water sample at 13' below the water surface/1' above lake bottom	Water sample 16.38 °C 8.18 pH 119 ORPmV 0.122mS/cm 0.2 NTU 11.25 mg/L DO 117 %DO
		Silt Dark Brown			0'-6"	Sediment sample	
		Silt Reddish-Brown			1'-3'	Sediment sample	
		Sand Reddish-Brown, fine-medium grained, silty	-4		3'-5'	Sediment sample	
		E.O.B.					

VERTICAL DATUM:
 GRD. ELEVATION:
 T.O.C.:
 S.W.L.:
 CASING:
 SCREEN:
 WELL DEPTH:
 COMPLETION NOTES:

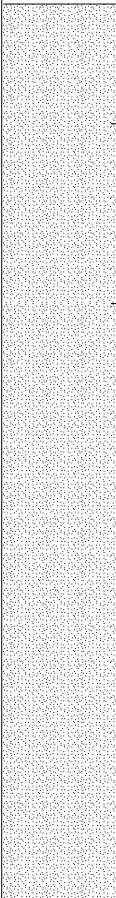




LATITUDE: 47.18899332
 LONGITUDE: -88.40632968
 PROJECTION:
 NORTHING: 740245.954
 EASTING: 317553.041

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
TOWNSHIP: Village of Lake Linden
TOWN: 55N
RANGE: 32W
SECTION: 6
LOCATION DESCRIPTION: On Lake in Lake Linden Sands Area C&H Lake Linden Operations

DATE: 5-27-15
DRILLER: Brian Lower
GEOLOGIST: Aaron Berndt
DRILL METHOD: Vibracore
TOTAL DEPTH: 6' in 3.5' of water

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Sand Brown, poorly sorted			0'-6"	Sediment sample	
		Sand Reddish-Brown, poorly sorted					
		Sand Reddish-Brown, fine to medium grained				1'-3'	Sediment sample
					3'-5'	Sediment sample	
			5				
		E.O.B.					

VERTICAL DATUM:
GRD. ELEVATION:
T.O.C.:
S.W.L.:
CASING:
SCREEN:
WELL DEPTH:
COMPLETION NOTES:

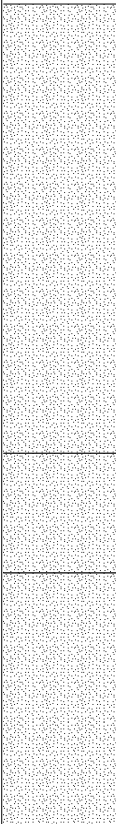

LATITUDE: 47.18910542
LONGITUDE: -88.40609369
PROJECTION:
NORTHING: 740257.859
EASTING: 317571.294

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
TOWNSHIP: Village of Lake Linden
TOWN: 55N
RANGE: 32W
SECTION: 6
LOCATION DESCRIPTION: On Lake in Lake Linden Sands Area C&H Lake Linden Operations

DATE: 5-28-15
DRILLER: Brian Lower
GEOLOGIST: Aaron Berndt
DRILL METHOD: Vibracore
TOTAL DEPTH: 5.5' in 2.9' of water

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter	
		Lake Bottom	0					
		Sand Reddish-Brown, fine to medium grained			0'-6"	Sediment sample		
					1'-3'	Sediment sample, duplicate sample 1'-3'		
		Sand Reddish-Brown, poorly sorted				3'-5'	Sediment sample	
		Sand Reddish-Brown, fine grained						
		Sand Reddish-Brown, fine to medium grained	5					
		E.O.B.						

VERTICAL DATUM:
GRD. ELEVATION:
T.O.C.:
S.W.L.:
CASING:
SCREEN:
WELL DEPTH:
COMPLETION NOTES:

LATITUDE: 47.18886121
LONGITUDE: -88.40522141
PROJECTION:
NORTHING: 740228.707
EASTING: 317636.520

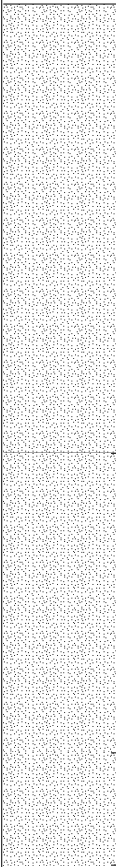

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
 TOWNSHIP: Village of Lake Linden
 TOWN: 55N
 RANGE: 32W
 SECTION: 6

DATE: 5-28-15
 DRILLER: Brian Lower
 GEOLOGIST: Aaron Berndt
 DRILL METHOD: Vibracore
 TOTAL DEPTH: 5.75' in 2.9' of water

LOCATION DESCRIPTION: On Lake in Lake Linden Sands Area C&H Lake Linden Operations

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Sand Reddish-Brown, fine to medium grained			0'-6"	Sediment sample	
					1'-3'	Sediment sample	
		Sand Reddish-Brown, fine to medium grained, silty			3'-5'	Sediment sample	
		Sand Reddish-Brown, fine grained	5				
		E.O.B.					

