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SUBMITTAL OF THE FINAL ANNUAL POST-CLOSURE MONITORING LETTER REPORT FOR CORRECTIVE ACTION UNIT (CAU) 97: YUCCA FLAT/CLIMAX MINE; CAU 98: FRENCHMAN FLAT; AND CAU 99: RAINIER MESA/SHOSHONE MOUNTAIN, UNDERGROUND TEST AREA, NEVADA NATIONAL SECURITY SITE, NEVADA, FOR CALENDAR YEAR 2020, REVISION 1, MAY 2021

Please find enclosed one final electronic copy of the subject letter report for review and approval.

To keep this activity on schedule, please review and reply with your comments within 30 calendar days from the above letter date.

This electronic submittal will be the final submittal of this document.

Please contact John Myers at (702) 918-6718 if further information on this matter is needed.

Bill R. Wilborn

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As stated

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1.0 Introduction

This letter serves as the annual post-closure letter for Corrective Action Unit (CAU) 97, Yucca Flat/Climax Mine (YF/CM); CAU 98, Frenchman Flat (FF); and CAU 99, Rainier Mesa/Shoshone Mountain (RM/SM) for calendar year (CY) 2020. This letter will discuss the post-closure monitoring activities that occurred during CY 2020, identify any triggers reached, and summarize water usage on the Nevada National Security Site (NNSS) and surrounding hydrographic basins at the three CAUs.

1.1 CY 2020 Post-Closure Monitoring Activities

During CY 2020, post-closure monitoring activities were conducted at the YF/CM, FF, and RM/SM CAUs as indicated in the CAU-specific closure reports (CRs). Activities included the following:

- Measuring water levels in specified wells.
- Conducting well site surveillance at specified well sites.
- Sampling YF/CM Well WW C-1 for low-level tritium (^{3}H).
- Verifying use restrictions (URs) and institutional controls.
- Determining water usage on the NNSS and surrounding hydrographic basins.
- Identifying any triggers reached at the YF/CM and RM/SM CAUs.
    - The FF CAU has no triggers identified in the CR.

2.0 Water-Level Measurements

2.1 CAU 98, Frenchman Flat

Fourteen wells, with a total of 16 completions, are in the FF post-closure water-level monitoring network, and are measured on a quarterly basis and within a narrow time frame. In addition to the 16 completions, three of the Area 5 Radioactive Waste Management Complex (RWMC) pilot well water levels are measured quarterly. In CY 2020, water levels were measured in the wells, and the water levels are presented in Table 2-1.

2.2 CAU 97, Yucca Flat/Climax Mine

Twenty wells, with a total of 25 completions, are in the YF/CM post-closure water-level monitoring network, and are measured annually and in the same quarter of each year. In CY 2020, water levels were measured in the wells or were calculated from the long-term water-level monitoring pressure transducers (PXDs). When PXDs are installed in completions to obtain continuous water-level measurements, water levels cannot be physically measured because the PXD prevents access to the completion. The water levels are presented in Table 2-2.

2.3 CAU 99, Rainier Mesa/Shoshone Mountain

Seven wells and two vent holes, with a total of nine completions, are in the RM/SM post-closure water-level monitoring network and are measured annually. In CY 2020, water levels were measured in the wells and vent holes, and the water levels are presented in Table 2-3.

Table 2-1
CY 2020 FF Water-Level Measurements

Well and ISPID	Date	Depth to Water (ft bgs)	Date	Depth to Water (ft bgs)	Date	Depth to Water (ft bgs)	Date	Depth to Water (ft bgs)
ER-5-3_p1		928.43		928.49		928.45		928.57
ER-5-3_m2		927.66		927.87		927.80		927.68
ER-5-3-2_m1		961.66		961.67		961.61		961.65
ER-5-3-3_p1		927.68		927.81		927.78		927.75
ER-5-4_m1-2		725.88		725.99		725.98		725.97
ER-5-4_p1		725.46		725.47		725.49		725.51
ER-5-4-2_m1-a		649.64		649.69		649.58		649.58
ER-5-5_p1 [a]		929.85		930.05		NA [b]		930.90
ER-11-2_p1		1,153.85		1,153.91		1,153.92		1,154.09
RNM-1_m4-5	01/13/2020	730.15 [c]	06/22/2020	730.17 [c]	08/10/2020	730.17 [c]	11/09/2020	730.44 [c]
RNM-2s_m1		724.07		724.11		724.11		724.36
UE-5n_m1		706.68		706.71		706.70		707.00
WW-4_m1		840.37		840.22		840.39		840.68
WW-4A_m1		840.83		840.70		840.84		841.15
WW-5A_m1		703.07		702.98		703.00		702.80
WW-5B_m1		688.53		688.82		689.12		688.96
UE-5 PW-1_p1		772.19		772.20		772.16		772.40
UE-5 PW-2_p1		839.43		839.46		839.44		839.36
UE-5 PW-3_p1		888.72		888.60		888.62		888.79

[a] Water level was calculated from long-term water-level monitoring equipment PXD data.
[b] PXD installed in ER-5-5_p1 stopped recording on 07/21/2020 at 19:20; began recording again on 09/29/2020 at 09:45.
[c] Water level corrected for borehole deviation.

bgs = Below ground surface
ft = Foot
ISPID = Integrated Sampling Plan Identifier
NA = Not available

