

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: Tract 11 and Tract 11E

Mine IDs: 262, 263

Navajo AUM North Central Region

Prepared by:

Weston Solutions, Inc.

Contract: W91238-06-F-0083

20074.063.039.0020

April 2012

Part I Site Identification, Location and Status

Site Names and ID numbers as applicable

Mine ID: 262

Map ID: NC31

CERCLIS: NNN000909279

Navajo Abandoned Mine Land Reclamation Program: NA-0205

Local name / Aliases: Tract 11 Mines; Tract 11 Mine; Kimmerle & Redd; Tract #11

Chapter and local area: Oljato

County: Navajo

State: AZ

Lat/Long: 36.9634697494 N / -110.38305262 W

Nearby road and highway: Indian Route 6450 **Local Post Office:** Oljato, 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:

Historical documents identified the operator of the mine in 1956 as Phillips Petroleum Company, from 1957 to 1961 as Inar Norgaard, and from 1962 to 1963 as Howard Kimmerle and Preston Redd. No additional historical ownership / lease information was identified in the EPA / AUM database.

Number of residential structures within 200 feet of mine: None

Mine ID: 263

Map ID: NC30

CERCLIS: NNN000909279

Navajo Abandoned Mine Land Reclamation Program: NA-0203

Local name / Aliases: Tract 11 shaft mine; Tract 11 Mines; SM-68-11

Chapter and local area: Oljato

County: Navajo

State: AZ

Lat/Long: 36.968336705 N / -110.391476815 W

Nearby road and highway: Indian Route 6450 **Local Post Office:** Oljato, 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:

Historical documents identified the operator of the mine in 1956 as Phillips Petroleum Company, from 1957 to 1961 as Inar Norgaard, and from 1962 to 1963 as Howard Kimmerle and Preston Redd. 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: 262

Highest gamma radiation measurement: 441,750 counts per minute (cpm)

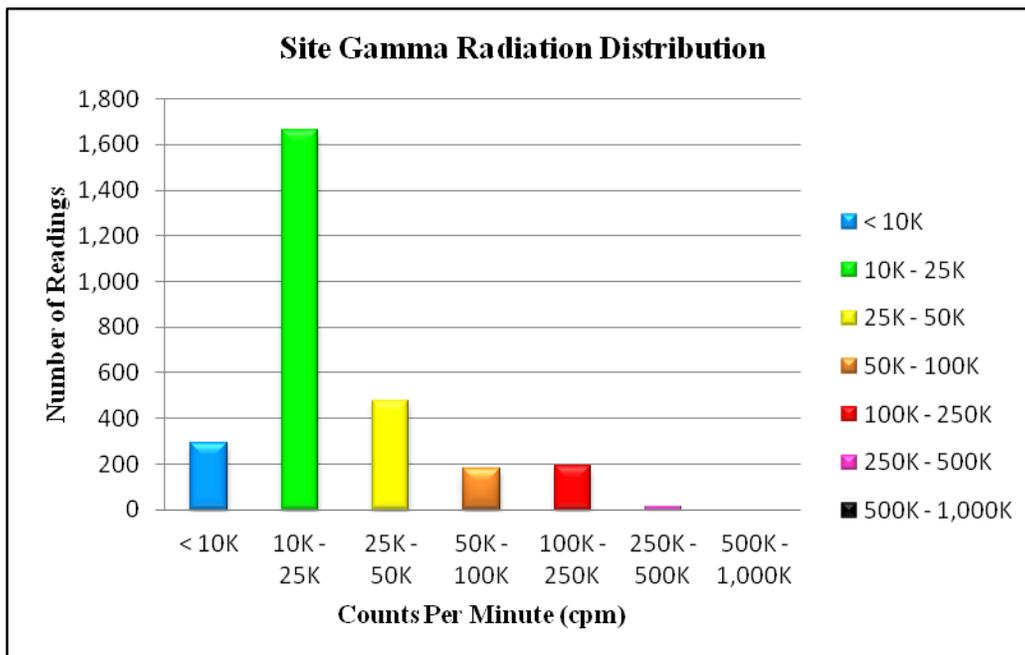
Background Average: 9,692 cpm **Two Times Background:** 19,384 cpm

Describe any other radiological measurements:

A total of 2,810 gamma radiation measurements were collected from the mine site, ranging from 5,489 cpm to 441,750 cpm. Maximum levels of approximately 250,000 cpm were found in the vicinity of the waste rock and 450,000 cpm were found in eroded portions of the reclamation area. The measurements are represented in Figures 1, 2, 3 and 4.

