

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 Klee

Mine IDs: 73, 74

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: 73; 74

Map ID: 73: C8
74: C7

CERCLIS: NNN000909177

Navajo Abandoned Mine Land Reclamation Program: 73: NA-0711
74: NA-0712

Local name / Aliases: Tom Klee #1 Mine

Chapter and local area: Chilchinbito

County: Apache **State:** Arizona

Lat/Long: 73: 36.4680846138 N / -109.900362062 W
74: 36.4591273058 N / -109.909018925 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

Tribal Trust Land	<input checked="" type="checkbox"/>	Public lands	<input type="checkbox"/>
Private	<input type="checkbox"/>	Tribal Fee Land	<input type="checkbox"/>
Bureau of Land Mgmt	<input type="checkbox"/>	Allotment	<input type="checkbox"/>
State	<input type="checkbox"/>	Fee land	<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 Historical documents identified the operator of the mine as Tom Klee in 1952, C.A. Wheeler and A.H. Green from 1952 to 1953, George W. Smith from 1956 to 1957, and Harold F. Rogers in 1958. 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: 73

Highest gamma radiation measurement: 50,220 counts per minute (cpm)

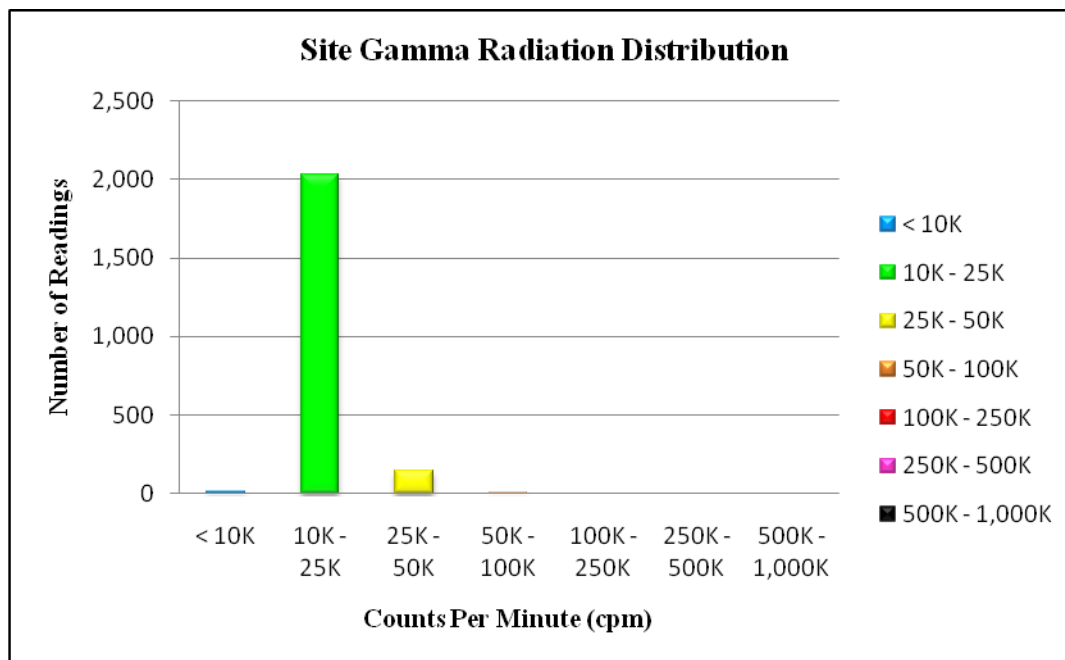
Background Average: 10,679 cpm **Two Times Background:** 21,358 cpm

Describe any other radiological measurements:

A total of 2,186 gamma radiation measurements were collected from the mine site, ranging from 9,265 cpm to 50,220 cpm. Measurements collected in the vicinity of the reclamation area between sites 73 and 74 were found at a maximum level of approximately 35,000 cpm. The measurements are represented in Figures 1, 2, 3 and 4.

