

Environmental  
Resources  
Management

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Sacramento, CA 95833  
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(916) 920-9378 (fax)

24 February 2009

Mr. Michael Kubatz  
Air National Guard  
Conaway Hall  
3500 Fetchet Avenue  
Andrews AFB, MD 20762-5157



Subject: Final Project Closeout Report for Former ERP Site 4  
Contract DAHA92-01-D-005, Delivery Order 0099  
Nevada Air National Guard Base  
Reno, Nevada

Dear Mr. Kubatz:

ERM-West, Inc. (ERM) has prepared this *Final Project Closeout Report* (Report) to describe the completed abandonment (decommissioning) of four groundwater monitoring wells at former Environmental Restoration Program (ERP) Site 4 at the 152<sup>nd</sup> Airlift Wing, Nevada Air National Guard Base (ANGB) in Reno, Nevada (the "site," [Figure 1](#)).

Three groundwater monitoring wells (MW-03, MW-04, and MW-05) were installed in 1994 during a Preliminary Assessment/Site Inspection completed by Oak Ridge National Laboratory/Environmental Technology Section. Two additional wells (MW-28 and MW-29) were installed in 1996 as part of the remedial investigation. Although well MW-03 is part of the former ERP Site 4 monitoring well network, it will be abandoned as part of a subsequent contract. Consequently, well MW-03 was not included in the abandonment activities. Groundwater monitoring well locations at former ERP Site 4 are shown in [Figure 2](#).

Groundwater monitoring was conducted at former ERP Site 4 between 1992 and 2004. Based on review of the results of the site and remedial investigations and the long-term groundwater monitoring program (all summarized in the *Final No Further Response Action Planned Decision Document for Environmental Restoration Program (ERP) Site 4* [ERM, 2007]), it was determined that conditions at this site do not pose a threat to human health or the environment. On 26 January 2007, a No Further Action-required status was granted for six ERP sites at the ANGB site, including ERP Site 4, by the Nevada Division of Environmental Protection. Therefore, final project closeout of ERP Site 4 was contingent



upon the abandonment of the five groundwater monitoring wells at the site.

### ***MONITORING WELL ABANDONMENT***

This section outlines the permits, methods, and documentation that were completed as part of former ERP Site 4 monitoring well abandonment activities. A summary of the construction of the abandoned wells is included as [Table 1](#).

As a result of site construction activities, including re-alignment of the main entrance road to the site, and the installation of a monument with a mounted aircraft in the area of former ERP Site 4, monitoring wells MW-04 and MW-05 were either lost or destroyed. ERM made efforts to locate these wells via surveying and magnetic detection, but neither of the wells was successfully located. Due to the lack of accessibility and the unknown condition of the wells, ERM requested a permanent waiver from the Nevada Department of Conservation and Natural Resources, Division of Water Resources (Nevada DWR) for the requirement to abandon wells MW-04 and MW-05. This waiver was approved by the Nevada DWR on 23 December 2008. A copy of this approval letter is included in [Appendix A](#).

Monitoring wells MW-28 and MW-29 were physically abandoned in accordance with Nevada Administrative Codes 534.420, 534.4353, and 534.4365 by Bruce MacKay Pump and Well Service, Inc., of Reno, Nevada; a Nevada state-licensed well driller. A notarized Affidavit of Intent to Abandon Wells was filed by the site Environmental Manager, Lt. Colonel John Peck, and a notification was also filed by the well abandonment contractor, Bruce MacKay Pump and Well Service, Inc.

Abandonment activities were completed on 30 December 2008 by filling each well with bentonite-cement grout under pressure using a tremie pipe from the bottom up. Well Driller's Plugging Reports completed by Bruce MacKay Pump and Well Service, Inc., to document the well abandonment, are included in [Appendix B](#). An ERM field technician was present to document the well abandonment activities.

