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

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DO NOT WRITE ON BACK

STATE OF NEVADA
DIVISION OF WATER RESOURCES

WELL DRILLER'S REPORT

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

OFFICE USE ONLY
Log No. 83387
Permit No.
Basin 110

NOTICE OF INTENT NO. 40392

1. OWNER US Army Hawthorne Army Dept
MAILING ADDRESS 1 S. Maine St
Hawthorne NV 89415-9404
ADDRESS AT WELL LOCATION

2. LOCATION SW ¼ NE ¼ Sec. 11 5 T. 8 N/S R. 30 E. Mineral County
PERMIT NO. E½ NW (Issued by Water Resources) | 6-30032 (Parcel No.) | Subdivision Name

3. WORK PERFORMED
☑ New Well ☐ Replace ☐ Recondition
☐ Deepen ☐ Abandon ☒ Other VAPOR

4. PROPOSED USE Vapor extr.
☐ Domestic ☐ Irrigation ☐ Test
☐ Municipal/Industrial ☑ Monitor ☐ Stock

5. WELL TYPE
☐ Cable ☐ Rotary ☐ RVC
☐ Air ☒ Other Auger

6. LITHOLOGIC LOG SB-5

Material	Water Strata	From	To	Thickness
Silt Sand Gravel		0	5	5
Fine Sand		5	10	5
Med. to Coarse Sand		10	15	5
Gravelly Sand		15	20	5
Fine Silty Sand		20	25	5
Fine Silty Sand		25	30	5
Clayey Silt		30	35	5
Silty Clay Fine Sand		35	40	5
Coarse Sand & cobbles		40	45	5
Coarse Sand Clayey Silt		45	50	5
Coarse Sand		50	55	5
Gravelly Sand		55	60	5
Silty Sandy Clay		60	65	5
Shaley Clay		65	70	5
Clayey Fine Sand		70	75	5

Date started 2-7, 2001
Date completed 2-7, 2001

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

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

8. WELL CONSTRUCTION
Depth Drilled 75 Feet Depth Cased 75 Feet

HOLE DIAMETER (BIT SIZE)

	From	To
8 Inches	0 Feet	85 Feet
Inches	Feet	Feet
Inches	Feet	Feet

CASING SCHEDULE

Size O.D. (Inches)	Weight/Ft. (Pounds)	Wall Thickness (Inches)	From (Feet)	To (Feet)
2½		sch 40 PVC	0	34

Perforations:
Type perforation Mill Slot
Size perforation .020
From 34 feet to 74 feet
From feet to feet
From feet to feet
From feet to feet
From ~~Cement~~ 75 feet to ~~85~~ feet

Surface Seal: ☒ Yes ☐ No
Depth of Seal 39'
Placement Method: ☒ Pumped ☐ Poured
Seal Type: ☒ Neat Cement ☐ Cement Grout ☐ Concrete Grout
Bentonite Chips 38 to 33
Gravel Packed: ☒ Yes ☐ No
From 44 feet to 75 feet

9. WATER LEVEL
Static water level NA feet below land surface
Artesian 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 Water Development Corp (Contractor)
Address P.O. Box 141 (Contractor)
Zamora CA 95698
Nevada contractor's license number issued by the State Contractor's Board 0012852
Nevada driller's license number issued by the Division of Water Resources, the on-site driller 2111
Signed James Whitley
By driller performing actual drilling on site or contractor
Date 3-1-01

(Rev. 3-91) USE ADDITIONAL SHEETS IF NECESSARY (O)-627

TETRA TECH, INC.
FIELD LOG OF BORING

Boring #: SB 05
Sheet 1 of 4

Project Name and Location: Bldg 336 Phase 3 G.W. Inv.			TC Number: 11377-0202
Elevation: ~4000 ft.	Date and Time Started: 02/09/01 8:30		Date and Time Completed: 13:10 02/09
Completion Depth: 75' bgs	Samples:	Drive:	1-liter: VOA: Other: 9 1½" sleeves
Boring Diameter & Drilling Method: 8 inch hollowstem auger	Water Level:	First (date/time):	Second (date/time):
Sample Type: cont. core	Hammer Wt.:	Drop:	Boring Location:
Drilling Co: Water Devel. Corp.	Driller: Jimmy		Geologist: R. Marvin

