MCT-30

STATE OF NEVADA
DIVISION OF WATER RESOURCES
WELL DRILLER'S REPORT

OFFICE USE ONLY
Log No. 108940
Permit No.
Basin

PRINT OR TYPE ONLY
DO NOT WRITE ON BACK

Please complete this form in its entirety in accordance with NRS 534.170 and NAC 534.340

NOTICE OF INTENT NO 32181

1. OWNER USA Washington DC
MAILING ADDRESS

ADDRESS AT WELL LOCATION Whitney
Subdivision Name: County: Clark

2. LOCATION SE ¼ SW ¼ Sec 29 T 21 N/S R 63 E
PERMIT/WAIVER No. 16029401001
Issued by Water Resources Parcel No.

Latitude 36.0860180021 UTM E ☐ NAD 27
Longitude 114.9664225 N ☒ NAD 83/WGS 84

3. WORKED PERFORMED
☒ New Well ☐ Replace ☐ Recondition
☐ Deepen ☐ Other

4. PROPOSED USE
☐ Domestic ☐ Irrigation ☐ Test
☐ Municipal/Industrial ☒ Monitor ☐ Stock

5. WELL TYPE
☐ Cable ☐ Rotary ☐ RVC
☐ Air ☒ Other Sonic Drill

6. LITHOLOGIC LOG

Material	Water Strata	From	To	Thickness
attached Log				

DCNR/DWR RECEIVED
SEP 01 2009
LAS VEGAS OFFICE

Date started: 5-6-09, 20 09
Date completed: 5-20-09, 20 09

9. WELL CONSTRUCTION
Depth Drilled 370 Feet Depth Cased 370 Feet

HOLE DIAMETER (BIT SIZE)

		From		To	
8"	Inches	0	Feet	370	Feet
	Inches		Feet		Feet
	Inches		Feet		Feet

CASING SCHEDULE

Size O.D. (Inches)	Weight/Ft. (Pounds)	Wall Thickness (Inches)	From (Feet)	To (Feet)
4"	PVC	SCH 80	0	370

Perforations:
Type of perforation Slotted Sliech
Size of perforation 0.010
From 350 feet to 370 feet
From feet to feet
From feet to feet
From feet to feet
From feet to feet

Annular Seal: ☐ Yes ☐ No
☐ Neat Cement to ☐ Pumped ☐ Poured
☐ Cement Grout to ☐ Pumped ☐ Poured
☐ Concrete Grout 0 to 340 ☒ Pumped ☐ Poured
☐ =30% Bentonite Grout to ☐ Pumped ☐ Poured

Gravel Pack: ☒ Yes ☐ No 345 to 370 ☐ Pumped ☒ Poured
Type:
Bentonite Chips: ☒ Yes ☐ No 340 to 345 ☐ Pumped ☒ Poured
Type: Time Release Hole Plug 3/8

7. Water Level
Static water level: 0' feet below land surface
Artesian Flow: G.P.M. P.S.I.
Water Temperature: °F
Quality:

8. WELL TEST DATA
TEST METHOD: ☐ Bailer ☐ Pump ☐ Air Lift

G.P.M.	Draw Down (Feet Below Static)	Time (Hours)

