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

STATE OF NEVADA
DIVISION OF WATER RESOURCES

WELL DRILLERS REPORT

OFFICE USE ONLY
Log No. 32048
Permit No.
Basin 6-87

1/4

PRINT OR TYPE ONLY

Please complete this form in its entirety

NOTICE OF INTENT NO.

1. OWNER Client Brown & Caldwell
MAILING ADDRESS 723 S Street
Sacramento, CA 95814-7092

ADDRESS AT WELL LOCATION ARCO STATION 6017
2240 B Street
Sparks, NV 89431

2. LOCATION NE ¼ NE ¼ Sec. 6 T. 19N N/S R. 20 E Washoe County
PERMIT NO. M/P 500 (Issued by Water Resources) | Parcel No. | EL RANCHO & B STREET (Subdivision Name)

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

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

5. TYPE WELL
Cable ☐ Rotary ☐
Other ☐

6. LITHOLOGIC LOG

Material	Water Strata	From	To	Thickness
ATTACHED				
Well # MW-2				

Date started 5/1/, 1989
Date completed 5/2/, 1989

7. WELL TEST DATA

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

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 hole ..... inches Total depth ..... feet
Casing record .....
Weight per foot ..... Thickness .....

Diameter	From	To
..... inches	..... feet	..... feet
..... inches	..... feet	..... feet
..... inches	..... feet	..... feet
..... inches	..... feet	..... feet
..... inches	..... feet	..... feet
..... inches	..... feet	..... feet

Surface seal: Yes ☐ No ☐ Type .....
Depth of seal ..... feet
Gravel packed: Yes ☐ No ☐
Gravel packed from ..... feet to ..... feet

Perforations:
Type perforation .....
Size perforation .....
From ..... feet to ..... feet
From ..... feet to ..... feet
From ..... feet to ..... feet
From ..... feet to ..... feet
From ..... feet to ..... feet

9. WATER LEVEL
Static water level 33.0 feet below land surface
Flow ..... G.P.M. ..... P.S.I.
Water temperature ..... ° F. Quality .....

10. DRILLERS CERTIFICATION
This well was drilled under my supervision and the report is true to the best of my knowledge.

Name ..... (Contractor)
Address ..... (Contractor)
Nevada contractor's license number .....
Nevada contractor's drillers number .....
Nevada driller's license number ..... (Actual Driller)
Signed ..... (Contractor)
Date .....

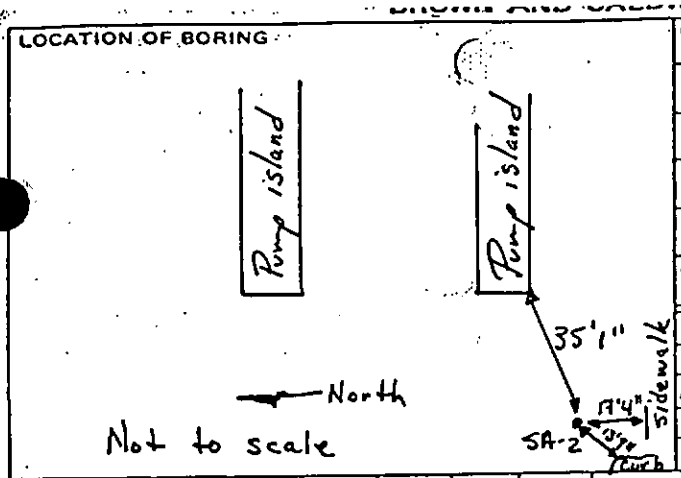
(Rev. 6-81)

USE ADDITIONAL SHEETS IF NECESSARY

O-627 CR434

BROWN AND CALDWELL — BORE HOLE LOG

LOCATION OF BORING



CLIENT ARCO PRODUCTS COMPANY				BORING NO. SA-2
LOCATION 2240 B ST, SPARKS, NV.		JOB NO. 4165		SHEET 1 OF 3
WATER LEVEL	33.0'	32.29		DRILLING START TIME 1140 DATE 5/1/89
TIME	0900	11:54		FINISH TIME 1200 DATE 5/2/89
DATE	5/2/89	5/11/89		
CASING DEPTH				

DRILLING CONTRACTOR WAYNE DRILLING
DRILLING METHOD ODEX – Air Rotary
ODEX-190 system with 8 5/8" L.H. drive casing
SAMPLING METHOD 5 3/8" Tubing (T)

N/S | E/W | TOC ELEV. = 4,500.00'