As part of the site construction activities previously mentioned, the main access road at the site was realigned, moving the entrance to the base such that well MW-28 and MW-29, which were originally located in a

parking lot, are now located in the center of a primary intersection near the entrance to the site. In addition, the surrounding ground surface grade had been raised several inches and the road had been paved with high-strength paving to withstand traffic by heavy fuel trucks and military equipment. The original well monuments were found to be set into concrete within raised, heavy-duty, traffic-rated, utility-type monuments that were set in an unknown amount of concrete. Because of these complications, it was determined that the well monuments could not be removed without significant damage to the surrounding pavement and disruption of the intersection.

All inert solid waste materials were transported by the abandonment contractor and placed in domestic waste debris containers at the site. No displaced water or soils were generated as part of the well abandonment.

Thank you for the opportunity to support the Air National Guard. Please call either Brian Magee or Mark Bradford at (916) 924-9378 if you have questions or comments.

Sincerely,



Mark L. Bradford  
*Partner-in-Charge*

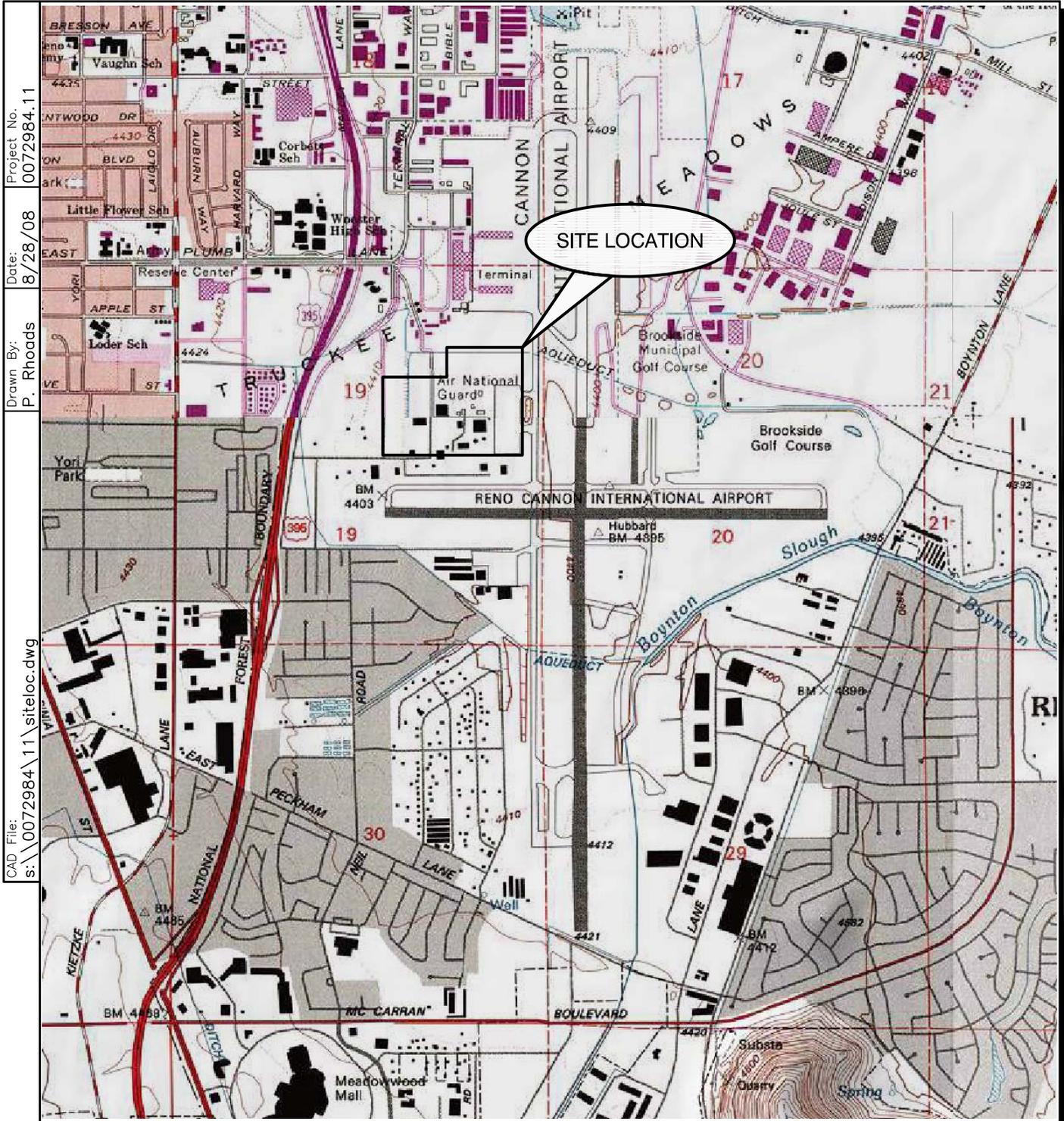


Brian D. Magee, P.G.  
*Project Manager*

MLB/BDM/dao/0072984.31  
enclosures

cc: Lt. Col. Peck, Nevada ANGB (1-Hard Copy, 1-CD)  
Mr. Ramon Naranjo, NDEP (1-Hard Copy, 1-CD)  
Mr. Aaron Etnyre, BB&E (1-Hard Copy)

## *Figures*



Project No. 0072984.11  
 Date: 8/28/08  
 Drawn By: P. Rhoads  
 CAD File: s:\0072984\11\siteloc.dwg

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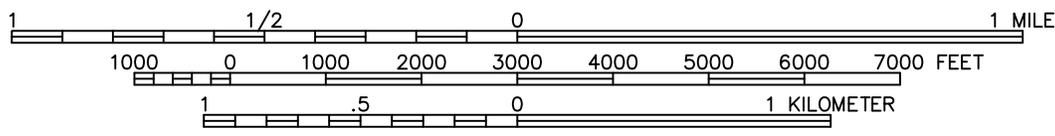
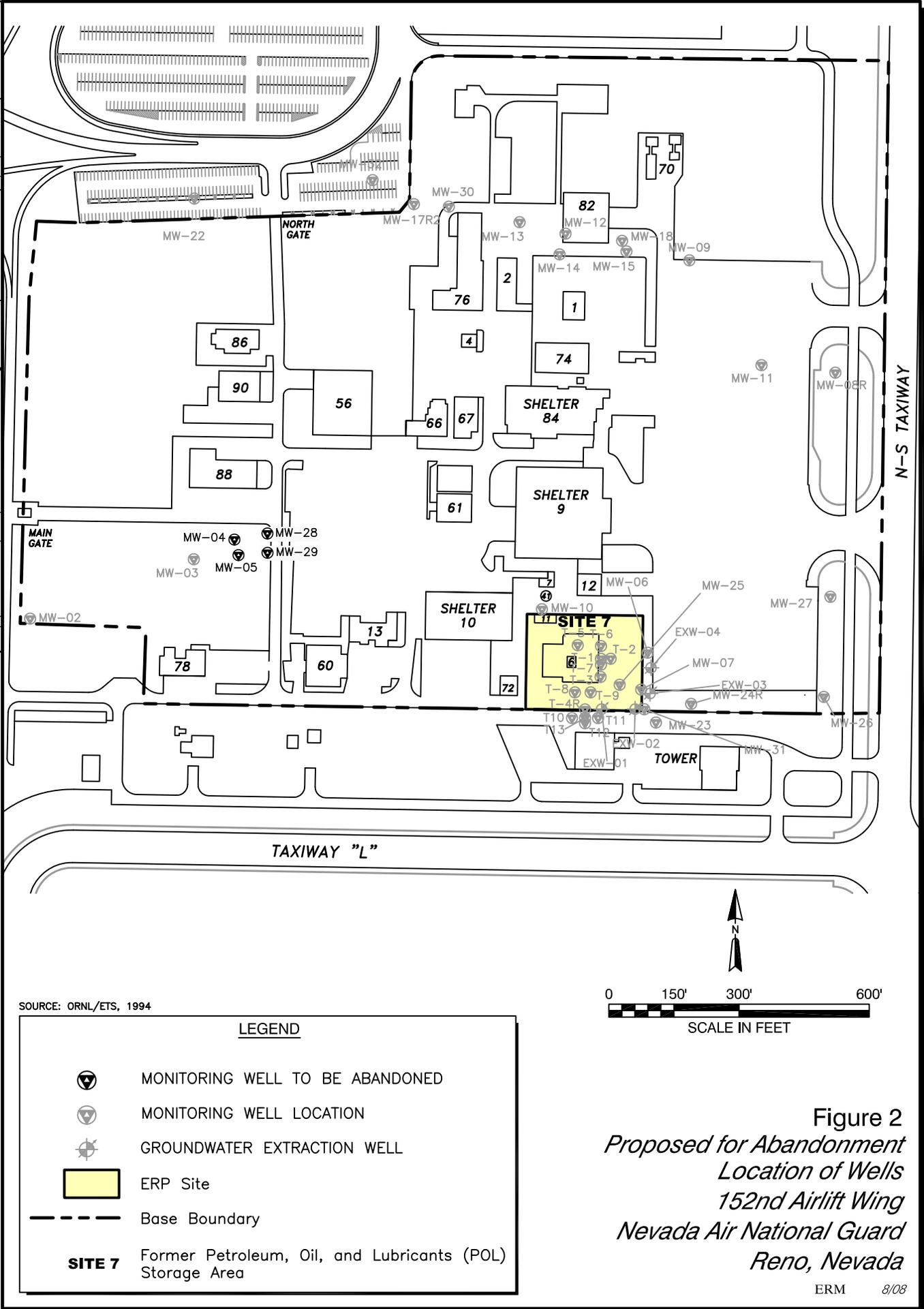