Distribution Chart and Statistics:

Site Gamma Radiation Statistics	
Number of Readings	2,186
Minimum (cpm)	9,265
Maximum (cpm)	50,220
Mean (cpm)	16,361
Median (cpm)	14,965
Standard Deviation	5,224



Mine ID: 74

Highest gamma radiation measurement: 37,161 cpm

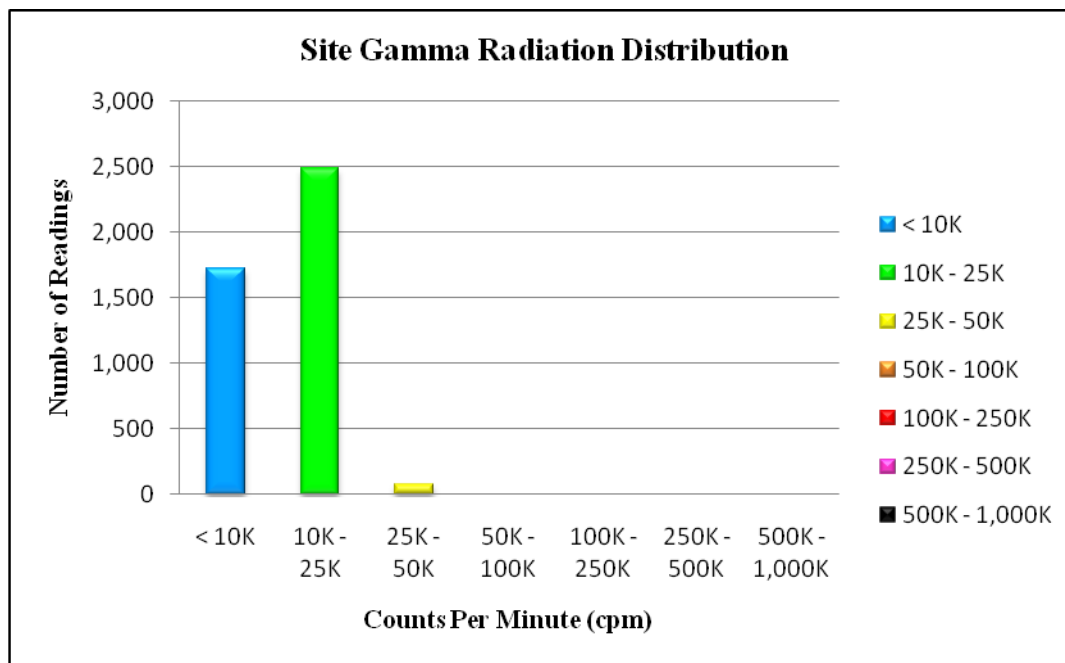
Background Average: 10,679 cpm **Two Times Background:** 21,358 cpm

Describe any other radiological measurements:

A total of 4,279 gamma radiation measurements were collected from the mine site, ranging from 5,565 cpm to 37,161 cpm. Measurements collected in the vicinity of the reclamation area between sites 73 and 74 were found at a maximum level of approximately 35,000 cpm. The measurements are represented in Figures 1, 2, 5 and 6.

Distribution Chart and Statistics:

Site Gamma Radiation Statistics	
Number of Readings	4,279
Minimum (cpm)	5,565
Maximum (cpm)	37,161
Mean (cpm)	11,819
Median (cpm)	10,428
Standard Deviation	4,145



Part III Status of Reclamation and Mine Waste

Mine ID: 73

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-0711

NAMLRP Mine features: 6 Rim Strips / Pits

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:

Reclamation area and berms between sites #73 and #74

Mine ID: 74

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-0712

NAMLRP Mine features: 10 Rim Strips / Pits

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:

Reclamation area and berms between sites #73 and #74

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: Wood structure/corral 250 ft N of site #74

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: Reservoir approximately 3 mi SE of site #74, and 3.5 mi SE of site #73

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 Klee mine claim consists of two separate mine sites (#'s 73, 74) with a total combined area of 428,592.47 m². The mine was identified as operational from 1952 to 1958. While operational, the mine had a total reported production volume of 64 tons. The mine surface land status is classified as Tribal Trust Land. Historical documents identified the operator of the mine as Tom Klee in 1952, C.A. Wheeler and A.H. Green from 1952 to 1953, George W. Smith from 1956 to 1957, and Harold F. Rogers in 1958. 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?

No

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?