SURFACE CONDITIONS Asphalt

WELL CONST. CASING	WELL CONST. ANNULUS	SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	SAMPLE NO. / SAMPLE DEPTH	BLOWS/6" SAMPLER	DEPTH IN FEET	SOIL CALLOUT	MATERIALS ENCOUNTERED AND DRILLING CONDITIONS ①
	CNI Concrete					0	Asphalt	0 – 0.25 ft; Asphalt.
	Seal					1–5	SM	0.25 – 4.5 ft; Silty gravelly sand; 60% fine to medium coarse sand, rounded to subangular, well graded; 20% fine to medium graded well rounded, consisting of mafic fine grained volcanics & some plutonics; 20% non-plastic fines; some fragments of bricks wood glass found; moist; firm to loose; Grayish brown (5YR 3/2) to Moderate brown (5YR 3/4). No HC odors identified or observed
Casing	Grout	Rotary				5–9	GC	4.5 – 9.5 ft; sandy gravels; 70% medium gravels, rounded, well graded, 15% v.fine to medium sand, rounded, moderately graded, contains quartz; 15% plastic fines; cuttings contains an occasional cobble; moist, loose to slightly firm; Moderate brown (5Y 3/4). No HC odors noted in drill cuttings.
Blank	Cement	Air				0–3	GP	9.5 – 13.0 ft; gravelly cobbles; 60% cobbles, rounded, consists of volcanics mafic fine grained; 20% medium gravel, consisting of granitics & volcanics and some quartz; 10% medium plastic fines; 10% v.fine to fine sand. Pull Aricone to sample from 13.0 - 15.0 feet; soil v.moist, slightly firm to loose, Dark moderate brn (5YR 3/4). No HC odors observed in soil. Sampler refused at 13.0'
PVC	Neat					3–6	SW	13.0 - 21.0 ft.; gravelly sand; 60% v.fine to medium coarse sand, subrounded to rounded; well graded, contains quartz; 20% medium gravel, rounded, consists of volcanics & some pumice tuff; 20% boulders 1.0' in diameter, rounded, consist of largely volcanics that are fine grained & mafic; hard drilling, pull Air Rotary & change to ODEX due to heaving boulders at 15.0'; moist; Boulders gravels & cobbles black →
Sch 40						6–9		
4" ID	Bentonite	ODEX				6–9		
Sched	#3 Monterey Sand	Tubing				0		

DRILLER Christensen & Nelson Drilling RIG 780-Schramm BY Jim Hazel DATE 5/1/89 CHK'D BY

① Estimated percentages from cyclone discharge during drilling.

BROWN AND CALDWELL — BOREHOLE LOG

3/4

Log # 32048

LOCATION OF BORING

See pg. #1

CLIENT	ARCO PRODUCTS COMPANY			
LOCATION	2240 B ST, SPARKS, NV.	JOB NO.	4165	
WATER LEVEL	33.0'	32.29		
TIME	9:00 A	11:54		
DATE	5/2/89	5/1/89		
CASING DEPTH				

BORING NO. SA-2

SHEET 2 OF 3

DRILLING

START	FINISH
TIME 1140	TIME 1200
DATE 5/1/89	DATE 5/2/89

DRILLING CONTRACTOR WAYNE DRILLING

DRILLING METHOD ODEX

SAMPLING METHOD 5 3/8" Tubing (T)

N/S | E/W | TOC ELEV. = 4,500.00

SURFACE CONDITIONS Asphalt

WELL CONST. CASING	WELL CONST. ANNULUS	SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	SAMPLE NO. / SAMPLE DEPTH	BLOWS/6" SAMPLER	DEPTH IN FEET	SOIL CALLOUT
4" ID PVC sch 40 .020 slotted casing	Sand	ODEX				20	SW
						21	
						22	GP
						23	
						24	Not retained
						25	
						26	GM
						27	
						28	
						29	
						30	
	Monterey #3					31	GP
						32	
						33	
						34	
						35	
		ODEX				36	GC
						37	
						38	
						39	
						40	

MATERIALS ENCOUNTERED AND DRILLING CONDITIONS ①

13-21.0 ft. (N1) Sand & minor amts of clay. Moderate brown (5YR 3/4) to (5YR 4/4). No HC odors observed from borehole cuttings. Sampled at 16.0 ft & 18.0' bg. (SA-2-2) and (SA-2-3). No TLV reading.

21.0-24.0 ft; Bouldery gravel; 60% gravel medium ~~[illegible]~~; rounded, ~~[illegible]~~ consiting of volcanics; 30% boulders 1.0-2.0 in diameter, rounded, consisting of mafic fine textured volcanics; 10% non plastic fines; v. hard drilling; Cobbles & gravels black (N1) to Dark gray (N3). Sand & non plastics. Dark yellow brown (10YR 4/2). HC odors are slight at 24.0'.

