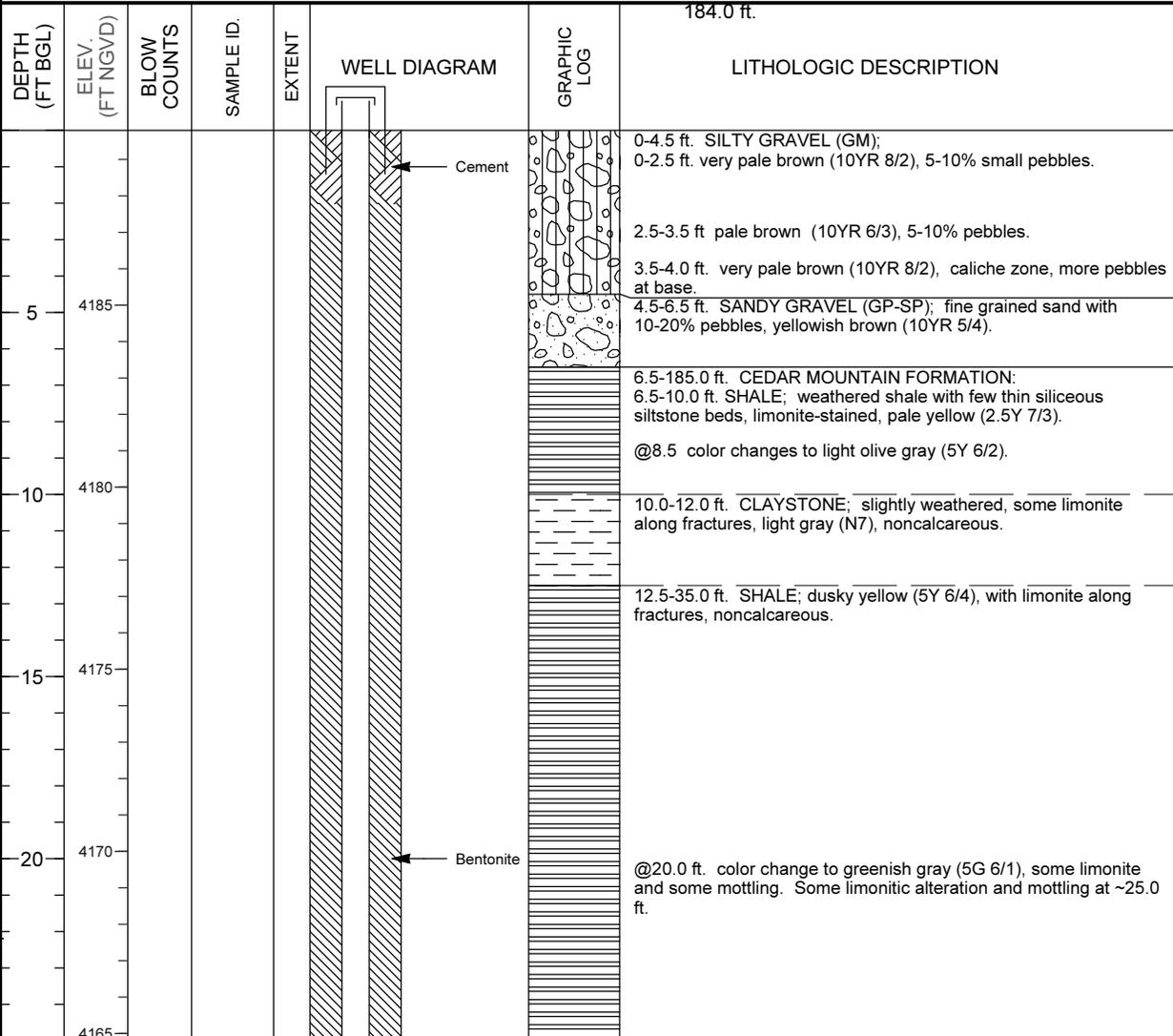


MONITORING WELL COMPLETION LOG GRN01-0184

PROJECT <u>UMTRA GROUND WATER</u>	NORTH COORD. (FT) <u>237094.00</u>	DATE DRILLED <u>06/20/2002 to 06/24/2002</u>
LOCATION <u>GREEN RIVER, UT</u>	EAST COORD. (FT) <u>2388555.47</u>	SURFACE ELEV. (FT NGVD) <u>4189.80</u>
SITE <u>GREEN RIVER</u>	HOLE DEPTH (FT) <u>187.00</u>	TOP OF CASING (FT) <u>4192.98</u>
WELL NUMBER <u>0184</u>	WELL DEPTH (FT) <u>184.00</u>	MEAS. PT. ELEV. (FT) <u>4192.98</u>

