Log of Boring No. BRC-SB-10-A

BMI Site - Hydrogeologic Characterization

Henderson, Nevada

Basic Remediation COMPANY

Drilling Method: Mud Rotary
Drilling Equipment: Gefco 15K
Drilling Contractor: Water Development Corporation
Driller: Steve Odom

Borehole Total Depth: 400 ft bgs
Borehole Diameter: 10 in
Boring Location: Location 10 (Well ID: MCF-10A)
Depth to Water (ft. bgs): NA

Sample Type: Cuttings grab
Sample Interval Varied

Logged By: Adam Norris
Date Started: 4/3/04
Date Completed: 4/6/04

Monitoring Well Construction

Type of Surface Seal:	Bentonite-Cement	Screen Slot Size:	0.010 in
Blank Casing Type/Size:	4" Sch 80 PVC	Top of Screen (ft. bgs):	365 ft bgs
Screen Type/Size:	4" Sch 80 PVC	Bottom of Screen (ft. bgs):	384.5 ft bgs
Transition Sand Type:	#1C	Type of Sand Pack:	#10 x 20

Depth Elevation (BGS)	Sample Type	Sample Interval	Sample Recovery	Sample Retained for Analysis	PID	Lithology	Soil Description	Geophysical Data: E-Log: 16" (OHM)	64" (OHM)	S. PT. (OHM)	Caliper Log (inch)	Guard Log (OHM.M)	Well Construction
0	Grab		1/1		NA		SM: Silty sand with gravel, yellowish brown (10YR5/4), wet (rain infiltration), subangular to subrounded sand, nonplastic silt, subangular to subrounded fine to coarse volcanic gravel (up to 3" long). Trace local volcanic cobbles & boulders. Approximately 25% gravel, 10% coarse sand, 20% medium sand, 20% fine sand, and 25% silt. Rig Chatter						Locking monument well box with concrete apron and ballards; Cement bentonite grout; 4" Blank PVC Riser Pipe
	Grab		0.5/0.5		NA		As above. Color change to brown (10YR4/3). No local volcanic cobbles. Approximately 5% increase in gravel. Rig Chatter. Grades with some local volcanic cobbles.						
-10	Grab		0.5/0.5		NA		As above. Color change to dark grayish brown (10YR4/2). Rig Chatter. Trace local volcanic cobbles.						
	Grab		0.5/0.5		NA		As above. Rig Chatter						
-20	Grab		0.5/0.5		NA		As above. Approximately 5% increase in medium and fine sand. Rig Chatter						

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Depth Elevation (BGS)	Sample Type	Sample Interval	Sample Recovery	Sample Retained for Analysis	PID	Lithology	Soil Description	Geophysical Data: E-Log 16" (OHM)	E-Log 64" (OHM)	E-Log S. P.T. (OHM)	Caliper Log (inch)	Guard Log (OHM.M)	Well Construction
	Grab		0.5/0.5		NA		As above.						
							Rig Chatter						
-30	Grab		0.5/0.5		NA		Silty sand, as above. Color change to grayish brown (10YR5/2), nonplastic to very low plasticity silt. Approximately 10% increase in silt.						
	Grab		0.5/0.5		NA		GM: Sandy silty gravel, grayish brown (10YR5/2), subangular to subrounded fine to coarse volcanic gravel, angular to subrounded sand, nonplastic silt. Trace local volcanic cobbles. Approximately 50% gravel, 10% coarse sand, 10% medium sand, 15% fine sand, and 15% silt. Rig Chatter						4" Blank PVC Riser Pipe
							Rig Chatter						
-40	Grab		0.5/0.5		NA		GW-GM: Well graded gravel with silt and sand, grayish brown (10YR5/2), subangular to subrounded fine to coarse volcanic gravel, nonplastic silt, angular to subrounded sand, trace local volcanic cobbles. Approximately 70% gravel, 10% coarse sand, 5% medium sand, 5% fine sand and 10% silt.						
							Rig Chatter						
	Grab		0.5/0.5		NA		SM: Silty sand, light brownish gray (10YR6/2), angular to subrounded sand, nonplastic to very low plasticty silt. Approximately 35% medium sand, 35% fine sand, and 30% silt.						
-50	Grab		0.5/0.5		NA		ML: Clayey silt with sand, light gray (10YR7/1), angular to subrounded sand, nonplastic to low plasticity fines. Approximately 5% medium sand, 10% fine sand, 65% silt, and 20% clay.						
	Grab		0.5/0.5		NA		Silt with clay and sand, as above. Approximately 10% increase in silt.						