Table 2-2
CY 2020 YF/CM Water-Level Measurements

Well and ISPID	Date	Depth to Water (ft bgs)
ER-3-3_p2 [a]	07/01/2020	1,653.16
UE-10j_m3 [a]	07/01/2020	2,158.44
ER-6-1_o1 [a]	07/01/2020	1,545.52
WW-2_m1-2	12/16/2019	2,052.15
ER-5-3-2_m1	06/22/2020	961.7
ER-3-3_p1	07/15/2020	1,655.6
ER-4-1_m1	07/16/2020	1,768.9
ER-7-1_m1	06/08/2020	1,852.20
U-3cn-5_o1	06/11/2020	1,621.16
WW C-1_o1	06/17/2020	1,543.06
UE-2ce_m1	06/22/2020	1,455.92
TW-D_m1	06/29/2020	1,722.22
UE-1q_o1	07/01/2020	1,654.87
ER-6-1-2_o1	07/07/2020	1,544.15
UE-7nS_m1_a1	07/07/2020	1,968.4
ER-6-2_o1	07/07/2020	1,780.0
UE-1h_o1	07/09/2020	1,551.3
UE-1c_o1	07/13/2020	1,297.2
ER-3-3_p3	07/15/2020	1,453.6
ER-4-1_p1	07/16/2020	1,013.5
ER-12-2_o2_a2	07/16/2020	174.06
ER-12-2_p1	07/16/2020	441.9
ER-6-1-2_p1	07/20/2020	1,472.7
ER-3-1_m2	08/11/2020	2,014.3
ER-8-1_m1	08/11/2020	2,292.6

[a] Water level was calculated from long-term water-level monitoring equipment PXD data.

Table 2-3
CY 2020 RM/SM Water-Level Measurements

Well and ISPID	Date	Depth to Water (ft bgs)
ER-12-3_m1	07/21/2020	3,112.57
ER-12-4_m1	07/28/2020	2,566.98
U-12s_o1	08/12/2020	908.9
ER-12-4_p1	08/20/2020	951.4
ER-12-3_p1	08/24/2020	1,242.53
TW-1_m1	09/03/2020	1,459.80
ER-16-1_p1	09/22/2020	4,167.13
U-12n.10 Vent Hole_o1_a1	10/26/2020	1,171.44
U-12n Vent Hole 2_o1_a1	11/03/2020	1,212.77

3.0 Well Site Surveillance

Sampling and water-level measurement wells/locations in the post-closure monitoring networks are maintained to correct deficiencies such as erosion around wellheads and to ensure well security. Any condition that affects the serviceability of a well will be noted in the field logbook and reported for corrective action. At all wells, the well site surveillance verifies the following:

- The wells and piezometers are locked.
- The wells and piezometers are properly marked with ISPID tags.
- The survey point is marked and undamaged.
- The well pad is clear and in good condition.
- The pad around the well is not damaged or eroded (e.g., no potential for standing water).
- Any damage to the well, piezometers, or pad is noted.

The same inspection items discussed above are checked before sampling the wells used for water-quality monitoring. Additionally, the conditions of the wells, sumps, discharge areas, and areas surrounding the wells are inspected for damage before sampling and are assessed for the following:

- The infiltration area remains viable.
- Any new roads or facilities have been constructed.
- There have been changes to the drainage pattern or area.

3.1 CAU 98, Frenchman Flat

There are six sampling locations and 16 water-level locations in the FF post-closure monitoring network. The general road conditions, well pad conditions, infiltration areas, and surrounding areas were evaluated. The well pads are in good condition with no damage around the wellheads.

3.2 CAU 97, Yucca Flat/Climax Mine

There are 10 sampling locations and 25 water-level locations in the YF/CM post-closure monitoring network. The general road conditions, well pad conditions, infiltration areas, and surrounding areas were evaluated. The well pads are in good condition with no damage around the wellheads. The UE-7nS wellhead had a small hole that was partially covered with a tack-welded steel plate. The wellhead was reconfigured, and there are no openings into the well.

3.3 CAU 99, Rainier Mesa/Shoshone Mountain

There are 14 sampling locations and nine water-level locations in the RM/SM post-closure monitoring network. The general road conditions, well pad conditions, infiltration areas, and surrounding areas were evaluated. The well pads are in good condition with no damage around the wellheads.

4.0 Institutional Controls

4.1 CAU 98, Frenchman Flat

4.1.1 Use Restrictions

The initial registration of the UR boundaries in the management and operating (M&O) Geographic Information Systems was confirmed by letter in 2016. The continued registration and visibility of the URs were confirmed in 2020 in the Integrated Planning Map maintained by the M&O contractor for the NNSS. The system shows two UR areas with accompanying descriptions and links to original documentation.

The initial U.S. Air Force (USAF) registry of the URs was asserted by letter from USAF in 2017. The continued presence of the restrictions was confirmed by letter from USAF in 2021.

4.1.2 Real Estate/Operations Permit

Real Estate/Operations Permit (REOP) Risk and Hazard Questionnaire questions 9H, "Activities that will require an increase in use of groundwater resources, either through requiring additional volume from an existing well, or installation of a new water well," did not have any positive answers.