	WELL INSTALLATION	INTERVAL (FT)	
SURFACE CASING:			DRILLING METHOD <u>ROTASONIC</u>
BLANK CASING:	4 in. PVC Sch 40	-3.18 to 169.0	SAMPLING METHOD <u>ROTASONIC CORE</u>
WELL SCREEN:	4 in. 0.02 Slotted PVC	169.0 to 184.0	DATE DEVELOPED _____
SUMP/END CAP:			WATER LEVEL (FT BGS) _____
SURFACE SEAL:	Cement	0.0 to 2.0	LOGGED BY <u>Goodknight, C.</u>
GROUT:	Bentonite	2.0 to 156.0	REMARKS <u>Saved core from 47.0 ft. in middle sand unit of Cedar Mtn Fm to TD through the rest of the Fm. Well installed on 6/24 Centralizers at 94.0 ft. and 184.0 ft.</u>
SEAL:	Bentonite Pellets	156.0 to 162.0	
UPPER PACK:	20-40 Silica Sand	162.0 to 164.0	
LOWER PACK:	10-20 Silica Sand	164.0 to 184.0	



MONITORING WELL COMPLETION LOG GRN01-0184

PROJECT <u>UMTRA GROUND WATER</u>	WELL NUMBER <u>0184</u>
SITE <u>GREEN RIVER</u>	DATES DRILLED <u>06/20/2002 to 06/24/2002</u>

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DEPTH (FT BGL)	ELEV. (FT NGVD)	BLOW COUNTS	SAMPLE ID.	EXTENT	WELL DIAGRAM	GRAPHIC LOG	LITHOLOGIC DESCRIPTION
30	4160				<p style="text-align: center;">PVC Sch 40</p>		<p>@32.0 ft. becomes calcareous and color changes to more of a yellowish gray (5Y 8/1), some calcareous nodules, trace fine pyrite.</p>
35	4155						<p>35.0-42.0 ft. SILTSTONE; hard, calcareous, with fine grained calcareous nodules (almost porcelaneous in appearance, yellowish gray to light gray (N7), with trace of pyrite blebs.</p>
40	4150						<p>42.0-43.0 SANDSTONE; hard, very fine to fine grained, greenish gray (5GY 6/1), with pyrite blebs.</p>
45	4145						<p>43.0-48.0 ft. SHALE; calcareous shale with nodules (hard). @44.0 ft. shale is slightly calcareous, soft, light gray (N7), some limonitic stain at 45.5 and 47.5 ft.</p>
50	4140						<p>48.0-72.0 ft. SANDSTONE; hard, calcareous cemented, fine grained, light gray (N7) to medium light gray (N6), trace of pyrite blebs.</p>
55	4135						<p>@53.0 ft. Limonite staining along fractures. Horizontal to low angle fractures at 53.0-54.0 ft.</p>

MONITORING WELL COMPLETION LOG GRN01-0184

PROJECT UMTRA GROUND WATER **WELL NUMBER** 0184
SITE GREEN RIVER **DATES DRILLED** 06/20/2002 to 06/24/2002

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DEPTH (FT BGL)	ELEV. (FT NGVD)	BLOW COUNTS	SAMPLE ID.	EXTENT	WELL DIAGRAM	GRAPHIC LOG	LITHOLOGIC DESCRIPTION
60	4130						<p>@59.0 ft. vertical, limonite coated fracture.</p> <p>@62.0 ft. steeply inclined fractures coated with limonite at 62.0-63.0 ft.</p> <p>64.0-67.0 ft. is darker colored, medium grained, calcareous, and higher porosity (vugs), not as hard, medium gray (N5).</p> <p>@67.0 and 68.0 ft. Hard, calcareous cemented, fine grained sandstone with vertical fractures.</p>
65	4125				← Bentonite		<p>@70.0 ft. highly crossbedded.</p> <p>71.0-72.0 ft. some conglomerate (pebbles up to 3/4" diameter).</p> <p>72.0-80.5 ft. MUDSTONE; soft, greenish gray (5G 6/1), calcareous.</p>
70	4120						<p>75.0-76.0 ft. zone of lighter colored material and calcareous nodules, greenish gray (5GY 6/1). Gray nodular shale/siltstone, calcareous.</p>
75	4115						<p>80.5-95.0 ft. SILTSTONE; platy, hard, slightly calcareous, light bluish gray (5B 7/1), some disseminated pyrite and pyrite blebs. Horizontal fracturing.</p>
80	4110						<p>85.0-86.0 ft. vertical jointing with calcite coatings is obvious.</p>
85	4105						<p>@88.0 ft. vertical fractures coated with calcite.</p>