VERTICAL DATUM:
 GRD. ELEVATION:
 T.O.C.:
 S.W.L.:
 CASING:
 SCREEN:
 WELL DEPTH:
 COMPLETION NOTES:

LATITUDE: 47.1886722
 LONGITUDE: -88.40490932
 PROJECTION:
 NORTHING: 740206.987
 EASTING: 317659.511

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
 TOWNSHIP: Village of Lake Linden
 TOWN: 55N
 RANGE: 32W
 SECTION: 6
 LOCATION DESCRIPTION: On Lake in Lake Linden Sands Area C&H Lake Linden Operations

DATE: 5-28-15
 DRILLER: Brian Lower
 GEOLOGIST: Aaron Berndt
 DRILL METHOD: Vibracore
 TOTAL DEPTH: 5' in 14.5' of water

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Silt Dark Brown			0'-6"	Sediment sample	
		Silt Reddish-Brown, clayey					
		Sand Reddish-Brown, fine grained				1'-3'	Sediment sample
						3'-5'	Sediment sample
			5				
		E.O.B.					

VERTICAL DATUM:
 GRD. ELEVATION:
 T.O.C.:
 S.W.L.:
 CASING:
 SCREEN:
 WELL DEPTH:
 COMPLETION NOTES:

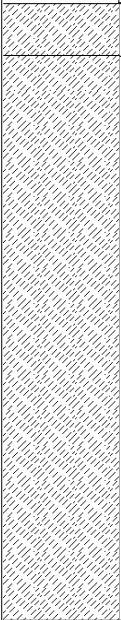
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 LONGITUDE: -88.40505358
 PROJECTION:
 NORTHING: 740179.029
 EASTING: 317647.720

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
TOWNSHIP: Village of Lake Linden
TOWN: 55N
RANGE: 32W
SECTION: 6
LOCATION DESCRIPTION: On Lake in Lake Linden Sands Area C&H Lake Linden Operations

DATE: 5-28-15
DRILLER: Brian Lower
GEOLOGIST: Aaron Berndt
DRILL METHOD: Vibracore
TOTAL DEPTH: 4.75' in 19.8' of water

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	-1		18.9'	Water sample at 18.9' below the water surface/1' above lake bottom	Water sample 10.03 °C 7.91 pH 135 ORPmV 0.128 mS/cm 3.1 NTU 13.70 mg/L DO 125 %DO
		Silt Dark Brown			0'-6"	Sediment sample	
		Silt Reddish-Brown, clayey			1'-3'	Sediment sample, Duplicate sample 1-3'	
				-4		3'-4.75'	
		E.O.B.					

VERTICAL DATUM:
GRD. ELEVATION:
T.O.C.:
S.W.L.:
CASING:
SCREEN:
WELL DEPTH:
COMPLETION NOTES:

LATITUDE: 47.1883839
LONGITUDE: -88.40538279
PROJECTION:
NORTHING: 740176.058
EASTING: 317622.675

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
TOWNSHIP: Village of Lake Linden
TOWN: 55N
RANGE: 32W
SECTION: 6
LOCATION DESCRIPTION: On Lake in Lake Linden Sands Area C&H Lake Linden Operations

DATE: 5-27-15
DRILLER: Brian Lower
GEOLOGIST: Aaron Berndt
DRILL METHOD: Vibracore
TOTAL DEPTH: 4.75' in 25' of water

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Silt Dark Brown			0'-6"	Sediment sample	
		Silt Reddish-Brown, clayey			1'-3'	Sediment sample	
					3'-4.75'	Sediment sample	
		E.O.B.	5				

VERTICAL DATUM:
GRD. ELEVATION:
T.O.C.:
S.W.L.:
CASING:
SCREEN:
WELL DEPTH:
COMPLETION NOTES:

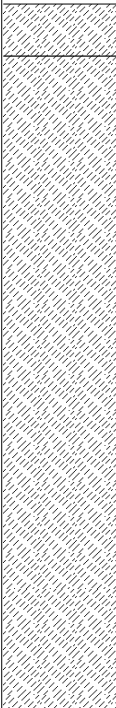




LATITUDE: 47.18824185
LONGITUDE: -88.40584112
PROJECTION:
NORTHING: 740161.341
EASTING: 317587.482

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
TOWNSHIP: Village of Lake Linden
TOWN: 55N
RANGE: 32W
SECTION: 6
LOCATION DESCRIPTION: On Lake in Lake Linden Sands Area C&H Lake Linden Operations