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Depth Elevation (BGS)	Sample Type	Sample Interval	Sample Recovery	Sample Retained for Analysis	PID	Lithology	Soil Description	Geophysical Data: E-Log 16" (OHM)	E-Log 64" (OHM)	E-Log S. P.T. (OHM)	Caliper Log (inch)	Guard Log (OHM.M)	Well Construction
-60	Grab		0.5/0.5		NA		Silt with sand, as above. Color change to yellowish brown (10YR5/4). Approximately 5% increase in fine sand.						
	Grab		0.5/0.5		NA		Sandy silt, as above. Nonplastic to very low plasticity silt. Approximately 5% increase in medium and fine sand.						
-70	Grab		0.5/0.5		NA		SM: Silty sand, brown (7.5YR4/4), subangular to subrounded sand, nonplastic silt. Approximately 20% medium sand, 55% fine sand, and 25% silt.						
	Grab		0.5/0.5		NA		ML: Silt with clay and sand, brown (7.5YR5/4), nonplastic to low plasticity fines, angular to subrounded sand. Approximately 5% medium sand, 10% fine sand, 75% silt, and 10% clay.						
-80	Grab		0.5/0.5		NA		Clayey silt, as above. Approximately 20% increase in clay.						
	Grab		0.5/0.5		NA		Silt with clay, as above. Color change to pale brown (10YR6/3). Approximately 5% increase in medium and fine sand.						
-90	Grab		0.5/0.5		NA		Silt with clay and sand, as above.						4" Blank PVC Riser Pipe

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Depth Elevation (BGS)	Sample Type	Sample Interval	Sample Recovery	Sample Retained for Analysis	PID	Lithology	Soil Description	Geophysical Data: E-Log: 16" (OHM)	64" (OHM)	S. P.T. (OHM)	Caliper Log (inch)	Guard Log (OHM.M)	Well Construction
	Grab		0.5/0.5		NA		Clayey silt, as above. Trace subangular to subrounded sand. Approximately 5% increase in silt and clay.						
-100	Grab		0.5/0.5		NA		As above.						
	Grab		0.5/0.5		NA		As above.						
-110	Grab		0.5/0.5		NA		Silt with sand, as above. Color change to borwn (10YR5/3). Approximately 10% increase in medium and fine sand.						
	Grab		0.5/0.5		NA		As above. Color change to yellowish borwn (10YR5/4). Approximately 10% increase in silt.						
-120	Grab		0.5/0.5		NA		Clayey silt with sand, as above. Angular to subrounded sand, trace local gypsum. Approximately 10% increase in clay.						

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Depth Elevation (BGS)	Sample Type	Sample Interval	Sample Recovery	Sample Retained for Analysis	PID	Lithology	Soil Description	Geophysical Data: E-Log: 16" (OHM)	64" (OHM)	S. P.T. (OHM)	Caliper Log (inch)	Guard Log (OHM.M)	Well Construction
	Grab		0.5/0.5		NA		Silt with sand, as above. Color change to borwn (10YR5/3). Approximately 10% increase in silt.						
-130	Grab		0.5/0.5		NA		Sandy silt, as above. Color change to yellowish borwn (10YR5/4). Approximately 5% increase in medium sand and 10% increase in fine sand.						
	Grab		0.5/0.5		NA		Silt with sand, as above. Approximately 5% increase in silt.						
-140	Grab		0.5/0.5		NA		Sandy silt, as above. Color change to brown (10YR5/3). Approximately 10% increase in fine sand.						
	Grab		0.5/0.5		NA		As above. Color change to yellowish brown (10YR5/4).						4" Blank PVC Riser Pipe
-150	Grab		0.5/0.5		NA		Silt with clay and sand, as above. Approximately 15% increase in silt.						
	Grab		0.5/0.5		NA		As above.						