Distribution Chart and Statistics:

Site Gamma Radiation Statistics	
Number of Readings	2,810
Minimum (cpm)	5,489
Maximum (cpm)	441,750
Mean (cpm)	32,742
Median (cpm)	17,164
Standard Deviation	43,841



Mine ID: 263

Highest gamma radiation measurement: 148,871 counts per minute (cpm)

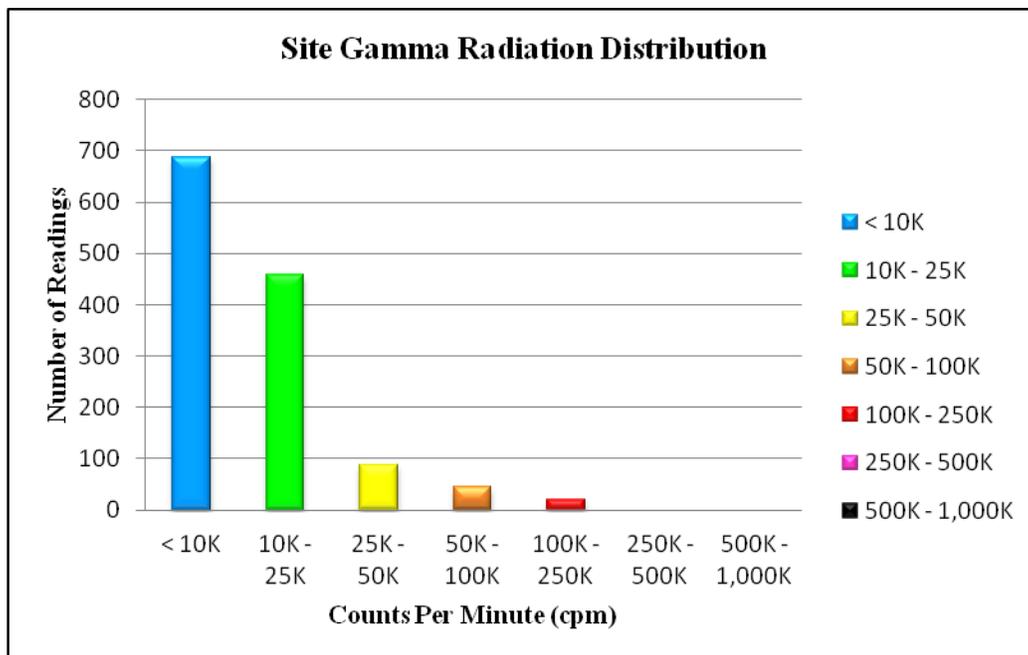
Background Average: 9,692 cpm **Two Times Background:** 19,384 cpm

Describe any other radiological measurements:

A total of 1,294 gamma radiation measurements were collected from the mine site, ranging from 5,477 cpm to 148,871 cpm. Maximum levels of approximately 150,000 cpm were found in reclamation area. The measurements are represented in Figures 1,2, 5 and 6.

Distribution Chart and Statistics:

Site Gamma Radiation Statistics	
Number of Readings	1,294
Minimum (cpm)	5,477
Maximum (cpm)	148,871
Mean (cpm)	15,781
Median (cpm)	9,761
Standard Deviation	19,230



Part III Status of Reclamation and Mine Waste

Mine ID: 262

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-0205

NAMLRP Mine features: 3 Portals

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:

Light grey rock (fine) on downslope of graded reclamation area, approximately 100' x 25'

Pits:

None Observed

Shafts:

None Observed

Other Debris and Mine Features:

Reclaimed/graded area in south portion of site with some metal mining debris

Mine ID: 263

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-0203

NAMLRP Mine features: 2 Verticals

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:

Site appears to be one large cap (two former shafts on topo), with some small metal mining debris.

Part IV Site Observations and Environs

Mine ID: 262

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

0 to 200 feet: 50 ft S - Fenced sheep pen/corral

200 feet to 0.25 mile: None Observed

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

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 site):

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 Tract 11 and Tract 11E (#262) mine claim consists of an area of 10,022 m². The mine was identified as being operational from 1958 to 1964. While operational, the mine had a total reported production volume of 14,913 tons. No additional historical ownership / lease information was identified in the EPA / AUM database.

Mine ID: 263

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

0 to 200 feet: None Observed

200 feet to 0.25 mile: None Observed

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

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):

None

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 site):

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 Tract 11 and Tract 11E (#263) mine claim consists of an area of 6,927 m². The mine was identified as being operational from 1958 to 1964. While operational, the mine had a total reported production volume of 14,913 tons. No additional historical ownership / lease information was identified in the EPA / AUM database.