DATE: 5-27-15
DRILLER: Brian Lower
GEOLOGIST: Aaron Berndt
DRILL METHOD: Vibracore
TOTAL DEPTH: 4.75' in 24.5' of water

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Silt Dark Brown			0'-6"	Sediment sample	
		Silt Reddish-Brown					
						1'-3'	Sediment sample
					3'-4'	Sediment sample	
		E.O.B.	5				

VERTICAL DATUM:
GRD. ELEVATION:
T.O.C.:
S.W.L.:
CASING:
SCREEN:
WELL DEPTH:
COMPLETION NOTES:


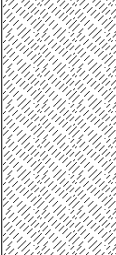

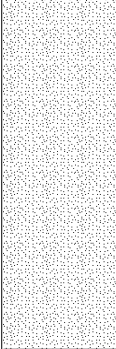


LATITUDE: 47.18845824
LONGITUDE: -88.40624104
PROJECTION:
NORTHING: 740186.307
EASTING: 317557.933

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
TOWNSHIP: Village of Lake Linden
TOWN: 55N
RANGE: 32W
SECTION: 6
LOCATION DESCRIPTION: On Lake in Lake Linden Processing Area C&H Lake Linden Operations

DATE: 5-28-15
DRILLER: Brian Lower
GEOLOGIST: Aaron Berndt
DRILL METHOD: Vibracore
TOTAL DEPTH: 4.75' in 13' of water

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	-1		12'	Water sample at 12' below the water surface/1' above lake bottom	Water sample 12.37 °C 7.79 pH 90 ORPmV 0.128 mS/cm 5.4 NTU 12.37 mg/L DO 119.7 %DO
		Silt Dark Brown, sandy			0'-6"	Sediment sample	
		Sand Reddish-Brown, fine to medium grained			1'-3'	Sediment sample	
		E.O.B.	-4		3'-4.75'	Sediment sample	

VERTICAL DATUM:
GRD. ELEVATION:
T.O.C.:
S.W.L.:
CASING:
SCREEN:
WELL DEPTH:
COMPLETION NOTES:

LATITUDE: 47.18853551
LONGITUDE: -88.40668455
PROJECTION:
NORTHING: 740195.920
EASTING: 317524.609

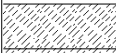

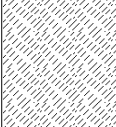

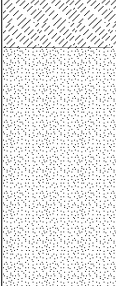
SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
 TOWNSHIP: Torch Lake
 TOWN: 55N
 RANGE: 32W
 SECTION: 7

DATE: 5-28-15
 DRILLER: Brian Lower
 GEOLOGIST: Aaron Berndt
 DRILL METHOD: Vibracore
 TOTAL DEPTH: 4.5' in 30' of water

LOCATION DESCRIPTION: On Lake in Lake Linden Processing Area C&H Lake Linden Operations

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Silt Dark Brown			0'-6"	Sediment sample	
		Silt Reddish-Brown, clayey					
		Silt Reddish-Brown, sandy, few pieces of slag			1'-3'	Sediment sample, duplicate sample 1'-3'	
		Silt Reddish-Brown, clayey					
		Sand Light brown to rusty brown, poorly sorted			3'-4.5'	Sediment sample	
		E.O.B.	5				

VERTICAL DATUM:
 GRD. ELEVATION:
 T.O.C.:
 S.W.L.:
 CASING:
 SCREEN:
 WELL DEPTH:
 COMPLETION NOTES:

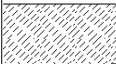

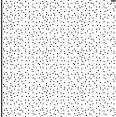
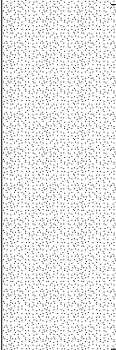

LATITUDE: 47.18505717
 LONGITUDE: -88.41099349
 PROJECTION:
 NORTHING: 739819.525
 EASTING: 317186.437

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
TOWNSHIP: Torch Lake
TOWN: 55N
RANGE: 32W
SECTION: 7

DATE: 6-2-15
DRILLER: Brian Lower
GEOLOGIST: Aaron Berndt
DRILL METHOD: Vibracore
TOTAL DEPTH: 3.5' in 28.3' of water

LOCATION DESCRIPTION: On Lake in Lake Linden Processing Area C&H Lake Linden Operations ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Silt Reddish-Brown			0'-6"	Sediment sample	
		Sand Reddish-Brown, fine grained, silty					
		Sand Reddish-Brown, poorly sorted			1'-3'	Sediment sample	
		E.O.B.			3'-3.5'	Sediment sample	
			5				

