COUNTY OF HUMBOLDT EXTRACTION REVIEW TEAM (CHERT)
2006 POST-EXTRACTION REPORT

FINAL

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County of Humboldt Extraction Review Team (CHERT)

For the

Humboldt County Board of Supervisors

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No comments were received on the Discussion Draft.
This version represents the Final 2006 CHERT Post-extraction Report

INTRODUCTION

This report presents an overview of the Humboldt County 2006 gravel extraction season, providing information on mining volumes, methods, and success of mine operators in meeting approved plans. The County of Humboldt Extraction Review Team (CHERT) provided site-specific recommendations on extraction designs submitted by the operators and their consultants, as did agencies with regulatory and oversight responsibilities (US Army Corps of Engineers, National Marine Fisheries Service, California Department of Fish and Game). Recommendations were based on field reviews at each site along with reviews of aerial photos and topographic and hydrologic information provided by the operators as required by the US Army Corps of Engineers 2004 Letter of Permission (LOP), and individual permits obtained by several operators.

For background, The Humboldt County Board of Supervisors appointed CHERT in 1992 to provide scientific oversight to Mad River gravel extraction, which had arrived at an impasse over environmental concerns. In 1996 the CHERT role was expanded to include most riverine extraction sites in Humboldt County. Additional details on CHERT's role have been presented in earlier post-extraction reports (accessible at www.county.humboldt.com).

The annual review process consists of visiting sites in the spring with operators and agency staff to observe post-winter conditions, note any undesirable effects from the previous season's extraction, and discuss a possible mining plan for the current season. Later, operators submit air photos, topographic and hydrologic information, and a mining proposal, which is typically followed by a second field review. Then, CHERT issues a written recommendation, which may or may not include suggested changes in a plan to reflect either CHERT's or an agency's concerns. When all parties accept an iteration of the mining plan, it is approved by the Corps and mining can begin. In rare occasions, a field review may be done while mining is taking place due to unexpected circumstances that require an alteration in an approved plan. When mining in completed in late summer or fall, and (hopefully) before rivers rise, post-extraction field reviews are conducted, sometimes with post-extraction topographic data and air photos in hand for comparison with field conditions.

CHERT bases recommendations on two areas of concern: 1) minimizing cumulative effects by ensuring that reach-wide mining volumes do not exceed that which is sustainable, and 2) ensuring that site-specific methods of extraction (skimming, trenching, etc.) are appropriate for protecting local habitat. The concept of 'sustained yield' gravel extraction requires that gravel extraction volumes not exceed mean annual recruitment (an estimate of the long-term average annual supply of gravel to a specific reach of a river). Site-specific measures are also recommended by CHERT to reduce both cumulative and localized effects of mining on riparian and aquatic habitat. These may include, for example, ensuring that skim floor elevations are high enough to maintain low flow channel confinement so that small rises in river stage do not inundate skim surface too readily.

Through time, experience on the rivers, and interaction with regulatory agencies, mine operators, and other stakeholders, the measures taken to protect river habitat and to improve program functioning are continually refined. This feedback process, termed 'adaptive management', is essential to help ensure that gravel mining and management improves with respect to resource protection, the quality of information provided by mine operators, and program efficiency. Problems can occasionally arise, however, when either the river's response to previous mining results in undesirable conditions, or an operator deviated from an approved mining plan. This post-extraction report summarizes information on the 2006 mining season and describes any specific problems encountered and possible solutions.

Humboldt County Instream Mine Sites and Extraction Terminology

Table 1 describes the geographic breakdown of Humboldt County mining reaches used in this report. CHERT classifies extraction techniques into the nine descriptive categories described in Table 2.

Table 1 - Description of river reaches used to sort and report extraction data.

Approximate Length (miles)	River Reaches
7	**Mad River:** The Mad River Reach extends approximately seven miles downstream from the Blue Lake Fish Hatchery to just below the Highway 299 Bridge near Arcata.
6	**Lower Eel River:** The Lower Eel River Reach extends approximately six miles downstream from the mouth of the Van Duzen River to near Fernbridge.
5	**Lower Van Duzen River:** The Lower Van Duzen River Reach extends upstream approximately five miles from the mouth of the Van Duzen River.
26	**Middle Reach of Eel River:** The Middle Reach of the Eel River extends upstream from Scotia (River mile 20) for approximately 26 miles to River Mile 46.
17	**South Fork Eel River:** The South Fork Reach extends from Garberville (River mile 33) upstream to Cooks Valley near the Mendocino County line (River mile 50).
15	**Trinity River Reach:** The Trinity River Reach extends downstream about 15 miles from near Willow Creek into the Hoopa Valley.
	Isolated Sites: Five extraction sites are more or less isolated from the rest of project. These are the *Satterlee Bar* on the main stem of the Eel river at Fort Seward, the *PL Bar* on the Van Duzen River, the *Branstetter Bar* on Bear River, the *Charles Bar* on Larabee Creek, and the *Cook Bar* on the North Fork of the Mattole River.