REOP Risk and Hazard Questionnaire question 9I, "Activities that include drilling, excavating, or impacting the subsurface at a depth of 50 feet or greater below the surface. This includes any underground/tunnel activities," did have positive answers for drilling the new Area 5 RWMC monitoring well designated as UE5MW-4. This borehole was drilled and completed just below the water level south of the main complex. Minor amounts of groundwater were produced in CY 2020 to develop and sample the well, and very minor amounts of groundwater will be produced from the well in the future for sampling purposes. There were some other activities that occurred during CY 2020 in support of the Area 5 RWMC such as construction of a stormwater berm, excavation of a new disposal cell, an irrigation project, and fire hydrant flow testing that used more water resources than normal. However, this was not an increase in the total water usage in the FF hydrographic basin when compared to total usage in CY 2019. This trend of increased water usage at the Area 5 RWMC is

expected to continue in CY 2021 because more similar construction projects are planned, but there is not a significant water usage impact predicted for the basin.

USAF confirmed by letter in 2021 that no new water wells were drilled or are in the planning stages during CY 2020, and that no USAF activities or facilities were proposed that could cause an increase in groundwater usage in the FF region during CY 2020.

4.1.3 Water Usage on the NNSS and Surrounding Basin

On the NNSS, the active production/water-supply wells in the FF hydrographic basin are WW-4, WW-4A, WW-5B, and WW-5C. Water production for CY 2020 from WW-4 was 26,240,974 gallons (gal); production from WW-4A was 28,585,016 gal; production from WW-5B was 44,681,869 gal; and production from WW-5C was 16,500 gal.

A query was sent in February 2021 to the Nevada Division of Water Resources (NDWR) specialists responsible for the basins of interest to inquire whether they are aware of any upcoming large-scale projects or other changes that could involve significant increases or decreases in groundwater pumping in the region, but that have not yet reached the application phase. The answer was negative for the reporting period.

A search on the NDWR website for hydrographic basin summaries by manner of use was conducted for Amargosa Desert, Indian Springs Valley, Frenchman Flat, and Three Lakes Valley. This search of groundwater resources in these basins surrounding FF identified commercial, irrigation, mining, and municipal use of the groundwater.

4.2 CAU 97, Yucca Flat/Climax Mine

4.2.1 Use Restrictions

The institutional controls established through the YF/CM CR and its ensuing record of technical change (ROTC) are restrictions that apply within the UR area and upgradient of the regulatory boundary negotiated between the Environmental Management (EM) Nevada Program and the Nevada Division of Environmental Protection (NDEP). The UR coordinates have been verified with the M&O contractor. The UR is currently being recorded in the *Federal Facility Agreement and Consent*

Order (FFACO) Environmental Management Information System (EMIS); the recording process is planned to be completed in the near future. NDEP will be notified when the UR recording process is complete.

4.2.2 Real Estate/Operations Permit

REOP Risk and Hazard Questionnaire questions 9H, "Activities that will require an increase in use of groundwater resources, either through requiring additional volume from an existing well, or installation of a new water well," and 9I, "Activities that include drilling, excavating, or impacting the subsurface at a depth of 50 feet or greater below the surface. This includes any underground/tunnel activities," did not have any positive answers.

4.2.3 Water Usage on the NNSS and Surrounding Basins

On the NNSS, the only active production/water-supply well in the YF hydrographic basin is WW-16d (also known as UE-16d WW). In fiscal year 2020, WW-16d had a production of 35,666,900 gal. The water production from this well had not increased in the past year. Water production information for CY 2020 is pending.

A query was sent in February 2021 to the NDWR specialists responsible for the basins of interest to inquire whether they are aware of any upcoming large-scale projects or other changes that could involve significant increases or decreases in groundwater pumping in the region, but that have not yet reached the application phase. The answer was negative for the reporting period.

A search on the NDWR website for hydrographic basin summaries by manner of use was conducted for Emigrant Valley-Groom Lake Valley, Emigrant Valley-Papoose Lake Valley, Frenchman Flat, Fortymile Canyon-Buckboard Mesa, Kawich Valley Basin, and Yucca Flat. This search of groundwater resources in these basins surrounding YF/CM identified no current or pending development.

4.3 CAU 99, Rainier Mesa/Shoshone Mountain

4.3.1 Use Restrictions

The institutional controls established through the RM/SM CR are restrictions that apply within the RM and SM UR areas. The UR boundary for RM follows the regulatory boundary except in the southwest direction, where the UR generally corresponds with Rainier Mesa Road and Pahute Mesa Road. The UR for SM coincides with the regulatory boundary. The final UR boundaries were negotiated between EM Nevada Program and NDEP. The UR coordinates have been verified with the M&O contractor. The URs are currently being recorded in the FFACO EMIS; the recording process is planned to be completed in the near future. NDEP will be notified when the UR recording process is complete.

4.3.2 Real Estate/Operations Permit

REOP Risk and Hazard Questionnaire question 9H, "Activities that will require an increase in use of groundwater resources, either through requiring additional volume from an existing well, or installation of a new water well," did not have any positive answers.

REOP Risk and Hazard Questionnaire question 9I, "Activities that include drilling, excavating, or impacting the subsurface at a depth of 50 feet or greater below the surface. This includes any underground/tunnel activities," did have a positive answer for work planned for CY 2021 for instrument/core holes in P-Tunnel. These instrument/core holes are being drilled well above the water table without any impact to the RM hydrographic environment. There may be similar additional instrument/core hole drilling from P-Tunnel later during CY 2021, but no impact is expected.