MONITORING WELL COMPLETION LOG GRN01-0184

PROJECT <u>UMTRA GROUND WATER</u>	WELL NUMBER <u>0184</u>
SITE <u>GREEN RIVER</u>	DATES DRILLED <u>06/20/2002 to 06/24/2002</u>

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DEPTH (FT BGL)	ELEV. (FT NGVD)	BLOW COUNTS	SAMPLE ID.	EXTENT	WELL DIAGRAM	GRAPHIC LOG	LITHOLOGIC DESCRIPTION
90	4100						@90.0 ft. platy, hard shale, ranges from light bluish gray (5B 7/1), to medium bluish gray (5B 5/1), non to slightly calcareous.
95	4095						95.0-100.5 ft. SHALE; alternating beds of platy, hard shale/siltstone, greenish gray (5G 6/1), and claystone, dark greenish gray (5G 4/1), noncalcareous, some vertical fractures.
100	4090						100.0-100.5 ft. color change-grayish red (5R 4/2), noncalcareous.
							100.5-101.5 ft. CLAYSTONE; light gray (N7) with light brownish gray (5YR 6/1) calcareous nodules.
							101.5-103.5 ft. calcareous shale, some vug porosity, trace of pyrite, hard, brittle, light greenish gray (5G 8/1).
105	4085						103.5-106.5 SILTY SHALE; non to slightly calcareous, soft, platy, greenish gray (5GY 6/1).
							106.5-108.0 ft. SILTSTONE; hard, brittle, shaley siltstone, noncalcareous, medium gray (N5), trace pyrite.
							108-111.5 ft. SHALE; softer shale and silty shale, medium light gray (N6).
110	4080						111.5-112.5 ft. SILTSTONE; hard, brittle, calcareous, medium gray (N5).
							112.5-116.0 ft. SILTY SHALE; soft, medium light gray (N6), noncalcareous.
115	4075					116.0-120.0 ft. SHALE; with calcareous infillings of septarian-like concretions, vugs.	
						117.0-120.0 ft. hard, brittle, noncalcareous, medium gray (N5) to greenish gray (5G 6/1).	
120	4070						120.0-122.0 ft. CLAYSTONE; soft, noncalcareous, grayish brown

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PROJECT UMTRA GROUND WATER **WELL NUMBER** 0184
SITE GREEN RIVER **DATES DRILLED** 06/20/2002 to 06/24/2002

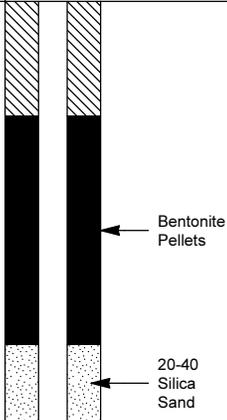
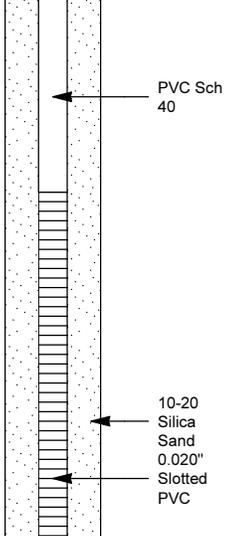
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DEPTH (FT BGL)	ELEV. (FT NGVD)	BLOW COUNTS	SAMPLE ID.	EXTENT	WELL DIAGRAM	GRAPHIC LOG	LITHOLOGIC DESCRIPTION
							(5YR 3/2).
125	4065						122.0-125.0 ft. SHALE; medium gray (N5), noncalcareous, alternating with siliceous nodules, greenish gray (5G 6/1) and hard brittle shale, noncalcareous, grayish red (5R 4/2).
130	4060						125.0-130.0 ft. CLAYSTONE; soft, noncalcareous, grayish red (5R 4/2) to pale brown (5YR 5/2) and calcareous. Some mottling with lighter gray silty material.
135	4055						130.0-133.0 ft. SHALE; hard, medium gray (N5) slightly calcareous with calcareous nodules and trace of pyrite.
							133.0-135.5 ft. CLAYSTONE; soft, pale brown (5YR 5/2), calcareous.
							135.5-137.0 ft. SILTSTONE; siltstone and shale, medium light gray (N6), calcareous, with some nodules.
							137-138.5 ft. CLAYSTONE; silty, soft, grayish red (5R 4/2), noncalcareous.
140	4050						138.5-139.0 ft. SHALE; hard, medium light gray (N6), slightly calcareous.
							139.0-141.5 ft. SANDSTONE; very fine grained, noncalcareous, grayish red (5YR 4/2). Vertical fractures.
							141.5-143.5 ft. CLAYSTONE; soft, pale brown (5YR 5/2), calcareous.
145	4045						143.5-148.0 ft. SANDSTONE; very fine grained, light greenish gray (5GY 8/1), calcareous, mottled, some limonite stain, vugs, trace pyrite and high angle fractures.
150	4040						148.0-151.0 ft. CLAYSTONE; soft, medium gray (N5), with some harder shale layers.
							151.0-164.0 ft. SANDSTONE; very fine grained to fine grained, light greenish gray (5GY 8/1), to greenish gray (5GY 6/1), calcareous, some limonite staining near top. Some vertical calcite