Table 2. - CHERT extraction methodology terminology and descriptions.

Narrow Shoreline Skim	A skim where one edge is close to the low flow channel at or above the 35 % flow elevation with a width no greater than 1/3 the width of the unvegetated bar surface.
Wide Shoreline Skim	Same as above but with a width greater than 1/3 the width of the unvegetated bar surface.
Narrow Offset Skim	A skim that has a substantial vertical or horizontal offset from the low flow channel and a width no greater than 1/3 the width of the unvegetated bar surface.
Wide Offset Skim	Same as above, but has a width greater than 1/3 the width of the unvegetated bar surface. Sometimes referred to as a 'horseshoe' skim in the past.
Dry Trench	A relatively long, linear shallow skim that does not intercept the water table at the time of excavation.
Overflow Channel Skim	Same as above, but one that is located within a high flow overflow channel
Wet Trench	A trench that is deep enough to intercept the water table at the time of excavation
Wetland Pit	A strategically located and designed pit simulating a remnant channel feature, such as an oxbow pond.
Alcove	A relatively deep excavation designed to simulate naturally occurring shoreline pools that can provide cool water and/or high velocity refuge.
Fish Access Channel	A relatively small trench designed to temporarily improve fish access.

2006 EXTRACTION SUMMARIES

River Reach Extraction Volumes

In 2006, CHERT reviewed 40 extraction areas distributed among 19 mining sites in Humboldt County (many sites had more than one extraction area). As shown in Table 3, the total volume of gravel approved for extraction in 2006 was 700,660 cubic yards (cy). The total volume actually extracted was 561,845 cy, or about 80% of that approved for extraction. (Note that values in red font may change pending receipt of revised information for Leland Rock site, Van Duzen River).

We also list the sum of all extractions for the Eel River system as a whole at the bottom of Table 3. In 2008, CHERT will begin an updated analysis of Eel River gravel extraction with a primary goal of estimating sustainable gravel yield. The 1992 Eel River PEIR states that the total permitted volume allocated in the Eel River system is upwards of 1.5 million cubic yards annually, a volume that likely exceeds a sustainable level (i.e., a level that minimizes local and cumulative adverse effects). Although actual mining volumes in recent years have been well below 1.5 million cy, it is important to incorporate a reliable estimate of sustainable yield to avoid over-allocation and the suite of negative impacts to river habitat and infrastructure that would ensue.

Table 3. – Humboldt County 2006 gravel extraction summary by river reach.

River Reach	No. of mined areas	No. of mined sites	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Percent of Approved Volume
Lower Mad River	10	7	174,245	162,360	93%
Lower Eel River	13	3	235,495	208,240	88%
Middle Eel River	0	0	0	0	n/a
Van Duzen River	8	3	131,488	104,747	80%
South Fork Eel River[1]	7	3	92,000	35,075	38%
Trinity River	2	3	64,010	51,420	80%
Isolated Sites	0	0	0	0	n/a
Humboldt County Total =	**40**	**19**	**697,238**	**561,842**	**81%**
Eel River System Total =	**28**	**9**	**458,983**	**348,062**	**76%**

[1] the South Fork Eel River total includes some volume from Mendocino County (see Table 8)

Tables 4-10 list site-specific extraction information for each designated river reach. Table 11 lists the approved and actual extraction surface areas, in acres, of all extraction areas for 2006. Following are descriptions of significant deviations from approved plans (if any), monitoring requirements, and other important performance issues encountered in the 2006 extraction season. If no mention of a site or operation is made below, then extraction was implemented consistent with approved plans and no other issues of note occurred.

Performance Issues

Overall, operator performance in conducting their 2006 operations consistent with approved mining plans was very successful. However, there were several sites where gravel extraction in 2006 deviated substantially from approved plans and/or regulatory conditions. These are described below. At all other sites, implementation in 2006 met all requirements.

Miller-Almquist Bar, Mad River (Miller Family Trust, operator): The following performance issues are noted. The format of the post extraction cross section plots did not conform to CHERT/LOP requirements in that the wrong scale was used and that the post extraction cross sections did not show the approved design superimposed on the pre extraction cross sections as required. In terms of implementation, a berm was left along the right side of the extraction, as indicated on XS-5 and 6, that did not conform to the approved plan. In addition, about one-half of the extraction floor was as much as 0.5 feet below approved grade. During a site visit CHERT observed a culvert across the overflow channel that bisects the extraction area and that was not included in the approved extraction plan.

The operator must improve the quality and completeness of submittals in the future and take greater care in keeping within approved limits. Any culverts or other channel crossings must be identified ahead of time and comply with LOP-2004 and CDFG 1600 requirements.