4.3.3 Water Usage on the NNSS and Surrounding Basin

On the NNSS, there are no active production/water supply wells in the RM/SM CAU.

A query was sent in February 2021 to the NDWR specialists responsible for the basins of interest to inquire whether they are aware of any upcoming large-scale projects or other changes that could involve significant increases or decreases in groundwater pumping in the region, but that have not yet reached the application phase. The answer was negative for the reporting period.

A search on the NDWR website for hydrographic basin summaries by manner of use was conducted for Emigrant Valley-Groom Lake Valley, Emigrant Valley-Papoose Lake Valley, Frenchman Flat, Fortymile Canyon-Buckboard Mesa, Kawich Valley Basin, Yucca Flat, Oasis Valley, and Crater Flat. This search of groundwater resources in these basins surrounding RM/SM identified industrial, mining, recreation, and municipal use of the groundwater.

5.0 Triggers

5.1 Triggers for CAU 98, Frenchman Flat

No triggers were established in the FF CR or its ensuing ROTC for this CAU during the first five years of monitoring. Corrective action triggers will be established by EM Nevada Program and NDEP after reviewing the results from the five years of monitoring. The initial five years of data will provide a baseline to evaluate future data and make recommendations regarding the monitoring strategy. The evaluation will consider the method and frequency of groundwater sampling, laboratory analyses, frequency of water-level measurements, and number of wells requiring monitoring. This evaluation will be used to assess whether the corrective action decision specified in the CR continues to be adequate for protecting the health and safety of the public.

5.2 Triggers for CAU 97, Yucca Flat/Climax Mine

The YF/CM CAU monitoring network has a trigger of 1,000-picocuries per liter (pCi/L) measurement of ^{3}H. This trigger is 5 percent of the U.S. Environmental Protection Agency's (EPA) *Safe Drinking Water Act* (SDWA) maximum contaminant level (MCL) of 20,000 pCi/L. The wells within the YF/CM CAU network will be sampled only for ^{3}H until the trigger is reached or exceeded. If the 1,000-pCi/L ^{3}H trigger is reached or exceeded, iodine-129 (^{129}I) and carbon-14 (^{14}C) will be added to the sampling requirements for the location that exceeded the trigger point for all subsequent samplings.

The ^{3}H concentration in Well UE-2ce exceeded the trigger level of 1,000 pCi/L, but the measured concentrations of ^{129}I and ^{14}C have been less than 3 percent of the respective MCL values; therefore, additional sampling for ^{129}I and ^{14}C is not needed, as documented in the CR and its ensuing ROTC. No other wells sampled in the YF/CM CAU during CY 2020 had ^{3}H concentrations that exceeded the trigger level of 1,000 pCi/L. Table 5-1 presents the ^{3}H concentrations in the YF/CM monitoring network.

In addition to the YF/CM CAU monitoring network trigger, there are three additional triggers listed in the CR that have not been reached in CY 2020:

Table 5-1
CY 2020 YF/CM ^{3}H Sampling Results

Well and ISPID	Sample Date	Low-Level ^{3}H (pCi/L)	^{3}H (pCi/L)
ER-5-3-2_m1	02/04/2020	<3.01	--
ER-3-3_m1	03/12/2020	--	<310
ER-4-1_m1	03/19/2020	--	<310
ER-7-1_m1	06/10/2020	--	<300
U-3cn-5_o1	06/15/2020	--	<280.47
WW C-1_o1	06/18/2020	9.91 | 12.49	--
UE-2ce_m1	06/24/2020	--	89,857.9 | 86,507.4
TW-D_m1	06/30/2020	--	<273
ER-6-1-2_o1	07/07/2020	--	<263 | <266
UE-1q_o1	07/13/2020	--	<260
	07/14/2020	--	<276

-- = Not analyzed.

Note:
(1) Non-detects are reported as "<MDC."
(2) The symbol "|" reports the sample and duplicate results.

Source: UGTA Chemistry Database

- No issues have been identified during well inspections that require immediate corrective actions.

- No activity has been identified within the UR boundary that would require an increase in use of groundwater resources, either through requiring additional volume from an existing well or installation of a new water well.

- No activity has been identified within the UR boundary that includes drilling, excavating, or impacting the subsurface at or below the water table.

5.3 Triggers for CAU 99, Rainier Mesa/Shoshone Mountain

The RM/SM CAU monitoring network has a trigger of 1,000-pCi/L measurement of ^{3}H. This trigger is 5 percent of the EPA SDWA MCL of 20,000 pCi/L. The wells within the network are sampled only for ^{3}H until the trigger is reached or exceeded. If the 1,000-pCi/L ^{3}H trigger is reached or exceeded,

^{129}I and ^{14}C will be added to the sampling requirements for the location that exceeded the trigger point for all subsequent samplings.

There are three sampling locations that exceeded the ^{3}H trigger of 1,000 pCi/L: U-12n.10 Vent Hole_o1_a1, U-12n Vent Hole 2_o1_a1, and E-Tunnel_mine1. As documented in the CR, these locations will be sampled every six years and will have the expanded analyte suite of ^{14}C, chlorine-36, strontium-90, technetium-99, ^{129}I, and plutonium-238/239/240. No other wells sampled in the RM/SM CAU during CY 2020 had ^{3}H concentrations that exceeded the trigger level of 1,000 pCi/L. Table 5-2 presents the ^{3}H concentrations in the RM/SM monitoring network.