Figure 1  
 Reno ANG Location Map  
 152nd Airlift Wing  
 Nevada Air National Guard  
 Reno, Nevada

References:  
 TOPO!® Software  
 U.S.G.S. 7.5 Minute Series (Topographic) Quadrangle,  
 Reno, Nevada  
 Version: 1978; Current: 1982

CAD File: s:\0072984\11\007298411-01.dwg  
 Drawn By: P. Rhoads  
 Date: 9/9/08  
 Project No. 0072984.11



**Figure 2**  
*Proposed for Abandonment*  
*Location of Wells*  
*152nd Airlift Wing*  
*Nevada Air National Guard*  
*Reno, Nevada*

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*Table*

**Table 1**  
**Well Construction Data**  
**Former ERP Site 4**  
**152nd Airlift Wing, Nevada Air National Guard**  
**Reno/Tahoe International Airport**  
**Reno, Nevada**

Well Identifier	ERP Site Number	Date Completed	Date Abandoned	Measuring Point Elevation (ft-amsl)	Total Depth of Borehole (ft-bgs)	Screened Interval (ft-bgs)	Top of Filter Pack (ft-bgs)
MW-04	4	11/13/1992	Lost or Destroyed <sup>a</sup>	4403.69	18.0	6 to 16	4.5
MW-05	4	11/13/1992	Lost or Destroyed <sup>a</sup>	4403.61	13.0	6 to 11	4.5
MW-28	4	5/18/1995	12/30/2008	4404.03	18.5	8 to 18	5.0
MW-29	4	5/18/1995	12/30/2008	4404.05	18.5	8 to 18	5.0

**Key:**

ERP = Environmental Restoration Program

ft-amsl = Feet above mean sea level

ft-bgs = Feet below ground surface

a = Well was either lost or destroyed as a result of site construction activities. Requirement to abandon well has been waived by Nevada DWR.