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Depth Elevation (BGS)	Sample Type	Sample Interval	Sample Recovery	Sample Retained for Analysis	PID	Lithology	Soil Description	Geophysical Data: E-Log: 16" (OHM)	64" (OHM)	S. P.T. (OHM)	Caliper Log (inch)	Guard Log (OHM.M)	Well Construction
-160	Grab		0.5/0.5		NA		As above.						
	Grab		0.5/0.5		NA		Sandy silt with clay, as above. Approximately 5% increase in medium sand, and 10% increase in fine sand.						
-170	Grab		0.5/0.5		NA		Silt with sand, as above. Approximately 10% increase in silt.						
	Grab		0.5/0.5		NA		Silt with clay and sand, as above. Approximately 5% increase in clay.						
-180	Grab		0.5/0.5		NA		Sandy silt, as above. Approximately 5% increase in fine sand.						
	Grab		0.5/0.5		NA		Clayey silt, as above. No local gypsum. Approximately 15% increase in clay.						
-190	Grab		0.5/0.5		NA		Clayey silt with sand, as above.						

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Depth Elevation (BGS)	Sample Type	Sample Interval	Sample Recovery	Sample Retained for Analysis	PID	Lithology	Soil Description	Geophysical Data: E-Log: 16" (OHM)	64" (OHM)	S. P.T. (OHM)	Caliper Log (inch)	Guard Log (OHM.M)	Well Construction
	Grab		0.5/0.5		NA		Sandy clayey silt, as above. Trace local gypsum. Approximately 5% increase in medium sand, and 10% increase in fine sand.						
-200	Grab		0.5/0.5		NA		As above. No local gypsum.						4" Blank PVC Riser Pipe
	Grab		0.5/0.5		NA		Clayey silt with sand, as above. Color change to light yellowish brown (10YR6/4). Approximately 5% increase in silt.						
-210	Grab		0.5/0.5		NA		As above. Approximately 10% increase in clay.						
	Grab		0.5/0.5		NA		As above. Color change to yellowish brown (10YR5/4). Approximately 5% increase in silt.						
-220	Grab		0.5/0.5		NA		As above. Trace local gypsum. Approximately 5% increase in silt.						

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	Grab		0.5/0.5		NA		As above. Approximately 5% increase in clay.						
-230	Grab		0.5/0.5		NA		As above. Color change to light yellowish brown (10YR6/4). No local gypsum.						
	Grab		0.5/0.5		NA		Clayey silt, as above. Trace angular to subrounded san,d trace local gypsum. Approximately 10% increase in clay.						
-240	Grab		0.5/0.5		NA		As above. Color change to light brown (7.5YR6/4).						
	Grab		0.5/0.5		NA		Clayey silt with sand, as above. Color change to light yellowish brown (10YR6/4). Approximately 5% increase in medium sand and 10% increase in fine sand.						
-250	Grab		0.5/0.5		NA		Sandy clayey silt, as above. Approximately 5% increase in medium and fine sand.						
	Grab		0.5/0.5		NA		Clayey silt with sand, as above. Approximately 10% increase in silt.						4" Blank PVC Riser Pipe