Yes

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 #73; Reclamation area



Photo 2: Mine Site #73; Northwest boundary



Photo 3: Mine Site #73; Cliff area



Photo 4: Mine Site #73; Below cliff



Photo 5: Mine Site #73; Berm between #73 and #74



Photo 6: Mine Site #74



Photo 7: Mine Site #74



Photo 8: Mine Site #74; Wood structure



Photo 9: Mine Site #74

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

Name: _____

Title or official role (if any): _____

Telephone number: _____

Address: _____

Information provided: _____

Name: _____

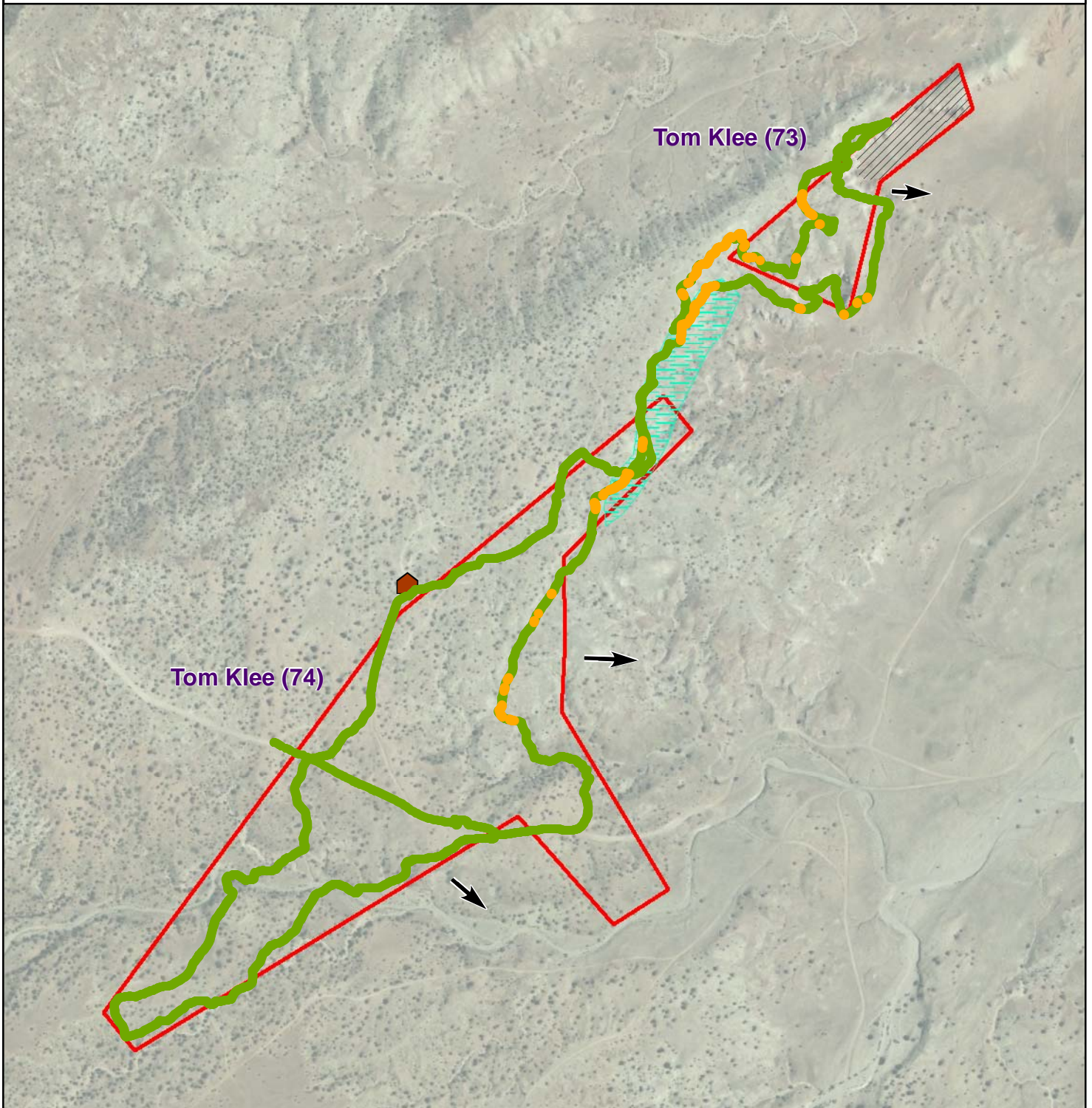
Title or official role (if any): _____

Telephone number: _____

Address: _____

Information provided: _____

**Figure 1 - Gamma Radiation Measurements, Above Two Times Background
Tom Klee (73, 74)
Chilchinbito Chapter, Navajo Nation**









