WHITE—DIVISION OF WATER RESOURCES
CANARY—CLIENT'S COPY
PINK—WELL DRILLER'S COPY

STATE OF NEVADA
DIVISION OF WATER RESOURCES

WELL DRILLER'S REPORT

Please complete this form in its entirety

OFFICE USE ONLY
Log No. 32611
Permit No.
Basin 4-59

PRINT OR TYPE ONLY

NOTICE OF INTENT NO. 3690

1. OWNER Battle Mountain Gold Company
MAILING ADDRESS P.O. Box 1627
Battle Mountain, Nevada 89820

ADDRESS AT WELL LOCATION BMGC
P.O. Box 1627
Battle Mountain, Nevada 89820

2. LOCATION SE ¼ NE ¼ Sec. 4 T. 31 N/S R. 44 E. Lander County
PERMIT NO. Ltr for waiver M/0-180 (Issued by Water Resources) NA (Parcel No.) NA (Subdivision Name)

3. TYPE OF WORK
New Well ☑ Recondition ☐
Deepen ☐ Other ☐

4. PROPOSED USE
Domestic ☐ Irrigation ☐ Test ☑
Municipal ☐ Industrial ☐ Stock ☐

5. TYPE WELL
Cable ☐ Rotary ☑
Other ☐

6. LITHOLOGIC LOG

Material	Water Strata	From	To	Thickness
Monitor Well M-3 (see attached log)				

'89 NOV -7 P1:54

STATE ENGINEER

Date started 8-29, 1989
Date completed 8-30, 1989

7. WELL TEST DATA

Pump RPM	G.P.M.	Draw Down	After Hours Pump
undeveloped			

BAILER TEST
G.P.M. ..... Draw down ..... feet ..... hours
G.P.M. ..... Draw down ..... feet ..... hours
G.P.M. ..... Draw down ..... feet ..... hours

8. WELL CONSTRUCTION
Diameter 12.25 inches Total depth 438 feet
..... inches
..... inches
Casing record 14" dia. thin wall blk pipe & 4" sch 80 PVC
Weight per foot ..... Thickness .....

Diameter	From	To
14 inches	0 feet	20 feet
4 inches	0 feet	387 feet
inches	feet	feet
inches	feet	feet
inches	feet	feet
inches	feet	feet

Surface seal: Yes ☑ No ☐ Type cement grout & bentonite
Depth of seal 0-379' cement, 379-383 clay feet
Gravel packed: Yes ☑ No ☐
Gravel packed from 385 feet to 415 feet

Perforations:
Type perforation slotted sch 80 PVC
Size perforation 0.010 inch
From 387 feet to 407 feet
From ..... feet to ..... feet
From ..... feet to ..... feet
From ..... feet to ..... feet
From ..... feet to ..... feet

9. WATER LEVEL
Static water level 225 feet below land surface
Flow ..... G.P.M. ..... P.S.I.
Water temperature ..... °F Quality .....

10. DRILLER'S CERTIFICATION
This well was drilled under my supervision and the report is true to the best of my knowledge.
Name [illegible]
~~Contractor~~
Address P.O. Box 1627, Battle Mtn., NV 89820
Contractor
Nevada contractor's license number issued by the State Contractor's Board .....
Nevada contractor's driller's number issued by the Division of Water Resources .....
Nevada driller's license number issued by the Division of Water Resources, the on-site driller [illegible]
Signed [illegible]
By driller performing actual drilling on site or contractor
Date [illegible]

(Rev. 11-85) USE ADDITIONAL SHEETS IF NECESSARY (O)-627

M-3

LOG 32611

WELSH ENGINEERING, INC.

PROJECT NAME BATTLE MOUNTAIN GOLD LEACH PAD NO. 11302

BORING LOCATION N 2,125,980 E 403,060		ELEVATION AND DATUM	
DRILLING AGENCY BATTLE MNTN. GOLD	DRILLER	DATE STARTED / DATE FINISHED 8/29-30/89	
DRILLING EQUIPMENT INGERSOL RAND TH-100 A		COMPLETION DEPTH PILOT-438'	SAMPLER CUTTINGS
DRILLING METHOD AIR REVERSE CIRC. *	DRILL BIT 5 1/4" TRI.	NO. OF SAMPLES / DIST. 88	UNDIST.
SIZE AND TYPE OF CASING 4-IN.-SCHED. 80 PVC-FLUSH THREADS		WATER ELEV. / FIRST	COMPL. / 24 HRS
TYPE OF PERFORATION 0.010 IN SLOTTED	FROM TO FT.	LOGGED BY KPR/RAB WELSH ENGR.	CHECKED BY: RAB/WELSH
SIZE AND TYPE OF PACK 1/4" TO 3/8" GRAVEL	FROM TO FT.		
TYPE OF SEAL "ENVIROPLUG" BENTONITE	FROM TO FT.		