Depth (ft.)	Sample No.	Sample Interval	Recovery	Blow Count	Description	Graphic Symbol	USCS Symbol	Estimated % of Gr	Sa	Si	Cl	P.I.D. Reading	Comments
0	0-5		17"		Mixed road grade, including asphalt first 7 inches then orange to tan poorly sorted silt, sand and gravel			20	50	25	5	2.0	
1													
2													
3	5-10		23"		Orange-tan gravelley fine to med. sand. Very weakly indurated and slightly damp.			30	60	10		Ø	
4													
5													
6	10-15		36"		Finely bedded medium and coarse sand layers with cm scale silty clay interbeds (first 20 inches of interval). Sharp basal contact with underlying gravelly coarse sand.							Ø	
7													
8													
9													
10	15-20		22"		Gravelly poorly sorted sand, dry and loose			40	50	10		Ø	
11													
12	20-25		21"		Fine silty sand - olive and damp, weakly indurated grading down into well sorted fine sand.							5.6	
13													
14	25-30				Fine silty sand, olive-tan damp grading down into well sorted fine sand and then into poorly sort coarse sand with local iron oxide stained							313	Sample SB05-1 @ ~30' bgs 9:50
15													
16													

BORING LOG FORM

Boring #:	SB 05
Sheet 2 of 4	

Project Name and Location:

TC Number:

Depth	Sample No.	Sample Interval	Recovery	Blow Count	Description	Graphic Symbol	USCS Symbol	Estimated % of Gr	Sa	Si	Cl	P.I.D. Reading	Comments
	25-30				Zones. PID reading								
					of 313 in coarse sand								
					@ end of interval								
					Sample SB05-01-S								
	30-35		42"		Damp, olive clayey silt			5	50	25	20	567	
					with cm scale fine sand							211	
					interbeds first 14" of							87	
					interval. Massive brown							1340	Sample SB 05-02
					clay next 6". Last								10:10
					22 inches, Coarsely inter								
					bedded well sorted,								
					loose, dry fine sand								
					and well rounded								
					coarse sand. TPH								
					soaked fine sand @								
					end of interval (no								
					free product but damp								
					with TPH, 1340 PID								
	35-40		34"		Coarsely interbedded				30	40	30	982	
					clayey silt, silty clay							411	
					and fine sand. Cm								
					scale well sorted, coarse							712	
					sand near end of							1120	
					interval. Entire							1640	Sample SB05-03
					interval is damp with							790	~38 bgs
					TPH but no free								@ 10:30
					product seen. Interval							260	
					is yellow-olive color.								
	40-45		14"		Very poorly sorted, loose			30	70			614	
					cobbly coarse sand.							1147	Sample SB05-0
					Cobbles up to 2.5 inchs								10:45
					in diameter. Damp with							750	
					TPH.								
	45-50		30		Coarsely interbedded gravelly,							790	
					clayey silt and coarse sand.							1620	Sample SB05-05
					Olive to blue-green, damp wit TPH							1100	11:10 ~47' bgs