VERTICAL DATUM:
GRD. ELEVATION:
T.O.C.:
S.W.L.:
CASING:
SCREEN:
WELL DEPTH:
COMPLETION NOTES:

LATITUDE: 47.18462343
LONGITUDE: -88.4117852
PROJECTION:
NORTHING: 739773.183
EASTING: 317124.998

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
 TOWNSHIP: Torch Lake
 TOWN: 55N
 RANGE: 32W
 SECTION: 7
 LOCATION DESCRIPTION: On Lake in Lake Linden Processing Area C&H Lake Linden Operations

DATE: 6-2-15
 DRILLER: Brian Lower
 GEOLOGIST: Aaron Berndt
 DRILL METHOD: Vibracore
 TOTAL DEPTH: 0' in ~30' of water

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0			No sample due to debris. Moved around and still hit debris.	
		E.O.B.					
			5				

VERTICAL DATUM:
 GRD. ELEVATION:
 T.O.C.:
 S.W.L.:
 CASING:
 SCREEN:
 WELL DEPTH:
 COMPLETION NOTES:

LATITUDE: 47.18447555
 LONGITUDE: -88.41199992
 PROJECTION:
 NORTHING: 739757.255
 EASTING: 317108.232

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
TOWNSHIP: Torch Lake
TOWN: 55N
RANGE: 32W
SECTION: 7
LOCATION DESCRIPTION: On Lake in Hubbell Coal Dock Area C&H Lake Linden Operations

DATE: 6-1-15
DRILLER: Brian Lower
GEOLOGIST: Aaron Berndt
DRILL METHOD: Vibracore
TOTAL DEPTH: 6' in 43.3' of water

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	-1		42.3'	Water sample at 42.3' below the water surface/1' above lake bottom	Water sample 12.94 °C 7.75 pH 178 ORPmV 0.119 mS/cm 15.6 NTU 11.12 mg/L DO 108.2 %DO
		Silt Dark Brown			0'-6"	Sediment sample	
		Silt Reddish-Brown, clayey, ~2.8' tan to rusty brown silty fine grained sand seam less than 1" thick			1'-3'	Sediment sample, duplicate sample 1'-3'	
			-4		3'-5'	Sediment sample	
		E.O.B.					

VERTICAL DATUM:
GRD. ELEVATION:
T.O.C.:
S.W.L.:
CASING:
SCREEN:
WELL DEPTH:
COMPLETION NOTES:

LATITUDE: 47.17866797
LONGITUDE: -88.41585897
PROJECTION:
NORTHING: 739121.085
EASTING: 316796.124

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
 TOWNSHIP: Torch Lake
 TOWN: 55N
 RANGE: 32W
 SECTION: 7
 LOCATION DESCRIPTION: On Lake in Hubbell Smelter Area C&H Lake Linden Operations

DATE: 6-1-15
 DRILLER: Brian Lower
 GEOLOGIST: Aaron Berndt
 DRILL METHOD: Vibracore
 TOTAL DEPTH: 6' in 57.9' of water

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Silt Dark Brown			0'-6"	Sediment sample	
		Silt Reddish-Brown, clayey			1'-3'	Sediment sample, duplicate sample 1'-3'	
					3'-5'	Sediment sample	
		E.O.B.	5				

VERTICAL DATUM:
 GRD. ELEVATION:
 T.O.C.:
 S.W.L.:
 CASING:
 SCREEN:
 WELL DEPTH:
 COMPLETION NOTES:

LATITUDE: 47.17501737
 LONGITUDE: -88.4185478
 PROJECTION:
 NORTHING: 738721.816
 EASTING: 316579.978

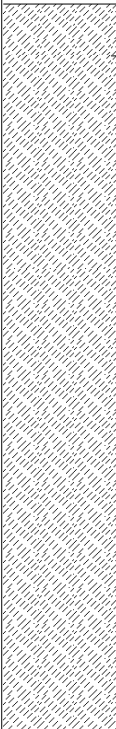

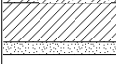

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
 TOWNSHIP: Torch Lake
 TOWN: 55N
 RANGE: 32W
 SECTION: 7

DATE: 6-1-15
 DRILLER: Brian Lower
 GEOLOGIST: Aaron Berndt
 DRILL METHOD: Vibracore
 TOTAL DEPTH: 6' in 79.2' of water