Essex Bar, Mad River (Mercer Fraser Co., operator): Although the site as a whole was under-extracted, on implementation, extraction extended farther upstream than the approved plan (it extended past XS 2, the approved limit, to XS 1.5). In addition, there was over extraction at XS 1.5 and XS 3, and extraction at XS 3 was too wide.

Leland Rock Site, Van Duzen River (Rock and Gadberry Gravel, operator): Due to non-perpendicular (oblique) cross section orientations at Area B, the pre-extracton volume was re-calculated and reduced to 13,907 cy from 15,961 cy. The re-calculated volume was the one approved for extraction, but in the post-extraction submittal, the volume actually taken was reported to be the original 15,961 cy. We do not know if this was truly over-extraction or, as we suspect, just a reporting error based on the original calculation that did not account for the oblique cross section orientations. Until this is resolved, we must assume that the reported post-extraction volume is valid and is listed as such in all pertinent tables presented in this report (affected values in red font, Tables 3, 6, and Appendix A). We will later amend these tables if they are indeed in error. We also note that cross sections are to be plotted as if viewed looking downstream, but the extraction cross sections for Area B were plotted looking upstream.

Sandy Prairie Site, Lower Eel River (Mercer Fraser Co., operator): This is a very complex bar feature, typically with many diverse types of extraction areas. It is common for extractions to be revised multiple times, even into the fall season. There were several issues with the quality of extraction submittal information: 1) post-extraction XS areas were not submitted, so CHERT had to estimate the missing data, and 2) in some cases the monitoring cross sections were oblique to the extraction areas and volume calculations based upon oblique cross sections will be inaccurate.

Numerous implementation issues were also noted. The Plant A extracted volume (72,850 cy) substantially exceeded the permitted volume (70,000 cy) due to over-extractions at areas A1 and A3 (see below). The Plant B permitted volume (100,000 cy) was not exceeded, although over-extraction did occur at two of the Plant B areas (see below and Table 5). The following describes details of implementation failures at the Sandy Prairie site in 2006.

Plant A: Over extraction occurred at area A1 (see Table 5) because the trench was excavated too wide at several locations. In addition, the trench was mis-located to a position 100 feet to the left of the approved location at XS7. At area A2, the skim exceeded the approved length by about 50 feet. Despite this, the area was under-extracted because the skim floor was left higher than that approved. At area A3, the approved volume was substantially exceeded (see Table 5). This was due to several factors. First, the skim exceeded the approved length by about 225 feet. Further, approved cross section limits at area A3 were exceeded at the following XS: 9.5 (1.5 feet too deep), 10 (1.8 feet too deep), 10.5 (20 feet too wide), 11 (20 feet too wide). At area A4, minor deviations from approved plans in depth and width were also noted.

Plant B: At area B1A, a 400-foot long, 40-foot wide berm was supposed to be placed along the upper end of site. Instead, the operators dug a 40-foot wide trench. This was noticed during the post extraction site visit and the operator corrected the error following the inspection. Further, approved cross section limits at area B1A were exceeded at the following XS: 10 (25 feet too wide), 11 (40 feet too wide), 11.1 (35 feet too wide), and 11.3 (30 feet too wide). At area B1B, a 200-foot long, 40-foot wide berm was supposed to be placed along the upper end of the site. The berm was not constructed. This was noticed during the post extraction site visit but could not be corrected due to existing site conditions. Further, approved cross section limits at area B1B were exceeded at the following XS: 11 (25 feet too wide), 11.1 (35 feet too wide), 11.2 (50 feet too wide), and 11.3 (50 feet too wide).

At area B2, the skim exceeded the approved length by about 150 feet. Further, approved cross section limits at area B2 were exceeded at the following XS: 9.1 (35 feet too wide), 9.2 (35 feet too wide). At area B3, the skim exceeded the approved length by about 100 feet. Further, approved cross section limits at area B3 were exceeded at the following XS: 11.5 (30 feet too wide), 12 (25 feet too wide), 12.5 (20 feet too wide), 13 (1 foot too deep in one section), 13.6 (0.5 feet too deep), 14.6 (10 feet too wide and 1 foot too deep), 15.6 (1.5 feet too deep). At area B6, the trench was 30 feet too wide and 2 feet too deep (we note that trench depths are difficult to control during excavation), resulting is an excavated XS end area that was nearly twice that approved.

To prevent these performance issues in the future, the operator should ensure that: 1) all volume calculations are included are correct, 2) additional extraction cross sections located normal to the planned extraction areas should be used where monitoring cross sections are oblique to the long axis of the extraction area, or use a correction factor the improve accuracy, and 3) supervision of extraction activities must be vastly improved to ensure approved plans are met on implementation.

