

# Navajo Abandoned Uranium Mine

## Site Screen Report

*This form is for use at the site of abandoned uranium mines (AUM) located on Navajo Nation lands. Applicable sites include all mine and mine features that have or have not undergone reclamation by the Navajo Abandoned Mine Lands Reclamation Program, including features, adits, pits and waste piles. Applicable sites also include all AUM sites listed in the USEPA CERCLIS database, all sites listed in the 2008 AUM GIS Report issued by USACOE and USEPA, all AUM sites on allotment lands associated with the Navajo Nation, and any and all AUM sites not listed in any database located on Navajo lands. Reconnaissance of any sites located on lands adjacent to Navajo lands that may be impacting Navajo lands will need to be coordinated with the authorities appropriate to those lands.*

*The purpose of the form is to ascertain the status and location of the identified AUM site, and record all immediate site information associated with the mine site. Decisions and recommendations on what additional steps are needed will be provided on a separate document.*

**Mine Name: Tom Wilson**  
**Mine IDs: 75, 76, 400, 402**

**Navajo AUM Central Region**

**Prepared by:**

**Weston Solutions, Inc.**

**Contract: W91238-06-F-0083**

**20074.063.017.0020**

**August 2011**

**Part I Site Identification, Location and Status**

**Site Names and ID numbers as applicable**

**Mine ID:** 75; 76; 400; 402

**Map ID:** 75: C3; 76: C4;  
400: C1; 402: C2

**CERCLIS:** NNN000909178

**Navajo Abandoned Mine Land Reclamation Program:** 75: NA-0705; 76: NA-0710;  
400: None; 402: None

**Local name / Aliases:** None

**Chapter and local area:** Chilchinbito

**County:** Apache **State:** Arizona

**Lat/Long:** 75: 36.4624668786 N / -109.93620864 W  
76: 36.4631500061 N / -109.934199708 W  
400: 36.464045821 N / -109.94213553 W  
402: 36.4655119278 N / -109.937845064 W

**Nearby road and highway:** Indian Route 59 **Local Post Office:** Rough Rock, AZ

**Surface Land Status: check one or more and provide ownership and contact information below**

<b>Tribal Trust Land</b>	<input checked="" type="checkbox"/>	<b>Public lands</b>	<input type="checkbox"/>
<b>Private</b>	<input type="checkbox"/>	<b>Tribal Fee Land</b>	<input type="checkbox"/>
<b>Bureau of Land Mgmt</b>	<input type="checkbox"/>	<b>Allotment</b>	<input type="checkbox"/>
<b>State</b>	<input type="checkbox"/>	<b>Fee land</b>	<input type="checkbox"/>

**Subsurface Mineral Rights:**

No information on subsurface mineral rights ownership was found in the EPA/AUM Database.

**Claim and operator information:**

The mine surface land status is classified as Tribal Trust Land. Historical documents identified the operator of the mine as Tom Wilson in 1952, Vanadium Corporation of America in 1952, C.A. Wheeler and A.H. Green from 1952 to 1954, Dean Nicholson in 1954, and Howard L. Stanley in 1956. No additional historical ownership / lease information was identified in the EPA / AUM database.

**Number of residential structures within 200 feet of mine:** None

## Part II Summary of Radiological Readings

**Mine ID: 75**

**Highest gamma radiation measurement:** 47,138 counts per minute (cpm)

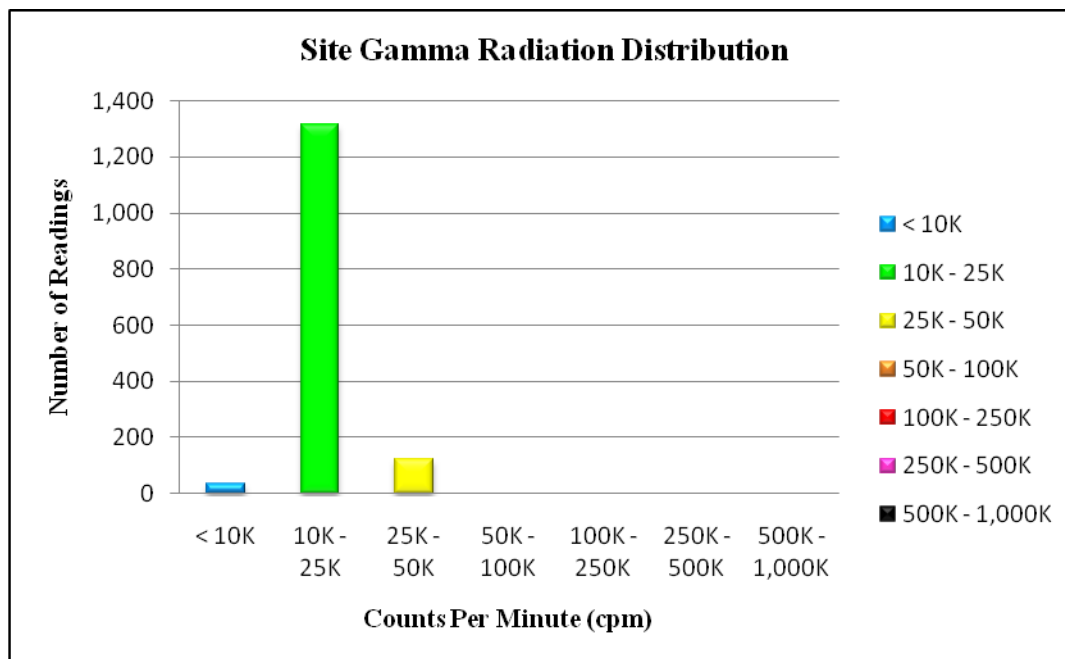
**Background Average:** 9,169 cpm      **Two Times Background:** 18,338 cpm

**Describe any other radiological measurements:**

A total of 1,470 gamma radiation measurements were collected from the mine site, ranging from 5,887 cpm to 47,138 cpm. The measurements are represented in Figures 1, 2, 3 and 4.

