

**Subject: Information in support of the Tarmac America (Tarmac) Lake Belt applications**

The purpose of this document is three-fold:

1. Provide detailed drawings of each section of land and summarize the land cover expected at the end of each phase of mining included in the current applications. **Table 1** provides the land cover summary by quarry. A full set of permit drawings is enclosed. A separate table that summarizes the information by section is included with the drawings.
2. Document the mitigation requirements contained in permits issued prior to the Lake Belt permits that were issued in 2002. This information is shown in **Table 2**.
3. Calculate the breakdown of both the pre-2002 and post-2002 mitigation obligations and describe how each will be accommodated in the mining plans covered by these applications. This information is shown in **Table 3**.

**1. Post mining land cover.**

**Table 1** summarizes the expected final land cover for this quarry based on the applications now under review. The data are derived from the enclosed permit sketches and summarized by individual lake.

<b>Table 1. Breakdown of permit area by mining phase and final cover type (acres)</b>									
<b>Tarmac</b>	<b>Quarry Lakes</b>			<b>Gross Footprint Acreage<sup>1</sup></b>			<b>Finished Land Cover Acreage</b>		
<b>S-T-R</b>	<b>2002 Lake Area</b>	<b>2009 Lake Area</b>	<b>At full Build-out</b>	<b>Sect I</b>	<b>Sect II</b>	<b>Total Permit</b>	<b>Littoral Areas</b>	<b>Deep Cut Lake Area</b>	<b>Easements (note 2)</b>
01-53-39	385	425	462	26		26	23	462	16
10-53-39	0	0	394	421		421	20	394	7
27/34-52-39	338	695	807	33		33	39	807	26
28S/33-52-39	0	0	510		537	537	24	510	3
03-53-39	0	0	529	534		534	22	529	14
<b>Total</b>	<b>723</b>	<b>1120</b>	<b>2702</b>	<b>1,014</b>	<b>537</b>	<b>1,551</b>	<b>128</b>	<b>2701</b>	<b>66</b>
1500' setback area							<b>444</b>	acres	
<p>Note 1: The permit areas include the areas of lake and littoral construction at the end of each phase, as well as the County road/canal/utility easements surrounding the littoral area. This is mining footprint from 2009 forward.</p> <p>Note 2: An average 50-foot width was assumed for the County road/canal/utility easement along all section and half-section lines.</p>									



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## 2. Pre-2002 Permits

In 2002 the Corps of Engineers issued new permits that followed the mitigation framework developed through the Lake Belt Planning process as adopted by the State of Florida in 1999. These new permits did not remove the mitigation requirements contained in the prior permits. This section summarizes the mitigation obligations in the permits that were in effect prior to the Lake Belt permits issued in 2002.

**Table 2. Pre-2002 Analysis Permit review and calculation of mitigation required by those permits.**

Tarmac		Pre-2002 Permits		Carryover from pre-2002 permits					New Permits	
Location	Permit #	Impacts	Littoral Area	2002 Lake and Filled	% Impacts by 2002	Required Littoral Area	Littoral Area Built	Littoral Area to Build	Impacts	Littoral Area <sup>1</sup>
Sec. 1 <sup>2</sup>	1989-20375	497	64.5	458	92%	59.3	6	53.3	43	39
Sec. 27/34 <sup>3</sup>	1988-20583	808	207.7	475	59%	122.5	127	0	397	39
Sec. 10									421	33
Sec. 28S/33									537	42
Sec. 3									565	44
Total			272.2	933		181.8	133	<b>48.8</b>	1,963	<b>197</b>

Note 1. Area based on Lake Belt Plan formula (100' width) or twice the value shown in Table 1

Note 2. The Section 1 permit required 16.6 acres in Section 2, which almost entirely overlaps the required area in the Sections 27/34 permit. Tarmac is not allowed to credit two permits for the same mitigation area. The entire 16.6 area was constructed and included in the constructed littoral total for the Sections 27/34 permit.

Note 3. The Sections 27/34 permit included both the excavation of Lakes Tarmac 27/34 (F) and 34S (G). The required mitigation included littoral around both lakes, as well as mitigation in Sections 2, 35, and 36. While 163 acres of constructed littoral shelves in Section 2 were constructed, 98 acres was required to offset Section 27/34 mining. Of the 53 acres of littoral shelves constructed in Section 35, 29 acres was constructed for Section 27/34. No mitigation has been identified for this permit for Section 36.

Note 4. Sections 25, 26, 35, 36 and 2 – are not included in this permit application. If the applicant identifies that the pre-2002 obligations in these sections are satisfied, excess littoral area from these sections may be applied to this verification.

