

# **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.*

### **Charles Huskon No. 8 AUM Site**

**Navajo AUM Western Region**

**Prepared by:**

**Weston Solutions, Inc.**

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

**12767.063.599.1111**

**January 2011**

**Part I Site Identification, Location and Status****Site Names and ID numbers as applicable****Mine ID:** 167; 168**Map ID:** *167:* W77; *168:* W76**CERCLIS:** NNN000909087**Navajo Abandoned Mine Land Reclamation Program:** *167:* NA-0158B; *168:* NA-0158A**Local name / Aliases:** Huskon No. 8; Charles Huskon #8; Huskon #8**Chapter and local area:** Cameron Chapter**County:** Coconino **State:** Arizona**Lat/Long:** *167:* 35.7701169657 N / -111.364175635 W  
*168:* 35.773717284 N / -111.366328583 W**Nearby road and highway:** Highway 89 **Local Post Office:** Cameron, 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 Charles Huskon No. 8 mine claim consists of 2 separate mine sites (#'s 167, 168). The mine claim surface land status is classified as Tribal Trust Land. Historical documents showed the operator of the mine as the Arrowhead Uranium Corporation in 1953, the Rare Metals Corporation from 1956 to 1957, and the Domino Mining Company from 1959 to 1960. No additional ownership / lease information was identified in the EPA/AUM database.

**Number of residential structures within 200 feet of mine:** None**Estimated volume of mine waste onsite:** *167:* 503 yd<sup>3</sup>  
*168:* 506 yd<sup>3</sup>

## Part II      Summary of radiological readings

**Mine ID:** 167

### Highest gamma radiation measurement:

237,985 counts per minute (cpm)

### Describe any other radiological measurements:

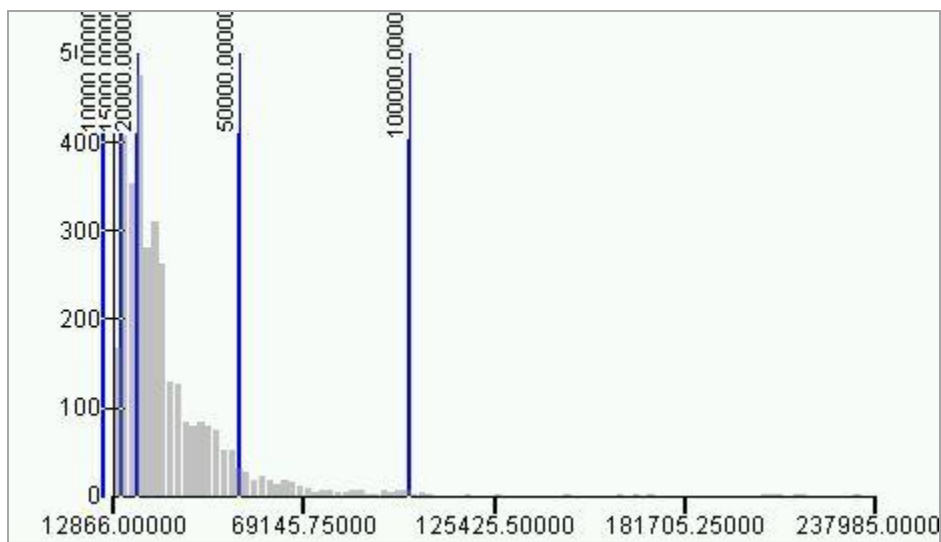
A total of 3,315 gamma radiation measurements were collected from the mine site, ranging from 12,866 cpm to 237,985 cpm. The measurements collected at the waste piles were found at maximum levels ranging from approximately 100,000 cpm to 240,000 cpm, and at the reclamation caps at maximum levels ranging from approximately 25,000 cpm to 100,000 cpm. The measurements are represented in Figures 1 and 2.

**Background Readings:** 14,507 cpm

**Background Average:** 14,507 cpm (mine claim background average was 17,751 cpm)

### Distribution Chart and Statistics:

The following chart and statistics were generated by ESRI ArcGIS 9.3.1, and show the general distribution of the site gamma radiation measurements. The horizontal X axis represents the gamma radiation reading levels in cpm (lowest levels to the left). The vertical Y axis represents the frequency of each gamma radiation level.