### Distribution Chart and Statistics:

<b>Site Gamma Radiation Statistics</b>	
Number of Readings	1,470
Minimum (cpm)	5,887
Maximum (cpm)	47,138
Mean (cpm)	16,772
Median (cpm)	15,617
Standard Deviation	5,327



**Mine ID: 76**

**Highest gamma radiation measurement:** 65,641 cpm

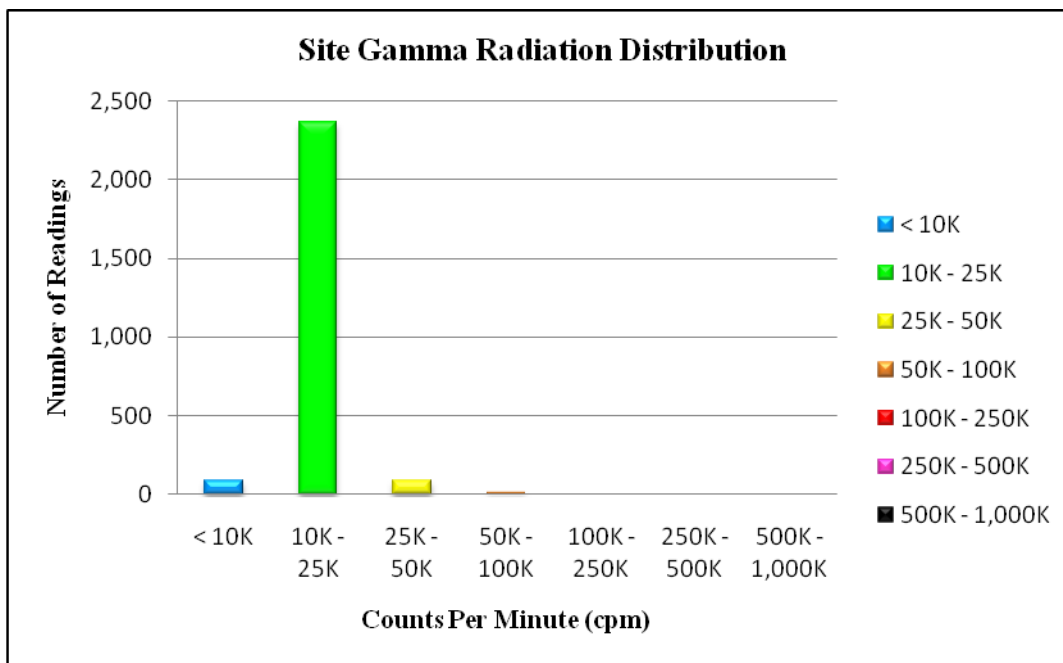
**Background Average:** 9,169 cpm      **Two Times Background:** 18,338 cpm

**Describe any other radiological measurements:**

A total of 2,546 gamma radiation measurements were collected from the mine site, ranging from 5,858 cpm to 65,641 cpm. The measurements are represented in Figures 1, 2, 3 and 4.

**Distribution Chart and Statistics:**

<b>Site Gamma Radiation Statistics</b>	
Number of Readings	2,546
Minimum (cpm)	5,858
Maximum (cpm)	65,641
Mean (cpm)	14,619
Median (cpm)	12,901
Standard Deviation	5,440



**Mine ID: 400**

**Highest gamma radiation measurement:** 95,693 counts per minute (cpm)

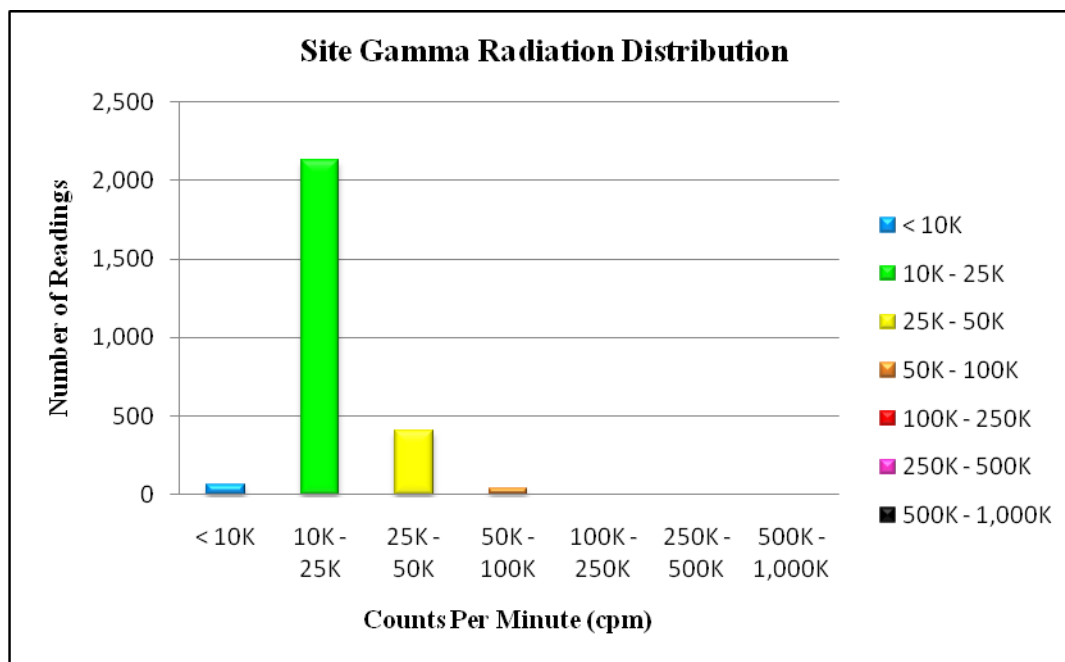
**Background Average:** 9,169 cpm      **Two Times Background:** 18,338 cpm

**Describe any other radiological measurements:**

A total of 2,642 gamma radiation measurements were collected from the mine site, ranging from 8,984 cpm to 95,693 cpm. Measurements collected in the vicinity of the waste rock and pit area were found at a maximum level of approximately 95,000 cpm. The measurements are represented in Figures 1, 2, 5 and 6.