Part V Response Action Summary

Mine ID: 262

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

Mine ID: 263

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?

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 #262



Photo 2

Mine Site #262 – Reclamation area



Photo 3

Mine Site #262



Photo 4

Mine Site #262 – Waste rock



Photo 5

Mine Site #262 - Drainage



Photo 6

Mine Site #262 - Corral



Photo 7

Mine Site #263



Photo 8

Mine Site #263



Photo 9

Mine Site #263

Part VII Contact 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: _____

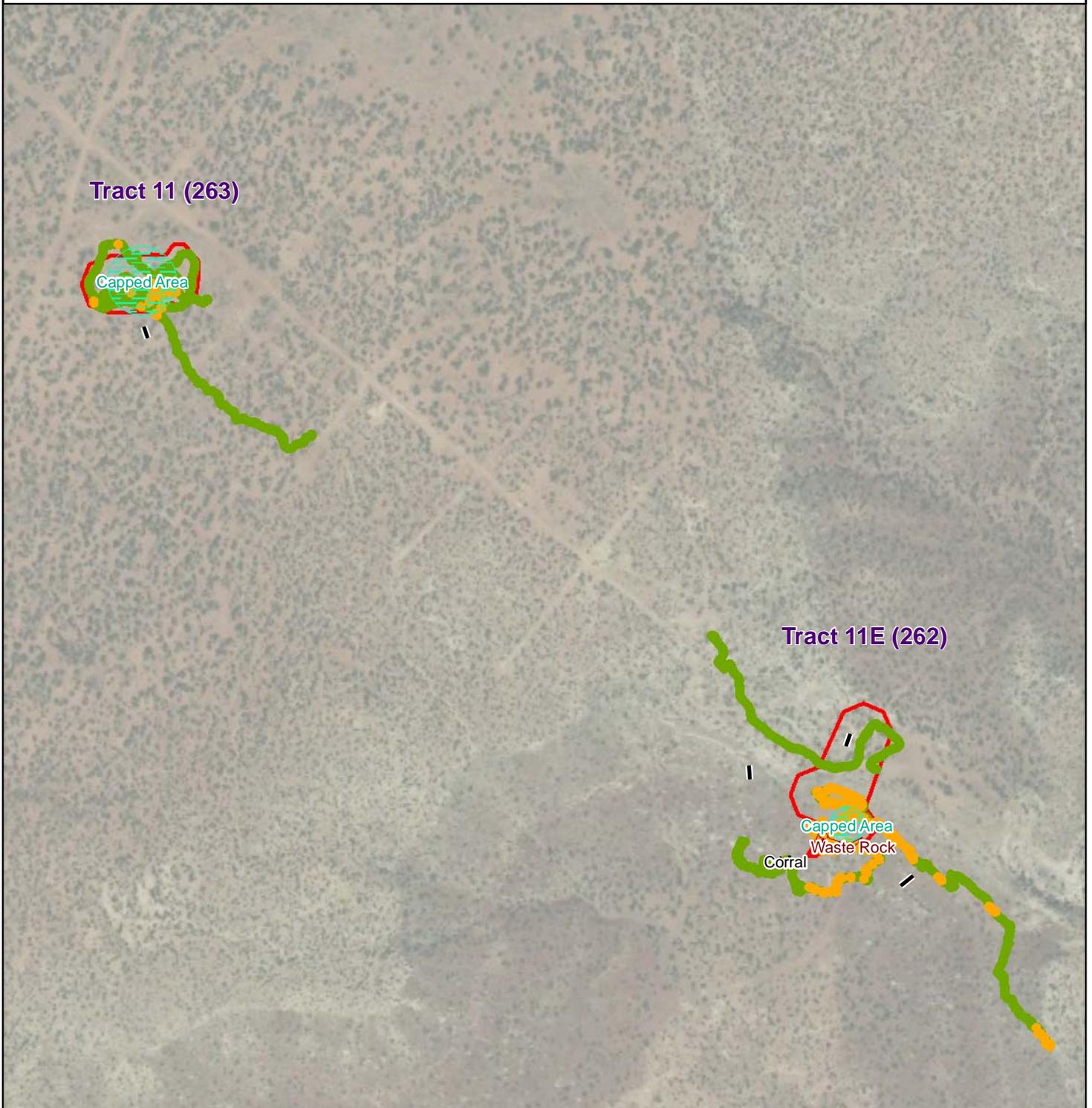
Title or official role (if any): _____

Telephone number: _____

Address: _____

Information provided: _____

**Figure 1 - Gamma Radiation Measurements, Above Two Times Background
Tract 11 and Tract 11E (262, 263)
Oljato Chapter, Navajo Nation**