DEPTH (FEET)	DESCRIPTION	GRAPHIC LOG: Lithology	GRAPHIC LOG: Piezometer Installation	Water Content	Piezometer Data	SAMPLES: Type No.	SAMPLES: Recov. ft.	SAMPLES: Penetra. Resist (Blows/6 in.)	REMARKS (Drill Rate, Fluid loss, Odor, etc.)
5, 10	SILTY SAND WITH GRAVEL; tan, fine to coarse sand and gravel, dry (SM)			DRY					
15, 20, 25, 30, 35	SILTY GRAVEL WITH SAND; tan, fine to coarse sand and gravel, dry (GM) — increasing sand — increasing gravel								
40, 45, 50	WELL GRADED SAND WITH SILT AND GRAVEL; tan, dry (SW-SM)		GROUT						
55, 60, 65, 70	SILTY SAND WITH GRAVEL; tan, fine to coarse sand and gravel, dry (SM)								
	(continued)								

FIELD LOG OF BORING NO. M-3 SHEET 1 of 7

NOTE: PILOT HOLE APPROX. 30 ft. NORTH OF WELL BORING M-3

* MAIN WELL DRILLED W/ 12 1/4" Ø MUD ROTARY

FIG A-35

LOG 32611

WELSH ENGINEERING, INC.

PROJECT NAME BATTLE MOUNTAIN GOLD LEACH PAD NO. 11302

BORING LOCATION		ELEVATION AND DATUM	
DRILLING AGENCY	DRILLER	DATE STARTED / DATE FINISHED	
DRILLING EQUIPMENT		COMPLETION DEPTH	SAMPLER
DRILLING METHOD	DRILL BIT	NO. OF SAMPLES / DIST.	UNDIST.
SIZE AND TYPE OF CASING		WATER ELEV. / FIRST	COMPL. / 24 HRS
TYPE OF PERFORATION	FROM TO FT.	LOGGED BY	CHECKED BY:
SIZE AND TYPE OF PACK	FROM TO FT.		
TYPE OF SEAL	FROM TO FT.		

DEPTH (FEET)	DESCRIPTION	GRAPHIC LOG: Lithology	GRAPHIC LOG: Piezometer Installation	Water Content	Piezometer Data	SAMPLES: Type No.	SAMPLES: Recov. ft.	SAMPLES: Penetra. Resist (Blows/6 in.)	REMARKS (Drill Rate, Fluid loss, Odor, etc.)
70	SILTY SAND WITH GRAVEL; (cont)			DRY					
75									
80	increased gravel from 80' to 85'; low plasticity								
85	increasing silt, medium plasticity								
90	slightly moist			SL. MOIST					
95									
100									
105	decreasing silt, low plasticity								
110	dry		GROUT	DRY					
115	increasing silt								
120									
125									
130									
135									
140	(continued)								

FIELD LOG OF BORING NO. M-3 (cont) SHEET 2 of 7

FIG A-36

LOG 32611

WELSH ENGINEERING, INC.

PROJECT NAME BATTLE MOUNTAIN GOLD LEACH PAD NO. 11302

BORING LOCATION		ELEVATION AND DATUM	
DRILLING AGENCY	DRILLER	DATE STARTED / DATE FINISHED	
DRILLING EQUIPMENT		COMPLETION DEPTH	SAMPLER
DRILLING METHOD	DRILL BIT	NO. OF SAMPLES: DIST.	UNDIST.
SIZE AND TYPE OF CASING		WATER ELEV.: FIRST	COMPL. / 24 HRS
TYPE OF PERFORATION	FROM TO FT.	LOGGED BY	CHECKED BY:
SIZE AND TYPE OF PACK	FROM TO FT.		
TYPE OF SEAL	FROM TO FT.		