Table 5-2
CY 2020 RM/SM ^{3}H Sampling Results

Well and ISPID	Sample Date	^{3}H (pCi/L)
ER-12-3_m1	07/23/2020	<300 | <300
ER-12-3_p1	08/24/2020	<142
ER-12-4_m1	08/03/2020	<300
ER-30-1_m2	08/11/2020	<143
UE-18t_o1	08/13/2020	<143
ER-12-1_m5	08/18/2020	<296 | <297
E-Tunnel_mine1	08/18/2020	249,000
WW-8_m26	08/25/2020	<173
ER-19-1_p1	09/01/2020	<142
ER-19-1_p2	09/02/2020	<142
TW-1_m1	09/08/2020	<142
ER-16-1_p1	09/23/2020	<142
U-12n.10 Vent Hole_o1_a1	10/29/2020	4,410,000 | 4,330,000
U-12n Vent Hole 2_o1_a1	11/05/2020	666,000 | 676,000

Note:
(1) Non-detects are reported as "<MDC."
(2) The symbol "|" reports the sample and duplicate results.

Source: UGTA Chemistry Database

In addition to the RM/SM CAU monitoring network trigger, there are three additional triggers listed in the CR that have not been reached in CY 2020:

- No issues have been identified during well inspections that require immediate corrective actions,.
- No activity has been identified within the UR boundary that would require an increase in use of groundwater resources, either through requiring additional volume from an existing well or installation of a new water well.
- No activity has been identified within the UR boundary that includes drilling, excavating, or impacting the subsurface at or below the water table. Work is planned for CY 2021 for instrument/core holes in P-Tunnel; these holes will be drilled well above the water table without any impact to the RM hydrographic environment.

6.0 Special Studies

6.1 YF/CM Well WW C-1

In accordance with the YF/CM CR and its ensuing ROTC, WW C-1 in this CAU will be sampled for low-level ^{3}H annually for six years beginning in 2020.

A low-level ^{3}H sample and a field duplicate sample were collected while the well was being pumped on June 18, 2020. The low-level ^{3}H results were above the MDCs at 9.91 pCi/L and 12.49 pCi/L for the sample and field duplicate, respectively (Table 6-1).

Table 6-1
CY 2020 WW C-1_o1 Low-Level ^{3}H Sampling Results

Well and ISPID	Sample Date	Low-Level ^{3}H (pCi/L)	MDC (pCi/L)
WW C-1_o1	06/18/2020	9.91 | 12.49	2.55 | 2.77

Note:
(1) The symbol "|" reports the sample and duplicate results.

Source: UGTA Chemistry Database

An analysis of the six years of low-level ^{3}H results will be documented in the YF/CM post-closure monitoring report.

7.0 Summary

The CY 2020 post-closure monitoring activities were conducted at the YF/CM, FF, and RM/SM CAUs as indicated in the CAU-specific CRs.

- Water levels were measured in specified wells.
- Well site surveillance was conducted at specified well sites. At the inspected well sites, the well pads are in good condition with no damage around the wellheads.
- Sampling for low-level ^{3}H was conducted at the YF/CM Well WW C-1. The results were between 9 and 13 pCi/L, which are above the MDCs which were approximately 3 pCi/L.
- URs and institutional controls were verified. All URs at the CAUs were verified as being in place to limit access to the area within the UR boundaries.
- Water usage was determined and verified on the NNSS and surrounding hydrographic basins for the CAUs by the M&O contractor and NDWR personnel.
- Identified any triggers reached at the YF/CM and RM/SM CAUs.
    - At YF/CM, the concentration of ^{3}H in Well UE-2ce exceeds the ^{3}H trigger of 1,000 pCi/L, but does not require a change in sampling or radionuclide analyses consistent with the YF/CM CR; no other wells exceeded the trigger level. Three additional triggers listed in the CR have not been reached in CY 2020.
    - At RM/SM, three locations, U-12n.10 Vent Hole, U-12n Vent Hole 2, and E-Tunnel, exceeded the ^{3}H trigger of 1,000 pCi/L, but do not require a change in sampling or radionuclide analyses consistent with the RM/SM CR; no other wells exceeded the trigger level. Three additional triggers listed in the CR have not been reached in CY 2020.
    - The FF CAU has no triggers identified in the CR.

8.0 Figures

This section includes the following figures:

- Figure 8-1 shows water-level locations for the FF CAU.
- Figure 8-2 shows water-level locations for the YF/CM CAU.
- Figure 8-3 shows water-level locations for the RM/SM CAU.

