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

STATE OF NEVADA
DIVISION OF WATER RESOURCES

WELL DRILLERS REPORT

PRINT OR TYPE ONLY

Please complete this form in its entirety

OFFICE USE ONLY
Log No. 32047
Permit No.
Basin 6-87

1/4

NOTICE OF INTENT NO.

1. OWNER Client Brown & Caldwell
MAILING ADDRESS 723 5 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/O 500 (Issued by Water Resources) | Parcel No. | EL RANCHO & B Streets (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
ATTACHED				
Well SA-1				

Date started 5/3/, 1989
Date completed 5/4/, 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 31.5' 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

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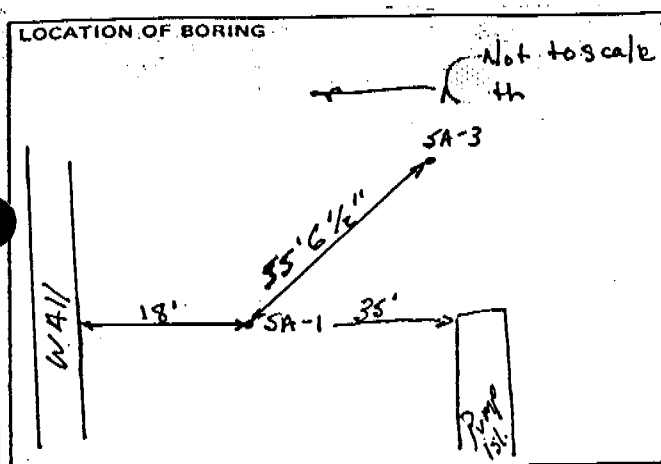
Log # 32047

LOCATION OF BORING



CLIENT	ARCO PRODUCTS COMPANY			
LOCATION	2240 B ST, SPARKS,	JOB NO. 4165		
WATER LEVEL	31.5'	32.77		
TIME	1340	1134		
DATE	5/3/89	5/11/89		
CASING DEPTH				

BORING NO. SA-1

SHEET 1 OF 3

DRILLING

START	FINISH
TIME 0845	TIME 1520
DATE 5/3/89	DATE 5/4/89

DRILLING CONTRACTOR WAYNE DRILLING

DRILLING METHOD ODEX 190 system with 8 5/8" L.H. drive casing

SAMPLING METHOD 5 3/8" Tubing (T)

N/S | E/W | TOC ELEV. = 4,500.62'

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
	CNI					0	Asphalt
	Concrete						
		H/A				1	backfill
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	
						0	
						1	
						2	
						3	
						4	GP
						5	
						6	GM
						7	
						8	
						9	
						0	

MATERIALS ENCOUNTERED AND DRILLING CONDITIONS (*)

0 - .75 ft; Asphalt

0.75 - 13.5 ft.; Gravel; 90% medium gravel subangular; ~~[illegible]~~ mainly imported backfill where former VST's were located; 10% ~~[illegible]~~ boulders, rounded, 0.5 - 1.0 ft in diameter, light gray (N7). No HC odors noted in drill cuttings.

13.5 - 16.0 ft; ~~[illegible]~~ gravelly cobbels; 60% ~~[illegible]~~ cobbles, rounded, ~~[illegible]~~, consists of mafic fine grained volcanics; 20% fine to med. gravel, ~~[illegible]~~, consisting of fine grained mafic volcanics; 10% v. fine to medium fine sand, well graded, ~~[illegible]~~, contains quartz & RK frags; 10% med - low plastic fines; lt olive gray (5Y 3/2); Easily drilled; HC odors noted in strong concentrations (250 ppm TPH with TLV). No samples could be obtained. Sheen noted in cuttings. Silty