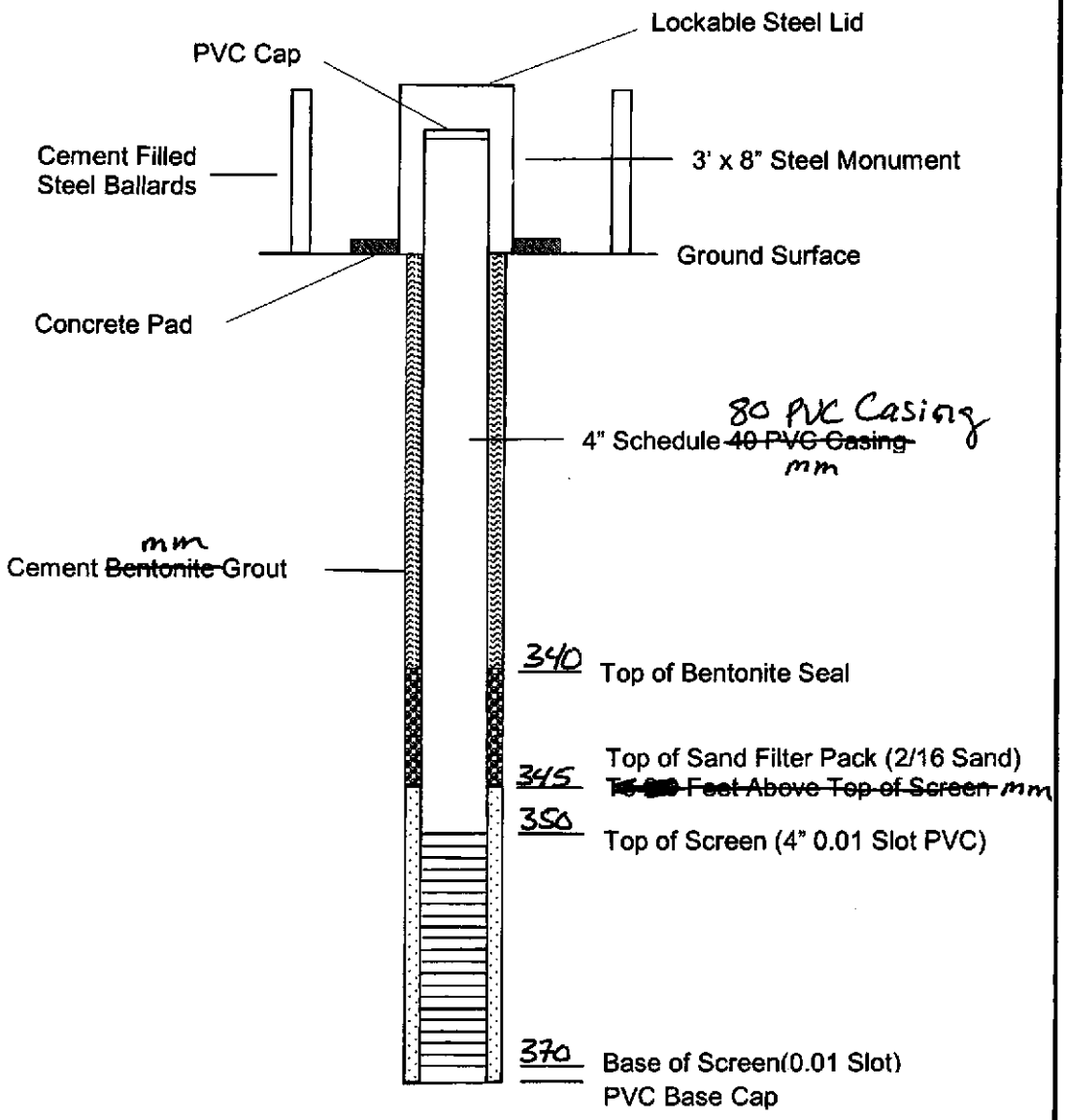
10. DRILLER'S CERTIFICATION
This well was drilled under my supervision and the report is true to the best of my knowledge.
Name EAGE DRILLING
Contractor
Address 7150 Placid Street
Contractor
Las Vegas NV 89119
Nevada contractor's license number issued by the State Contractor's Board S12 66
Nevada driller's license number issued by the Division of Water Resources, the on-site driller 2097
Signed [signature]
By driller performing actual drilling on site or contractor
Date 9-1-9

(Rev. 05-06)

USE ADDITIONAL SHEETS IF NECESSARY

MCF - SERIES MONITOR WELL CONSTRUCTION DIAGRAM

MCF-30A



GES	Job Name: BRC MONITOR WELLS	Boring No. MCF-30A

Job No. 20092509V1	Start: 5-6-09 End: 5-18-09	Location: See fig. 2
Total Depth: 370'	Groundwater	Comments:
Elevation: 1526'	Depth: Date: Time:	
Equipment: "Sonic" Drill Rig	Type of Bit: 6" O.D. Sonic Core Barrel	
Hammer (lbs/inches): 140 #/30"	Driller: T. Thompsen	
Surface Condition: Leveled Native	Logger: Marty Mehlhorn	

Comments:
Well Construction Data:
0.010-slot schedule 80-4" PVC Screen: 350'-370'
0-350': 4.0" schedule 80 PVC Blank
370'-342': #2-/16 sand pack.
342'-336.3': 3/8" Bentonite Pellets
336.3'-0': Cement grout.

Surface Dry Density (pcf):		Surface Moisture Content (%):

Depth (feet)	REC	Sample Type	Blows/ 6 inches	USCS	Description	Pene-trometer	Depth (feet)
	Run #1			SM	Very pale brown (10YR 7/4) silty SAND w/gravel (~20% silt, 50% sand (~~fine~~ mm subround, well-graded, ~30% cs, 30% ms 40% fs), 30% gravel (sub-angular to subrounded, poorly graded, ~20% cg, 80% fg)), dry, dense, homogeneous, strong reaction to HCl, sand: ~30% matics, 70% felsics, gravel: ~30% dacite, 30% andesite, 15% basalt, 15% gypsum.		
	Run #2	MCF-30A-10, MCF-30A-10-ms/MSD			...at 3.0': light brown (7.5YR 6/3), ...Samples: MCF-30A-10, MCF-30A-10-ms/MSD, pH=8.68, PIDs: 10.6eV=0.2 ppmV, 11.7eV=1.1 ppmV.		

