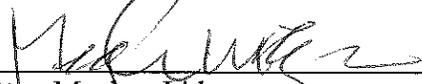


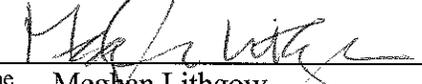
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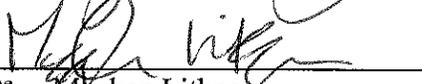
Client: DMC Project: White Mesa Mill – Cell 4B Project/  
Proposal No.: SC0349  
Task No.

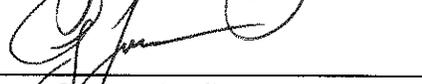
Title of Computations CELL 4B CAPACITY CALCULATIONS

Computations by: Signature  08/06/09  
Printed Name Meghan Lithgow Date  
Title Senior Staff Engineer

Assumptions and Procedures Checked by: Signature  8/7/09  
(peer reviewer) Printed Name Keaton Botelho Date  
Title Senior Staff Engineer

Computations Checked by: Signature  08/07/09  
Printed Name Meghan Lithgow Date  
Title Senior Staff Engineer

Computations backchecked by: Signature  8/7/09  
(originator) Printed Name Meghan Lithgow Date  
Title Senior Staff Engineer

Approved by: Signature  8/7/09  
(pm or designate) Printed Name Gregory T. Corcoran Date  
Title Principal

Approval notes: \_\_\_\_\_

Revisions (number and initial all revisions)

No.	Sheet	Date	By	Checked by	Approval
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Written by:	<u>M. Lithgow</u>	Date:	<u>08/07/09</u>	Reviewed by:	<u>G. Corcoran</u>	Date:	<u>8/7/09</u>
Client:	DMC	Project:	White Mesa Mill- Cell 4B	Project/ Proposal No.:	SC0349	Task No.:	02

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**CELL 4B CAPACITY CALCULATIONS  
WHITE MESA MILL – CELL 4B  
BLANDING, UTAH**

**OBJECTIVE**

The purpose of this calculation is to demonstrate that the proposed Cell 4B has adequate capacity to handle runoff from the Probable Maximum Precipitation (PMP) event. The volume of liquid that must be contained by Cell 4B will be generated from upstream areas including Cells 2, 3, and 4A in addition to direct rainfall on Cell 4B. This calculation demonstrates that Cell 4B will contain and control tailings solids and liquids without causing discharge to nearby soil or surface water during a PMP event.

**ASSUMPTIONS**

The following assumptions were used for completion of this calculation:

- The watershed areas upstream of Cell 4B include Cells 2 & 3, and 4A and the runoff volumes generated from these areas are 123.4 acre-feet (ac-ft), and 36 ac-ft, respectively<sup>1</sup>.
- A minimum of 0.77 feet is required for wave run-up within the cell;
- The area of Cell 4B is 44 acres;
- The PMP event is 10 inches (0.83 ft.) in 6 hours;
- During the PMP event, Cells 2, 3, and 4A are at capacity and the discharge passing through the 4B spillway is the volume of runoff, with out accounting for adsorption or evaporation, generated by Cells 2, 3, and 4A in addition to direct rainfall on Cell 4B.
- The spillway is of adequate capacity to handle runoff from Cell 4A to Cell 4B, as demonstrated in a separate calculation package.

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<sup>1</sup> These numbers were provided to Geosyntec by DMC from the White Mesa Mill Standard Operating Procedures Manual, Book II: Environmental Protection Manual, Section 3.1.

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Written by: M. Lithgow Date: 08/07/09 Reviewed by: G. Corcoran Date: 8/7/09  
 Client: **DMC** Project: **White Mesa Mill-Cell 4B** Project/ Proposal No.: **SC0349** Task No.: **02**

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## CELL 4B CAPACITY CALCULATIONS

### Calculate Volume of Direct Rainfall on Cell 4B

$$V_{CELL\ 4B} = area_{CELL\ 4B} \times PMP_{DEPTH} = 44ac \times 0.83\ ft = 36.5\ ac - ft$$

### Calculate the Volume of Runoff Generated by the Probable Maximum Precipitation Conditions that must be contained in Cell 4B:

$$V_{TOTAL} = V_{CELLS\ 2\ \&\ 3} + V_{CELL\ 4A} + V_{CELL\ 4B}$$

$$V_{TOTAL} = 123.4ac - ft + 36ac - ft + 36.5ac - ft = 195.9\ ac - ft$$

$$195.9\ ac - ft \times \frac{43,560\ ft^2}{1\ acre} = 8,533,404\ ft^3$$

### Use Construction Drawing to Determine Depth of Water In Cell 4B.

The maximum contour elevation that encloses the perimeter of Cell 4B is 5,596 ft above mean seal level (MSL). Using the computer software in the AutoCAD program, a depth of 5 ft was determined to contain the PMP event run-off and direct rainfall volume, 8,533,404 ft<sup>3</sup>, in Cell 4B.

## CONCLUSIONS AND RECOMMENDATIONS

Our analysis evaluated the maximum volume of liquid generated over the site during the PMP event and determined the following:

- It is recommended that a minimum freeboard of 5.8 feet be maintained with Cell 4B during operation to account for the liquid generated during the PMP and the height of wave run-up;
- This recommended freeboard depth exceeds the minimum 3 foot freeboard mandated in Part I.D6(d) of the Ground Water Permit; and
- Cell 4B will have adequate capacity to contain runoff generated by the PMP event.