Legend

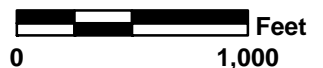
Gamma Radiation Measurements

- < 2X Background
- > 2X Background

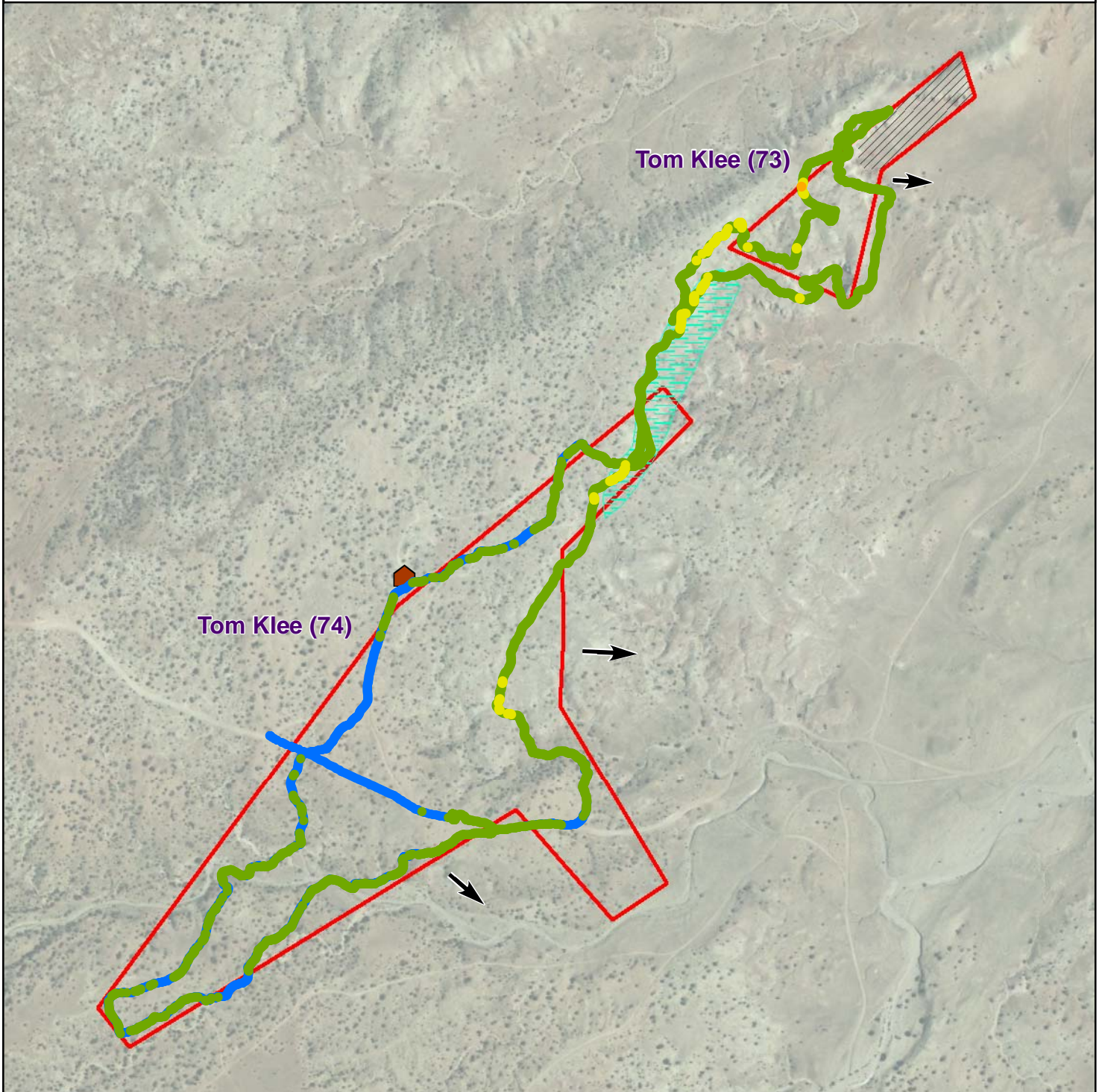
Measured as counts per minute (cpm)