GES	Job Name: BBC Monitor Wells	Boring No. MCF-30A
Job No. 20092509V1	Start: 5-6-09 End: 5-18-09	Location: See fig. 2

Depth (feet)	REC	Sample Type	Blows/ 6 inches	USCS	Description	Pene-trometer	Depth (feet)
				SM	...same as above, weakly-moderately cemented in 0.5"-1.0" layers.		
13	Run #3						13
14							14
15							15
16	Run #4				...stratified (0.5'-1.0' thick beds), alternating SM and gravel (GM) beds.		16
17							17
18							18
19							19
20					...wet, not sampled due to water falling into core sampler.		20
21	Run #5						21
22							22
23							23
24					...abrupt contact w/:		24
25				SM	Light yellowish brown (10YR 6/4) silty SAND (~30% silt, 50% sand (subround, poorly graded, ~10% cs, 20% ms, 70% fs), 20% gravel (subrounded, poorly graded, ~100% fg)), wet, l. dense, stratified (1.0" thick beds), strong reaction		25
26	Run #6						26
27							27
28							28

GES	Job Name: BRC Monitor Wells	Boring No. MCF-30A
Job No. 20092509U1	Start: 5-6-08 / End: 5-18-09	Location: See fig. 2

Depth (feet)	REC	Sample Type	Blows/ 6 inches	USCS	Description	Pene-trometer	Depth (feet)
				SM	to HCl, sand and gravel		
29	Run #6	MCF-30A-29, wet, pH=9.39			composition same as above, abrupt contact w/:		29
30					28': SM: Very pale brown (10YR 6/4) silty SAND w/		30
31					gravel; same as 0'-24'; contact abrupt w/:		31
32							32
				ML	Brownish yellow (10YR 6/6)		
33	Run #7				sandy SILT (~70% silt, 30%		33
34					sand (subrounded, poorly graded, ~100% fs), wet, v.		34
35					stiff, laminated-stratified (0.5"-2.0" thick beds), strong		35
36					reaction to HCl, mottled lt. greenish gray (8/5GY)		36
				ML	@ 34' (lean CLAY, 0.5' thick		
37					beds), abrupt contact w/:		37
38	Run #8				36': ML: Reddish yellow (7.5 YR 6/6) SILT w/ sand (~80%		38
39					silt, 20% sand (subrounded, poorly graded, ~100% fs)), moist,		39
40					very stiff, has ~20% weakly cemented nodules, laminated		40
41					(2-4mm beds), weak reaction to HCl.		41
				CL	Brown (7.5YR 5/4) lean		
42		MCF-30A-42 (10.0' below Qal/TMCF			CLAY (~90% lean clay, trace sand, ~10 gypsum as matrix		42
43	Run #9	contact).			cement), moist, weakly cemented, v. stiff, laminated,		43
44		pH=9.46			wk reaction to HCl.		44

GES	Job Name: BRC Monitor Wells	Boring No. MCF-30A
Job No. 20092509V1	Start: 5-6-09 / End: 5-18-09	Location: See p. 1

Depth (feet)	REC	Sample Type	Blows/ 6 inches	USCS	Description	Pene-trometer	Depth (feet)
45	Run #9			CL	...Same as above.		45 5-6-09 5-7-09
46							46
47							47
48	Run #10				...Contact abrupt w/:		48
49				ML	Light brown (7.5YR 6/4) SILT (~85% silt, trace sand, 15% gypsum as cs-sized grains and matrix cement), moist, weakly cemented, v. stiff, laminated (0.5" thick beds), weak reaction to HCl, contact abrupt with:		49
50							50
51							51
52				CH			52
53					S1': CH: Greenish gray (Gley 1, 5/5GY) fat CLAY (~80% fat clay, trace sand, ~20% gypsum as cs-sized grains and 2.0" long clear-cloudy crystals), moist, weakly cemented, v. stiff, massive, weak reaction to HCl, strong H_2S odor, ...S5'-S7': ~40% gypsum, as above.		53
54							54
55	Run #11						55
56		Sample# MCF-30A-S6 (25' below Qal/TMCF), pH= 8.77					56
57							57
58							58
59	Run #12				...Same as above		59
60							60

GES	Job Name: BRC Monitor Wells	Boring No. MCF-30A
Job No. 20092509V1	Start: 5-8-09 / End: 5-18-09	Location: See p. 1

Depth (feet)	REC	Sample Type	Blows/ 6 inches	USCS	Description	Pene-trometer	Depth (feet)
				CH	...same as above		
61							61
62							62
63							63
64							64
65							65
66	Run #12						66
67					...becomes laminated (2-6mm thick laminae), ~30% black, carbonaceous organic matter, trace pyrite.		67
68							68
69							69
70							70
71					...same as above, contact gradational w/ 1		71
72							72
73				MH	Dark greenish gray (GLEY1, 4/5GY) mottled light greenish gray (Gley 1, 7/10Y) elastic SILT (~70% elastic silt, trace sand, ~20% gypsum, ~10% organic matter as seed pods, leaves, carbonaceous matter, trace pyrite), moist, v. stiff		73
74	Run #13						74
75							75
76							76

GES	Job Name: BRC Monitor Wells	Boring No. MCF-30A
Job No. 20092509V1	Start: 5-6-09 / End: 5-18-09	Location: See p.1.

Depth (feet)	REC	Sample Type	Blows/ 6 inches	USCS	Description	Pene-trometer	Depth (feet)
77	Run #13			MH	, laminated (1-3mm thick laminae), no reaction to HCl, strong organic odor.		77
78							78
79							79
80							80
81							81
82		MCF-30A-82 (50' below)			...sample # MCF-30A-82, 50' below Qal/TMCF contact, same as above		82
83	Run #14	pH = 8.89					83
84							84
85							85
86							86
87							87
88							88
89							89
90					...same as above, minor water (wet) along bedding surfaces; volume insufficient for sample.		90
91	Rtn #15						91
92							92

GES	Job Name: BRC Monitor Wells	Boring No. MCF-30A
Job No. 20092509V1	Start: 5-7-09 / End: 5-18-09	Location: See p.1.