**Distribution Chart and Statistics:**

<b>Site Gamma Radiation Statistics</b>	
Number of Readings	2,642
Minimum (cpm)	8,984
Maximum (cpm)	95,693
Mean (cpm)	17,921
Median (cpm)	13,993
Standard Deviation	10,134



**Mine ID: 402**

**Highest gamma radiation measurement:** 148,374 cpm

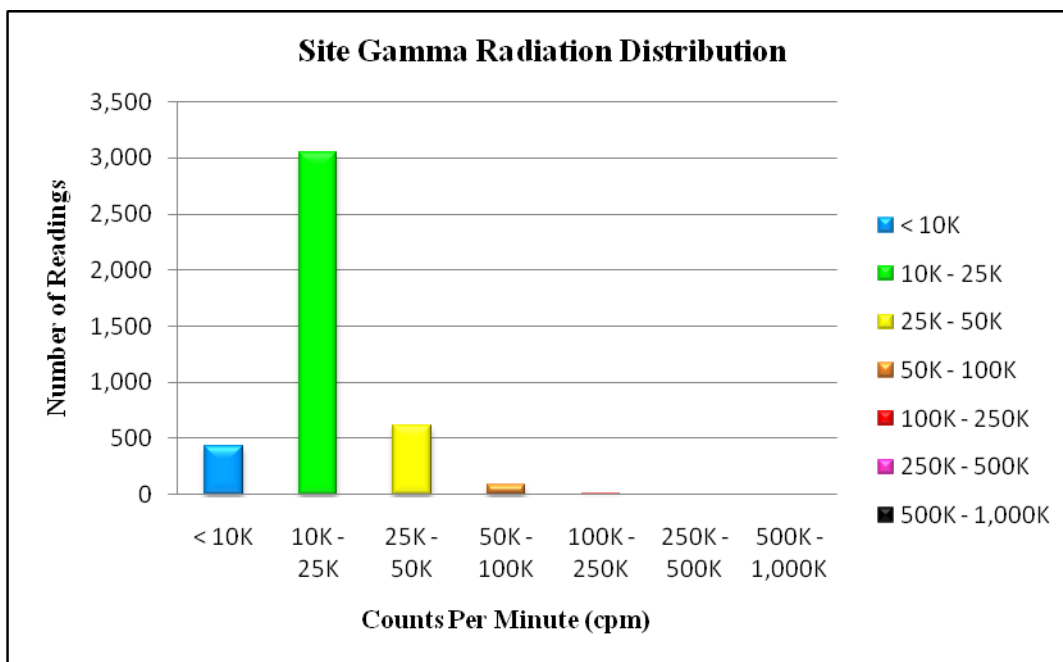
**Background Average:** 9,169 cpm      **Two Times Background:** 18,338 cpm

**Describe any other radiological measurements:**

A total of 4,200 gamma radiation measurements were collected from the mine site, ranging from 6,352 cpm to 148,374 cpm. Measurements collected in the vicinity of the waste rock were found at a maximum level of approximately 150,000 cpm. The measurements are represented in Figures 1, 2, 5 and 6.

**Distribution Chart and Statistics:**

<b>Site Gamma Radiation Statistics</b>	
Number of Readings	4,200
Minimum (cpm)	6,352
Maximum (cpm)	148,374
Mean (cpm)	18,919
Median (cpm)	15,855
Standard Deviation	11,566



### **Part III      Status of Reclamation and Mine Waste**

#### **Mine ID: 75**

**The following information was obtained from the Navajo Abandoned Mine Land Reclamation Program (NAMLRP) Point Features Database:**

**NAMLRP Status of the mine site: Reclaimed: Yes                      Waste Pile onsite: No**

**NAMLRP Project Number: NA-0705**

**NAMLRP Mine features: 2 Rim Strips / Pits**

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**The following information was obtained from field observations collected during the 2011 site screening:**

**Provide description and status of all mine sites, and features at site. Include all waste piles, adits, pits and other features, and indicate whether they are open, closed, covered, capped, buried or unreclaimed. Indicate approximate size, shape and extent, including description of any reclamation caps. Note condition of all caps.**

#### **Observed reclamation work and status:**

##### **Adits:**

None observed

##### **Waste Piles:**

None observed

##### **Pits:**

None observed

##### **Shafts:**

None observed

##### **Other Debris and Mine Features:**

None observed

**Mine ID: 76**

**The following information was obtained from the Navajo Abandoned Mine Land Reclamation Program (NAMLRP) Point Features Database:**

**NAMLRP Status of the mine site: Reclaimed: Yes**

**Waste Pile onsite: No**

**NAMLRP Project Number: NA-0710**

**NAMLRP Mine features: 4 Rim Strips / Pits**

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**The following information was obtained from field observations collected during the 2011 site screening:**

**Provide description and status of all mine sites, and features at site. Include all waste piles, adits, pits and other features, and indicate whether they are open, closed, covered, capped, buried or unreclaimed. Indicate approximate size, shape and extent, including description of any reclamation caps. Note condition of all caps.**

**Observed reclamation work and status:**

**Adits:**

None observed

**Waste Piles:**

None observed

**Pits:**

None observed

**Shafts:**

None observed

**Other Debris and Mine Features:**

None observed



**Mine ID: 400**

**The following information was obtained from the Navajo Abandoned Mine Land Reclamation Program (NAMLRP) Point Features Database:**

**NAMLRP Status of the mine site: Reclaimed: No**                      **Waste Pile onsite: Yes**

**NAMLRP Project Number: None**

**NAMLRP Mine features: 2 Rim Strips / Pits**

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**The following information was obtained from field observations collected during the 2011 site screening:**

**Provide description and status of all mine sites, and features at site. Include all waste piles, adits, pits and other features, and indicate whether they are open, closed, covered, capped, buried or unreclaimed. Indicate approximate size, shape and extent, including description of any reclamation caps. Note condition of all caps.**

**Observed reclamation work and status:**

**Adits:**

None observed

**Waste Piles:**

6 waste rock piles surrounding the possible mining pits, each 3' diameter

**Pits:**

2 possible mining pits: Pit 1 - 12' diameter, surrounded by small piles of rock debris, tan-yellow sandy soil; Pit 2 - 15' diameter surrounded small piles of rock debris, tan-yellow brown sandy soil

**Shafts:**

None observed

**Other Debris and Mine Features:**

None observed

**Mine ID: 402**

**The following information was obtained from the Navajo Abandoned Mine Land Reclamation Program (NAMLRP) Point Features Database:**

**NAMLRP Status of the mine site: Reclaimed: No**                      **Waste Pile onsite: Yes**

**NAMLRP Project Number: None**

**NAMLRP Mine features: 3 Rim Strips / Pits**

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**The following information was obtained from field observations collected during the 2011 site screening:**

**Provide description and status of all mine sites, and features at site. Include all waste piles, adits, pits and other features, and indicate whether they are open, closed, covered, capped, buried or unreclaimed. Indicate approximate size, shape and extent, including description of any reclamation caps. Note condition of all caps.**