DEPTH (FEET)	DESCRIPTION	GRAPHIC LOG: Lithology	GRAPHIC LOG: Piezometer Installation	Water Content	Piezometer Data	SAMPLES: Type No.	SAMPLES: Recov. ft.	SAMPLES: Penetra. Resist. (Blows/6 in.)	REMARKS (Drill Rate, Fluid loss, Odor, etc.)
140	SILTY SAND / CLAYEY SAND; tan, fine to coarse sand, trace to few fine to coarse gravel, low plasticity, dry (SM/SC)		GROUT	DRY					
145									
150	SILTY SAND WITH GRAVEL; tan, fine to coarse sand and gravel, low plasticity, dry (SM)								
155									
160									
165									
170									
175									
180									
185	increasing silt								
190	with thin interbeds of clay								
195	increasing silt and clay, medium to high plasticity (SM/SC)								
200									
205									
210	(continued)								

FIELD LOG OF BORING NO. M-3 (cont) SHEET 3 of 7

FIG A-37

LOG 32611

WELSH ENGINEERING, INC.

PROJECT NAME BATTLE MOUNTAIN GOLD LEACH PAD NO. 11302

BORING LOCATION		ELEVATION AND DATUM	
DRILLING AGENCY	DRILLER	DATE STARTED / DATE FINISHED	
DRILLING EQUIPMENT		COMPLETION DEPTH	SAMPLER
DRILLING METHOD	DRILL BIT	NO. OF SAMPLES / DIST.	UNDIST.
SIZE AND TYPE OF CASING		WATER ELEV. / FIRST	COMPL. / 24 HRS
TYPE OF PERFORATION	FROM TO FT.	LOGGED BY	CHECKED BY:
SIZE AND TYPE OF PACK	FROM TO FT.		
TYPE OF SEAL	FROM TO FT.		

DEPTH (FEET)	DESCRIPTION	GRAPHIC LOG: Lithology	GRAPHIC LOG: Piezometer Installation	Water Content	Piezometer Data	SAMPLES: Type No.	SAMPLES: Recov. ft.	SAMPLES: Penetra. Resist. (Blows/6 in.)	REMARKS (Drill Rate, Fluid loss, Odor, etc.)
210	SILTY SAND WITH GRAVEL; (cont.) interbedded with medium plasticity silt and clay		GROUT	DRY					
215									
220									
225									▽ STATIC WATER AFTER DRILLING 8/31/89
230									
235									
240	- slightly moist			SL MOIST					
245									
250									
255	- dry			DRY					
260	less silt, sl. moist			SL MOIST					
265	increasing silt								
270									
275	SANDY CLAY; brown, medium plasticity, few fine gravel, dry (CL)			DRY					
280	(continued)								

FIELD LOG OF BORING NO. M-3 (cont) SHEET 4 of 7

FIG A-38

LOG 32611

WELSH ENGINEERING, INC.

PROJECT NAME BATTLE MOUNTAIN GOLD LEACH PAD NO. 11302

BORING LOCATION		ELEVATION AND DATUM	
DRILLING AGENCY	DRILLER	DATE STARTED / DATE FINISHED	
DRILLING EQUIPMENT		COMPLETION DEPTH	SAMPLER
DRILLING METHOD	DRILL BIT	NO. OF SAMPLES / DIST.	UNDIST.
SIZE AND TYPE OF CASING		WATER ELEV. / FIRST	COMPL. / 24 HRS
TYPE OF PERFORATION	FROM TO FT.	LOGGED BY	CHECKED BY:
SIZE AND TYPE OF PACK	FROM TO FT.		
TYPE OF SEAL	FROM TO FT.		

DEPTH (FEET)	DESCRIPTION	GRAPHIC LOG: Lithology	GRAPHIC LOG: Piezometer Installation	Water Content	Piezometer Data	SAMPLES: Type No.	SAMPLES: Recov. ft.	SAMPLES: Penetra. Resist. (Blows/6 in.)	REMARKS (Drill Rate, Fluid loss, Odor, etc.)
280	SANDY CLAY; (cont), moist			MOIST					
285									
290	increasing fine to coarse gravel								
295									
300	CLAYEY SAND WITH GRAVEL; brown, fine to coarse sand and gravel, medium plasticity, dry (SC)			DRY					
305	- interbedded with silty gravel - increasing silt and clay, sl. moist			SL. MOIST					
310									
315			GROUT						
320	- wet			WET					
325	SANDY SILT / SANDY CLAY WITH GRAVEL; brown, fine to coarse sand and gravel, medium plasticity, moist (ML/CL)			MOIST					
330				SL. MOIST					
335									
340	interbedded with silty sand								
345									
350	(continued)								

FIELD LOG OF BORING NO. M-3 (cont) SHEET 5 of 7

FIG A-39

LOG 32611

WELSH ENGINEERING, INC.