Depth (feet)	REC	Sample Type	Blows/ 6 inches	USCS	Description	Pene-trometer	Depth (feet)
93	Run #15			MH	...same as above; gypsum as clear-brownish clouded crystals along beds		93
94							94
95							95
96							96
97							97
98				CH	...contact gradational with: Light greenish gray (Gley1, 8/5GY) fat CLAY (~80% fat clay, trace sand, ~20% gypsum as clear, cs-sized crystals and grains, trace organics), moist, weakly cemented, v. stiff, stratified (1"-thick beds), weak reaction to HCl,		98
99							99
100							100
101							101
102		MCF-30A-102, pH = 8.95		wet			102
103	Run #16				...101.5'-102.5': bluish gray (GLey 2, 6/5PB), ~48% gypsum w/water along crystal surfaces, sample #MCF-30A-102		103
104							104
105							105
106					...103': gypsum as cs-sized crystals, only moist		106
107							107
108							108

GES	Job Name: BRC Monitor Wells	Boring No. MCF-30A
Job No. 20092509V1	Start: 5-6-09 / End: 5-18-09	Location: See p.1.

Depth (feet)	REC	Sample Type	Blows/ 6 inches	USCS	Description	Pene-trometer	Depth (feet)
				CH			
109	Run #16				...gypsum as white, 0.5" thick granulose layers.		109
110							110
111					...pyrite as cs-fs sized clear grains and crystals		111
112							112
113							113
114					...same as above.		114
115							115
116	Run #17						116
117							117
118					...1.0"-2.0" long, randomly-oriented, stained euhedral gypsum crystals w/ pyrite grains along crystal faces, crystals in ~0.5'-1.0' thick beds.		118
119							119
120							120
121							121
122					...wet along bedding planes,		122
123	Run #18						123
124					...light greenish gray (5Gy 7/1,		124

GES	Job Name: BRC Monitor Wells	Boring No. MCF-30A
Job No. 20092509V1	Start: 5-6-09 End: 5-18-09	Location: See p.1.

Depth (feet)	REC	Sample Type	Blows/ 6 inches	USCS	Description	Pene-trometer	Depth (feet)
				CH	7/10 GY), alternating beds and layers of granulose gypsum.		
125							125
126							126
127							127
128	Run #18				...same as above		128
129							129
130							130
131							131
132		MCF-30A-132, pH= 8.78			...sample #MCF-30A-132 ([illegible] contact), trace pyrite along gypsum crystal faces.		132
133							133
134							134
135							135
136	Run #17						136
137							137
138					abrupt contact with:		138
				CL	Light gray (10YR 7/2) lean CLAY (~75% lean clay, trace sand, ~25% gypsum as clear, randomly oriented 1.0" long.		
139							139
140							140

GES	Job Name: BRC Monitor Wells	Boring No. MCF-30A
Job No. 20092509VI	Start: 5-6-09 End: 5-18-09	Location: See p. 1.

Depth (feet)	REC	Sample Type	Blows/ 6 inches	USCS	Description	Pene-trometer	Depth (feet)
				CL	euhedral crystals), moist, very		
141					stiff, laminated-stratified,		141
					weak reaction to HCL,		
142					becomes light brown (7.5YR		142
					6/3) past 139':		
143					...white (Gley 1, 8/N).		143
144							144
145							145
	Run #20			MH Wet	Light greenish gray (Gley 1,		
146					7/5 GY) elastic SILT (~60%		146
					elastic silt, trace sand, 40%		
147					gypsum as cs-sized granules		147
		MCF-30A-			and crystals), wet (along		
148		148, pH=			crystal faces), v. stiff, homogeneous,		148
		8.78		CH	strong reaction to HCl, abrupt		
149					contact with:		149
					148': CH: Light greenish		
150					gray (Gley 1, 7/5GY) fat		150
					CLAY (~60% fat clay, trace		
151					sand, ~40% gypsum (same		151
					as above)), moist, very stiff,		
152					homogenous, strong reaction		152
					to HCl.		
153					...150'-154': dark bluish gray		153
					(Gley 1, 4/5B), ~20% black		
154	Run #21				carbonaceous organic		154
					matter and dark green		
155					plant material along beds.		155
					Trace wet (1/8") zones along		
156					bedding.		156