LOCATION DESCRIPTION: On Lake in Hubbell Smelter Area C&H Lake Linden Operations

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Silt Dark Brown			0'-6"	Sediment sample	
		Silt Reddish-Brown, clayey			1'-3'	Sediment sample	
					3'-5'	Sediment sample	
		Clay Reddish-Brown, silty					
		Sand Reddish-Brown, fine grained, silty					
		E.O.B.	5				

VERTICAL DATUM:
 GRD. ELEVATION:
 T.O.C.:
 S.W.L.:
 CASING:
 SCREEN:
 WELL DEPTH:
 COMPLETION NOTES:

LATITUDE: 47.17428199
 LONGITUDE: -88.4197724
 PROJECTION:
 NORTHING: 738642.981
 EASTING: 316484.700

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
 TOWNSHIP: Torch Lake
 TOWN: 55N
 RANGE: 32W
 SECTION: 7

DATE: 6-1-15
 DRILLER: Brian Lower
 GEOLOGIST: Aaron Berndt
 DRILL METHOD: Vibracore
 TOTAL DEPTH: 6' in 83' of water

LOCATION DESCRIPTION: On Lake in Hubbell Smelter Area C&H Lake Linden Operations

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter	
		Lake Bottom	0					
		Silt Dark Brown			0'-6"	Sediment sample		
		Silt Reddish-Brown, clayey			0.7'-0.9'	Sediment sample		
		Silt Black						
		Silt Reddish-Brown, clayey				1'-3'	Sediment sample	
						3'-5'	Sediment sample	
			5					
		E.O.B.						

VERTICAL DATUM:
 GRD. ELEVATION:
 T.O.C.:
 S.W.L.:
 CASING:
 SCREEN:
 WELL DEPTH:
 COMPLETION NOTES:

LATITUDE: 47.1739601
 LONGITUDE: -88.42028619
 PROJECTION:
 NORTHING: 738608.422
 EASTING: 316444.679

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
 TOWNSHIP: Torch Lake
 TOWN: 55N
 RANGE: 32W
 SECTION: 7
 LOCATION DESCRIPTION: On Lake in Hubbell Smelter Area C&H Lake Linden Operations

DATE: 6-1-15
 DRILLER: Brian Lower
 GEOLOGIST: Aaron Berndt
 DRILL METHOD: Vibracore
 TOTAL DEPTH: 6' in 77.1' of water

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	-1		76.1'	Water sample at 76.1' below the water surface/1' above lake bottom. Duplicate sample collected from 76.1'	Water sample 10.29 °C 7.75 pH 184 ORPmV 0.122 mS/cm 4.9 NTU 14.32 mg/L DO 130.1 %DO
	Silt Dark Brown				0'-6"	Sediment sample	
	Silt Reddish-Brown, clayey				1'-3'	Sediment sample	
			-4		3'-5'	Sediment sample, duplicate sample 3'-5'	
		E.O.B.					

VERTICAL DATUM:
 GRD. ELEVATION:
 T.O.C.:
 S.W.L.:
 CASING:
 SCREEN:
 WELL DEPTH:
 COMPLETION NOTES:

LATITUDE: 47.1735117
 LONGITUDE: -88.42172672
 PROJECTION:
 NORTHING: 738561.974
 EASTING: 316334.023

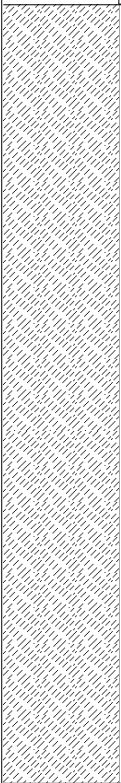
SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
TOWNSHIP: Torch Lake
TOWN: 55N
RANGE: 32W
SECTION: 7

DATE: 6-1-15
DRILLER: Brian Lower
GEOLOGIST: Aaron Berndt
DRILL METHOD: Vibracore
TOTAL DEPTH: 6' in 71.7' of water

LOCATION DESCRIPTION: On Lake in Hubbell Smelter Area C&H Lake Linden Operations

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	-1		70.7'	Water sample at 70.7' below the water surface/1' above lake bottom	Water sample 8.1 °C 8 pH 159 ORPmV 0.130 mS/cm 4.5 NTU 14.52 mg/L DO 126.1 %DO
		Silt Reddish-Brown, clayey, stained dark black stringer at 3.5'			0'-6"	Sediment sample	
					1'-3'	Sediment sample	
				-4		3'-5'	
		E.O.B.					