Count:	3315
Minimum:	12866.00000
Maximum:	237985.00000
Sum:	100131366.00000
Mean:	30205.54027
Median:	23922.00000
Standard Deviation:	22478.62095

**Mine ID:** 141

**Highest gamma radiation measurement:**

188,731 counts per minute (cpm)

**Describe any other radiological measurements:**

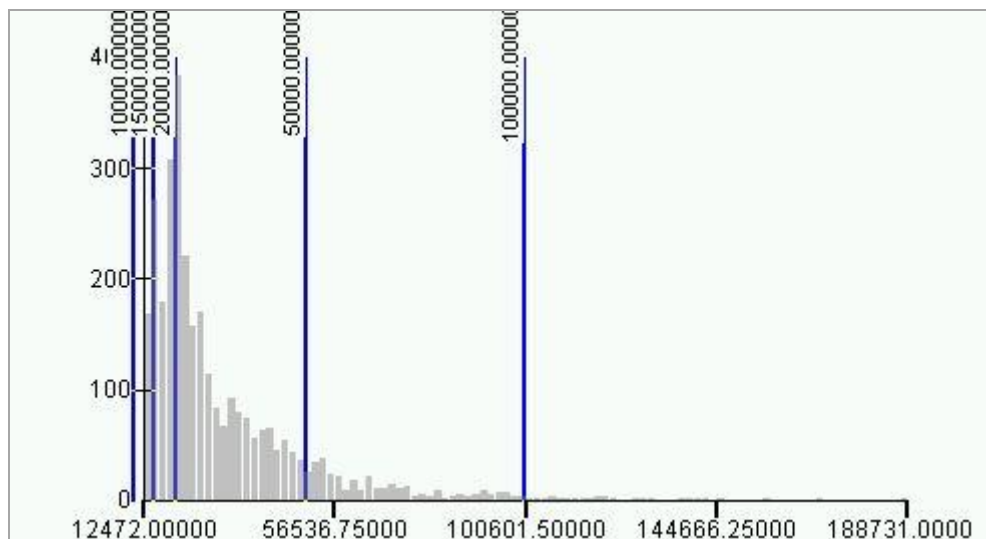
A total of 3,101 gamma radiation measurements were collected from the mine site, ranging from 12,472 cpm to 188,731 cpm. The measurements collected at the waste piles were found at maximum levels ranging from approximately 32,000 cpm to 190,000 cpm, and at the reclamation caps at maximum levels ranging from approximately 35,000 cpm to 60,000 cpm. The measurements are represented in Figures 1 and 2.

**Background Readings:** 20,994 cpm

**Background Average:** 20,994 cpm (mine claim background average was 17,751)

**Distribution Chart and Statistics:**

The following chart and statistics were generated by ESRI ArcGIS 9.3.1, and show the general distribution of the site gamma radiation measurements. The horizontal X axis represents the gamma radiation reading levels in cpm (lowest levels to the left). The vertical Y axis represents the frequency of each gamma radiation level.



Count:	3101
Minimum:	12472.00000
Maximum:	188731.00000
Sum:	93794260.00000
Mean:	30246.45598
Median:	23331.00000
Standard Deviation:	18879.81613

**Part III      Status of Reclamation and Mine Waste****Mine ID:** 167

**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-0158B**NAMLRP Mine features:** 1 Rim Strip / Pit

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**The following information was obtained from field observations collected during the 2010 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

**Waste Piles**

3 waste piles: 1 - 50' x 30' x 7' grey mound; 2 - 7' diameter x 2.5' high grey mound with rock markers; 3 - 25' x 10' x 12' grey/tan mound at bottom of drainage beneath caps; N edge of reclamation cap exposed grey rock

**Pits**

None

**Shafts**

None

**Other Debris and Mine Features**

3 reclamation caps: 250' x 100 x 15' mound, red-brown sandy clay; 100' x 80' x 2' high mound, red-brown sandy clay; 450' x 150' x 20' mound, red-brown clay

**Mine ID:** 168

**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-0158A

**NAMLRP Mine features:** 1 Rim Strip / Pit

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**The following information was obtained from field observations collected during the 2010 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

**Waste Piles**

4 possible waste piles: 1 - offsite 30' diameter x 15' h mound; 2 - 30' diameter x 15' h mound; 3 - 30' x 10' x 4' grey mound; 4 - 45' x 15' x 8' grey mound

**Pits**

None

**Shafts**

None

**Other Debris and Mine Features**

2 reclamation caps; cap 1 - large cap near offsite debris, clay with uniform rocks; 2 - possible pit area with crescent berm, sandy clay

## Part IV

### Site observations and Environs

**Observed Structures: list number of and describe human habitation status of structures at the following distances from mine:**

**0 to 200 feet:** None

**200 feet to 0.25 mile:** None

**Observed Public or commercial structure: list and describe all schools, clinics, Chapter Houses, places of business and any other structure used by members of the community at the following distances:**

**0 to 200 feet:** None

**200 feet to 0.25 mile:** None

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

None

**Observed water sources: list the 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

**0.25 miles to 4 miles:** Windmill Well approximately 2.5 mi SW of the site; Little Colorado River Basin approximately 2 mi E of the site