The information in this table indicates that **48.8** acres of littoral area mitigation are needed to mitigate for the mining prior to 2002, while the finished quarries under the Lake Belt guidelines of 100 foot littoral width would require **197** acres of littoral area, for a littoral shelf requirement of **245.8** acres. As noted in Table 2, Sections 25, 26, 35, 36 and 2 are not included in this permit application. The applicant had identified that additional littoral shelf construction had occurred within Sections 2 and 35 which were to be applied to this permit's pre-2002 littoral shelf obligation. However, the applicant has not identified that this 'excess' migration is above and beyond that which would have been required for pre-2002 impacts within those sections. If the applicant identifies that the pre-2002 obligations in these sections are satisfied, excess littoral area from these sections may be applied to the pre-2002 littoral shelf requirements.

For lakes that were permitted prior to 2002 and will be completed under the new permits, the required littoral area consists of the prorated amount due from the work prior to 2002 and the portion of the littoral area calculated for the new permits. The applicant is proposing to create **128** acres of onsite littoral area.



The allocation of the proposed littoral shelf construction that is onsite versus that which is constructed within the 1,500-foot Exclusion Area is shown in **Table 3**. Since insufficient littoral shelves are being constructed within the mining area to offset the littoral shelf requirements (combined pre and post-2002 littoral shelves), some of the mitigation for mining will be accomplished by aggregating the mitigation and dedicating a portion of the 1,500-foot exclusion area to that requirement. This littoral distribution is also shown in **Table 3**. No credit will be given to post 2002 Lake Belt mining for mitigation performed to offset pre-2002 impacts.

### 3. Allocation of Littoral Area and Other Mitigation

The Tarmac application includes existing quarries that have been active since before 2002 and four proposed new quarries where excavation has not yet begun. The Permits issued before 2002 contain a wide range of mitigation requirements and the Tarmac permits (see Table 2) from prior to 2002 are good examples of that. The mitigation required for impacts before 2002 has been estimated based on the conditions in each permit and the percentage of the permitted impact that had occurred prior to 2002. The remainder of the mitigation necessary to cover the expanded mining in the application has been calculated based on Lake Belt guidelines with a 50 foot littoral shelf and an equivalent amount to be located in a 1500 foot mining exclusion zone just east of the Dade/Broward levee. **Table 3** summarizes the steps in the calculations and shows the final mitigation acreage for the FRI mining described the permit application.

<b>Table 3.</b> This table summarizes the accounting of littoral areas for the pre-2002 permits and post-2002 permits. Littoral required by the pre-2002 permits is not available.	
Description	Acres
Littoral Area Required by pre-2002 permits (from Table 2 above).	272
Littoral area owed based on impacts by 2002 (from Table 2 above).	<b>182</b>
Pre-2002 permit littoral constructed (from Table 2 above).	133
Pre-2002 littoral requirement remaining	<b>49</b>
Final Littoral Area in this permit (50 foot width) (from Table 1 above)	<b>128</b>
Littoral Area expected with Lake Belt Plan (100 foot width)	<b>197</b>
Increase in Lake area from 2002 to the proposed end of mining (2,702 – 723)	1,979
Total mitigation required - pre-2002 mitigation (49) plus new mining littoral area (197)	<b>246</b>
Littoral area of the 128 acres required to satisfy pre-2002 (not creditable to post-2002 mining)	<b>49</b>
Littoral area creditable to post-2002 authorization	79
Littoral area from pre-2002 assigned to 1500 foot area.	<b>0</b>
Acres of required littoral construction conducted in the 1,500-foot Exclusion Area (197-79)	<b>118</b>
Acres of final littoral area credited to post 2002 impacts	148

The final littoral area that will be constructed around the Tarmac quarry lakes will cover **128** acres. This, when added to the **222** acres already constructed, is sufficient to provide the total mitigation needed for the pre-2002 impacts (**170** acres) and the mitigation needed (**172** acres) for all the post-2002 impacts, including the new mining shown in this application. Therefore **no** post-2002 mitigation will be located in the 1500 foot mining exclusion area shown on the permit drawings. All **120** acres of post-2002 mitigation



will be credited to offset mining that has occurred, and will occur after 2002, and the 7 surplus acres will be saved for future activities.

The final littoral area that will be constructed around the APAC quarry lakes will cover **128** acres. This is sufficient to provide the total mitigation needed for the pre-2002 impacts (**49** acres) and for a portion of the post-2002 impacts, including the new mining shown in this application (**197** acres). Therefore, 118 acres of the post 2002 mitigation will be located in a dedicated portion of the 1,500-foot mining exclusion area shown on the permit drawings. Only the **148** acres of post-2002 mining mitigation, all of which will be located in the 1,500-foot exclusion area, will be credited to offset mining that has occurred, and will occur after 2002.



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