GES	Job Name: BRC Monitor Wells	Boring No. MCF-30A

Job No.	Start:	Location:
20092509V1	5-6-09	MCF-30A
	End: 5-18-09	

Depth (feet)	REC	Sample Type	Blows/ 6 inches	USCS	Description	Pene-trometer	Depth (feet)
				CH	...same as above.		
157							157
	Run #21				...stratified w/2.0" thick beds of: CH, ~~green~~ mm greenish gray (Gley 1, 6/5GY), strong organic odor (decay).		
158							158
159							159
160							160
161	Run #22				...greenish gray (Gley 1, 6/5GY) with 2.0"-0.5' thick beds of clouded, randomly-oriented euhedral gypsum crystals w/ pyrite along edges, abrupt contact w/:		161
162							162
163							163
164							164
				CL	Laminated light brownish gray (2.5Y 6/2) and yellowish brown (10YR 5/4) lean CLAY (≈80% lean clay, trace sand, 20% gypsum as randomly-oriented, clear 0.5" euhedral crystals, matrix cement, and cs-sized grains), moist, weakly cemented, v. stiff, laminated (2-5mm thick beds), weak reaction to HCl, becomes strong brown (7.5YR 5/6) past 168'		
165							165
166							166
167							167
168							168
169							169
170							170
171	Run #23						171
172							172

GES	Job Name: BRC Monitor Wells	Boring No. MCF-30A
Job No. 20092509U1	Start: 5-6-09 / End: 5-18-09	Location: See p. 1

Depth (feet)	REC	Sample Type	Blows/ 6 inches	USCS	Description	Pene-trometer	Depth (feet)
173	Run #23			CL	...same as above, contact abrupt with:		173
174				ML	Yellowish brown (10YR 5/4) SILT (~80% silt, trace sand, 20% gypsum as cs-sized grains), moist, weakly cemented, very stiff, laminated-stratified (2mm-0.5" thick beds), weak reaction to HCl		174
175							175
176							176
177							177
178					...gypsum content increases to ~40% as clear, randomly-oriented euhedral crystals and granulose layers, abrupt contact w/:		178
179							179
180							180
181	Run #24 - 187'-190' lost			CL	Very pale brown (10YR 7/3) lean CLAY (~60% lean clay, 40% gypsum as clear, randomly oriented, 2" long euhedral crystals, trace sand), moist, weakly cemented, v. stiff, stratified (2"-1.0" beds), weak reaction to HCl, at ~184': brown (7.5YR 5/4), ~25% gypsum, as 0.25" and smaller crystals ... thin lenses (0.5") of silt interbedded w/in the clay beds.		181
182							182
183							183
184							184
185							185
186							186
187							187
188							188

5-7-09
~~5-6-09~~
5-8-09

GES	Job Name: BRC Monitor Wells	Boring No. MCF-30A
Job No. 20092509V1	Start: 5-6-09 End: 5-18-09	Location:

Depth (feet)	REC	Sample Type	Blows/ 6 inches	USCS	Description	Pene-trometer	Depth (feet)
	Run #24			CL	...same as above.		
189							189
190							190
191	Run #25				...laminae of reddish brown, (7.5YR 4/4) clay.		191
192					...192'-193.5': zone of 2.0", randomly oriented euhedral, clear gypsum crystals.		192
193							193
194					...0.5"-0.25" long clear, randomly-oriented gypsum crystals.		194
195							195
196							196
197		MCF-30A-197, pH=7.99		ML wet CL	...abrupt contact w/: Gray (Gley 1, 5/N) sandy SILT (~70% silt, 30% sand (subrounded, poorly graded, ~100% fs), trace gypsum as matrix cement), wet, weakly cemented in 0.5" wide nodules, v. stiff, laminated, weak reaction to HCl, abrupt contact with:		197
198							198
199							199
200							200
201	Run #26						201
202					197.5': CL: Brown (10YR 4/3) lean CLAY (~80% lean clay, trace sand, ~20% gypsum as clear, randomly-oriented 0.5" crystals), moist, v. stiff, laminated (0.5" beds), weak reaction to HCl		202
203							203
204							204

GES	Job Name: BRC Monitor Wells	Boring No. MCF-30A
Job No. 20092509V1	Start: 5-6-09 / End: 5-18-09	Location: See p. 1.

Depth (feet)	REC	Sample Type	Blows/ 6 inches	USCS	Description	Pene-trometer	Depth (feet)
	Run #26			ML	Brown (10YR 5/3) SILT (~80% silt, trace sand, ~20% gypsum as 0.25" to cs-sized clear crystals and grains), moist, v. stiff, laminated (2mm-4mm laminae), weak reaction to HCl, abrupt contact with:		
205							205
206							206
207							207
				CL	207': CL: Light greenish gray (Gley1, 7/10GY) lean CLAY (~60% lean clay, trace sand, ~40% gypsum as clear, euhedral, randomly oriented crystals, cs-sized grains, and bedding parallel layers), moist, weakly to moderately cemented, stratified (2"-0.5" thick beds), weak reaction to HCl.		
208							208
209							209
		209'-210':	lost				
210							210
211	Run #27						211
212							212
213		not sampled due to low volume.					213
				wet	...at 210': Brown (10YR 5/3), ~15% gypsum as clear, randomly-oriented crystals. ...at 213'-214': wet zones (0.125" thick) along bedding surfaces only, gypsum as ms-sized grains only.		
214							214
215							215
216							216
217							217
218					...0.25" thick interbeds of silt.		218
219							219
220							220

5-8-09
5-11-09

GES	Job Name: BRC Monitor Wells	Boring No. MCF-30A
Job No. 20092509V1	Start: 5-6-09 / End: 5-18-09	Location: See p.1.