MONITORING WELL COMPLETION LOG GRN01-0184

PROJECT UMTRA GROUND WATER **WELL NUMBER** 0184
SITE GREEN RIVER **DATES DRILLED** 06/20/2002 to 06/24/2002

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DEPTH (FT BGL)	ELEV. (FT NGVD)	BLOW COUNTS	SAMPLE ID.	EXTENT	WELL DIAGRAM	GRAPHIC LOG	LITHOLOGIC DESCRIPTION
-155	4035				 <p style="margin-left: 20px;">Bentonite Pellets</p> <p style="margin-left: 20px;">20-40 Silica Sand</p>	•••••	filled fractures. Sandstone is fine to medium grained in places, with vug porosity and porosity along crossbedding planes, Color varies to light gray (N7). Dark chert fragments (up to 1/2" diameter). Sandstone highly crossbedded @162.0 to 164.0 ft.
-160	4030						
-165	4025				 <p style="margin-left: 20px;">PVC Sch 40</p> <p style="margin-left: 20px;">10-20 Silica Sand 0.020" Slotted PVC</p>	•••••	164.0-185.0 ft. CONGLOMERATE; small pebbles, rounded black, white, tan, green, and gray chert fragments up to 1.0" diameter with groundmass of medium grained sand, some calcareous cement, overall rock color is medium light gray (N6), to medium gray (N5). Most clasts are approximately 1/4" diameter. Calcareous cement increases with depth. Most clasts are subrounded in ~1/2" diameter range. From 182.0 185.0 ft., conglomerate coarsens with clasts up to 2.5" diameter. Base of Cedar Mountain Formation @185.0 ft.
-170	4020						
-175	4015						
-180	4010						
4005							

MONITORING WELL COMPLETION LOG GRN01-0184

PROJECT UMTRA GROUND WATER **WELL NUMBER** 0184
SITE GREEN RIVER **DATES DRILLED** 06/20/2002 to 06/24/2002

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DEPTH (FT BGL)	ELEV. (FT NGVD)	BLOW COUNTS	SAMPLE ID.	EXTENT	WELL DIAGRAM	GRAPHIC LOG	LITHOLOGIC DESCRIPTION
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 20px;">190</div> <div style="margin-bottom: 20px;">195</div> <div style="margin-bottom: 20px;">200</div> <div style="margin-bottom: 20px;">205</div> <div style="margin-bottom: 20px;">210</div> <div style="margin-bottom: 20px;">215</div> </div>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 20px;">4000</div> <div style="margin-bottom: 20px;">3995</div> <div style="margin-bottom: 20px;">3990</div> <div style="margin-bottom: 20px;">3985</div> <div style="margin-bottom: 20px;">3980</div> <div style="margin-bottom: 20px;">3975</div> </div>						<p>185.0-187.0 ft. MORRISON FORMATION, BRUSHY BASIN MEMBER: 185.0-186.0 ft. MUDSTONE; soft, grayish red (10YR 4/2), noncalcareous. 186.0-187.0 ft. MUDSTONE/SILTSTONE; soft, light greenish gray (5G 8/1) to greenish gray (5G 6/1), noncalcareous. Total Depth 187.0 ft.</p>