24.0-30.0 ft; ~~[illegible]~~ gravelly Cobbles; 70% cobbles rounded, consisting of volcanics & granitics; 15% gravel medium ~~[illegible]~~, rounded, ~~[illegible]~~ consisting of volcanics/mafic basalts, & pumice; 15% low plastic fines; Cobbles & gravels black to white (N1) to (N9) plastics. Grayish olive green (5GY 3/2). loose to firm; samples collected at 27.5 and 28.0 ft (SA-2-4) and (SA-2-4A) respectively, and at 29.0 (SA-2-4B) and 30' (SA-2-5). Slight HC odor (TLV meas. 100 ppm TPH on all soil samples).

Shut rig down and leave ODEX in hole to be continued tomorrow. 5/2/89. at (0915)

30-35 ft; Bouldery gravel. 70% medium ~~[illegible]~~ gravel, rounded, ~~[illegible]~~, consisting of mafic volcanics & granitics 20% Boulders; ~~[illegible]~~ rounded, consisting of volcanics, 1.0 in diameter; 10% low plastics, v. hard drilling, slight HC odor noted from cuttings. Black (N1) to lt gray (N8) in cobbles/gravels and boulders - lt brown in plastics (5YR 6/4).

35-40 ft; Clayey gravel; 70-80% medium ~~[illegible]~~ gravel; rounded, ~~[illegible]~~, consisting of granitics & some →

① Estimated percentages from cyclone discharge during drilling.

BY [illegible] DATE 5/1/89 CHK'D BY ____ RIG 7660-Schramm

BROWN AND CALDWELL – BOREHOLE LOG

LOCATION OF BORING

See pg. #1

CLIENT	ARCO PRODUCTS COMPANY
LOCATION	2240 B ST, SPARKS, NV.
JOB NO.	4165
BORING NO.	SA-2
SHEET	3 OF 3
WATER LEVEL	
TIME	
DATE	
CASING DEPTH	
DRILLING START TIME	1140
DRILLING FINISH TIME	1200
DRILLING START DATE	5/1/89
DRILLING FINISH DATE	5/2/89
DRILLING CONTRACTOR	WAYNE DRILLING
DRILLING METHOD	ODEX
SAMPLING METHOD	5 3/8" Tubing (T)
N/S	
E/W	
ELEV.	4,500.00'
SURFACE CONDITIONS	Asphalt

WELL CONST. CASING	WELL CONST. ANNULUS	SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	SAMPLE NO. / SAMPLE DEPTH	BLOWS/6" SAMPLER	DEPTH IN FEET	SOIL CALLOUT	MATERIALS ENCOUNTERED AND DRILLING CONDITIONS (*)
4" ID Sch 40 PVC .020 Slotted casing	#3 Monterey Sand	ODEX				40	GP	35-40 ft: minor volcanics, 20-30% medium plastic fines; firm to slightly loose; no HC odors apparent from cuttings, Moderate brown (5YR 4/4). No samples saturated.
						41		
						42		40.0-45.0 ft; Sandy gravel; 80% medium gravel; rounded, consisting of volcanics and granitics with occasional pumice fragment; 20% v. fine to medium sand, rounded, moderately graded containing quartz & dark minerals, firm to loose, saturated, gravels black to lt. gray (N1) to (N7). Sand lt. brn (5YR 6/4). No HC odor observed from borehole cuttings.
						43		
						44		
						45		
						46		
						47		45.0-50.0 ft.; Clayey cobbly gravel; 70% medium gravel, rounded, consists of dark mafic volcanics, & pumice, some granitics; 20% cobbles, rounded, consisting of mafic fine grained volcanics; 5% non plastic fines; 5% fine sand; saturated, firm to slightly hard, Moderate brown (5YR 4/4). No HC odors detected in samples from cuttings.
						48		
						49		
						50		
						51		Total depth of bore hole 50.0'
						52		
						53		Borehole completed with 30' of 4" ID Sch 40 PVC .020 slotted casing from 49' to 19' below grade; 20' of 4" ID Sch 40 PVC blank casing from 19' to 1.5 ft below grade; Annulus of well backfilled with #3 Sandtorey Sand from 50' to 17' below grade; bentonite from 17' to 14' below grade, neat cement grout seal from 14' to 0.5 ft below grade, finished at grade with a 9" ID CMI vault set in concrete. 5/2/89.
						54		
						55		
						56		
						57		
						58		
						59		
						60		

(*) Estimated percentages are from cyclone discharges during drilling

DRILLER Cal Northern & Rich Northern RIG: 7760-Schramm

BY Tim Havel DATE 5/1/89 CHK'D BY

1 of 1 32048 4/4