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Depth Elevation (BGS)	Sample Type	Sample Interval	Sample Recovery	Sample Retained for Analysis	PID	Lithology	Soil Description	Geophysical Data: E-Log 16" (OHM)	E-Log 64" (OHM)	E-Log S. P.T. (OHM)	Caliper Log (inch)	Guard Log (OHM.M)	Well Construction
-260	Grab		0.5/0.5		NA		Clayey silt with sand, light brown (7.5YR6/4) nonplastic to low plasticity fines, angular to subrounded sand. Approximately 5% medium sand, 10% fine sand, 70% silt and 15% clay.						
	Grab		0.5/0.5		NA		SM: Silty sand, light brown (7.5YR6/3) , angular to subrounded sand, nonplastic to low plasticity fines. Approximately 20% medium sand, 40% fine sand, 35% silt and 5% clay.						
-270	Grab		0.5/0.5		NA		ML: Clayey silt with sand, light brown (7.5YR6/4), nonplastic to low plasticity fines, angular to subrounded sand. Approximately 5% medium sand, 15% fine sand, 60% silt and 20% clay.						
	Grab		0.5/0.5		NA		As above. Color change to brown (7.5YR5/4).						
-280	Grab		0.5/0.5		NA		As above. Color change to brown (7.5YR6/4). Approximately 5% increase in medium sand.						
	Grab		0.5/0.5		NA		Silt with clay and sand, as above. Approximately 5% increase in silt.						
-290	Grab		0.5/0.5		NA		Silt with sand, as above. Color change to light brown (7.5YR6/3), trace local gypsum. Approximately 10% increase in silt.						

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Depth Elevation (BGS)	Sample Type	Sample Interval	Sample Recovery	Sample Retained for Analysis	PID	Lithology	Soil Description	Geophysical Data: E-Log 16" (OHM)	E-Log 64" (OHM)	E-Log S. P.T. (OHM)	Caliper Log (inch)	Guard Log (OHM.M)	Well Construction
	Grab		0.5/0.5		NA		Sandy silt, as above. Approximately 5% incnrease in medium and fine sand.						
-300	Grab		0.5/0.5		NA		Clayey silt, as above. Color change to light brown (7.5YR6/4). Approximately 10% increase in clay.						
	Grab		0.5/0.5		NA		Silt with sand, as above. Color change to brown (7.5YR5/4) no local gypsum. Approximately 20% increase in silt.						
-310	Grab		0.5/0.5		NA		Clayey silt with sand, as above. Approximately 10% increase in clay.						4" Blank PVC Riser Pipe
	Grab		0.5/0.5		NA		As above. Color change to light brown (7.5YR6/3). Approximately 5% increase in clay.						
-320	Grab		0.5/0.5		NA		As above. Color change to light brown (7.5YR6/4) trace local gypsum. Approximately 5% increase in silt.						

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Depth Elevation (BGS)	Sample Type	Sample Interval	Sample Recovery	Sample Retained for Analysis	PID	Lithology	Soil Description	Geophysical Data: E-Log 16" (OHM)	E-Log 64" (OHM)	E-Log S. P.T. (OHM)	Caliper Log (inch)	Guard Log (OHM.M)	Well Construction
	Grab		0.5/0.5		NA		Sand silt with clay, as above. Color change to yellowish brown (10YR5/4). Approximately 5% increase in medium sand, and 10% increase in fine sand.						
-330	Grab		0.5/0.5		NA		As above. Color change to brown (7.5YR5/4). Approximately 5% increase in medium and fine sand.						
	Grab		0.5/0.5		NA		Clayey silt wih sand, as above. Approximately 15% increase in silt.						
-340	Grab		0.5/0.5		NA		As above. Approximately 5% increase in silt.						
	Grab		0.5/0.5		NA		Sandy silt with clay, light brown (7.5YR6/3) nonplastic to low plasticity fines, angular to subrounded sand. Approximately 10% increase in fine sand.						
-350	Grab		0.5/0.5		NA		As above. Approximately 5% increase in clay.						Bentonite seal
	Grab		0.5/0.5		NA		Sandy silt, as above. Color change to light brown (7.5YR6/4). Approximately 5% increase in medium and fine sand.						

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Depth Elevation (BGS)	Sample Type	Sample Interval	Sample Recovery	Sample Retained for Analysis	PID	Lithology	Soil Description	Geophysical Data: E-Log: 16" (OHM)	64" (OHM)	S. P.T. (OHM)	Caliper Log (inch)	Guard Log (OHM.M)	Well Construction
	Grab		0.5/0.5				Sandy silt with clay, as above. Color change to light brown (7.5YR6/3). Approximately 5% increase in clay.						
-400	Grab		0.5/0.5				Sandy silt, as above. Approximately 5% increase in silt.						