Depth (feet)	REC	Sample Type	Blows/ 6 inches	USCS	Description	Pene-trometer	Depth (feet)
				ML	Brown (7.5YR 5/4) SILT w/sand (~70% silt, 15% sand (subrounded, poorly graded, ~20% ms, 80% fs), ~15% gypsum as cs-sized grains), moist, weakly cemented, v. stiff, laminated (0.5" thick beds), weak reaction to HCl, at 222', 225': light greenish gray (Gley 1, 7/10GY), with ~40% gypsum as clear, randomly-oriented euhedral crystals, gradational contact with:		5-8-09 / 5-11-09
221							221
222							222
223							223
224							224
225							225
226	Run #28						226
227							227
228							228
				CL	Brown (10YR 4/3) lean CLAY (~80% lean clay, trace sand, ~20% gypsum as cs-sized grains and matrix cement), moist, weakly cemented, v. stiff, laminated (0.25" thick beds), weak reaction to HCl, wet along bedding surfaces past 228.5' (insufficient material volume for sampling).		
229							229
230							230
231							231
232		MCF-30A-231, MCF-30A-231-FD, pH=8.16		ML wet			232
233				CL	231: ML: Greenish gray (gley 1, 5/10GY) sandy SILT (~60% silt, ~30% sand (subrounded, poorly graded, ~100% fs), 10% gypsum as fs-sized grains		233
234	Run #29						234
235							235
236							236

GES	Job Name: BRC Monitor Wells	Boring No. MCF-30A
Job No. 20092509V1	Start: 5-6-09 End: 5-18-09	Location: See p.1.

Depth (feet)	REC	Sample Type	Blows/ 6 inches	USCS	Description	Pene-trometer	Depth (feet)
237	Run #29			CL	and matrix cement), wet, weakly cemented in layers and nodules, laminated (0.5" thick beds), strong reaction to HCl, contact abrupt with: 232': CL: Yellowish brown (10YR 5/4) lean CLAY (~80% lean clay, trace sand, ~20% gypsum as fs-sized grains and matrix cement), moist weakly cemented, v. stiff, laminated (0.5" thick beds), weak reaction to HCl; 235'-237': ~60% gypsum as granulose layers, 1"-2" clear, randomly-oriented crystals (euhedral), abrupt contact w/:		237
238							238
239							239
240							240
241	Run #30						241
242							242
243							243
244							244
245				SM Wet	Grayish brown (10YR 5/2)		245
246				CL	silty SAND (~30% silt, 70% sand (subrounded, poorly graded, ~20% ms, 80% fs), wet, v. dense, stratified (1" beds), weak reaction to HCl, abrupt contact w/: 245.5': CL: Yellowish brown (10YR 5/4) mottled/layered light greenish gray (Gley 1, 7/5G) lean CLAY (~80% lean clay, trace sand, ~20% gypsum as granulose layers, randomly-oriented euhedral, clear crystals)		246
247							247
248		MCF-30A-248, pH=7.47		SP-SM Wet			248
249							249
250							250
251	Run #31						251
252							252

GES	Job Name: BRC Monitor Wells	Boring No. MCF-30A
Job No. 20092509V1	Start: 5-6-09 End: 5-18-09	Location: See p.1.

Depth (feet)	REC	Sample Type	Blows/ 6 inches	USCS	Description	Pene-trometer	Depth (feet)
253	Run #31				moist, weakly cemented, v. stiff, laminated, weak reaction to HCl, abrupt contact w:/		253
254					247': SP-SM: Grayish brown (10YR 5/2) poorly graded SAND w/silt (~5% silt, 90% sand (~~poorly~~ mm subrounded, ~10% ms, 90% fs), 5% gypsum as matrix cement), wet, weakly cemented, v. dense, laminated (0.25"-0.5" thick beds), weak reaction to HCl, abrupt contact with:		254
255							255
256							256
257							257
258							258
259							259
260					249.5': CL: Light yellowish brown (10YR 6/4) lean CLAY (~90% lean clay, trace sand, ~10% gypsum), moist, v. stiff, laminated (0.25" thick beds), weak reaction to HCl, past 256', there are irregularly spaced lenses and laminae of: Pale brown (10YR 6/3) silty SAND (~15% silt, ~85% sand (subrounded, poorly-graded, ~20% ms, 80% fs), trace gypsum), wet, v. dense, weak reaction to HCl, abrupt contact w:/		260
261	Run #32						261
262							262
263							263
264							264
265							265
266							266
266.5'							
267		MCF-30A-267, pH = 8.72		Wet SM	Greenish gray (Gley 1, 6/10Y) silty SAND (~40% silt, 50% sand (subrounded, poorly		267
267.5'							
268				ML			268

GES	Job Name: BRC Monitor Wells	Boring No. MCF-30A
Job No. 20092509V1	Start: 5-6-09 / End: 5-18-09	Location: See p. 1