PROJECT NAME BATTLE MOUNTAIN GOLD LEACH PAD NO. 11302

BORING LOCATION		ELEVATION AND DATUM	
DRILLING AGENCY	DRILLER	DATE STARTED / DATE FINISHED	
DRILLING EQUIPMENT		COMPLETION DEPTH	SAMPLER
DRILLING METHOD	DRILL BIT	NO. OF SAMPLES: DIST.	UNDIST.
SIZE AND TYPE OF CASING		WATER ELEV.: FIRST	COMPL. / 24 HRS
TYPE OF PERFORATION	FROM TO FT.	LOGGED BY	CHECKED BY:
SIZE AND TYPE OF PACK	FROM TO FT.		
TYPE OF SEAL	FROM TO FT.		

DEPTH (FEET)	DESCRIPTION	GRAPHIC LOG: Lithology	GRAPHIC LOG: Piezometer Installation	Water Content	Piezometer Data	SAMPLES: Type No.	SAMPLES: Recov. ft.	SAMPLES: Penetra. Resist. (Blows/6 in.)	REMARKS (Drill Rate, Fluid loss, Odor, etc.)
350	SANDY SILT / SANDY CLAY WITH GRAVEL; (cont.)			SL. MOIST					
355									
360	[cuttings from air rotary slurry-like in consistency,]			WET					
365									
370			GROUT						
375									
380	interbedded with silty sand and gravel								BENTONITE PLUG
385									NO. 30 MESH SAND
390									GRAVEL PACK
395	WELL GRADED GRAVEL WITH SAND; brown, trace to few silt, wet (GW)								[Heavy water flows during air rotary drilling below 392]
	SANDY SILT; brown, wet (ML)								
400	WELL GRADED GRAVEL WITH SAND; brown, wet (GW)								
	SANDY CLAY; brown, medium plasticity, wet (CL)								
405	CLAYSTONE/MUDSTONE (BEDROCK); gray, soft								
410	[1 1/4 feet/minute air rotary drilling]								
415									
420	(continued)								

FIELD LOG OF BORING NO. M-3 (cont) SHEET 6 of 7

FIG A-40

LOG 326-11

WELSH ENGINEERING, INC.

PROJECT NAME BATTLE MOUNTAIN GOLD LEACH PAD NO. 11302

BORING LOCATION		ELEVATION AND DATUM	
DRILLING AGENCY	DRILLER	DATE STARTED / DATE FINISHED	
DRILLING EQUIPMENT		COMPLETION DEPTH	SAMPLER
DRILLING METHOD	DRILL BIT	NO. OF SAMPLES / DIST.	UNDIST.
SIZE AND TYPE OF CASING		WATER ELEV. / FIRST	COMPL. / 24 HRS
TYPE OF PERFORATION	FROM TO FT.	LOGGED BY	CHECKED BY:
SIZE AND TYPE OF PACK	FROM TO FT.		
TYPE OF SEAL	FROM TO FT.		

DEPTH (FEET)	DESCRIPTION	GRAPHIC LOG: Lithology	GRAPHIC LOG: Piezometer Installation	Water Content	Piezometer Data	SAMPLES: Type No.	SAMPLES: Recov. ft	SAMPLES: Penetra. Resist. (Blows/6 in.)	REMARKS (Drill Rate, Fluid loss, Odor, etc.)
420	CLAYSTONE/MUDSTONE - (cont) [heavy water flows during air rotary drilling]			WET					
425	- grades to tan and black with iron-staining.								
430	- increasing tan with iron-staining								
435	- grades to gray-green with occ. iron staining								
440	Bottom of Hole - 438 ft. - Air rotary boring backfilled to 50' depth with bentonite hole plug; backfilled to surface with grout. - Mud rotary boring grouted from bentonite plug to surface with 7 cubic yards grout.								

FIELD LOG OF BORING NO. M-3 (cont) SHEET 7 of 7

FIG A-41