Average background 10,679 cpm

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



**Figure 2 - Gamma Radiation Measurements
Tom Klee (73, 74)
Chilchinbito Chapter, Navajo Nation**



Gamma Radiation Measurements

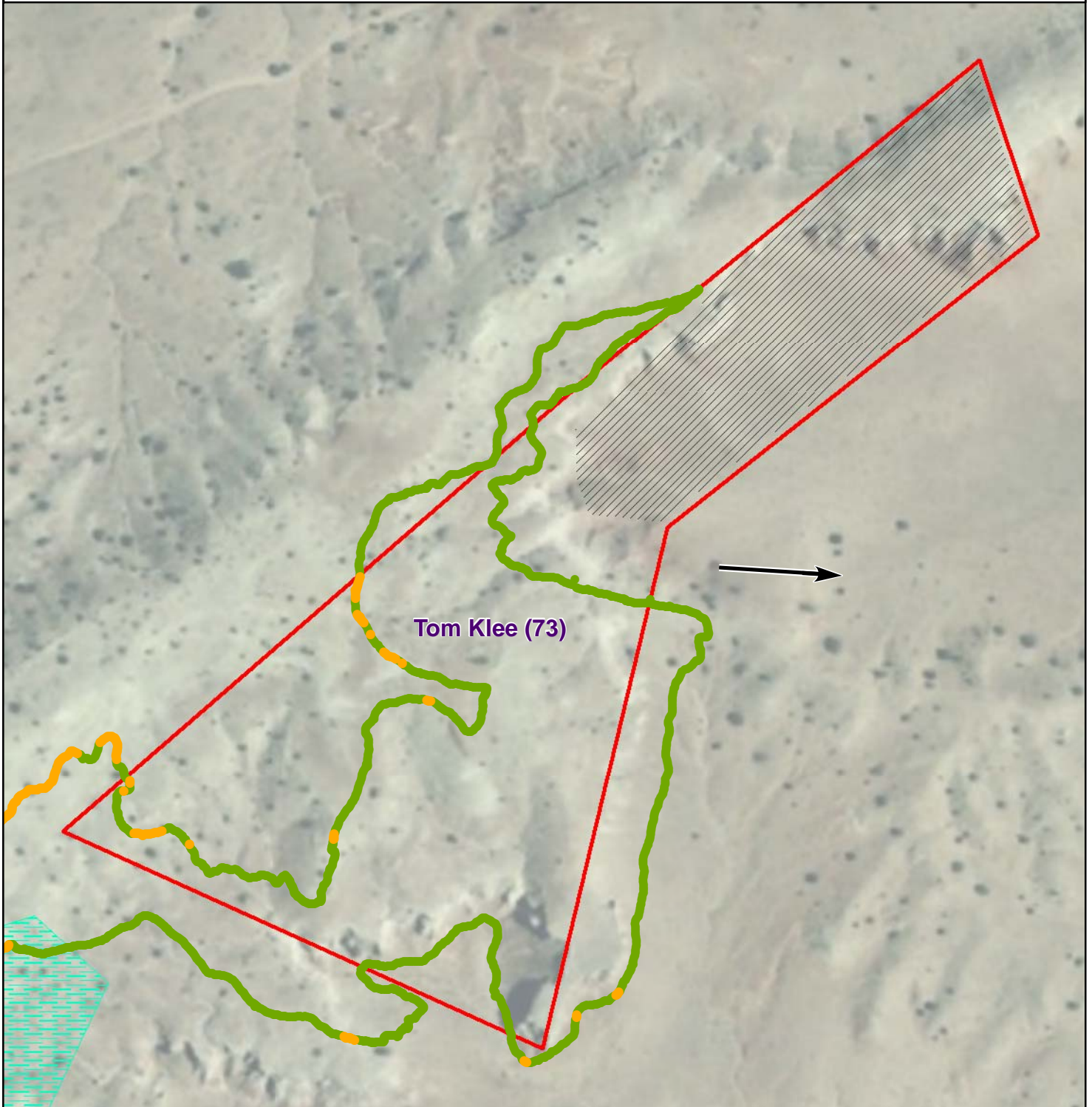
- 0 - 10,000 cpm
- 10,000 - 25,000 cpm
- 25,000 - 50,000 cpm
- 50,000 - 100,000 cpm
- 100,000 - 250,000 cpm
- 250,000 - 500,000 cpm
- 500,000 - 1,000,000 cpm