VERTICAL DATUM:
GRD. ELEVATION:
T.O.C.:
S.W.L.:
CASING:
SCREEN:
WELL DEPTH:
COMPLETION NOTES:

LATITUDE: 47.17326677
LONGITUDE: -88.42246506
PROJECTION:
NORTHING: 738536.490
EASTING: 316277.255





SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
 TOWNSHIP: Torch Lake
 TOWN: 55N
 RANGE: 32W
 SECTION: 7

DATE: 7/11/2015
 DRILLER: N. Ekel
 GEOLOGIST: D. Peabody
 DRILL METHOD: Vibracore
 TOTAL DEPTH: 6.00' in 80.17' of water

LOCATION DESCRIPTION: Hubbell Processing Area

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Silt Dark brown; wet; soft; silt; black streaking visible.			CHLL-SD-95-0-6"		
		Clay Dark brown with purple hue; wet; soft; clay; black streaking visible throughout.			CHLL-SD-95-1-3' CHLL-SD-95-1-3' Dup		
					CHLL-SD-95-3-5'		
		E.O.B.	5				

VERTICAL DATUM: Lake surface
 GRD. ELEVATION: NA
 T.O.C.: NA
 S.W.L.: NM
 CASING: NA
 SCREEN: NA
 WELL DEPTH: NA
 COMPLETION NOTES:

LATITUDE: 47.172677892°
 LONGITUDE: -88.422313368°
 PROJECTION: MichGeoRef
 NORTHING: 738470.718 meters
 EASTING: 316286.728 meters



BOREHOLE LOG

BORING/WELL: CHLL-SD96

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
 TOWNSHIP: Torch Lake
 TOWN: 55N
 RANGE: 32W
 SECTION: 7
 LOCATION DESCRIPTION: On Lake in Lake Linden Processing Area C&H Lake Linden Operations

DATE: 6-2-15
 DRILLER: Brian Lower
 GEOLOGIST: Aaron Berndt
 DRILL METHOD: Vibracore
 TOTAL DEPTH: 0.25' in 1.2' of water

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0		CHLL-SD-96-0-3"	No sample with vibracore due to refusal. WESTON returned 8/23/15 and collected a sample by hand.	
		E.O.B.					
			5				

VERTICAL DATUM:
 GRD. ELEVATION:
 T.O.C.:
 S.W.L.:
 CASING:
 SCREEN:
 WELL DEPTH:
 COMPLETION NOTES:

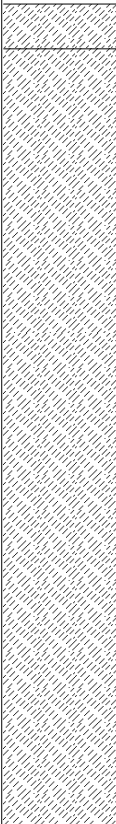

LATITUDE: 47.183833
 LONGITUDE: -88.413241
 PROJECTION: MichGeoRef
 NORTHING: 739684.966
 EASTING: 317016.775

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
 TOWNSHIP: Torch Lake
 TOWN: 55N
 RANGE: 32W
 SECTION: 7

DATE: 6-2-15
 DRILLER: Brian Lower
 GEOLOGIST: Aaron Berndt
 DRILL METHOD: Vibracore
 TOTAL DEPTH: 5.5' in 80.5' of water

LOCATION DESCRIPTION: On Lake in Hubbell Slag Dump and Beach Area C&H Lake Linden Operations ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Silt Dark Brown			0'-6"		
		Silt Reddish-Brown, clayey			1'-3'		
					3'-5'		
		E.O.B.	5				

VERTICAL DATUM:
 GRD. ELEVATION:
 T.O.C.:
 S.W.L.:
 CASING:
 SCREEN:
 WELL DEPTH:
 COMPLETION NOTES:

LATITUDE: 47.1708584
 LONGITUDE: -88.4240372
 PROJECTION:
 NORTHING: 738272.624
 EASTING: 316149.908



BOREHOLE LOG

BORING/WELL: CHLL-SD98

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
 TOWNSHIP: Torch Lake
 TOWN: 55N
 RANGE: 33W
 SECTION: 13

DATE: 7/8/2015
 DRILLER: N. Ekel
 GEOLOGIST: D. Peabody
 DRILL METHOD: Vibracore
 TOTAL DEPTH: 3.25' in 67.33' of water

LOCATION DESCRIPTION: Hubbell Processing Area

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Sand Dark brown to purple-brown; loose; wet; fine sand.			CHLL-SD-98-0-6"		
					CHLL-SD-98-1-3.25' CHLL-SD-98-1-3.25' Dup		
		E.O.B.					
			5				

VERTICAL DATUM: Lake surface
 GRD. ELEVATION: NA
 T.O.C.: NA
 S.W.L.: NM
 CASING: NA
 SCREEN: NA
 WELL DEPTH: NA
 COMPLETION NOTES:

LATITUDE: 47.169977971°
 LONGITUDE: -88.425836596°
 PROJECTION: MichGeoRef
 NORTHING: 738179.027 meters
 EASTING: 316010.576 meters