Gamma Radiation Measurements

- < 2X Background
- > 2X Background

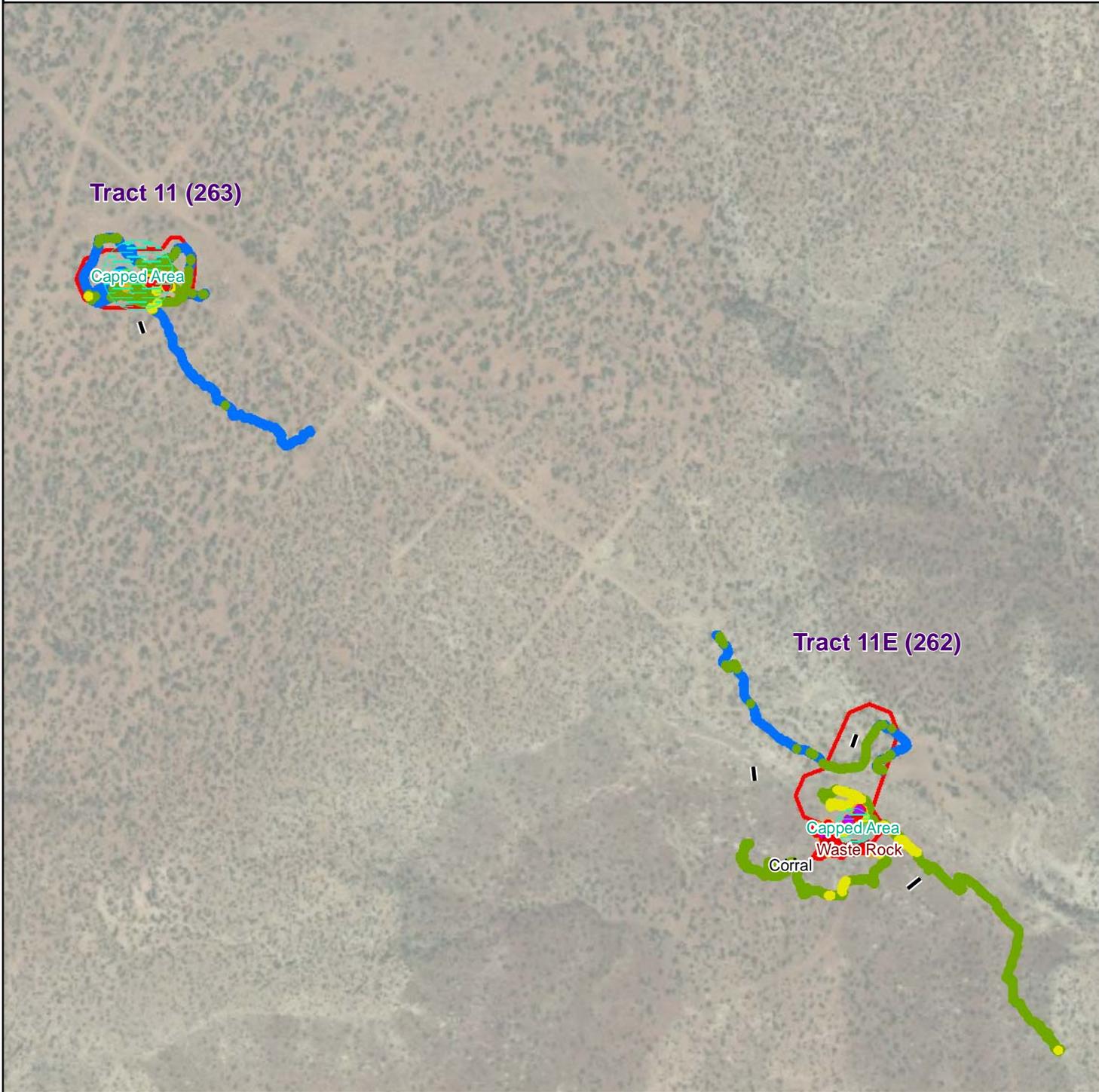
Measured as counts per minute (cpm)

Average background 9,692 cpm

- Mine Site Boundary
- General Slope Direction
- Observed Reclamation Feature
- Observed Waste Rock
- Observed Structure
- Observed Adit