**Observed reclamation work and status:**

**Adits:**

None observed

**Waste Piles:**

5 waste rock piles: Pile 1 - 10'x5'x3', tan light gray rocky soil, near depression area; Pile 2 - 10'x5'x3', tan light gray rocky soil, near depression area; Pile 3 - 10'x5'x3', tan light gray rocky soil, near depression area; Pile 4 - 10'x5'x3', tan light gray rocky soil, near depression area; Pile 5 - 10'x30'x6' oval, tan-gray soil with small rocks, adjacent mining road, small rock wall present 15' WSW of small depression

**Pits:**

Small pit, 40' diameter, sandy bottom, surrounded by piled berms

**Shafts:**

None observed

**Other Debris and Mine Features:**

None observed

## **Part IV Site Observations and Environs**

### **Observed Residential Structures (number and human habitation status of structures at the following distances from mine):**

**0 to 200 feet:** None observed

**200 feet to 0.25 mile:** House 0.25 mi SE of site #76

### **Observed Public or Commercial structures (schools, clinics, Chapter Houses, places of business and any other structure used by members of the community at the following distances from the mine):**

**0 to 200 feet:** None observed

**200 feet to 0.25 mile:** None observed

### **Levels measured around the perimeter(s) of the identified structure(s):**

Background Levels

### **Observed water sources (number and type of wells and surface water sources that are potentially used for human consumption at the following distances from the mine):**

**0 to 0.25 miles:** None observed

**0.25 miles to 4 miles:** None observed

### **Sensitive Environments (all sensitive environments located within visible range of the mine site, including: wetlands, endangered species, habitats and approximate locations of sites that may be under protection of the government of the Navajo Nation):**

None observed

### **Known Site History (information from interviews with Chapter officials and residents and database review, includes: mine ownership, type of mining operation, period of operation, known amount of production, and any other information provided):**

The Tom Wilson mine claim consists of four separate mine sites (#'s 75, 76, 400, 402) with a total combined area of 168,799.07 m<sup>2</sup>. The mine was identified operational from 1952 to 1956. While operational, the mine had a total reported production volume of 59 tons. The mine surface land status is classified as Tribal Trust Land. Historical documents identified the operator of the mine as Tom Wilson in 1952, Vanadium Corporation of America in 1952, C.A. Wheeler and A.H. Green from 1952 to 1954, Dean Nicholson in 1954, and Howard L. Stanley in 1956. No additional historical ownership / lease information was identified in the EPA / AUM database.

## **Part V      Response Action Summary**

### **Summary of Evaluation Factors:**

#### ***Accessibility:***

**Was the mine easily accessible to potential human activity?**

Yes

#### ***Radiological Measurements:***

**Were any gamma radiation measurements collected at the mine greater than two times the site-specific background levels?**

Yes

#### ***Waste Piles:***

**Were any unreclaimed waste piles observed at the mine with gamma radiation measurements greater than two times the site-specific background levels?**