**Sensitive environments: note and describe 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

**Known Site History: include information from interviews with Chapter officials and residents. Note information on mine ownership, type of mining operation, period of operation, known amount of production, and any other information as provided.**

Charles Huskon No. 8 mine claim consists of 2 separate mine sites (#'s 167, 168) with a total combined area of 102,782.24 m<sup>2</sup>. The mine claim was identified as being operational from 1953 to 1960. Historical documents showed the operator of the mine as the Arrowhead Uranium Corporation in 1953, the Rare Metals Corporation from 1956 to 1957, and the Domino Mining Company from 1959 to 1960. While operational, the mine had a total production volume of 626 tons. No other historical information or any additional 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?**

Yes

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

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

Yes (two reclamation caps)



## Part VI      Photos

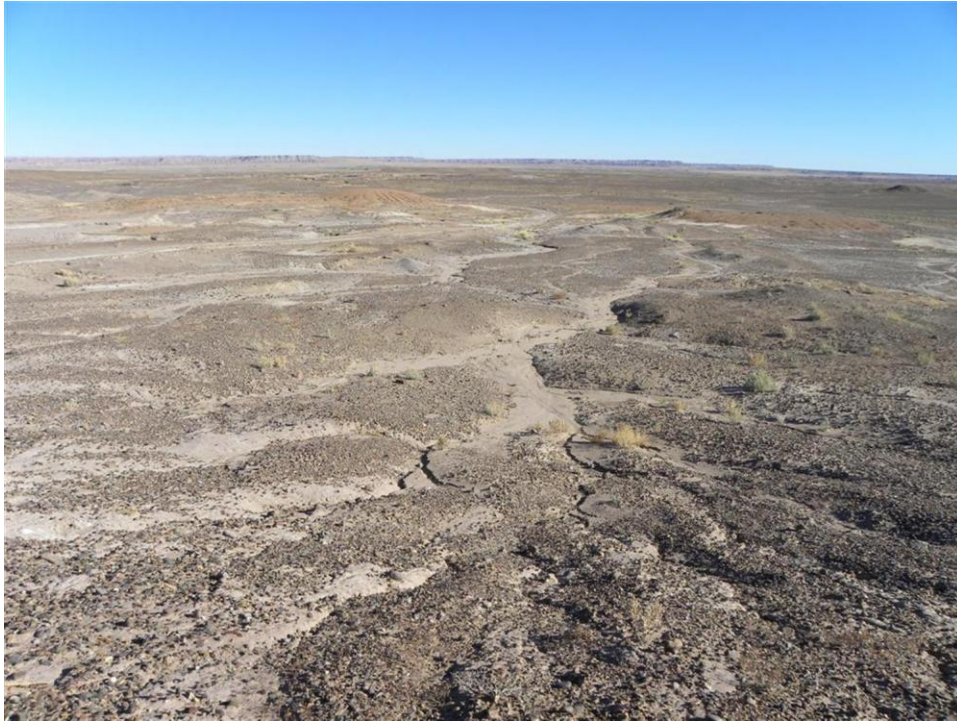


Photo 1. Charles Huskon No. 8, Site #167



Photo 2. Charles Huskon No. 8, Site #167, reclamation area





Photo 3. Charles Huskon No. 8, Site #167, waste pile



Photo 4. Charles Huskon No. 8, Site #167, waste pile





Photo 5. Charles Huskon No. 8, Site #167, mound



Photo 6. Charles Huskon No. 8, Site #168



Photo 7. Charles Huskon No. 8, Site #168, berm area



Photo 8. Charles Huskon No. 8, Site #168, berm/trench area





Photo 9. Charles Huskon No. 8, Site #168, berm area



Photo 10. Charles Huskon No. 8, Site #168, possible waste piles

**Part VII      Contacts Reports and Information**Name: Stanley Edison (928) 871-6861Eugene Esplain (928) 871-7331Title or official role (if any) Navajo EPA Superfund ProgramAddress PO Box 2946, Window Rock, AZ 86515Information provided Lead Regulatory Agency

