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. 19 N N/S R. 20 E WASHOE County
PERMIT NO. M/a 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 # 6M-7				

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.

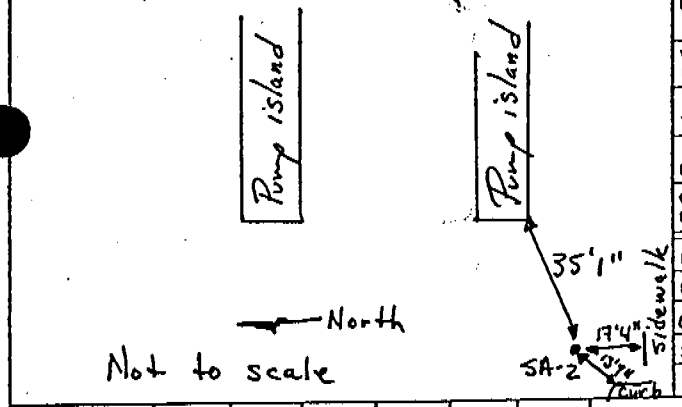
Name ..... (Contractor)
Address ..... (Contractor)
Nevada contractor's license number .....
Nevada contractor's drillers number .....
Nevada driller's license number ..... (Actual Driller)
Signed ..... (Contractor)
Date .....

USE ADDITIONAL SHEETS IF NECESSARY

(Rev. 6-81) O-627 CR434

2/4 Log # 3248

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 / FINISH TIME 1200
TIME	0900	11:54		
DATE	5/2/89	5/11/89		DATE 5/1/89 / DATE 5/2/89
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					0	Asphalt	0 – 0.25 ft; Asphalt.
	Concrete					1		0.25 – 4.5 ft; Silty gravelly sand; 60% v. fine to medium coarse sand, rounded to subangular, poorly ~~sorted~~ well graded; 20% fine to medium graded well rounded ~~unsorted~~, ~~[illegible]~~, consisting of mafic fine grained volcanics & some plutonics; 20% ~~[illegible]~~ 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
	Seal					2		
						3	SM	
	Grout					4		
Casing	Cement	Mortar				5		
						6		4.5 – 9.5 ft; ~~[illegible]~~ sandy gravels; 70% medium ~~[illegible]~~ gravels, rounded, well graded, ~~poorly sorted~~, 15% v. fine to medium sand, rounded, moderately graded, contains quartz; 15% plastic fines; cuttings contains ~~[illegible]~~ an occasional cobble; moist, loose to slightly firm; Moderate brown (5Y 3/4). No HC odors noted in drill cuttings.
						7		
						8	GC	
Blank	Neat					9		
						0		
PVC						1		9.5 – 13.0 ft; ~~[illegible]~~ gravelly cobbles; 60% cobbles, rounded, consists of volcanics & mafic fine grained; 20% medium gravel, ~~poorly graded~~ ~~[illegible]~~, consisting of granitics & volcanics and some quartz. 10% medium plastic fines; 10% v. fine to fine sand. Pull tricone 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'
						2		
Sch 40						3	GP	
4" ID		ODEX				4		
	Bentonite					5		
						6	SW	13.0 – 21.0 ft.; ~~[illegible]~~ gravelly sand; 60% v. fine to medium coarse sand, subrounded to rounded; well graded, ~~poorly sorted~~, contains quartz; 20% medium gravel, rounded, ~~poorly graded~~, ~~[illegible]~~; consists of volcanics & some pumice frags; 20% ~~[illegible]~~ boulders 1.0' in diameter, rounded, const. 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 & cobbels black →
						7		
						8		
Slotted	#3 Monterey Sand	Tubing				9		
		ODEX				0		

① Estimated percentages from cyclone discharge during drilling.

DRILLER Chris Reuman & Nick Wortman RIG 7660 - Schramm
BY Tim Havel DATE 5/1/89 CHK'D BY

3/4 Log # 32048

BROWN AND CALDWELL — BOREHOLE LOG

LOCATION OF BORING: See pg. #1

CLIENT	ARCO PRODUCTS COMPANY			BORING NO. SA-2
LOCATION	2240 B ST, SPARKS, NV.	JOB NO. 4165		SHEET 2 OF 3
WATER LEVEL	33.0'	32.29		DRILLING START TIME 1140 / FINISH TIME 1200
TIME	9:00 A	11:54		
DATE	5/2/89	5/4/89		DATE 5/1/89 / DATE 5/2/89
CASING DEPTH				

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	MATERIALS ENCOUNTERED AND DRILLING CONDITIONS ⊛
4" ID PVC sch 40 casing	Sand / Sloted .020 Monterey / #3	ODEX				20–21	SW	13-21.0 ft. (NI) 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.
						21–23	GP	21.0-24.0 ft; Bouldery gravel: 60% gravel medium, rounded, consisting of volcanics; 30% boulders 1.0-2.0 in diameter, rounded, consisting of mafic fine textured volcanics; 10% non plastic fines: v. hard drilling & Boulders & gravels black (N1) to Dark gray (N3). Sand & non plastics Dark yellow brown (10YR 4/2). HC odors are slight at 24.0'.
						24	Rock retained	
						25–29	GM	24.0-30.0 ft; gravelly Cobbles; 70% cobbles rounded, consisting of volcanics & granitics; 15% gravel medium, rounded, consisting of volcanics/mafic basalts, & pumice. 15% non 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-2-4B) 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).
						30–33	GP	Shut rig down and leave ODEX in hole to be continued tomorrow. 5/2/89. at (09:5)
						33–40	GC	30-35 ft; Bouldery gravel: 70% medium gravel, rounded, consisting of mafic Volcanics & granitics 20% Boulders; 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).
						40		35-40 ft. Clayey gravel; 70-80% medium gravel, rounded, consisting of granitics & some →

⊛ Estimated percentages from cyclone discharge during drilling.

BY ____ DATE 5/1/89 CHK'D BY ____ RIG 7660-Schramm DRILLER ____

BROWN AND CALDWELL — BOREHOLE LOG

Log # 32048 4/4

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 DATE	5/1/89
DRILLING 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
4" ID Sch 40 PVC .020 Slotted casing	#3 Monterey Sand	ODEX				40	GP
						41	
						42	
						43	
						44	
						45	
						46	
						47	
						48	
						49	
						50	
						51	
						52	
						53	
						54	
						55	
						56	
						57	
						58	
						59	
						60	

MATERIALS ENCOUNTERED AND DRILLING CONDITIONS (*)

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.

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, contains 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.

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.

Total depth of bore hole 50.0'

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 blnk csing from 19' to 185' ft below grade; Annulus of well backfilled with #3 Monterey 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 CNI vault set in concrete. 5/2/89.

(*) Estimated percentages are from cyclone discharges during drilling

DRILLER Chris Heaman & Rick Morrison

RIG 7660-Schramm

BY Jim Havel

DATE 5/1/89

CHK'D BY