Hauck Bar, Lower Eel River (Eureka Ready Mix, operator): A CHERT post extraction site visit and an off site review of pre and post extraction data indicates that the excavation substantially complied with the plan with the following exceptions: 1) at Area 1 (wet trench), the approved width was exceeded by 15 feet at XS2, and at XS 4 the trench was mis-aligned by about 70 feet to the right of the design location, 2) At Area 3, the excavation was 0.5-1 foot too deep. CHERT notes that, as with depths, trench widths can be difficult to precisely control due to sloughing of sides, which may have been that case at Area 1.

Van Duzen River Ranch, Van Duzen River (Jack Noble, operator): This site was greatly under-extracted, but by means that did not create habitat or drainage problems; the original design was a wide offset skim, but the actual extraction was narrow offset skim. The operator's submittal did not strictly conform to CHERT/LOP requirements in that the post extraction cross sections were not superimposed on the pre-extraction cross sections.

Tom Bess Site, Van Duzen River (Tom Bess, operator): The operator's submittal did not include acreages of the mining areas, so these were estimated by CHERT. Post-extraction cross sections indicated that extraction was about 1 foot too deep at XS 6+00 at the East Bar area. In addition, the extraction was too

wide at the downstream end of the East Bar (XS 8+00), where it was to have tapered to zero width according to the air photo. Instead, the width at XS 8+00 was about 100 feet. These two factors account for the over-extraction on the East Bar (see Table 6).

Randall Site, South Fork Eel River (Randall Sand and Gravel, operator): Cross section plots indicate that the extraction went beyond the landward (west) edge of approved extraction at Home Bar (XS 7.2, 7.3, and 7.4), although total extraction from this area was less than that approved. The depths were small outside the approved area and, because of their landward location, were inconsequential with respect to riverine habitat. However, the operator must take greater care to limit extraction to approved areas.

Rowland Bar, Trinity River (Klamath Trinity Aggregates, operator): This site was over-extracted (see Table 9) due to excavations 1 feet deeper than approved at XS 2.5 and 3, and 1-2 feet deeper at XS 3.4. The operator must improve grade control measures to ensure this does not recur.

McKnight Bar, Trinity River (Mercer Fraser Co., operator): Post-extraction cross sections indicate that extraction was too 10-20 feet wide at XS 1.2, 2, 2.2, 3, and 3.2. The operator must improve control over extraction widths to ensure this does not recur.

Humboldt County Department of Public Works Isolated Sites (Humboldt County Dept. of Public Works, operator): For the following sites that were not mined in 2006, the operator has not submitted annual monitoring cross section as required by the Humboldt County LOP-2004: 1) PL Bar, Van Duzen River; 2) PL Dyerville Bar, Middle Eel River; 3) Branstetter Bar, Bear River; and 4) Cook Bar, North Fork Mattole River. The Public Works Department staff had inquired in 2006 as to whether or not less frequent surveys at these sites would be acceptable. Both CHERT and the Corps of Engineers indicated informally that there was potential to relax the annual monitoring requirements, but no official resolution was achieved.

Hansen Bar, Lower Eel River (Hansen Truck Stop, Inc., operator): The site was not mined in 2006. The operator has not submitted annual monitoring cross sections as required by the Humboldt County LOP-2004.

Table 4. Lower Mad River extractions, 2006.

Operator	Site	Area	Method	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Percent of Approved Volume
Eureka Ready Mix	O'Neill Bar	1	wide shoreline skim	8,440	8,790	104%
Eureka Ready Mix	Johnson-Spini Bar	1	wide shoreline skim	47,360	46,500	98%
Eureka Ready Mix	Christie Bar	1	wide shoreline skim	14,280	14,570	102%
Eureka Ready Mix	Christie Bar	2	narrow shoreline skim	7,570	7,805	103%
Granite Construction Co.	Johnson Bar	n/a	no extraction	0	0	n/a
Granite Construction Co.	Blue Lake Bar	1	wide shoreline skim	14,845	12,250	83%
Granite Construction Co.	Emmerson Bar	1	narrow shoreline skim	34,840	25,880	74%
Mad River Sand and Gravel	Guynup Bar	1	wide shoreline skim	32,690	32,980	101%
Mad River Sand and Gravel	Guynup Bar	2	wide offset skim	4,190	4,285	102%
Miller Family Trust	Miller Bar	1	wide shoreline skim	6,300	6,220	99%
Mercer Fraser Co.	Essex Bar	1	wide shoreline skim	3,730	3,080	83%
River Reach Totals =	---	---	---	**174,245**	**162,360**	**93%**

Table 5. Lower Eel River extractions, 2006.