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**Figure 2 - Gamma Radiation Measurements
Tract 11 and Tract 11E (262, 263)
Oljato Chapter, Navajo Nation**



Gamma Radiation Measurements

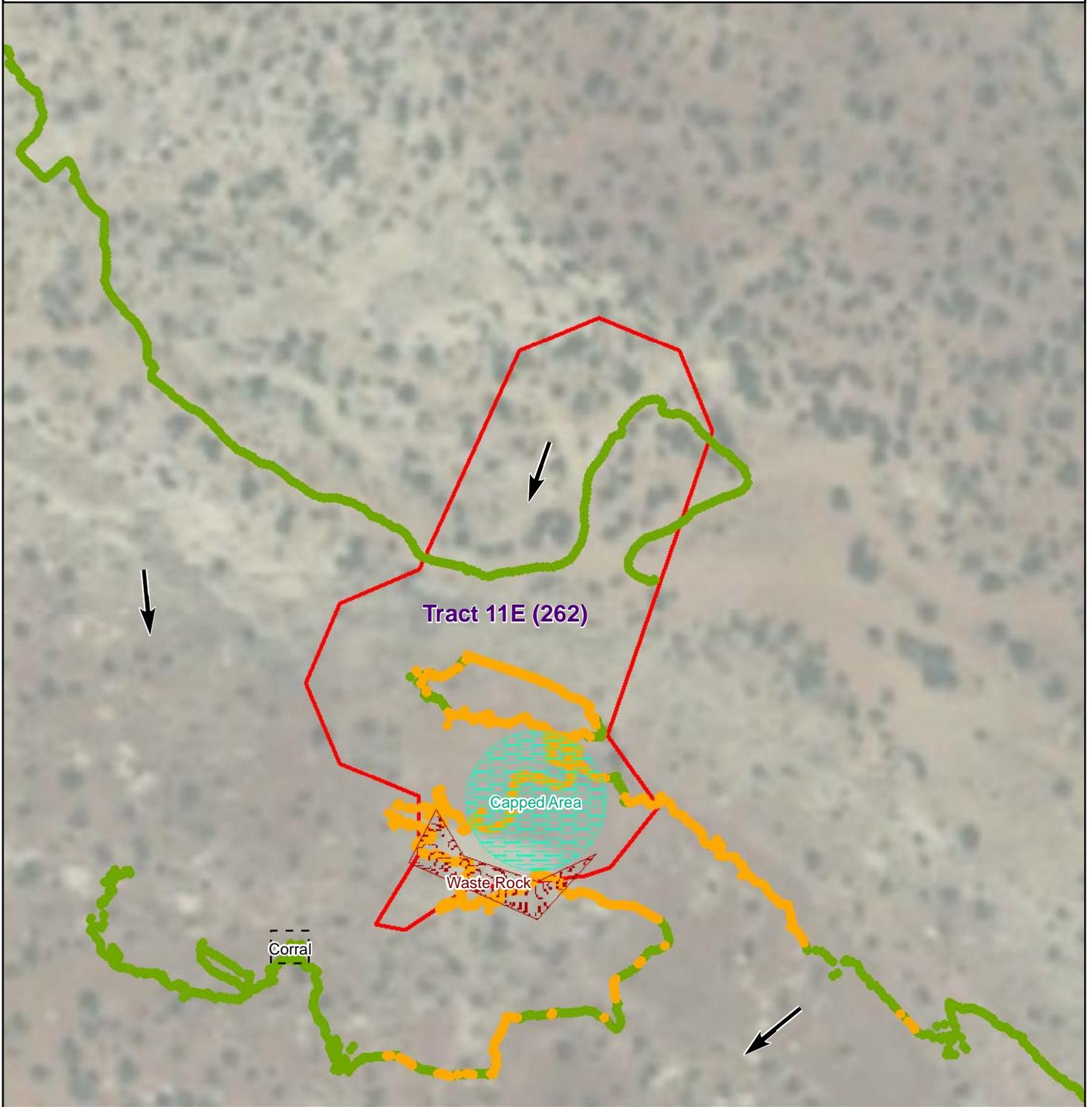
- 0 - 10,000 cpm
- 10,000 - 25,000 cpm
- 25,000 - 50,000 cpm
- 50,000 - 100,000 cpm
- 100,000 - 250,000 cpm
- 250,000 - 500,000 cpm
- 500,000 - 1,000,000 cpm