BORING LOG FORM

Boring #: SB05
Sheet 3 of 4

Project Name and Location: Bldg 336 Phase III
TC Number: 11377-0202

Depth	Sample No.	Sample Interval	Recovery	Blow Count	Description	Graphic Symbol	USCS Symbol	Estimated % of Gr	Sa	Si	Cl	P.I.D. Reading	Comments
	45-50 (cont)				Interval is weakly to well indurated.								See prev. page
	50-55		25"		Coarsely interbedded poorly sorted coarse sand and well sorted fine, clayey sand. Interval is weakly to moderately indurated. Light tan to olive-blue-green. Interval is TPH soaked. Free product on inside of core barrel (minor) >2500 ppm PID			5	70	10	15	>2500 1200 1414 >2500 790	Sample SB05-06 11:20
	55-60		28"		Loose gravelly sand first 8 inches of interval. Sharp basal contact into well indurated, clayey-silty poorly sorted sand. Silty clay, massive, @ last 6 inches of interval.			10	50	20	20	>2500 690 920	Sample SB05-07 @ 56 bgs 11:35
	60-65		32"		Massive tan-brown clay first 8 inches of interval then silty-sandy clay for 12 inches. Massive brown clay for remainder of interval. Interval is damp.							>2500 407 625 930	Sample SB05-08 12:05 ~ 61' bgs
	65-70		31"		Shaley, densely indurated clay (tan-brown) grading down into sandy clay and then back to shaley clay. Bright white 8 cm thick silty layer @ 8 inches into interval. Sharp basal contact to red to								Sample SB05-0 69' bgs 12:15

BORING LOG FORM

Boring #: SB 05
Sheet 4 of 4

Project Name and Location: Bldg 336 Phase 3 G.W. Invest.
TC Number: TC#11377-02-02

Depth	Sample No.	Sample Interval	Recovery	Blow Count	Description	Graphic Symbol	USCS Symbol	Estimated % of Gr	Sa	Si	Cl	P.I.D. Reading	Comments
	65-70 (cont)				light tan, calcareous sand, locally completely indurated								
	70-75		50"		Clayey fine sand, mod. indurated, yellow-green color, damp to 18 inches into interval. Sharp basal contact with a massive tan-orange clay to 36 inches into interval. Sharp basal contact with underlying fine sand and clayey fine sand - very damp. (EOH)				30	30	40	2100 500 610 80 90 20 10	13:05

END OF BORING

Robert D. M
13:10
02/09/01

Monitoring Well Construction Data
Hawthorne Army Depot, Hawthorne, Nevada

Vapor
~~Monitoring~~ Well: SB 05 Date: 02/09/01

Date of well construction: 02/09/01 Time of well construction: 14:30
Reference elevation during construction: ~ 4000 feet
Depth ground water first encountered: Not encountered.
Depth of static ground water before construction:
Depth of static ground water after construction:
Boring depth: 75 feet bgs Casing length: 74 feet
Borehole diameter: 8 inch Well casing diameter: 2 inch

Blank Casing:
Type ~~Sch~~ Schedule 40 Interval 34 feet bgs to surface
Material PVC Joint type flush thread

Screen Casing:
Type Schedule 40 Interval 74 feet bgs to 34 feet bgs
Material PVC Slot size/design 0.02

Centralizer Depths: none

Filter Pack:
Material High Quality Silica Sand Interval 74 feet bgs to 33 feet bgs
Gradation Uniformity coefficient
Size #3 Volume calculated ~~14.08 ft³~~ 13.12 ft³
Volume actual Placement method poured through auger

Transition Sand:
Material Interval
Gradation Uniformity coefficient
Size Volume calculated
Volume actual Placement method