Operator	Site	Area	Method	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Percent of Approved Volume
Eureka Ready Mix	Singley Bar	n/a	no extraction	0	0	n/a
County of Humboldt	Worswick Bar	1	wide shoreline skim	24,980	17,520	n/a
Mallard Pond	Drake Bar	n/a	no extraction	0	0	n/a
Eureka Ready Mix	Hauck Bar	1	wet trench	29,175	25,675	88%
Eureka Ready Mix	Hauck Bar	2	wide shoreline skim	9,670	9,855	102%
Eureka Ready Mix	Hauck Bar	3	narrow offset skim	1,915	2,165	113%
Mercer Fraser Co.	Sandy Prairie: Plant A	A1	wet trench	19,500	24,875	128%
Mercer Fraser Co.	Sandy Prairie: Plant A	A2	wide shoreline skim	4,260	3,540	83%
Mercer Fraser Co.	Sandy Prairie: Plant A	A3	narrow overflow skim	27,015	31,455	116%
Mercer Fraser Co.	Sandy Prairie: Plant A	A4	narrow overflow skim	19,220	12,980	68%
Mercer Fraser Co.	Sandy Prairie: Plant B	B1a	wide shoreline skim	30,560	22,575	74%
Mercer Fraser Co.	Sandy Prairie: Plant B	B1b	alcove	16,540	16,305	99%
Mercer Fraser Co.	Sandy Prairie: Plant B	B2	wide shoreline skim	2,510	2,875	115%
Mercer Fraser Co.	Sandy Prairie: Plant B	B3	narrow overflow skim	33,780	32,565	96%
Mercer Fraser Co.	Sandy Prairie: Plant B	B4	wide shoreline skim	12,980	0	0%
Mercer Fraser Co.	Sandy Prairie: Plant B	B6	wet trench	3,390	5,855	173%
Hansen Truck Shop	Hansen Bar	n/a	no extraction	0	0	n/a
River Reach Totals =	---	---	---	**235,495**	**208,240**	**88%**

Table 6. Van Duzen River extractions, 2006.

Operator	Site	Area	Method	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Percent of Approved Volume
Tom Bess	East Bar	1	wide shoreline skim	3,250	3,610	111%
Tom Bess	West Bar	2	wide shoreline skim	16,750	15,155	90%
Van Duzen River Ranch	Bar #10	1	narrow offset skim	23,890	1,355	6%
Leland Rock	above 101 bridge	A	wetland pit	24,815	18,904	76%
Leland Rock	above 101 bridge	B	narrow shoreline skim	13,907	17,327	125%
Leland Rock	below 101 bridge	C	narrow offset skim	5,837	5,779	99%
Leland Rock	below 101 bridge	D	narrow offset skim	30,166	30,167	100%
Leland Rock	above 101 bridge	E	narrow offset skim	12,873	12,450	97%
River Reach Totals =	---	---	---	**131,488**	**104,747**	**80%**

Table 7. Middle Eel River extractions, 2006.

Operator	Site	Area	Method	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Percent of Approved Volume
Pacific Lumber Co.	Scotia Dam Bar	n/a	no extraction	0	0	n/a
Pacific Lumber Co.	Lower Truck Shop Bar	n/a	no extraction	0	0	n/a
Pacific Lumber Co.	Three Mile Bridge Bar	n/a	no extraction	0	0	n/a
Pacific Lumber Co.	Dinner Creek Bar	n/a	no extraction	0	0	n/a
Pacific Lumber Co.	Elinor Bar	n/a	no extraction	0	0	n/a
Pacific Lumber Co.	Larabee Bar	n/a	no extraction	0	0	n/a
Pacific Lumber Co.	South Fork Bar	n/a	no extraction	0	0	n/a
Pacific Lumber Co.	Bowley Bar	n/a	no extraction	0	0	n/a
Pacific Lumber Co.	Maynard Bar	n/a	no extraction	0	0	n/a
Pacific Lumber Co.	Vroman Bar	n/a	no extraction	0	0	n/a
River Reach Totals =	---	---	---	**0**	**0**	**n/a**

Table 8. South Fork Eel River extractions, 2006.

Operator	Site[1]	Area	Method	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Percent of Approved Volume
Mercer Fraser Co.	Cooks Valley: MEN	1a	wet trench	11,440	0	0%
Mercer Fraser Co.	Cooks Valley: MEN	1b	wide offset skim	11,375	9,630	85%
Mercer Fraser Co.	Cooks Valley: HUM	3	wide shoreline skim	17,700	3,875	22%
Randall Sand and Gravel	Home Bar	1	wide shoreline skim	29,985	21,570	72%
Randall Sand and Gravel	Tooby Park Bar	2	wide shoreline skim	5,115	0	0%
Randall Sand and Gravel	County Bar	3	wide offset skim	6,385	0	0%
Wallan and Johnson	Wallan and Johnson Bar	1	wide shoreline skim	10,000	0	0%
River Reach Totals =	---	---	---	**92,000**	**35,075**	**38%**

[1] "HUM" is Humboldt County portion, "MEN" is Mendocino County portion

Table 9. Trinity River extractions, 2006.