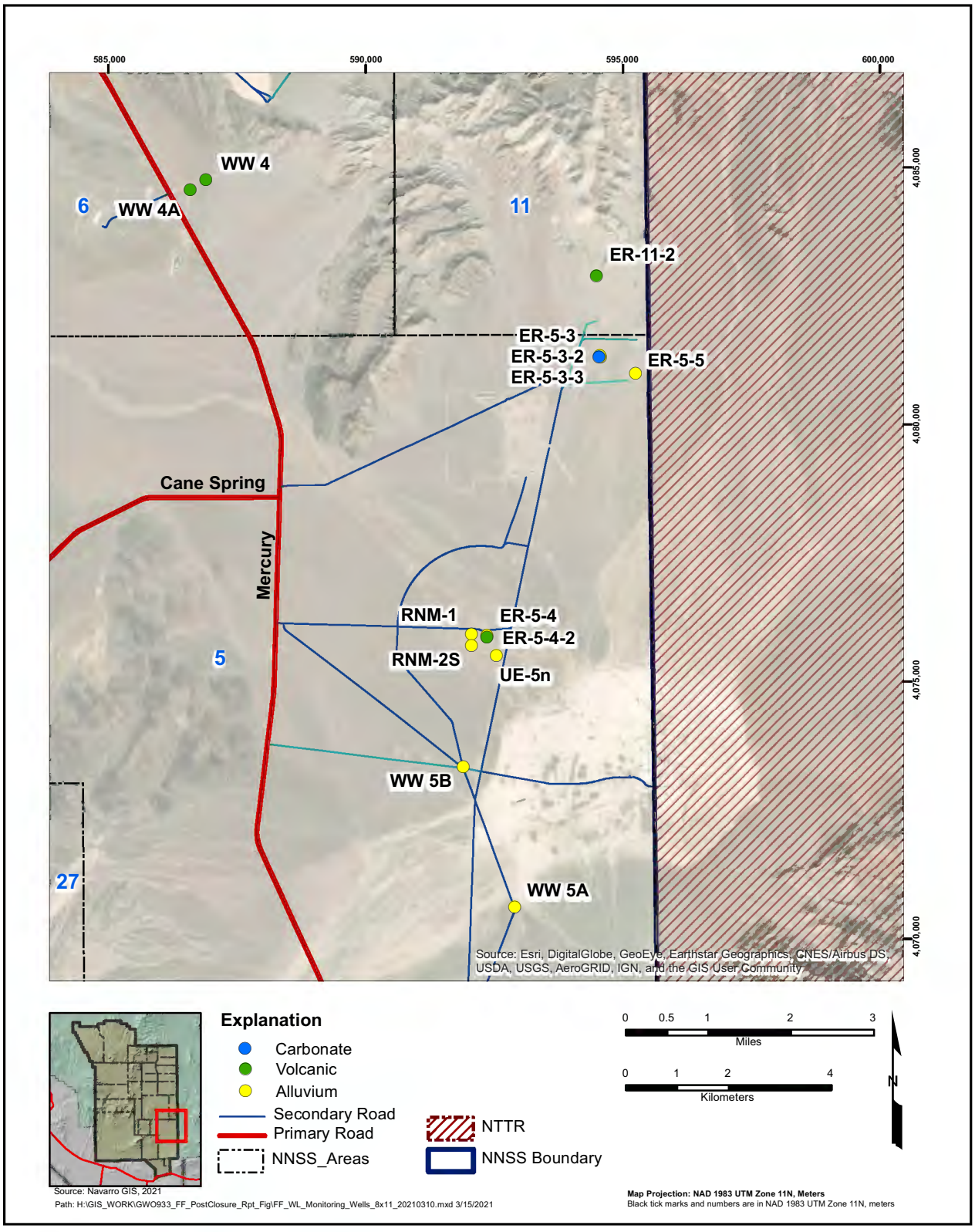

Figure 8-1
Water-Level Locations for FF CAU

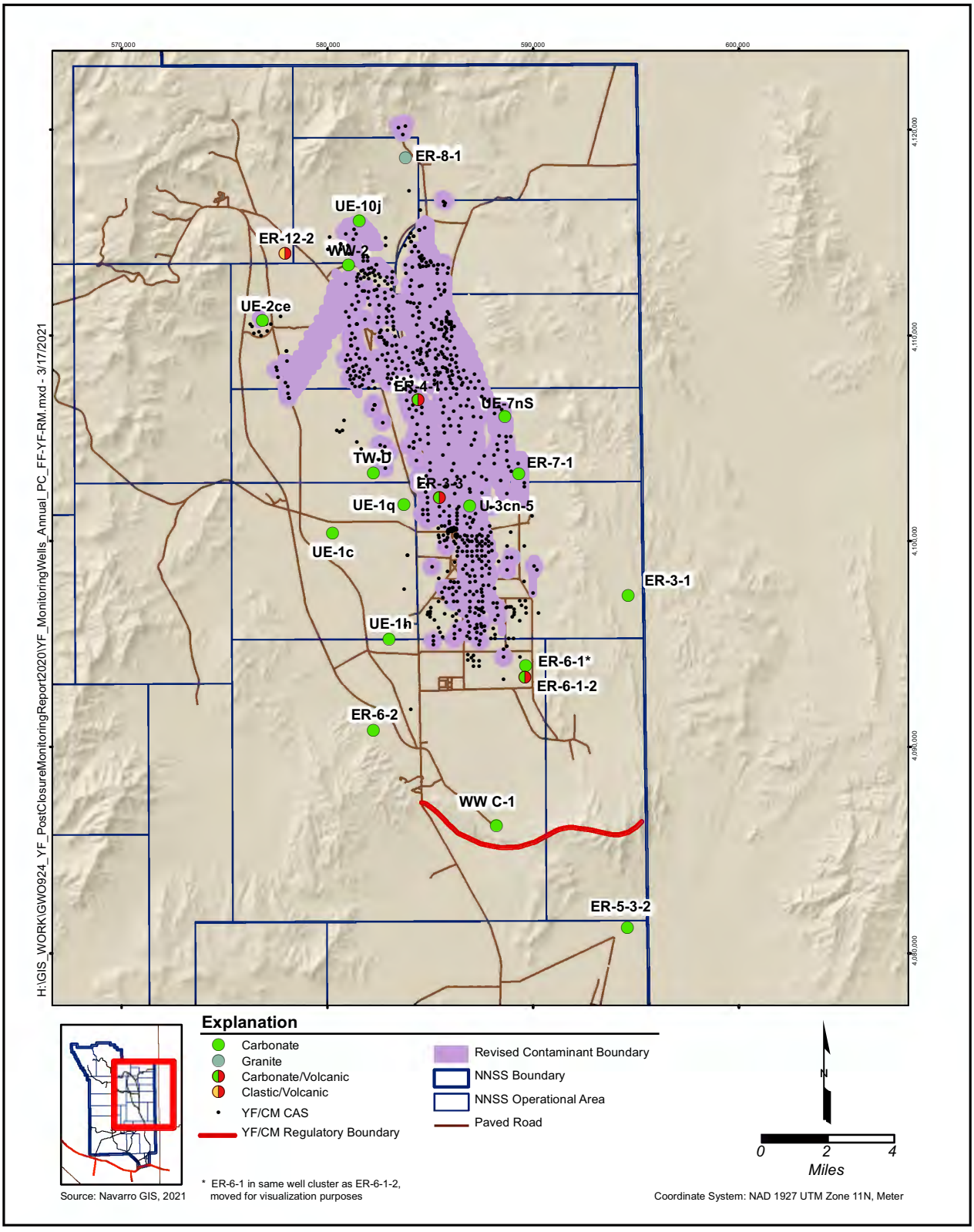

Figure 8-2
Water-Level Locations for YF/CM CAU