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
 TOWNSHIP: Torch Lake
 TOWN: 55N
 RANGE: 32W
 SECTION: 7
 LOCATION DESCRIPTION: Ahmeek Mill Processing Area

DATE: 7/9/2015
 DRILLER: N. Ekel
 GEOLOGIST: D. Peabody
 DRILL METHOD: Vibracore
 TOTAL DEPTH: 2.50' in 47.83' of water

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	-1		CHLL-SW-11-44.5-45.5'		Temp: 14.5°C DO: 9.03 mg/l Cond: 122.8 uS pH: 7.82 Turb: 10.3 nTu
		Sand Dark brown with purple hue; wet; loose; medium to coarse angular sand.			CHLL-SD-99-0-6"		
		Silt with Sand Dark brown to purple-brown; wet; soft; silt with angular sand.					
		Silt with Clay Dark brown to purple-brown; wet; soft; silt with clay; some visible black streaking.			CHLL-SD-99-1-2.50'		
		E.O.B.					
			-4				

VERTICAL DATUM: Lake surface
 GRD. ELEVATION: NA
 T.O.C.: NA
 S.W.L.: NM
 CASING: NA
 SCREEN: NA
 WELL DEPTH: NA
 COMPLETION NOTES:

LATITUDE: 47.17387222°
 LONGITUDE: -88.423075509°
 PROJECTION: MichGeoRef
 NORTHING: 738605.174 meters
 EASTING: 316233.088 meters

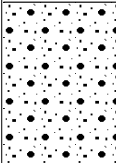
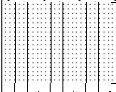
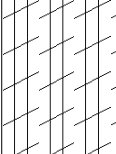
SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
TOWNSHIP: Torch Lake
TOWN: 55N
RANGE: 32W
SECTION: 7

DATE: 7/9/2015
DRILLER: N. Ekel
GEOLOGIST: D. Peabody
DRILL METHOD: Vibracore
TOTAL DEPTH: 2.50' in 47.83' of water

LOCATION DESCRIPTION: 125' from PCI shoreline

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	-1		CHLL-SW-11-44.5-45.5'		Temp: 14.5°C DO: 9.03 mg/l Cond: 122.8 uS pH: 7.82
		Sand Dark brown with purple hue; wet; loose; medium to coarse angular sand.			CHLL-SDM-34-0-6"		
		Silt with Sand Dark brown to purple-brown; wet; soft; silt with angular sand.					
		Silt with Clay Dark brown to purple-brown; wet; soft; silt with clay' some visible black streaking.			CHLL-SDM-34-1-2.50'		
		E.O.B.					
			-4				

VERTICAL DATUM: Lake surface
GRD. ELEVATION: NA
T.O.C.: NA
S.W.L.: NM
CASING: NA
SCREEN: NA
WELL DEPTH: NA
COMPLETION NOTES:


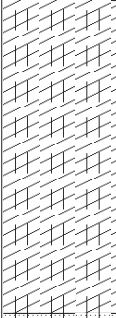
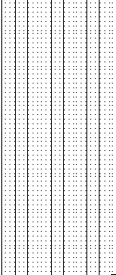
LATITUDE: 47.17387222°
LONGITUDE: -88.423075509°
PROJECTION: MichGeoRef
NORTHING: 738605.174 meters
EASTING: 316233.088 meters

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
 TOWNSHIP: Schoolcraft
 TOWN: 55N
 RANGE: 32W
 SECTION: 6
 LOCATION DESCRIPTION: Lake Linden Recreation Area

DATE: 7/12/2015
 DRILLER: N. Ekel
 GEOLOGIST: D. Peabody
 DRILL METHOD: Vibracore
 TOTAL DEPTH: 4.75' in 26.00' of water

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Silt with Organics Dark brown to black; wet; soft; silt with organics.			CHLL-SD-101-0-6"		
		Clay with Silt Dark brown; wet; soft; clay with silt.			CHLL-SD-101-1-3'		
		Silt with Trace Sand Dark brown; wet; soft to firm; silt with trace fine sand.			CHLL-SD-101-3-4.75'		
		E.O.B.	5				

VERTICAL DATUM: Lake surface
 GRD. ELEVATION: NA
 T.O.C.: NA
 S.W.L.: NM
 CASING: NA
 SCREEN: NA
 WELL DEPTH: NA
 COMPLETION NOTES:

LATITUDE: 47.188071053°
 LONGITUDE: -88.405794186°
 PROJECTION: MichGeoRef
 NORTHING: 740142.258 meters
 EASTING: 317590.455 meters