Operator	Site	Area	Method	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Percent of Approved Volume
Mercer Fraser Co.	Willow Creek Site	1	wet trench	34,035	19,370	57%
Mercer Fraser Co.	McKnight Bar	1	narrow shoreline skim	9,975	10,715	n/a
Klamath Trinity Aggregates	Rowland Bar	1	wide shoreline skim	20,000	21,335	107%
River Reach Totals =	---	---	---	**64,010**	**51,420**	**80%**

Table 10. Isolated sites extraction, 2006.

Operator	River Reach	Site	Area	Method	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Percent of Approved Volume
County of Humboldt	North Fork Mattole	Cook Bar	n/a	n/a	0	0	n/a
County of Humboldt	Larabee Creek	Charles Bar	n/a	n/a	0	0	n/a
County of Humboldt	Bear River	Branstetter Bar	n/a	n/a	0	0	n/a
County of Humboldt	Mid-Van Duzen River	PL Bar	n/a	n/a	0	0	n/a
Fort Seward Ranch	Eel River	Satterlee Bar	n/a	n/a	0	0	n/a
Isolated Sites Totals =		---	---	---	**0**	**0**	**n/a**

Table 11. Extraction area acreages

Operator	Site	Area	Method	Approved Acreage	Extracted Acreage	Percent of Approved Acreage
Lower Mad River						
Eureka Ready Mix	O'Neill Bar	1	wide shoreline skim	3.5	3.5	100%
Eureka Ready Mix	Johnson-Spini Bar	1	wide shoreline skim	7.6	7.6	100%
Eureka Ready Mix	Christie Bar	1	wide shoreline skim	3.0	3.0	100%
Eureka Ready Mix	Christie Bar	2	narrow shoreline skim	2.1	2.1	100%
Granite Construction Co.	Johnson Bar	n/a	no extraction proposed	n/a	n/a	n/a
Granite Construction Co.	Blue Lake Bar	1	wide shoreline skim	6.0	6.0	100%
Granite Construction Co.	Emmerson Bar	1	narrow shoreline skim	7.2	7.0	97%
Mad River Sand and Gravel	Guynup Bar	1	wide shoreline skim	6.0	6.0	100%
Mad River Sand and Gravel	Guynup Bar	2	wide offset skim	1.0	1.0	100%
Miller Family Trust	Miller Bar	1	wide shoreline skim	1.8	1.7	94%
Mercer Fraser Co.	Essex Bar	1	wide shoreline skim	0.8	0.7	88%
			Lower Mad River Totals =	**39.0**	**38.6**	**99%**
Lower Eel River						
Eureka Ready Mix	Singley Bar	n/a	no extraction proposed	n/a	n/a	n/a
County of Humboldt	Worswick Bar	1	wide shoreline skim	7.6	7.6	100%
Mallard Pond	Drake Bar	n/a	no extraction proposed	n/a	n/a	n/a
Eureka Ready Mix	Hauck Bar	1	wet trench	2.4	2.4	100%
Eureka Ready Mix	Hauck Bar	2	wide shoreline skim	1.7	1.7	100%
Eureka Ready Mix	Hauck Bar	3	narrow offset skim	0.6	0.6	100%
Mercer Fraser Co.	Sandy Prairie: Plant A	A1	wet trench	2.3	2.8	122%
Mercer Fraser Co.	Sandy Prairie: Plant A	A2	wide shoreline skim	0.6	0.7	117%
Mercer Fraser Co.	Sandy Prairie: Plant A	A3	narrow overflow skim	4.1	4.1	100%
Mercer Fraser Co.	Sandy Prairie: Plant A	A4	narrow overflow skim	4.1	2.7	66%
Mercer Fraser Co.	Sandy Prairie: Plant B	B1a	wide shoreline skim	6.4	6.4	100%
Mercer Fraser Co.	Sandy Prairie: Plant B	B1b	alcove	1.1	1.1	100%
Mercer Fraser Co.	Sandy Prairie: Plant B	B2	wide shoreline skim	0.5	0.7	140%
Mercer Fraser Co.	Sandy Prairie: Plant B	B3	narrow overflow skim	12.4	10.7	86%
Mercer Fraser Co.	Sandy Prairie: Plant B	B4	wide shoreline skim	3.9	0.0	0%
Mercer Fraser Co.	Sandy Prairie: Plant B	B6	wet trench	0.6	0.8	133%
Hansen Truck Shop	Hansen Bar	n/a	no extraction proposed	n/a	n/a	n/a
			Lower Eel River Totals =	**48.3**	**42.3**	**88%**

Table 11. Extraction area acreages (cont.')