16.0 - 22.0 ft; ~~[illegible]~~ boulders; 50% ~~[illegible]~~ boulders 0.5 - 1.0' in diameter, rounded, consisting of fine grained volcanics that are mafic; 20% medium ~~[illegible]~~ gravel, rounded, ~~[illegible]~~, consists of dark fine grained volcanics; 20% non - ~~[illegible]~~ plastic fines; 10% v. fine to medium sand, well graded, ~~[illegible]~~, rounded; contains quartz; hard drilling, moist; Olive gray (5Y 3/2). Slight HC odors to strong (TLV meas 500 ppm TPH from cutting exhaust port). Sheen on cuttings

22.0 - 24.0 ft Boulders; 70% ~~[illegible]~~ boulders. 0.5' - 1.0' in diameter rounded, consisting of fine grained mafic volcanics; 20% medium gravel, rounded, volcanics, ~~[illegible]~~, ~~[illegible]~~; 10% non - low plastic fines; Olive gray (5Y 3/2) to Grayish Olive (10Y 4/2). Strong HC odors crew is instructed to don respiratores (TLV meas from cyclone exhaust = 1000 ppm TPH). Hard drilling slow penetration

(*) Estimated percentages from cyclone discharge.

DRILLER Gary Hedman & Rick Wortman

RIG 7760 - Schramm

BY Tim Havel

DATE 5/4/89

CHK'D BY

CASING: 4" ID Sch 40 PVC blank casing

ANNULUS: #3 Monterey sand + bentonite grout seal w/ neat cement

SAMPLER TYPE: ODEX

CASING: 4" ID PVC .020 slot casing

Depth in feet: 0 – 0

Soil callout: Asphalt; backfill; GP; GM

BROWN AND CALDWELL — BORING LOG

LOCATION OF BORING: See pg. #1

CLIENT	ARCO PRODUCTS COMPANY
LOCATION	2240 B' ST, SPARKS, NV.
JOB NO.	4165
BORING NO.	SA-1
SHEET	2 OF 3
WATER LEVEL	
TIME	
DATE	
CASING DEPTH	
DRILLING START TIME	0845
DRILLING FINISH TIME	1520
DRILLING START DATE	5/3/89
DRILLING FINISH DATE	5/4/89
DRILLING CONTRACTOR	WAYNE DRILLING
DRILLING METHOD	ODEX
SAMPLING METHOD	5 3/8" Tubing (T)
N/S	
E/W	
TOC ELEV.	= 4,500.62'
SURFACE CONDITIONS	Asphalt

WELL CONST.: CASING — 4" ID Sch 40 PVC; ANNULUS — #3 Monterey Sand

SAMPLER TYPE: ODEX; 5 3/8" Tubing; ODEX

INCHES DRIVEN / INCHES RECOVERED; SAMPLE NO. / SAMPLE DEPTH; BLOWS/6" SAMPLER

DEPTH IN FEET: 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40

SOIL CALLOUT: GM; GP; GM; SM/GM; GM

MATERIALS ENCOUNTERED AND DRILLING CONDITIONS (*)

20.0 - 26.0 ft; ~~Clayey~~ gravelly cobbles; 50% ~~silt~~ cobbles, rounded, ~~poorly graded~~, ~~unconsolidated~~, consists of fine grained mafic basalts; 20% fine to medium gravel, rounded, ~~poorly graded~~, ~~poorly sorted~~ consists of mafic fine grained volcanics; 20% ~~low~~ non plastic fines; moist to saturated; very hard; moderate brn (5YR 4/4) to Olive gray (5Y 5/2). HC odors noted in samples collected at 24.0 ft (SA-1-4) (OVA measurement 1000 ppm TPH).

26.0 - 31.0 ft; ~~Silty~~ silty sand; 50% fine to coarse sand, rounded, well graded, ~~poorly sorted~~ contains quartz; 30% non plastic fines; 20% medium cobbles, rounded, ~~poorly graded~~, ~~not sorted~~ consists of fine grained volcanics; moist - very moist; sample tube driven easily to a depth of 31 ft, sediments are firm to hard; Olive gray (5Y 3/2), Cobbles are black (N1); Samples collected at 26.5 ft (SA-1-5) and 31.0 ft (SA-1-5) TLV measurements for (SA-1-3) = 2000 ppm TPH and (SA-1-5) = 2500 ppm TPH.