- ▭ Mine Site Boundary
- ➔ General Slope Direction
- ▨ Observed Reclamation Feature
- ▨ Observed Waste Rock
- 🏠 Observed Structure
- Observed Adit

Average background 9,692 cpm

Measured as counts per minute (cpm)

**Figure 3 - Gamma Radiation Measurements, Above Two Times Background
Tract 11 and Tract 11E (262, 263)
Oljato Chapter, Navajo Nation**



Gamma Radiation Measurements

- < 2X Background
- > 2X Background

Measured as counts per minute (cpm)

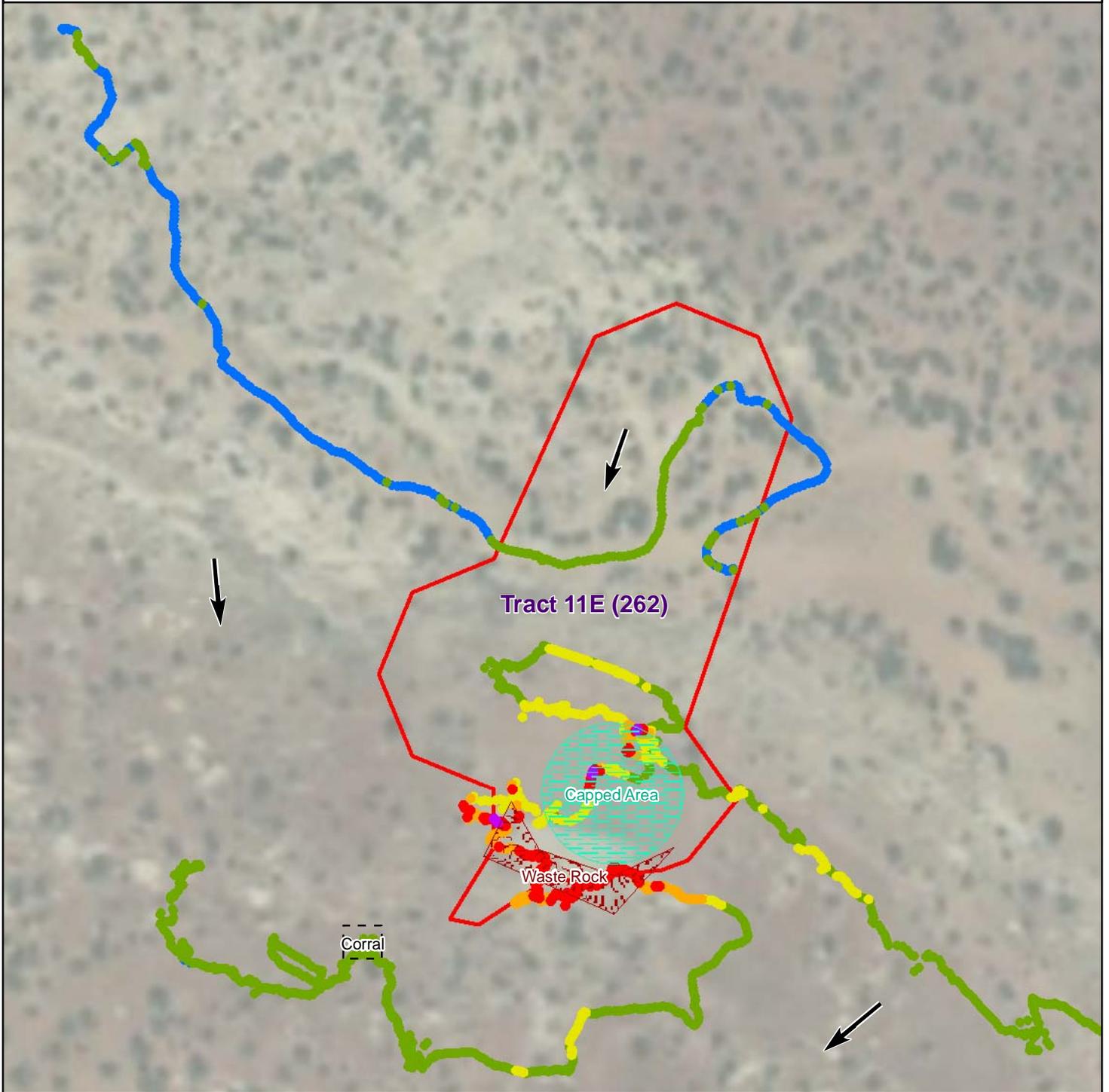
Average background 9,692 cpm

- Mine Site Boundary
- General Slope Direction
- Observed Reclamation Feature
- Observed Waste Rock
- Observed Structure
- Observed Adit