*Appendix A*  
*Approval Letter for Waiver of*  
*Requirement to Abandon*  
*Wells MW-04 and MW-05*



**DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES  
DIVISION OF WATER RESOURCES**

901 South Stewart Street, Suite 2002

Carson City, Nevada 89701-5250

(775) 684-2800 • Fax (775) 684-2811

(800) 992-0900 x 2400

(In Nevada Only)

<http://water.nv.gov>

December 23, 2008

Corrected waiver number

R-598

Brian D. Magee, P.G.  
Environmental Resources Management  
2525 Natomas Park Dr.  
Sacramento, CA 95833

Re: Request to waive the "Monitor Wells: Plugging" requirements of Nevada Administrative Code (NAC) 534.4365 (all) for two monitor wells located within Washoe County, Nevada. Well details are as outlined in the request received.

MW-4 and MW-5, both within Local Number 087 19N 20E 19 Ac.

Dear Mr. Magee:

This will acknowledge your waiver request received by this office December 4, 2008, and subsequent information received December 22, 2008, for permission to not plug two of the monitoring wells installed under MO-571. These wells were drilled under well logs 39925 (MW-4) and 39926 (MW-5). The reason for requesting this waiver is that after substantial effort, including, but not limited to, surveying, triangulating off of two found wells, utilizing metal detectors, etc, that MW-4 and MW-5 could not be located. Any further attempts to locate these wells would result in the removal of a substantial amount of concrete, and involve undue hardship on the operations at the Air National Guard facility where these wells are located. Therefore, for good cause shown, this request is **granted**.

Full compliance of all other statutes and regulations is required. It is expressly understood that this authorization does not relieve the operator of the permitting requirements of other state, federal, and local agencies. If you have any questions, please contact this office at (775) 684-2800

Sincerely,

A handwritten signature in black ink, appearing to read "Mark Sivazlian".

Mark Sivazlian  
Staff Engineer

MES/sg

cc: Environmental Resources Management, Sara Giorgi (Fax 916-920-9378)

*Appendix B*  
*Well Driller's Plugging Reports*

STATE OF NEVADA
DIVISION OF WATER RESOURCES
WELL DRILLER'S PLUGGING REPORT

OFFICE USE ONLY
Log No.
Permit No.
Basin

PRINT OR TYPE ONLY
DO NOT WRITE ON BACK

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

NOTICE OF INTENT NO. 63605

1. OWNER Lt. Col. John Peck EM.
MAILING ADDRESS 1776 National Guard Way
Reno NV. 89502

ADDRESS AT WELL LOCATION 1776 National Guard Way
Reno Well # MW 28

2. LOCATION SE 1/4 NE 1/4 Sec 19 T19N R20E

Subdivision Name: County: Washoe

PERMIT/WAIVER NO. 15-210-31
Issued by Water Resources Parcel No.

Latitude 39.49951 UTM E NAD 27
Longitude 119.77675 N NAD 83/WGS 84

3. TYPE OF WELL
Domestic Irrigation Test
Municipal/Industrial Monitor Stock

Is this well being plugged because a
replacement well was drilled? Yes No
If yes, what is replacement well NOI?

Is there an existing well log? Yes No
If yes, what is NDWR well log #?

4. EXISTING WELL CONSTRUCTION
Depth Drilled 18 Feet Depth Cased 18 Feet

7. WELL PLUGGING PROCEDURE
Was well cleaned out to total depth? Yes No

Table with columns: Size O.D. (Inches), Weight/Ft. (Pounds), Wall Thickness (Inches), From (Feet), To (Feet). Row 1: 2, SCH 40 PVC, 0, 18.