Yes

#### ***Structures:***

**Were any structures observed within 200 feet of the mine?**

No

#### ***Potential Drinking Water Sources:***

**Were any potential drinking water sources observed within 4 miles of the mine?**

No

#### ***Reclamation:***

**Was the mine reported to be previously reclaimed, or did the mine appear to be reclaimed?**

Yes

**Part VI      Photos**



**Photo 1:** Mine Site #75; Onsite drainage



**Photo 2:** Mine Site #75



**Photo 3:** Mine Site #76



**Photo 4:** Mine Site #76





**Photo 5:** Mine Site #76; Drainage



**Photo 6:** Mine Site #76; Potential Mining Debris





**Photo 7:** Mine Site #400



**Photo 8:** Mine Site #400; Haul road





**Photo 9:** Mine Site #400; Small depression



**Photo 10:** Mine Site #402





**Photo 11:** Mine Site #402; Waste piles



**Photo 12:** Mine Site #402; Waste piles





**Photo 13:** Mine Site #402; Waste pile



**Photo 14:** Mine Site #402; Depression / piles



**Photo 15:** Mine Site #402; Tailings

**Part VII      Contacts Reports and Information**

Name: Eugene Esplain

Title or official role (if any): Navajo EPA Superfund Program

Telephone number: (928) 871-7331

Address: PO Box 2946, Window Rock, AZ 86515

Information provided: Lead Regulatory Agency

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Name: \_\_\_\_\_

Title or official role (if any): \_\_\_\_\_

Telephone number: \_\_\_\_\_

Address: \_\_\_\_\_

Information provided: \_\_\_\_\_

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Name: \_\_\_\_\_

Title or official role (if any): \_\_\_\_\_

Telephone number: \_\_\_\_\_

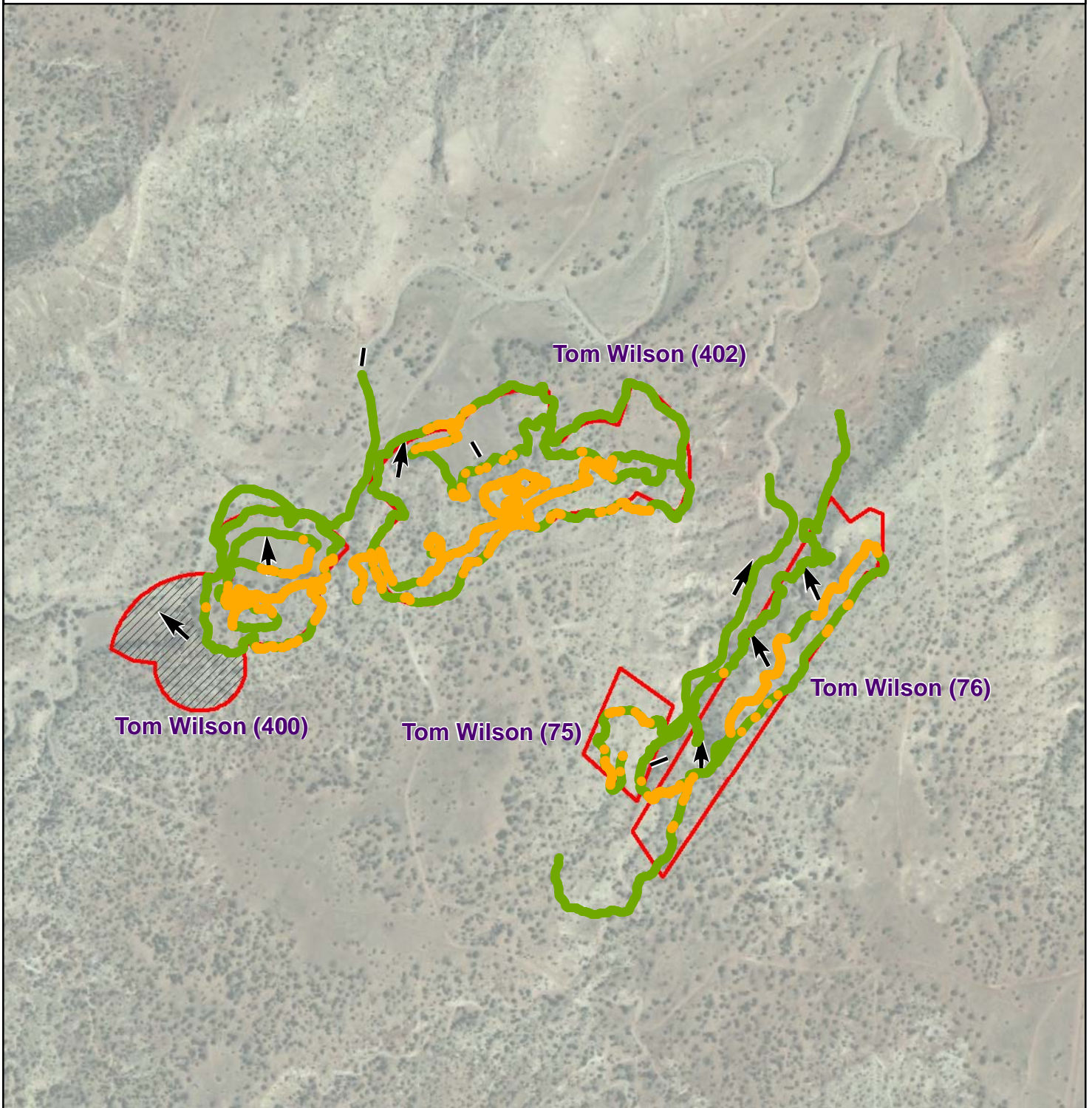
Address: \_\_\_\_\_

Information provided: \_\_\_\_\_

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**Figure 1 - Gamma Radiation Measurements, Above Two Times Background  
Tom Wilson (75, 76, 400, 402)  
Chilchinbito Chapter, Navajo Nation**



**Legend**

**Gamma Radiation Measurements**

- < 2X Background
- > 2X Background

Measured as counts per minute (cpm)

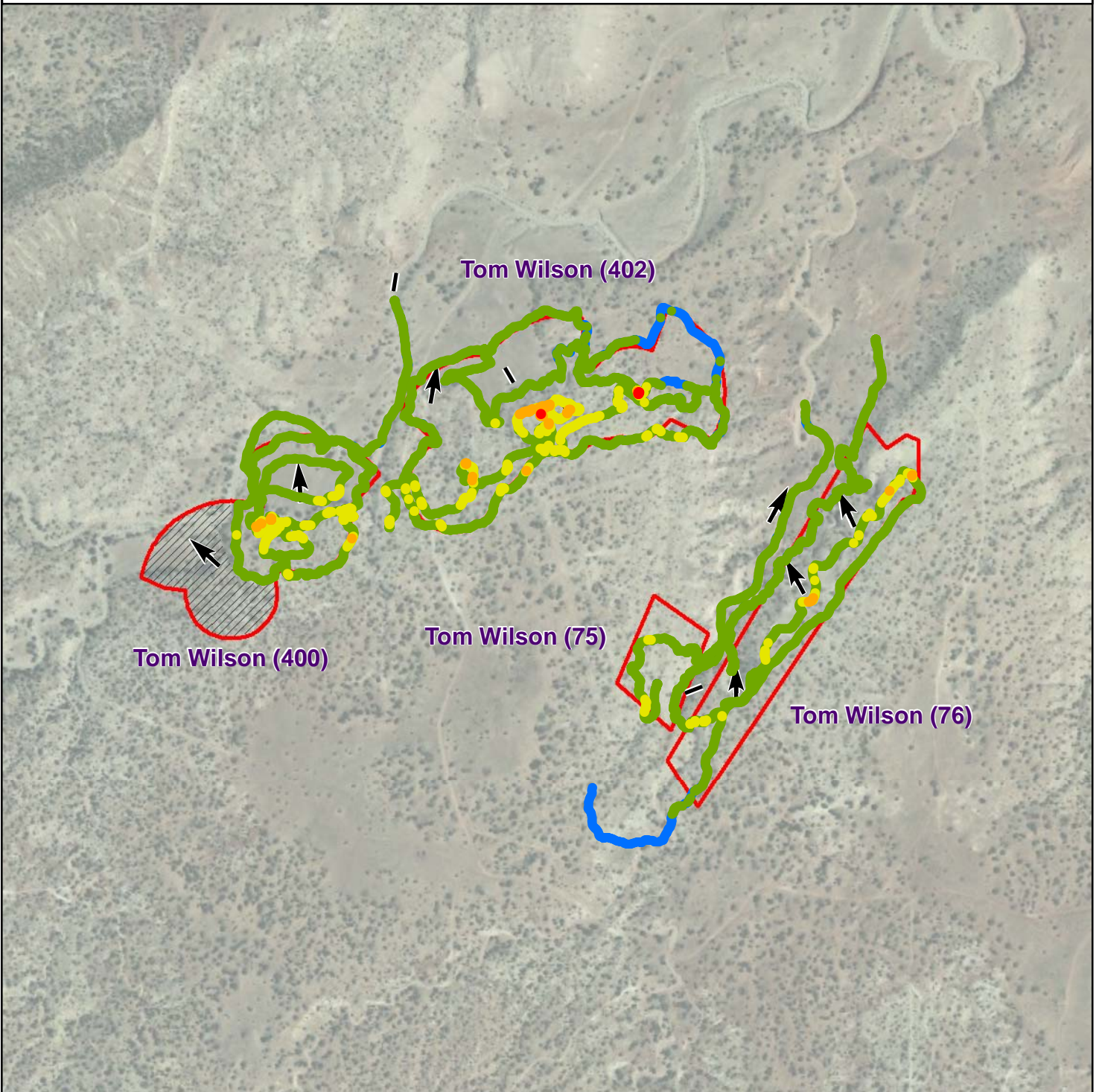
Average background 9,169 cpm

- Mine Site Boundary
- General Slope Direction
- Observed Reclamation Feature
- Observed Waste Pile
- Observed Structure
- Steep Grade