31.0 - 36.0 ft; ~~Silty sandy~~ Silty gravels; 40% medium ~~to coarse~~ gravels, rounded, ~~unconsolidated~~ ~~poorly graded~~ consists of volcanics & some granitics; 30% non-~~low~~ plastic fines; 20% medium to coarse sand with rounded grains, well-mod. graded, ~~poorly sorted~~; 10% Cobbles, rounded, granitic & volcanic origins. HC odors noted in drill cuttings collected at 31.0 - 36.0 ft. Color Moderate brown (5YR 3/4) to Med Olive brn.

36.0 - 42.0 ft; Same as above at 24.0 - 26.0 ft below grade. No HC odors are observed, take off respirators. Color Moderate brn. (5YR 4/4). saturated at ≈31.5' below grade.

DRILLER: Tilton - Schramm; RIG: 7660; BY: [illegible]; DATE: 5/3/89; CHK'D BY: [illegible]

Log # 32047

Hom - Marre - Job Sands

(*) Estimated percentages from cyclone discharge during drilling

4/4 Log # 32047

LOCATION OF BORING

See pg. #1

CLIENT	ARCO PRODUCTS COMPANY
LOCATION	2240 B' ST, SPARKS, NV.
JOB NO.	4165
BORING NO.	SA-1
SHEET	3 OF 3
WATER LEVEL	
TIME	
DATE	
CASING DEPTH	
DRILLING START TIME	0845
DRILLING FINISH TIME	1520
DRILLING START DATE	5/3/89
DRILLING FINISH DATE	5/4/89
DRILLING CONTRACTOR	WAYNE DRILLING
DRILLING METHOD	ODEX
SAMPLING METHOD	5 3/8" Tubing (T)
N/S	
E/W	
TOC ELEV.	4,500.62'
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 (*)
						40	GM	42.0-45.0 ft.; Cobbly gravels; 60-70% medium ~~coarse~~ gravels, rounded, ~~moderately graded~~ ~~poorly graded~~, consists of volcanics, quartz, and granitics, 20% cobbles, rounded, volcanic in origin, 10-20% v. fine to medium sand, rounded well graded, ~~poorly graded~~; Saturated; No HC odors noted in cuttings, Cobbles & gravels Black (N1), Sand & silt fraction Moderate brown (5YR 3/4).
						41		
						42	GP	45.0-50.0 ft.; ~~Cobbly~~ sandy ~~cobbly~~ gravel; 40% medium ~~coarse~~ gravel, rounded, ~~well graded~~ ~~poorly graded~~; 30-40% v. fine to medium coarse sand, rounded well graded, ~~poorly graded~~, contains quartz; 20% cobbles, rounded, consists of mafic volcanics with some granitics & quartz, 10% non plastic fines; Moderate brown (5YR 4/4), firm to loose, Saturated, No HC odors noted in drill cuttings.
						43		
						44		
						45		
						46		
						47		
						48		
						49		
						50		Total depth of borehole is 50'
						51		Completed with 30' of 4" ID sch 40 PVC .020 slotted casing from 49'-19 ft below grade; 18 ft of 4" ID sch 40 PVC blnk casing from 19' to 0.5 ft below grade → backfilled with #3 monterey sand from 50' to 17' below grade, 17' to 14' below grade with bentonite and 14' to 10 with neat cement grout; finally set at grade in concrete a 9" ID CNI metal vault box.
						52		
						53		
						54		
						55		
						56		
						57		
						58		
						59		
						60		

Casing: 4" ID sch 40 PVC .020 slotted → Sand: #3 Monterey → Sampler: ODEX

DRILLER Carey Hoover & Alex Moorman RIG 7660-Schramm

BY Jim Havel DATE 5/3/89 CHK'D BY

(*) Estimated Percentages from cuttings discharge during drilling