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



Measured as counts per minute (cpm) Average background 10,679 cpm

**Figure 3 - Gamma Radiation Measurements, Above Two Times Background
Tom Klee (73)
Chilchinbito Chapter, Navajo Nation**



Legend

Gamma Radiation Measurements

- < 2X Background
- > 2X Background

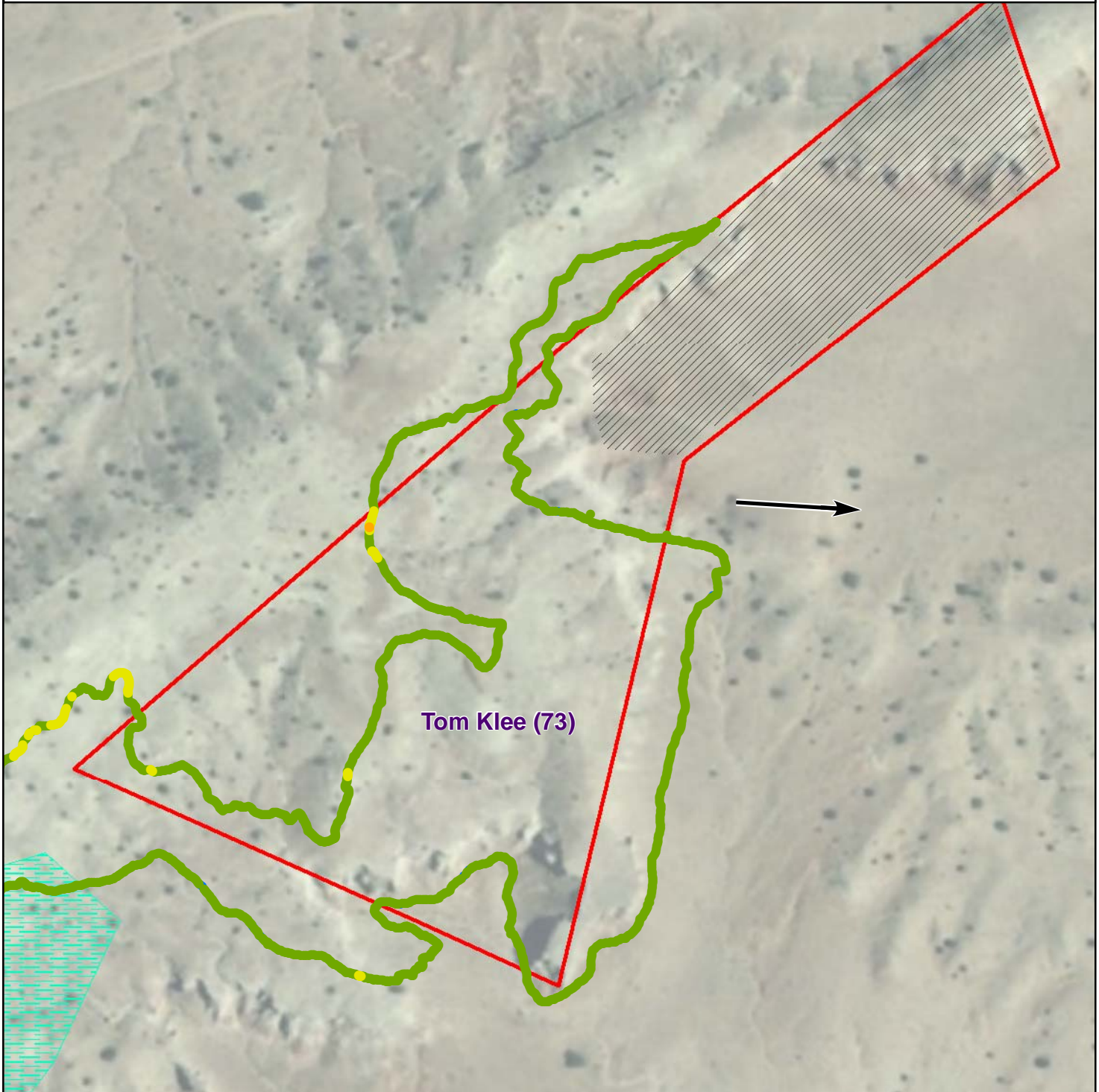
Measured as counts per minute (cpm)