**WESTON SOLUTIONS**



**Figure 2 - Gamma Radiation Measurements**  
**Tom Wilson (75, 76, 400, 402)**  
**Chilchinbito Chapter, Navajo Nation**



**Gamma Radiation Measurements**

- 0 - 10,000 cpm
- 10,000 - 25,000 cpm
- 25,000 - 50,000 cpm
- 50,000 - 100,000 cpm
- 100,000 - 250,000 cpm
- 250,000 - 500,000 cpm
- 500,000 - 1,000,000 cpm

- ▭ Mine Site Boundary
- ➔ General Slope Direction
- ▨ Observed Reclamation Feature
- ▨ Observed Waste Pile
- 🏠 Observed Structure
- ▨ Steep Grade

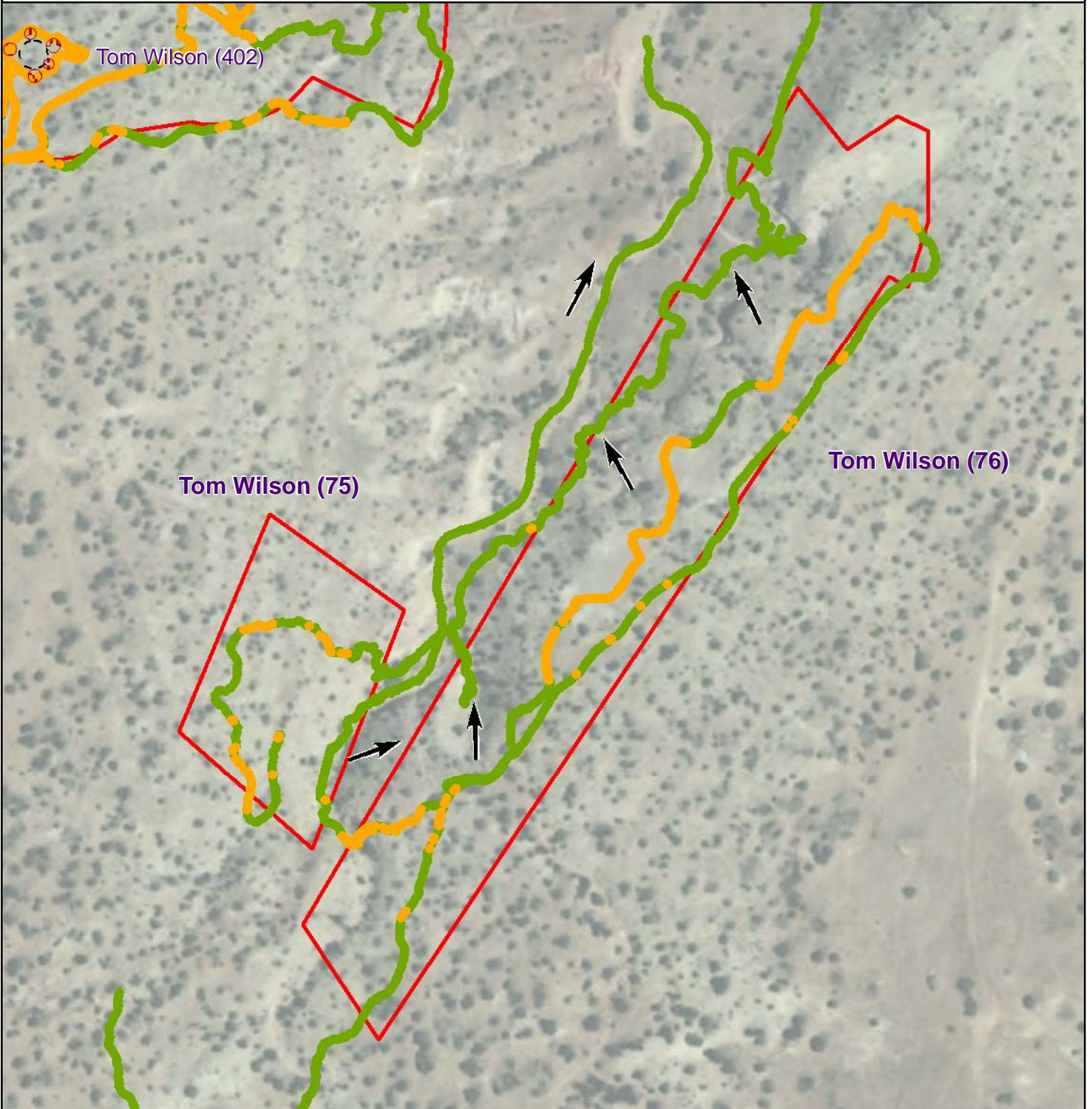


Measured as counts per minute (cpm)

Average background 9,169 cpm



**Figure 3 - Gamma Radiation Measurements, Above Two Times Background  
Tom Wilson (75, 76)  
Chilchinbito Chapter, Navajo Nation**



**Legend**

**Gamma Radiation Measurements**

- < 2X Background
- > 2X Background

Measured as counts per minute (cpm)