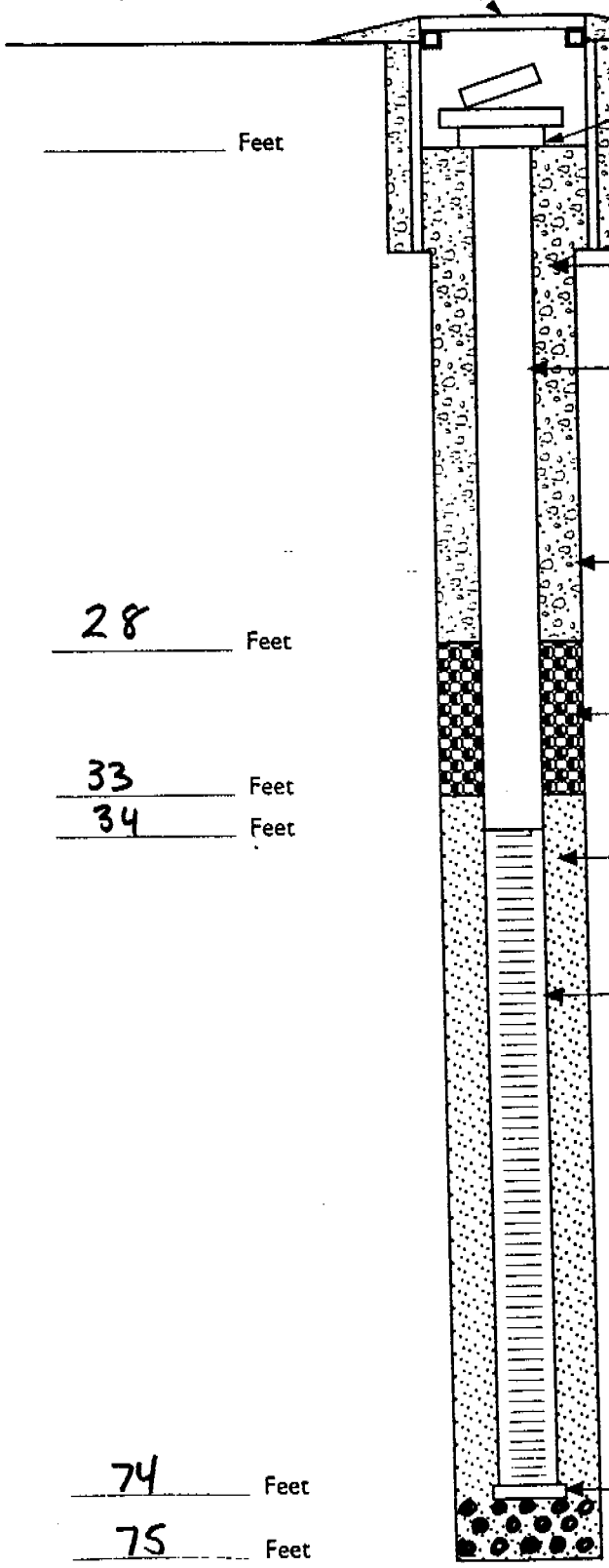
Annular Sealant:
Material bentonite chips Interval 33 feet bgs to 28 feet bgs
Volume calculated Volume actual 2 1/2
Placement method poured through auger

Grout:
Material Cement with ~1% bentonite Interval 28 feet bgs to surface
Volume calculated Volume actual
Placement method tremie pipe

Comments: Bottom 12 inches of 75 foot hole was sealed with bentonite (chip - hydrated) to isolate the damp sand unit intercepted from ~ 74' bgs to 75' bgs. Well was constructed on top of the bentonite.

Monitoring Well Construction Sheet

Project: Bldg. 336 Phase 3 Ground Water Invest.
Date: 02/09/01
Project No.: 11377-02-02
Driller: W.D.C. - Jimmy F.
Well Number: SB 05
Drilling Method: Hollow Stem Auger
Field Geologist: R. Marvin
Registered Geologist: _____



Waterproof Well Cover

Concrete Base

Ground Surface

WATERPROOF LOCKING WELL CAP

_____ Feet

SANITARY SEAL
Type: cement grout

WELL CASING (BLANK)
Diameter 2 inch
Schedule 40
Type: PVC Flush Thread

BORING DIAMETER
- [x] 8 inches
- [ ] 10 inches
- [ ] other ___

28 Feet

SEAL
Type: bentonite chips

33 Feet

34 Feet

SAND FILTER PACK
Size: #3

WELL SCREEN
Slot size: 0.02
Diameter 2 inch
Schedule: 40
Type: PVC Flush Thread

74 Feet

BOTTOM CAP

75 Feet

Lower Grout Seal