Average background 10,679 cpm

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



**Figure 4 - Gamma Radiation Measurements
Tom Klee (73)
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

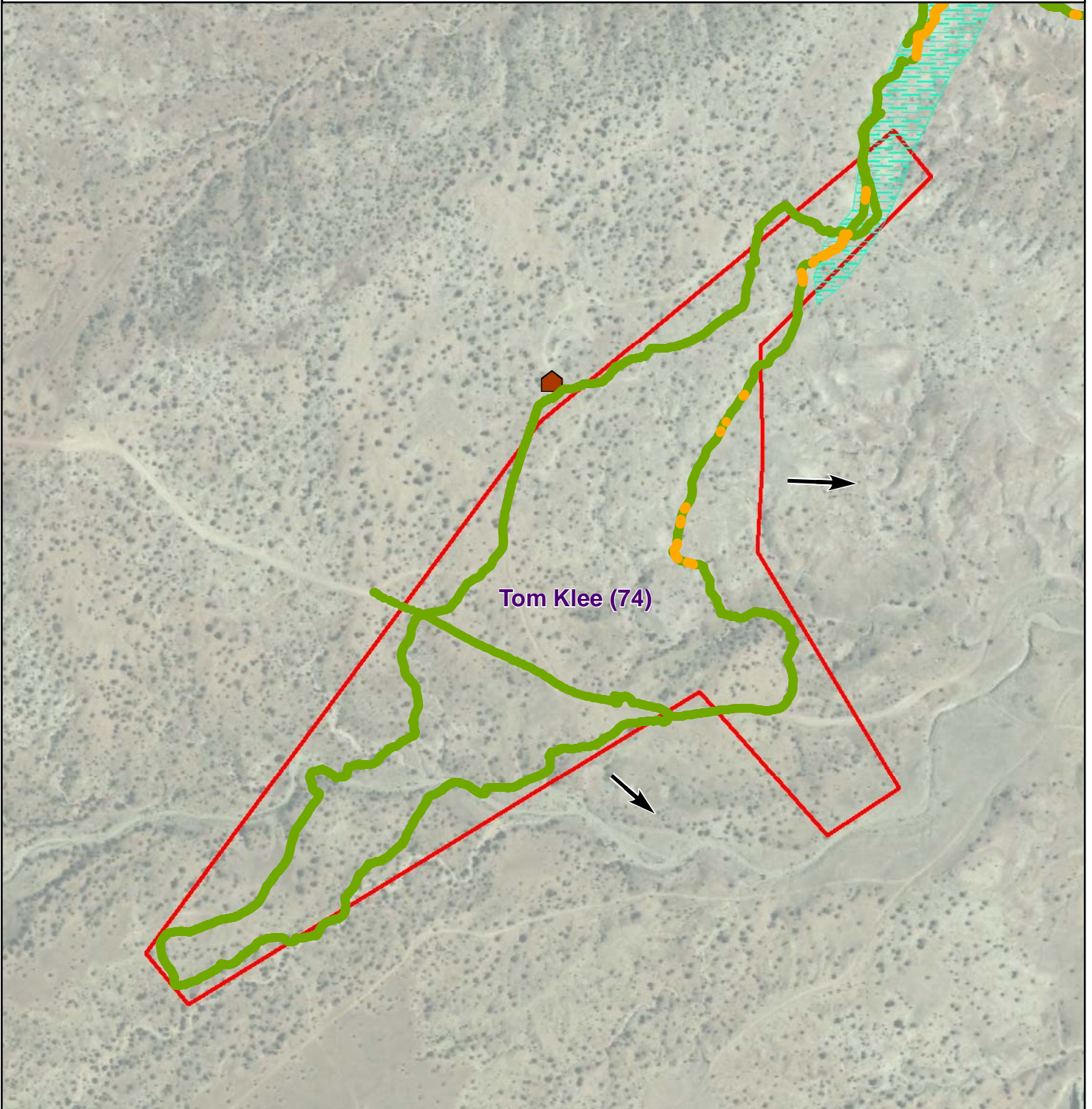
- ▭ Mine Site Boundary
- ➔ General Slope Direction
- ▨ Observed Reclamation Feature
- ▨ Observed Waste Pile
- 🏠 Observed Structure
- ▨ Steep Grade



Measured as counts per minute (cpm)