Depth (feet)	REC	Sample Type	Blows/ 6 Inches	USCS	Description	Pene-trometer	Depth (feet)
269	Run #32			ML	graded, ≈100% fs), 10% gypsum as matrix cement), wet, weakly cemented, v. stiff, laminated (2mm-6mm		269
270					thick beds), strong reaction to HCL, abrupt contact w/:		270 5-11-09 5-12-09
271	Run #33 - Lost due to running in casing				267.5': ML: Dark yellowish brown (10YR 4/6) SILT (≈55% silt, trace sand, ~45% gypsum as 2.0", clear, randomly oriented euhedral crystals and matrix cement), moist, weakly cemented, v. stiff, homogenous, weak reaction w/ HCl, past 268.5', gypsum content decreases to ≈30%. ...run #33 (270'-280') was last during 8" casing emplacement to 270'.		271
272							272
273							273
274							274
275							275
276							276
277							277
278							278
279							279
280							280
281	Run #34			CL	Brown (7.5YR 5/4) lean CLAY (~80% lean clay, trace sand, ≈20% gypsum as clear, randomly-oriented 1" long euhedral crystals), moist, weakly cemented, v. stiff, stratified (2.0"-0.5' beds), weak reaction to HCl		281
282							282
283							283
284							284

GES	Job Name: BRC Monitor Wells	Boring No. MCF-30A
Job No. 20092509V1	Start: 5-6-09 / End: 5-18-09	Location: See p. 1.

Depth (feet)	REC	Sample Type	Blows/ 6 inches	USCS	Description	Pene-trometer	Depth (feet)
285	Run #34			CL	...mottled strong brown (7.5 YR 5/6), light brown (7.5YR 6/4), and pinkish gray (7.5YR 6/2).		285
286							286
287							287
288					...abrupt contact w/:		288
289		MCF-30A –		ML CL	288'-288.25', 289-289.5': ML: Light greenish gray (Gley 1, 7/10Y) sandy SILT (~70%		289
289.5'		289, pH=8.31		ML wet CL			
290					silt, 30% sand (subrounded,		290
291	Run #35				poorly graded, ~100% fs), wet, weakly cemented in		291
292					layers, v. stiff, laminated (0.25"-0.5" beds), weak		292
293					reaction to HCl		
					289.5': CL: Yellowish brown		293
294				ML	(10YR 5/4) lean CLAY (~85% lean clay, trace sand, 15%		294
295					gypsum as cs-fs sized grains), moist, weakly		295
296				CALI	cemented, v. stiff, laminated (0.25"-0.5" layers), weak		296
297					reaction to HCl, gradational contact w/:		297
298					293': ML: Yellowish brown (10YR 5/6) SILT (~75% silt, trace		298
299	Run #36			CL	sand, ~25% gypsum as cs-sized grains), moist, weakly cemented, v. stiff,		299
300					stratified (0.25"-1.0" beds),		300

GES	Job Name: BRC Monitor Wells	Boring No. MCF-30A
Job No. 20092509V1	Start: 5-6-09 / End: 5-18-09	Location: See p.1.

Depth (feet)	REC	Sample Type	Blows/ 6 Inches	USCS	Description	Pene-trometer	Depth (feet)
301				CL	weak reaction to HCl, abrupt contact w/: 295': CALI: Light gray (10YR 7/2) CALICHE (~20% silt, trace sand, ~80% gypsum as cs-sized grains, and matrix infilling), moist, moderately-strongly cemented, stratified (0.5"-2.0" thick beds), weak reaction to HCl.		301
302							302
303				SP-SM wet			303
304		MCF-30A-304, pH=8.10					304
305							305
306	Run #36	MCF-30A-306, pH=7.87		CL ~~ML~~ mm wet SP-SM	298': CL: Yellowish brown (10YR 5/4) lean CLAY (~85% lean clay, trace sand, ~15% gypsum as 0.5" long crystals, moist, v. stiff, homogeneous, weak reaction to HCl, abrupt contact with: 302': SP-SM: Pale brown (10YR 6/3) poorly graded SAND w/ silt (~10% silt, 90% sand (subrounded, poorly graded, ~100% qtz)), wet, v. dense, stratified (0.5" thick beds), strong reaction to HCl, abrupt contact w/: 305-305.5': CL-same as above, then: 305.5' ~~ML~~ mm - 308.5': same as 302'-305.5' except for ~20% gypsum as euhedral crystals.		306
307							307
308							308
309				ML			309
310							310
311							311
311.5'							
312	Run #37			CL			312
313							313
314							314
315							315
316							316

GES	Job Name: BRC Monitor Wells	Boring No. MCF-30A
Job No. 20092509U1	Start: 5-6-09 / End: 5-18-09	Location: See p.1