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
 TOWNSHIP: Schoolcraft
 TOWN: 55N
 RANGE: 32W
 SECTION: 6
 LOCATION DESCRIPTION: Lake Linden Recreation Area

DATE: 7/12/2015
 DRILLER: N. Ekel
 GEOLOGIST: D. Peabody
 DRILL METHOD: Vibracore
 TOTAL DEPTH: 5.00' in 27.75' of water

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Silt with Sand Light brown to black; wet; soft; silt with very fine sand.			CHLL-SD-102-0-6"	Sheen observed on water surface when pulling in core	
		Sand with Silt Dark brown; wet; loose to medium dense; fine to medium angular sand with silt.					
		Silt with Sand Dark brown; wet; firm; silt with fine angular sand.			CHLL-SD-102-1-3'		
					CHLL-SD-102-3-5'		
		E.O.B.	5				

VERTICAL DATUM: Lake surface
 GRD. ELEVATION: NA
 T.O.C.: NA
 S.W.L.: NM
 CASING: NA
 SCREEN: NA
 WELL DEPTH: NA
 COMPLETION NOTES:


LATITUDE: 47.18821708°
 LONGITUDE: -88.40635777°
 PROJECTION: MichGeoRef
 NORTHING: 740159.788 meters
 EASTING: 317548.272 meters

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
 TOWNSHIP: Torch Lake
 TOWN: 55N
 RANGE: 32W
 SECTION: 7

DATE: 6-2-15
 DRILLER: Brian Lower
 GEOLOGIST: Aaron Berndt
 DRILL METHOD: Vibracore
 TOTAL DEPTH: 8' of water

LOCATION DESCRIPTION: On Lake in Hubbell Slag Dump and Beach Area C&H Lake Linden Operations ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	-1		7'	Water sample at 7' below the water surface/1' above the lake bottom	Water sample 15.31 °C 8.1 pH 137 ORPmV 0.126 mS/cm 1.6 NTU 12.89 mg/L DO 132.7 %DO
			-4				
		E.O.B.					

VERTICAL DATUM:	LATITUDE: 47.171674075
GRD. ELEVATION:	LONGITUDE: -88.427209551
T.O.C.:	PROJECTION:
S.W.L.:	NORTHING: 738370.656
CASING:	EASTING: 315912.389
SCREEN:	
WELL DEPTH:	
COMPLETION NOTES:	


SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
 TOWNSHIP: Torch Lake
 TOWN: 55N
 RANGE: 33W
 SECTION: 12

DATE: 7/8/2015
 DRILLER: N. Ekel
 GEOLOGIST: D. Peabody
 DRILL METHOD: Vibracore
 TOTAL DEPTH: 4.75' of water

LOCATION DESCRIPTION: Hubbell Processing Area

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	-1		CHLL-SW-09-4.25-5.25'	Water sample at 4.25' below the water surface/0.5' above the lake bottom	Temp: 21.8°C DO: 7.19 mg/l Cond: 0.3 uS pH: 8.41 Turb: 4.30 nTu
		No sediment recovered. Surface water sample only.	-4				

VERTICAL DATUM: Lake surface
 GRD. ELEVATION: NA
 T.O.C.: NA
 S.W.L.: NM
 CASING: NA
 SCREEN: NA
 WELL DEPTH: NA
 COMPLETION NOTES:


LATITUDE: 47.17319°
 LONGITUDE: -88.42579°
 PROJECTION: MichGeoRef
 NORTHING: 738535.735 meters
 EASTING: 316025.125 meters

SITE: Abandoned Mining Wastes Torch Lake

COUNTY: Houghton
 TOWNSHIP: Torch Lake
 TOWN: 55N
 RANGE: 32W
 SECTION: 17
 LOCATION DESCRIPTION: Torch Lake

DATE: 7/8/2015
 DRILLER: N. Ekel
 GEOLOGIST: D. Peabody
 DRILL METHOD: Vibracore
 TOTAL DEPTH: 4.78' of water

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	-1		CHLL-SW-10-4.08-5.08'	Water sample at 4.08' below the water surface/0.70' above the lake bottom	Temp: 21.9°C DO: 6.71 mg/l Cond: 146.7 uS pH: 8.28 Turb: 3.90 nTu
		No sediment recovered. Surface water sample only.	-4				

VERTICAL DATUM: Lake surface
 GRD. ELEVATION: NA
 T.O.C.: NA
 S.W.L.: NM
 CASING: NA
 SCREEN: NA
 WELL DEPTH: NA
 COMPLETION NOTES:

LATITUDE: 47.16147°
 LONGITUDE: -88.401750001°
 PROJECTION: MichGeoRef
 NORTHING: 737177.825 meters
 EASTING: 317806.375 meters