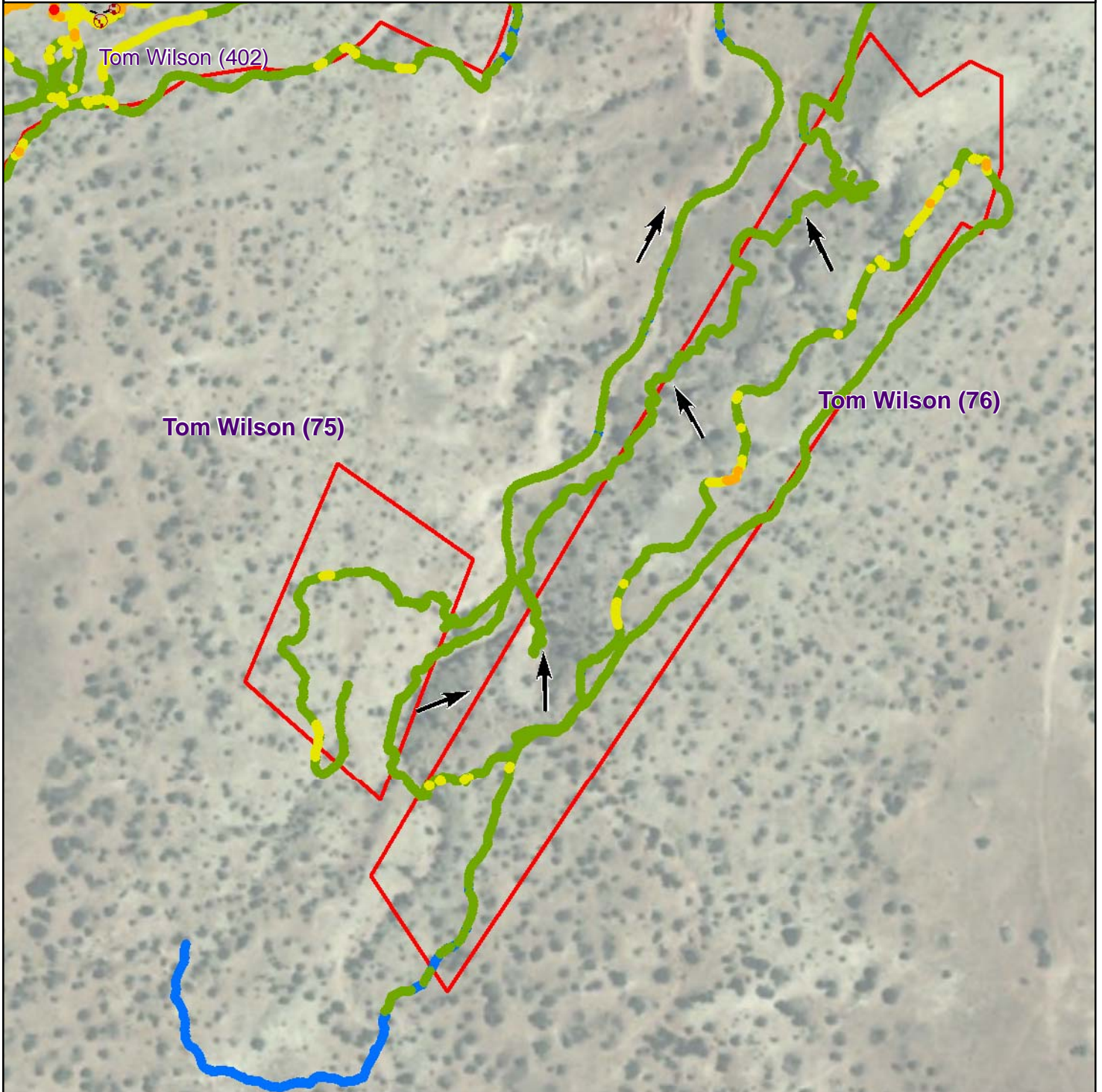
Average background 9,169 cpm

- ▭ Mine Site Boundary
- ➔ General Slope Direction
- ▨ Observed Reclamation Feature
- ▨ Observed Waste Pile
- ▤ Observed Structure
- ▨ Steep Grade





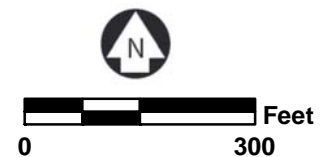
**Figure 2 - Gamma Radiation Measurements**  
**Tom Wilson (75, 76)**  
**Chilchinbito Chapter, Navajo Nation**



**Gamma Radiation Measurements**

- 0 - 10,000 cpm
- 10,000 - 25,000 cpm
- 25,000 - 50,000 cpm
- 50,000 - 100,000 cpm
- 100,000 - 250,000 cpm
- 250,000 - 500,000 cpm
- 500,000 - 1,000,000 cpm

- ▭ Mine Site Boundary
- ➔ General Slope Direction
- ▨ Observed Reclamation Feature
- ▨ Observed Waste Pile
- ▭ Observed Structure
- ▨ Steep Grade