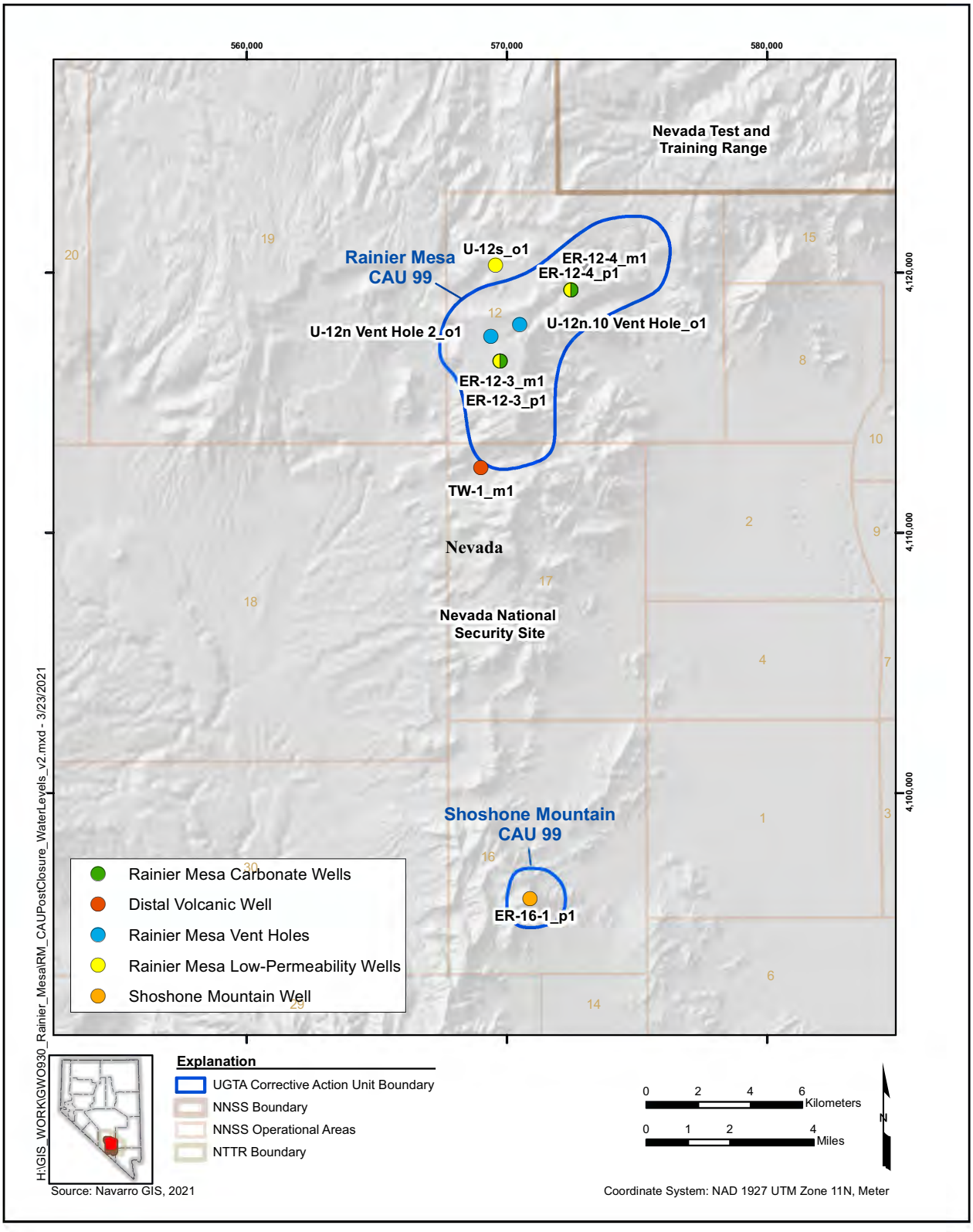

Figure 8-3
Water-Level Locations for RM/SM CAU

Appendix A

Nevada Division of Environmental Protection Comments

(3 Pages)