Operator	Site	Area	Method	Approved Acreage	Extracted Acreage	Percent of Approved Acreage
Van Duzen River						
Tom Bess	East Bar	1	wide shoreline skim	2.0	2.0	100%
Tom Bess	West Bar	2	wide shoreline skim	5.5	4.8	87%
Van Duzen River Ranch	Bar #10	1	narrow offset skim	7.5	0.8	11%
Leland Rock	above 101 bridge	A	wetland pit	2.3	2.2	96%
Leland Rock	above 101 bridge	B	narrow shoreline skim	2.9	2.9	100%
Leland Rock	below 101 bridge	C	narrow offset skim	2.1	2.1	100%
Leland Rock	below 101 bridge	D	narrow offset skim	7.0	7.0	100%
Leland Rock	above 101 bridge	E	narrow offset skim	3.1	3.1	100%
			Van Duzen Totals =	**32.4**	**24.9**	**77%**
Middle Eel River						
Pacific Lumber Co.	Scotia Dam Bar	n/a	no extraction proposed	n/a	n/a	n/a
Pacific Lumber Co.	Lower Truck Shop Bar	n/a	no extraction proposed	n/a	n/a	n/a
Pacific Lumber Co.	Three Mile Bridge Bar	n/a	no extraction proposed	n/a	n/a	n/a
Pacific Lumber Co.	Dinner Creek Bar	n/a	no extraction proposed	n/a	n/a	n/a
Pacific Lumber Co.	Elinor Bar	n/a	no extraction proposed	n/a	n/a	n/a
Pacific Lumber Co.	Larabee Bar	n/a	no extraction proposed	n/a	n/a	n/a
Pacific Lumber Co.	South Fork Bar	n/a	no extraction proposed	n/a	n/a	n/a
Pacific Lumber Co.	Bowley Bar	n/a	no extraction proposed	n/a	n/a	n/a
Pacific Lumber Co.	Maynard Bar	n/a	no extraction proposed	n/a	n/a	n/a
Pacific Lumber Co.	Vroman Bar	n/a	no extraction proposed	n/a	n/a	n/a
			Middle Eel River Totals =	**n/a**	**n/a**	**n/a**
South Fork Eel River						
Mercer Fraser Co.	Cooks Valley: MEN	1a	wet trench	1.5	0.0	0%
Mercer Fraser Co.	Cooks Valley: MEN	1b	wide offset skim	1.2	1.2	0%
Mercer Fraser Co.	Cooks Valley: HUM	3	wide shoreline skim	1.2	1.0	100%
Randall Sand and Gravel	Home Bar	1	wide shoreline skim	3.4	3.5	103%
Randall Sand and Gravel	Tooby Park Bar	2	wide shoreline skim	1.1	0.0	0%
Randall Sand and Gravel	County Bar	3	wide offset skim	1.3	0.0	0%
Wallan and Johnson	Wallan and Johnson Bar	1	wide shoreline skim	2.9	0.0	0%
			South Fork Eel River Totals =	**12.6**	**5.7**	**45%**

Table 11. Extraction area acreages (cont.')

Operator	Site	Area	Method	Approved Acreage	Extracted Acreage	Percent of Approved Acreage
Trinity River						
Mercer Fraser Co.	Willow Creek Site	1	wet trench	1.9	1.9	100%
Mercer Fraser Co.	McKnight Bar	1	narrow shoreline skim	1.4	1.5	107%
Klamath Trinity Aggregates	Rowland Bar	1	wide shoreline skim	2.9	2.9	100%
			Trinity River Totals =	**6.2**	**6.3**	**102%**
Isolated Sites						
County of Humboldt	Cook Bar	n/a	no extraction proposed	n/a	n/a	n/a
County of Humboldt	Charles Bar	n/a	no extraction proposed	n/a	n/a	n/a
County of Humboldt	Branstetter Bar	n/a	no extraction proposed	n/a	n/a	n/a
County of Humboldt	PL Van Duzen Bar	n/a	no extraction proposed	n/a	n/a	n/a
County of Humboldt	PL Dyerville Bar	n/a	no extraction proposed	n/a	n/a	n/a
Fort Seward Ranch	Satterlee Bar	n/a	no extraction proposed	n/a	n/a	n/a
			Isolated Sites Totals =	**n/a**	**n/a**	**n/a**

APPENDIX A: HISTORICAL EXTRACTION VOLUME SUMMARIES

Mad River ("---" means unknown)

Year	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Percent
1992	115,000	115,000	100%
1993	122,100	138,400	113%
1994	134,500	134,898	100%
1995	210,637	226,265	107%
1996	203,998	189,517	93%
1997	252,926	210,976	83%
1998	265,795	223,352	84%
1999	196,212	174,974	89%
2000	204,748	146,534	72%
2001	199,215	167,719	84%
2002	204,991	171,937	84%
2003	150,390	136,790	91%
2004	156,540	141,250	90%
2005	138,475	127,200	92%
2006	174,245	162,360	93%
Totals	**2,729,772**	**2,467,172**	**90%**
Years	**15**	**15**	**---**
Averages	**181,985**	**164,478**	**90%**

Lower Eel River ("---" means unknown)