Feet
 0 100

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**Figure 4 - Gamma Radiation Measurements
Tract 11 and Tract 11E (262, 263)
Oljato 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 Rock
- ▭ Observed Structure
- ↔ Observed Adit

Average background 9,692 cpm

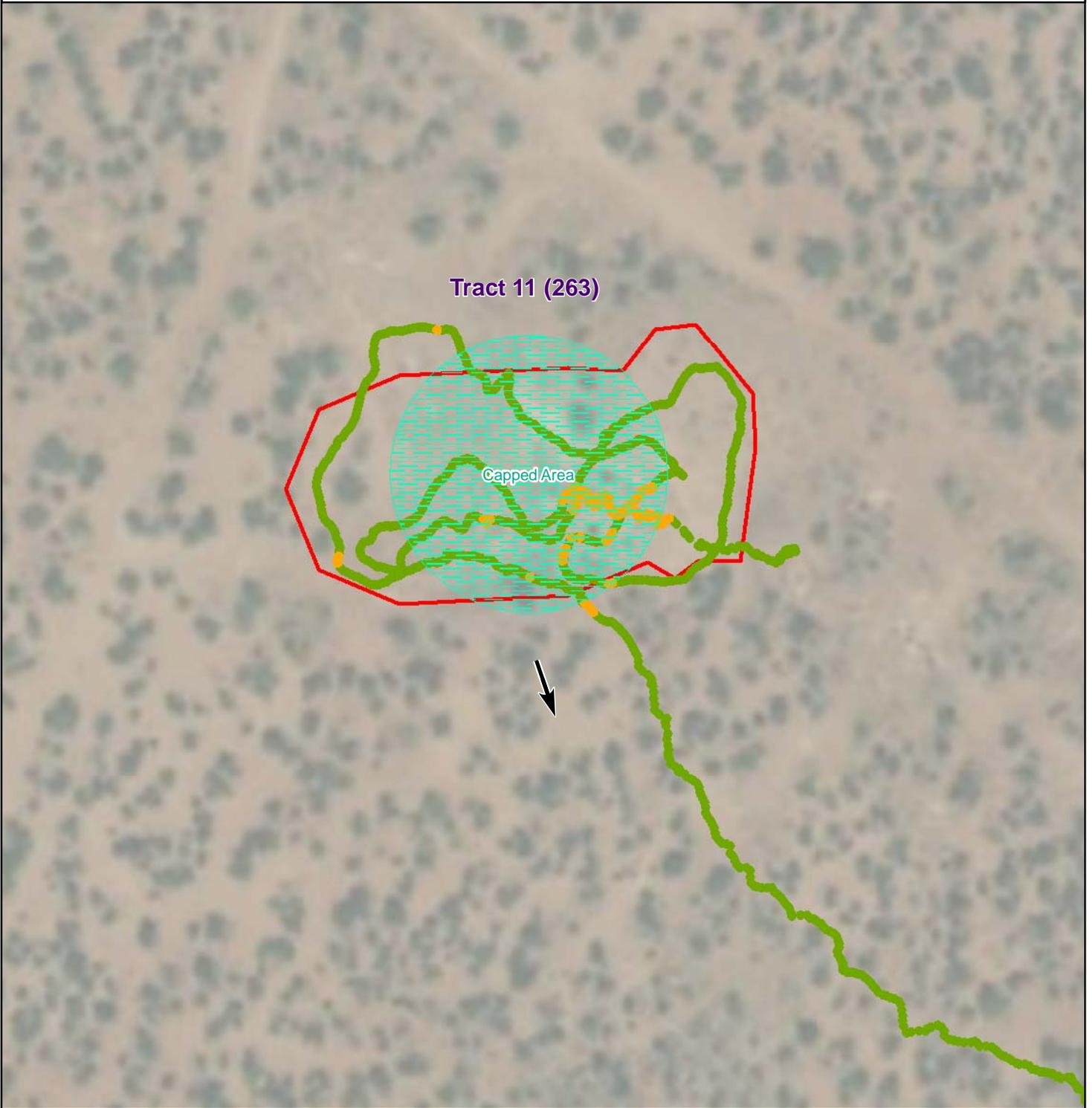
Measured as counts per minute (cpm)

N

0 100 Feet

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**Figure 5 - Gamma Radiation Measurements, Above Two Times Background
Tract 11 and Tract 11E (262, 263)
Oljato Chapter, Navajo Nation**