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Name\_\_\_\_\_

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

Address\_\_\_\_\_

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

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

Name\_\_\_\_\_

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

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

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

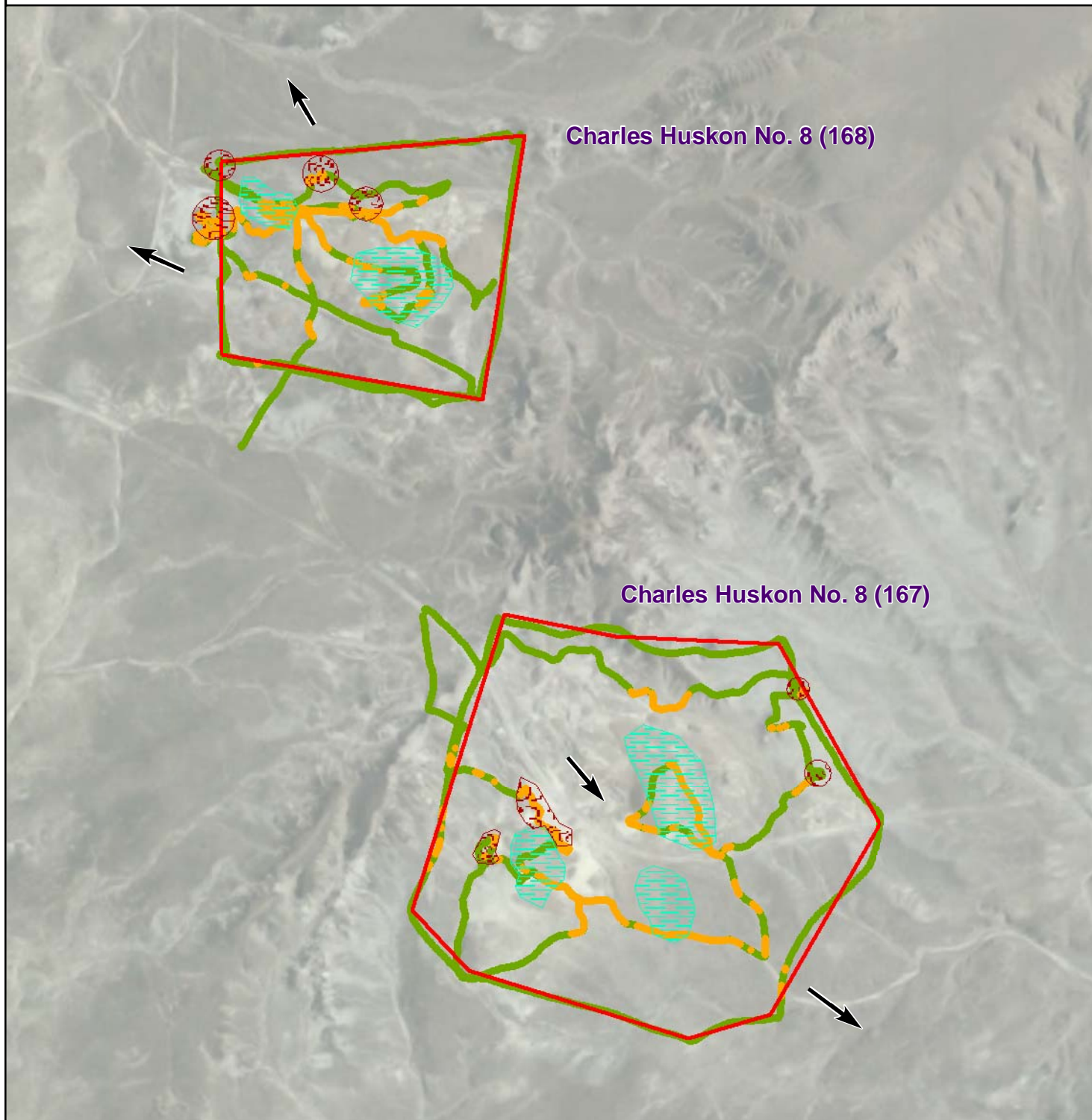
Name\_\_\_\_\_

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

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

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

**Figure 1 - Gamma Radiation Measurements, Above Two Times Background  
Charles Huskon No. 8 (167, 168)  
Cameron Chapter, Navajo Nation**



## Legend

### Gamma Radiation Measurements

- < 2X Background
- > 2X Background

Gamma survey conducted 11/2010  
Measured as counts per minute (cpm)

Average background 17,751 cpm

- General Slope Direction
-  Observed Waste Pile
-  Observed Reclamation Area
-  Mine Site Boundary



0 400 Feet



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**Figure 2 - Gamma Radiation Measurements**  
**Charles Huskon No. 8 (167, 168)**  
**Cameron Chapter, Navajo Nation**

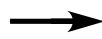
Charles Huskon No. 8 (168)

Charles Huskon No. 8 (167)

## Legend

### Gamma Radiation Measurements

- 0 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 50,000
- 50,000 - 100,000
- > 100,000



General Slope Direction



Observed Waste Pile



Observed Reclamation Area



Mine Site Boundary

**Gamma survey conducted 11/2010**  
**Measured as counts per minute (cpm)**

**Average background 17,751 cpm**



0 400 Feet



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