If well was not cleaned out to total depth, please explain why:

Existing Perforations:
Type of perforation Factory
Size of perforation .010
From 8 feet to 17.5 feet

Was the well contaminated? Yes No
Was the casing pulled? Yes No
Was the casing over drilled? Yes No

If casing was left in place, please show where additional perforations were made:

Additional Perforations:
Type of perforator used:
From feet to feet Number of perfs per linear foot

5. WATER LEVEL
Static water level: 8 feet below land surface
Artesian flow: G.P.M. P.S.I.

8. WELL PLUGGING MATERIALS
Material Used

Water Temperature: F Quality
6. Additional Notes or Comments

Neat cement Pumped Poured
From 0 feet to 18 feet
From feet to feet
From feet to feet
From feet to feet
From feet to feet

Neat Cement Fluid Weight 15 lbs/gal
Bentonite Grout % bentonite

Date Started 12/30/08
Date Completed 12/30/08

9. DRILLER'S CERTIFICATION
This well was plugged and abandoned under my supervision and the
report is true to the best of my knowledge.
Name Bruce MacKay Pump & Well Service, Inc.
(CONTRACTOR)

Address 1600 Mt. Rose Hwy
Reno, NV 89511
(CONTRACTOR)

Nevada contractor's license number
issued by the State Contractor's Board 23096
Nevada driller's license number issued by the
Division of Water Resources, the on-site driller 2326

Signed R. Bruce MacKay
By driller performing actual drilling on site or contractor
Date 12/30/08

STATE OF NEVADA
DIVISION OF WATER RESOURCES
WELL DRILLER'S PLUGGING REPORT

OFFICE USE ONLY
Log No.
Permit No.
Basin

PRINT OR TYPE ONLY
DO NOT WRITE ON BACK

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

NOTICE OF INTENT NO. 63606

1. OWNER Lt. Col. John Peck EM.
MAILING ADDRESS 1776 National Guard Way
Reno NV. 89502

ADDRESS AT WELL LOCATION 1776 National Guard Way
Reno Well # MW29
Subdivision Name:
County: Washoe

2. LOCATION SE 1/4 NE 1/4 Sec 19 T19 N/ R20E
PERMIT/WAIVER NO. 15-210-31
Issued by Water Resources Parcel No.

Latitude 39.49939 UTM E
Longitude 119.77674 N
NAD 27
NAD 83/WGS 84

3. TYPE OF WELL
Domestic Irrigation Test
Municipal/Industrial Monitor Stock
Is this well being plugged because a replacement well was drilled? Yes No
Is there an existing well log? Yes No
If yes, what is replacement well NOI?
If yes, what is NDWR well log #?

4. EXISTING WELL CONSTRUCTION
Depth Drilled 18 Feet Depth Cased 18 Feet

Table with columns: Size O.D. (Inches), Weight/Ft. (Pounds), Wall Thickness (Inches), From (Feet), To (Feet). Row 1: 2, SCH 40 PVC, 0, 18.

Existing Perforations:
Type of perforation Factory
Size of perforation .010
From 8 feet to 17.5 feet

7. WELL PLUGGING PROCEDURE
Was well cleaned out to total depth? Yes No
If well was not cleaned out to total depth, please explain why:

Was the well contaminated? Yes No
Was the casing pulled? Yes No
Was the casing over drilled? Yes No
If casing was left in place, please show where additional perforations were made:
Additional Perforations:

Type of perforator used:
From feet to feet Number of perfs per linear foot

5. WATER LEVEL
Static water level: 8 feet below land surface
Artesian flow: G.P.M. P.S.I.

8. WELL PLUGGING MATERIALS

Material Used
Neat Cement
From 0 feet to 18 feet Pumped Paired

Neat Cement Fluid Weight 15 lbs/gal
Bentonite Grout % bentonite
Date Started 12/30/08
Date Completed 12/30/08

6. Additional Notes or Comments

9. DRILLER'S CERTIFICATION

This well was plugged and abandoned under my supervision and the report is true to the best of my knowledge.
Name Bruce MacKay Pump & Well Service, Inc.
Address 1600 Mt. Rose Hwy
Reno, NV 89511
Nevada contractor's license number issued by the State Contractor's Board 23096
Nevada driller's license number issued by the Division of Water Resources, the on-site driller 2326

Signed [Signature]
By driller performing actual drilling on site or contractor
Date 12/30/08