Depth (feet)	REC	Sample Type	Blows/ 6 Inches	USCS	Description	Pene-trometer	Depth (feet)
317	Run #37			CL	308.5': ML: Brown (10YR 4/3) SILT (~80% silt, trace sand, 20% gypsum as clear, euhedral crystals), moist, weakly cemented, v. stiff, homogeneous, weak reaction to HCl, at 310', 311', there are 0.5' thick beds of: ML: Light greenish gray (Gley 1, 7/5GY) sandy SILT (~70% silt, 30% sand (subrounded, poorly graded, ~100% fs), trace gypsum, moist, weakly cemented, v. stiff, laminated (0.25" beds), strong reaction to HCl, contact abrupt w/:		317
318							318
319							319
320							320 5-12-09 5-13-09
321	Run #38						321
322							322
323							323
324							324
325					311.5': CL: Yellowish brown (10YR 5/4) lean CLAY (~75% lean clay, trace sand, ~25% gypsum as 2.0"/ms, clear, randomly oriented euhedral crystals), moist, weakly cemented, v. stiff, laminated, wk reaction to HCl. ...at 314.5': dark reddish brown (2.5YR 3/3). ...at 320': yellowish brown (10YR 5/4). ...@ 323': yellowish red (5YR 4/6). ...@ 325': 2.0" silt laminae, light greenish gray (Gley 1, 7/5GY), then reddish brown (5YR 5/4) ...@ 330': yellowish brown (10YR 5/4)		325
326							326
327							327
328							328
329							329
330							330
331	Run #39						331
332							332

GES	Job Name: BRC Monitor Wells	Boring No. MCF-30A
Job No. 20092509V1	Start: 5-6-09 / End: 5-18-09	Location: See p.1.

Depth (feet)	REC	Sample Type	Blows/ 6 inches	USCS	Description	Pene-trometer	Depth (feet)
		MCF-30A-		CL	...regular sample #MCF-30A		
333		332, pH=8.53			-332 (300' below to Qall		333
					TMCF contact), ~20%		
334					gypsum as cs-sized grains		334
					only.		
335							335
336							336
337	Run #39						337
338					...same as above		338
339							339
340							340
					...reddish brown (5YR 4/4).		
341							341
342					...abrupt contact with:		342
				ML	Light brown (7.5YR 6/3)		
343					SILT (~75% silt, trace sand,		343
				CL	~25% gypsum as cs-sized		
344					grains and matrix cement),		344
					moist, weakly-moderately		
345	Run #40				cemented (as layers/		345
					0.25" nodules), v. stiff,		
346					laminated, weak reaction		346
					to HCl, contact abrupt w/:		
347					343': CL: Brown (7.5YR 5/4)		347
					lean CLAY (~90% lean Clay,		
348					trace sand, ~10% gypsum		348

GES	Job Name: BRC Monitor Wells	Boring No. MCF-30A
Job No. 20092509V1	Start: 5-6-09 / End: 5-18-09	Location: See p.1.

Depth (feet)	REC	Sample Type	Blows/ 6 inches	USCS	Description	Pene-trometer	Depth (feet)
349	Run #40			CL	as ms-fs sized grains / matrix cement), moist, weakly cemented, v. stiff, laminated (0.25"-0.5" beds), weak reaction to HCl, gradational contact with:		349
350							350
351	Run #41 - Last 3' lost						351
352		MCF-20A-352, pH=7.27		ML Wet	Light gray (10YR 7/1) sandy SILT (~65% silt, ~30% sand (subrounded, poorly graded, ~100% fs), 5% gypsum as matrix cement), wet, weakly to moderately cemented, laminated (0.25"-0.5" beds), weak reaction to HCl, gradational contact with: 353': ML: Interbedded pale brown (10YR 6/3) SILT (~80% silt, trace sand, 20% gypsum as matrix cement), moist, weakly to moderately cemented, v. stiff, laminated (0.25"-0.5" thick beds), weak reaction to HCl.		352
353				ML			353
354							354
355							355
356							356
357							357
358							358
359							359
360							360 5-13-09 5-14-09
361	Run #42				...same as above, becomes stratified (2"-6" thick beds) w/sandy SILT (wet), water localized along bedding surfaces) throughout entire sequence. Sample MCF-30A-363 collected from 363'-364.5' from wet layers.		361
362							362
363		MCF-30A-363, pH=8.29					363
364							364

GES	Job Name: BRC Monitoring Wells	Boring No. MCF-30A
Job No. 20082509U1	Start: 5-6-09 / End: 5-18-09	Location: See p. 1

Depth (feet)	REC	Sample Type	Blows/ 6 inches	USCS	Description	Pene-trometer	Depth (feet)
	Run #42			SM wet	Light brownish gray (10YR 6/2) silty SAND (~40% silt, 60% sand (subrounded, poorly graded, ~10% ms, 90% fs), wet, v. dense, laminated (0.25" thick beds) weak reaction to HCl, gradational contact w/:		
365				CL			365
366				ML			366
367				CL			367
368	Run #43						368
369					364.5': CL: Pale brown (10YR 6/3) lean CLAY (~90% lean clay, trace sand, ~10% gypsum as cs-sized crystals and matrix cement), moist, weakly cemented, v. stiff, laminated (0.5" beds), weak reaction to HCl.		369
370							370
371					365.5': ML: Gray (10YR 6/1) sandy SILT (~70% silt, 30% sand (subrounded, poorly graded, ~100% fs), wet, v. stiff, laminated, strong reaction to HCl, abrupt contact with:		371
372							372
373							373
374							374
375							375
376					366.5': CL: Pale brown (10YR 6/3) lean CLAY (~85% lean clay, trace sand, 15% gypsum as fs-sized grains), moist, weakly cemented, v. stiff, stratified (2-6" thick beds), weak reaction to HCl.		376
377							377
378							378
379							379
380					End of Boring @ 370'		380