Average background 10,679 cpm

**Figure 5 - Gamma Radiation Measurements, Above Two Times Background
Tom Klee (74)
Chilchinbito Chapter, Navajo Nation**



Legend

Gamma Radiation Measurements

- < 2X Background
- > 2X Background

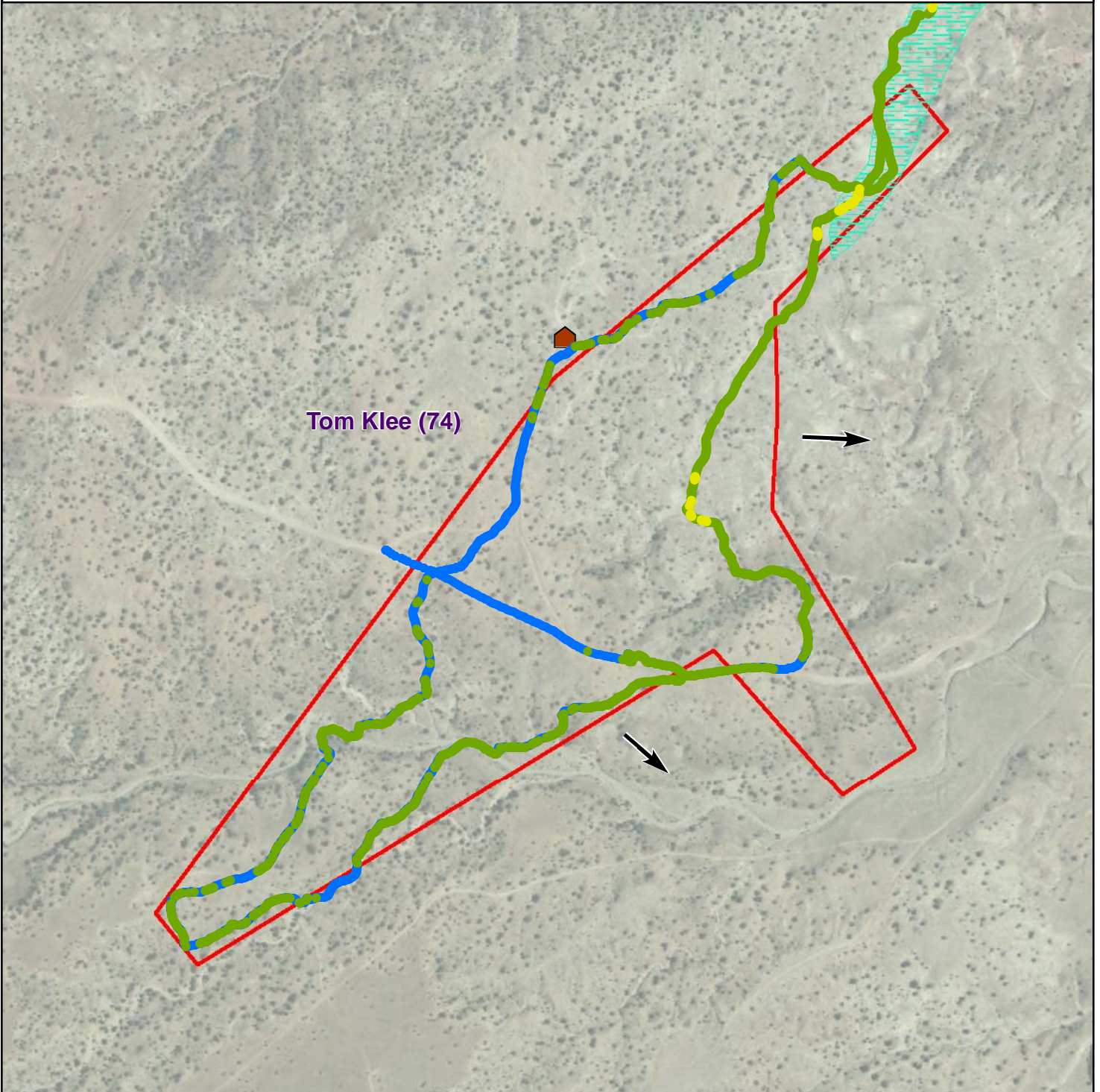
Measured as counts per minute (cpm)

Average background 10,679 cpm

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

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**Figure 6 - Gamma Radiation Measurements
Tom Klee (74)
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 10,679 cpm