Year	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Percent
1992	---	---	---
1993	---	---	---
1994	---	---	---
1995	---	---	---
1996	---	---	---
1997	561,700	326,500	58%
1998	399,100	273,000	68%
1999	471,400	290,500	62%
2000	291,300	208,600	72%
2001	389,900	119,300	31%
2002	387,300	220,000	57%
2003	318,300	163,900	51%
2004	188,840	120,305	64%
2005	199,370	166,280	83%
2006	235,495	208,240	88%
Totals	**3,442,705**	**2,096,625**	**61%**
Years	**10**	**10**	**---**
Averages	**344,271**	**209,663**	**61%**

APPENDIX A: HISTORICAL EXTRACTION VOLUME SUMMARIES (continued)

Van Duzen River ("---" means unknown)

Year	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Percent
1992	---	---	---
1993	---	---	---
1994	---	---	---
1995	---	---	---
1996	---	---	---
1997	120,000	81,600	68%
1998	119,100	103,700	87%
1999	159,900	108,800	68%
2000	194,800	121,300	62%
2001	161,700	85,600	53%
2002	202,500	167,400	83%
2003	175,100	123,000	70%
2004	179,045	92,610	52%
2005	159,090	123,170	77%
2006	134,910	104,750	78%
Totals	**1,606,145**	**1,111,930**	**69%**
Years	**10**	**10**	---
Averages	**160,615**	**111,193**	**69%**

Middle Eel River ("---" means unknown)

Year	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Percent
1992	---	---	---
1993	---	---	---
1994	---	---	---
1995	---	---	---
1996	---	---	---
1997	147,300	84,900	58%
1998	157,900	99,400	63%
1999	134,900	124,900	93%
2000	160,100	131,000	82%
2001	116,100	64,000	55%
2002	132,767	121,608	92%
2003	74,030	54,060	73%
2004	0	0	n/a
2005	0	0	n/a
2006	0	0	n/a
Totals	**923,097**	**679,868**	**74%**
Years	**10**	**10**	---
Averages	**92,310**	**67,987**	**74%**

APPENDIX A: HISTORICAL EXTRACTION VOLUME SUMMARIES (continued)

South Fork Eel River ("---" means unknown)

Year	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Percent
1992	---	---	---
1993	---	---	---
1994	---	---	---
1995	---	---	---
1996	---	---	---
1997	67,700	74,700	110%
1998	75,400	70,100	93%
1999	85,400	75,900	89%
2000	75,700	53,700	71%
2001	66,000	43,100	65%
2002	58,163	48,122	83%
2003	87,060	54,660	63%
2004	80,730	50,745	63%
2005	82,770	36,480	44%
2006	92,000	35,075	38%
Totals	**770,923**	**542,582**	**70%**
Years	**10**	**10**	**---**
Averages	**77,092**	**54,258**	**70%**

Trinity River ("---" means unknown)

Year	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Percent
1992	---	---	---
1993	---	---	---
1994	---	---	---
1995	---	---	---
1996	---	---	---
1997	47,500	40,000	84%
1998	35,000	28,100	80%
1999	64,300	66,900	104%
2000	18,000	22,200	123%
2001	46,600	15,100	32%
2002	38,145	19,394	51%
2003	76,210	49,390	65%
2004	62,075	32,700	53%
2005	64,100	30,570	48%
2006	64,010	51,420	80%
Totals	**515,940**	**355,774**	**69%**
Years	**10**	**10**	**---**
Averages	**51,594**	**35,577**	**69%**

APPENDIX A: HISTORICAL EXTRACTION VOLUME SUMMARIES (continued)

Isolated Sites ("---" means unknown)

Year	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Percent
1992	---	---	---
1993	---	---	---
1994	---	---	---
1995	---	---	---
1996	---	---	---
1997	---	---	---
1998	22,800	23,300	102%
1999	30,100	19,000	63%
2000	43,200	22,900	53%
2001	0	0	n/a
2002	0	0	n/a
2003	0	0	n/a
2004	24,790	3,100	13%
2005	20,760	9,540	46%
2006	0	0	n/a
Totals	**141,650**	**77,840**	**55%**
Years	**9**	**9**	**---**
Averages	**15,739**	**8,649**	**55%**

Humboldt County Totals ("---" means unknown)

Year	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Percent
1992	---	---	---
1993	---	---	---
1994	---	---	---
1995	---	---	---
1996	---	---	---
1997	---	---	---
1998	1,075,095	820,952	76%
1999	1,142,212	860,974	75%
2000	987,848	706,234	71%
2001	979,515	494,819	51%
2002	1,023,866	748,461	73%
2003	881,090	581,800	66%
2004	692,020	440,710	64%
2005	664,565	493,240	74%
2006	700,660	561,845	80%
Totals	**8,146,871**	**5,709,035**	**70%**
Years	**9**	**9**	**---**
Averages	**905,208**	**634,337**	**70%**