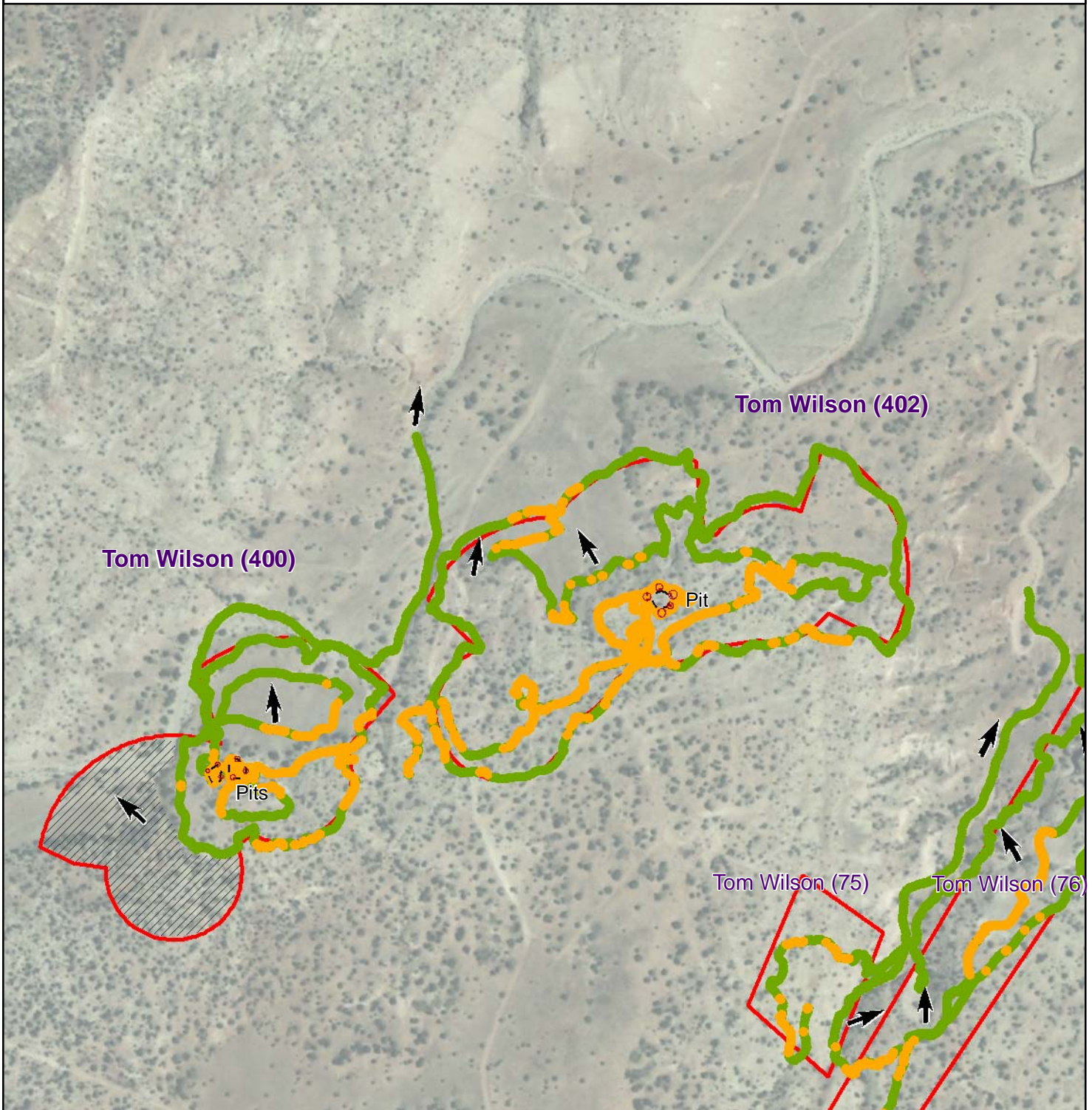


Measured as counts per minute (cpm)

Average background 9,169 cpm



**Figure 5 - Gamma Radiation Measurements, Above Two Times Background  
Tom Wilson (400, 402)  
Chilchinbito Chapter, Navajo Nation**



**Legend**

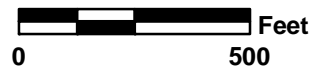
**Gamma Radiation Measurements**

- < 2X Background
- > 2X Background

Measured as counts per minute (cpm)

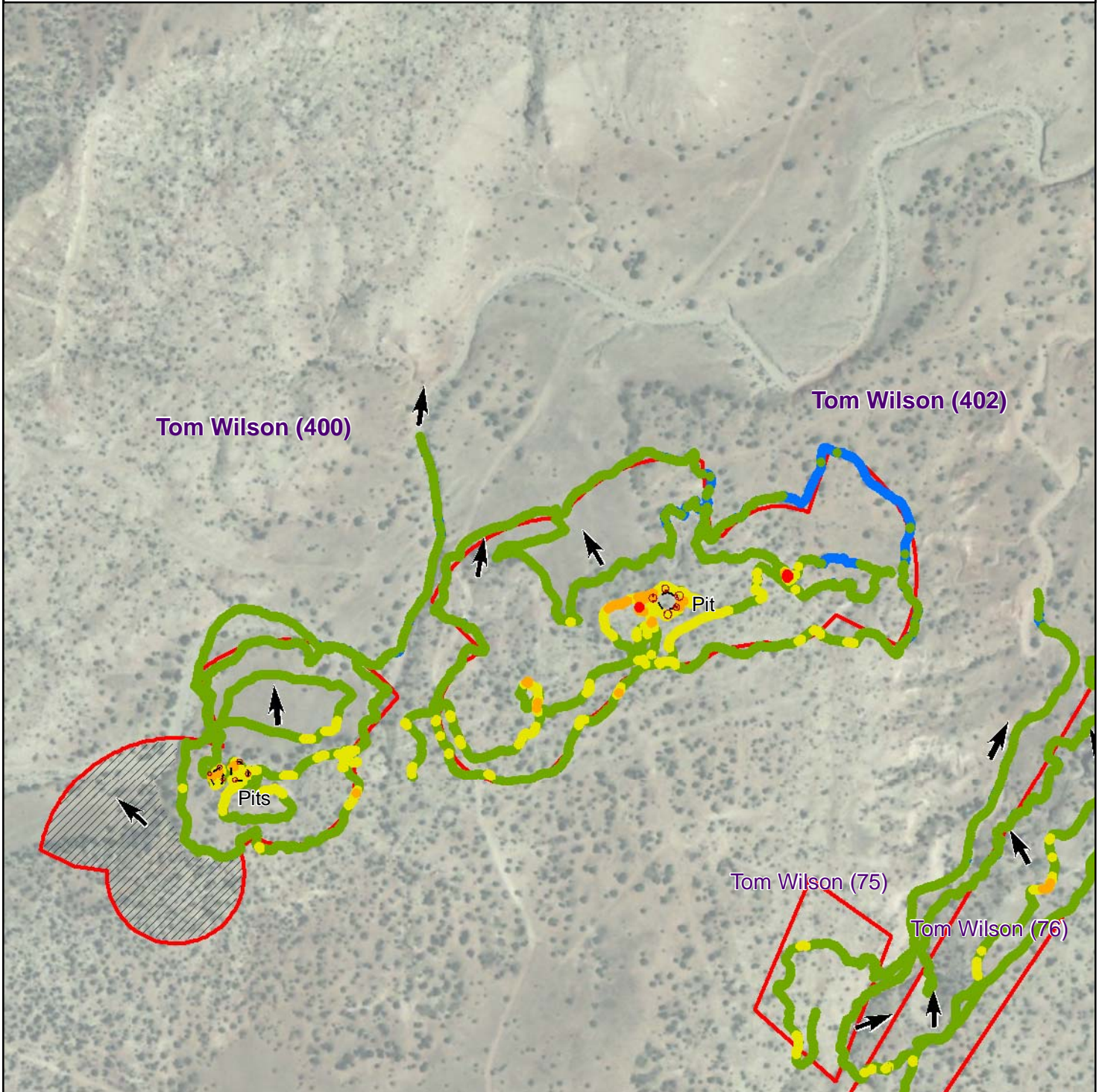
Average background 9,169 cpm

- ▭ Mine Site Boundary
- ➔ General Slope Direction
- ▨ Observed Reclamation Feature
- ▨ Observed Waste Pile
- ▣ Observed Structure
- ▨ Steep Grade





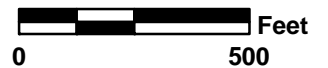
**Figure 6 - Gamma Radiation Measurements**  
**Tom Wilson (400, 402)**  
**Chilchinbito Chapter, Navajo Nation**



**Gamma Radiation Measurements**

- 0 - 10,000 cpm
- 10,000 - 25,000 cpm
- 25,000 - 50,000 cpm
- 50,000 - 100,000 cpm
- 100,000 - 250,000 cpm
- 250,000 - 500,000 cpm
- 500,000 - 1,000,000 cpm

- ▭ Mine Site Boundary
- ➔ General Slope Direction
- ▨ Observed Reclamation Feature
- ▨ Observed Waste Pile
- 🏠 Observed Structure
- ▨ Steep Grade



Measured as counts per minute (cpm)

Average background 9,169 cpm