NEVADA ENVIRONMENTAL MANAGEMENT OPERATIONS ACTIVITY
DOCUMENT REVIEW SHEET

1. Document Title/Number: Annual Post-Closure Monitoring Letter Report for Calendar Year 2020 for Corrective Action Unit (CAU) 97: Yucca Flat/Climax Mine; CAU 98: Frenchman Flat; and CAU 99: Rainier Mesa/Shoshone Mountain, Underground Test Area, Nevada National Security Site, Nevada				2. Document Date: March 2021
3. Revision Number: 0				4. Originator/Organization: Navarro
5. Responsible EM Nevada Program Activity Lead: John Myers				6. Date Comments Due: April 2021
7. Review Criteria: Full				
8. Reviewer/Organization Phone No.: Chris Andres – candres@ndep.nv.gov ; Britt Jackson – bjacobso@ndep.nv.gov ; Nikita Lingenfelter nlingenfelter@ndep.nv.gov				9. Reviewer's Signature:
10. Comment Number/Location		11. Type[a]	12. Comment	13. Comment Response
1.	Sections, 3.1, 3.2, and 3.3	M Comment response accepted	The number of sampling and water-level measurements stated in these three sections, because they are combined with no apparent manner of "adding up," are difficult to sort out when comparing to the numbers given in Sections 2.1, 2.2 and 2.3 for the water-level measurements (which do correspond to the numbers presented in the respective Closure Reports (CRs) for water level measurements) and the number of wells for groundwater sampling stated in Sections 4.1.1 of all three CRs (i.e., six wells are monitored in FF, ten locations are monitored in YF, and 14 locations are monitored for RM/SM). As the water-level measurement locations are discussed in Section 2.0 of this report, it is suggested that the number of sampling locations be stated in Section 3.0 or an explanation provided as to why the number of water-monitoring locations plus the number of sampling locations for each CAU given in its CR do not add up to the numbers presented in Sections 3.1, 3.2 and 3.3.	Section 3.1: Changed first sentence of section to clarify: "There are six sampling locations and 16 water-level locations in the FF post-closure monitoring network." Section 3.2: Changed first sentence of section to clarify: "There are 10 sampling locations and 25 water-level locations in the YF/CM post-closure monitoring network." Section 3.3: Changed first sentence of section to clarify: "There are 14 sampling locations and nine water-level locations in the RM/SM post-closure monitoring network."

[a]Comment Types: M = Mandatory, S = Suggested.
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10. Comment Number/Location		11. Type[a]	12. Comment	13. Comment Response
2.	Section 3.3	M Comment response accepted	It states there are 16 sampling and water-level measurement wells/locations in the RM/SM post-closure monitoring network. However, in Section 4.1.1.2 if the RM/SM CR, it is stated that "groundwater samples from the 14 long-term monitoring locations will be collected for the analytes shown in Table 4-1." There are a total of 14 locations for RM/SM depicted on Figures 4-1 and 4-2 of the CR. Please clarify this discrepancy.	Changed first sentence to clarify: "There are 14 sampling locations and nine water-level locations in the RM/SM post-closure monitoring network."
3.	Sections 4.2.1 and 4.3.1, 1st Paragraphs, Last Sentences	M Comment response accepted	Will the recording process be completed before the finalization of this report? If so, will these sentences then be updated?	If the URs are recorded before the report is finalized, the sentences will be updated. NDEP will be notified when the UR recording process is complete.
4.	Section 4.2.4, Table 4-1	M Comment response accepted	CY 2020 WW C-1 _ o l Low-Level ^{3}H Sampling Results: Please explain why these data are included in the Institutional Controls section.	The original outline had this in the Institutional Controls section of the letter. The WW C-1 discussion and results have been moved to a new section titled "Special Studies."
5.	Section 5.2, 2nd Paragraph, 2nd Sentence	M Comment response accepted	This sentence implies that other wells were sampled for ^{3}H in CY 2020. If this is indeed true, please include this data in the report.	Added a table to the section with the ^{3}H results for the YF/CM monitoring network.

[a]Comment Types: M = Mandatory, S = Suggested.
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10. Comment Number/Location		11. Type[a]	12. Comment	13. Comment Response
6.	Section 5.3, 2nd Paragraph, 3rd Sentence	M Comment response accepted	This sentence implies that other wells were sampled for ^{3}H in CY 2020. If this is indeed true, please include this data in the report.	Added a table to the section with the ^{3}H results for the RM/SM monitoring network.

[a]Comment Types: M = Mandatory, S = Suggested.
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