Gamma Radiation Measurements

- < 2X Background
- > 2X Background

Measured as counts per minute (cpm)

Average background 9,692 cpm

- Mine Site Boundary
- General Slope Direction
- Observed Reclamation Feature
- Observed Waste Rock
- Observed Structure
- > Observed Adit

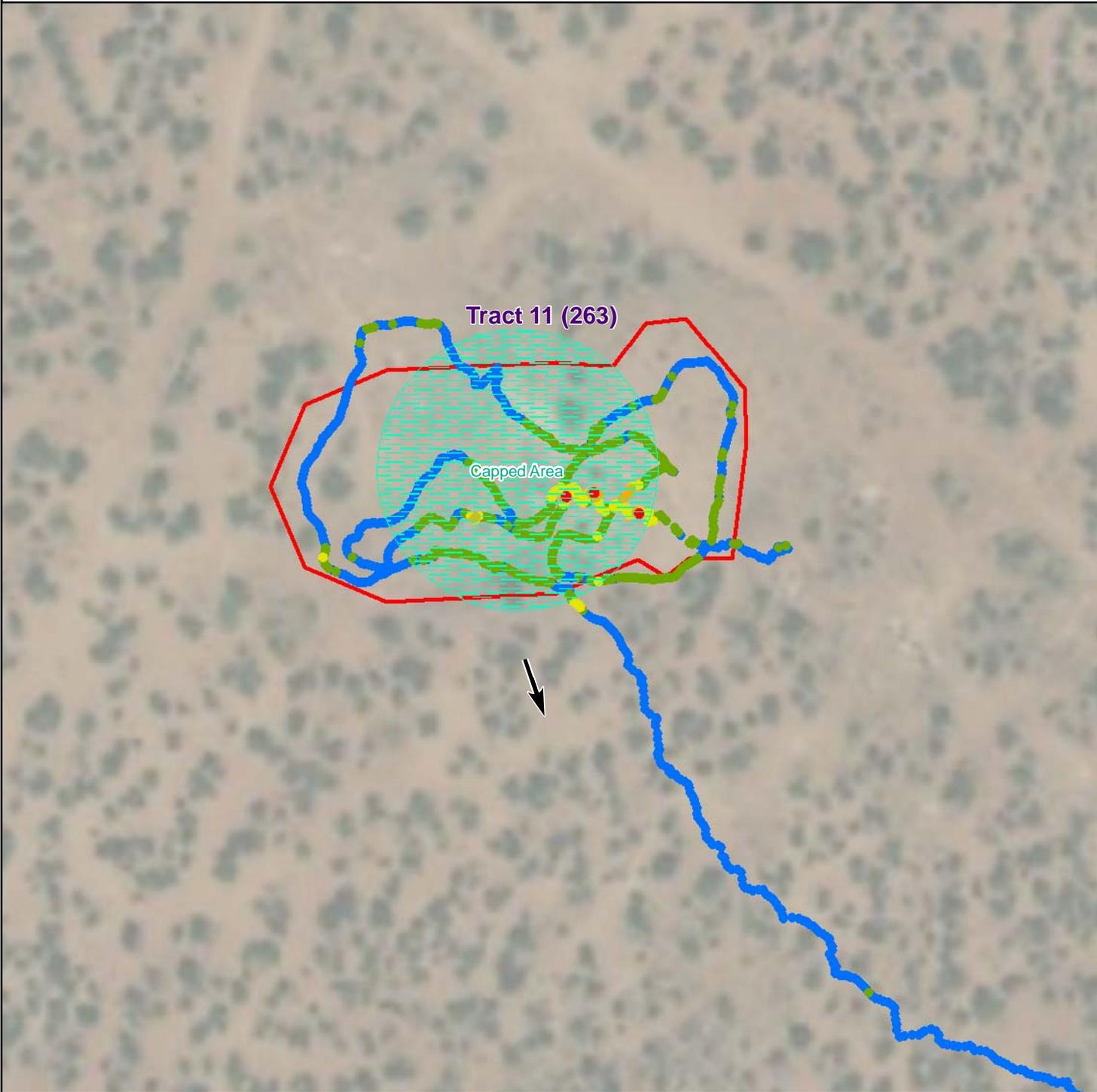








**Figure 6 - Gamma Radiation Measurements
Tract 11 and Tract 11E (262, 263)
Oljato Chapter, Navajo Nation**



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 Rock
- 🏠 Observed Structure
- Observed Adit

Average background 9,692 cpm

Measured as counts per minute (cpm)

N

0 100 Feet

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