STATE OF CALIFORNIA—THE RESOURCES AGENCY GRAY DAVIS, GOVERNOR

CALIFORNIA COASTAL COMMISSION
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RECORD PACKET COPY

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March 20, 2002

TO: **COASTAL COMMISSIONERS AND INTERESTED PARTIES**

FROM: Peter M. Douglas, Executive Director
Mark Delaplaine, Federal Consistency Supervisor
Larry Simon, Federal Consistency Staff

SUBJECT: Sediment Dredging and Disposal Plan for Bolsa Chica Wetlands Restoration Project, Consistency Determination CD-061-01 (U.S. Fish and Wildlife Service).

On November 13, 2001, the Commission concurred with consistency determination CD-061-01 submitted by the U.S. Fish and Wildlife Service for restoration of the Bolsa Chica Lowlands in Orange County. The Commission subsequently adopted findings for this action at its January 7, 2002, meeting.

As a part of its concurrence with the consistency determination, the Commission examined the proposed sediment dredging and disposal plan for the restoration project. The relevant section of the adopted findings states that:

> *Prior to the start of construction, the Service will submit to the Commission for its review the final sediment dredging and disposal plan for the project (including evidence of plan review and approval by the U.S. Army Corps of Engineers and concurrence by the U.S. EPA);*
>
> *The final sediment dredging and disposal plan will provide for nearshore (i.e., to create the offshore ebb bar and to nourish adjacent beaches) and/or upland beach disposal of only those dredged materials from the Bolsa Chica Lowlands that are physically and chemically suitable for unconfined aquatic disposal;*

As used above, the term "physically suitable" means the greater of either: a) 80% sand by total volume; or b) in the case of upland beach disposal, within 10% of the existing proportion of sand in the material on the receiving beach; and

As used above, the term "chemically suitable" means that the results of chemical analysis demonstrates that: a) the dredged materials are not hazardous waste (as defined by California Health and Safety Code Sections 25117 and 25141); and b) meet the requirements of the "Evaluation of Dredged Material; Proposed for Discharge in Waters of the U.S. – Inland Testing Manual" (U.S. EPA and Corps of Engineers (February 1998)), which addresses sediment disposal requirements contained in the Federal Clean Water Act Section 404(b)(1) guidelines (40 CFR Part 230).

On February 11, 2002, the Commission received the following documents:

- Transmittal letter from U.S. Fish and Wildlife Service, dated February 8, 2002.

- Bolsa Chica Wetland Restoration Project, Dredging and Grading Quantities, prepared by Moffatt & Nichol Engineers, report dated February 1, 2002.

- E-mail correspondence dated February 7, 2002, from Steven John, USEPA, to Russ Kaiser, Corps of Engineers, providing EPA's concurrence with the Corps of Engineers' determination that the proposed Bolsa Chica dredged materials are suitable for aquatic disposal.

- E-mail correspondence dated February 11, 2002, from Russ Kaiser, Corps of Engineers, to California Coastal Commission providing the Corps' determination that the proposed Bolsa Chica dredged materials are suitable for aquatic disposal.

The above four items are attached to this report as Exhibits 1-4.

The above-referenced February 1, 2002, Moffatt & Nichol Engineers report serves in part as an updated supporting document to the Bolsa Chica Lowlands restoration project dredging and disposal plan, which is presented in detail in the Final EIR/EIS for the project (April 2001) and in the Bolsa Chica Wetlands Restoration Project Proposed Dredge Areas Sediment Sampling and Analyses Results (April 1999). The Commission approved the dredging and disposal plan for the restoration project (as outlined in these documents) as an element of its concurrence with CD-061-01 on November 13, 2001, due in part to the commitments made by the USFWS that refined the type of materials that would be placed in the nearshore waters and the beaches adjacent to the Bolsa Chica Lowlands.

The February 1, 2002, Moffatt & Nichol Engineers report introduction (Exhibit 2) states that:

Material dredge and grading quantities were calculated as part of the Preliminary Engineering Studies completed in December 1999 (Moffatt & Nichol Engineers, 1999). The quantities were determined for purposes of budgeting, construction feasibility and

environmental review based on available information on material grain size and chemistry provided in the report by Kinnetic Laboratories/Toxscan, 1999. This work was completed prior to review by permit agencies.

Since then, the project has entered into the permitting stage and the USFWS is providing additional information to the permit agencies. The agencies requested that material grain size information be provided by depth throughout the dredge area. The USFWS provided the data and reached preliminary concurrence with the agencies about areas to be excluded from dredging.

USFWS staff requested that Moffatt & Nichol Engineers review and recalculate the dredge and grading quantities based on excluding the specified areas, a total of 57.1 acres of the full tidal area, from dredging. The excluded areas are shown in Exhibit A, provided by the U.S. Fish and Wildlife Service. Exhibit A also provides grain size mapping and chemistry information. [The "Exhibit A" cited in this paragraph and in the following paragraph is located within Exhibit 2 of this staff report.]

The report concludes as follows:

Exhibit A, which is based on the information provided by Kinnetic Laboratories/Toxscan (1999), lists all core sample contaminant test results where the measured levels exceeded the lower of the ER-L and LC-20 thresholds.

USFWS has advised Moffatt & Nichol Engineers that the material outside the excluded areas appears to be suitable for ebb bar construction based on these contaminant levels. This determination is to be made by the U.S. Army Corps of Engineers with EPA concurrence.

This report presents recalculated dredge and grading quantities. The new quantities are based on a revised definition of the areas containing materials suitable for dredging and nearshore discharge, compared to those presented in the Preliminary Engineering Studies (Moffatt & Nichol Engineers, 1999). The project can be implemented as previously described, with no significant changes in construction quantities, methods or costs resulting from the newly defined excluded areas. Sufficient materials will be available onsight for construction; the amount of excess fine-grained materials will decrease slightly compared to the previous calculation.

The material quality calculations provided here, indicate that sufficient coarse material (with an average fines content of less than 20%) will still be available for construction of the ebb bar.

As noted in the suitability determination made by the Corps of Engineers and the concurrence made by EPA (Exhibits 3 and 4), an additional excluded area was designated subsequent to publication of the February 1, 2002, report. On February 11, 2002, the U.S. Fish and Wildlife

Service agreed with the Corps and EPA that this new site (B-18-0.5) would be isolated and excluded from aquatic disposal.

The Commission staff has reviewed the submitted material and spoke with representatives from the USFWS, Corps of Engineers, and EPA regarding the proposed dredge material disposal plan. Staff concludes that the USFWS has met the commitments it made in CD-061-01 regarding: (1) the submittal of a final sediment dredging and disposal plan reviewed and approved by the Corps of Engineers and EPA; and (2) nearshore and beach disposal of only physically and chemically suitable dredged materials from the Bolsa Chica Lowlands.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
2730 Loker Avenue West
Carlsbad, California 92008

February 8, 2002

Mr. Larry Simón
Federal Consistency Chief
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, California 94105-2219

Re: Consistency Determination No. CD-61-01, Dredge Material Analysis, Bolsa Chica Lowlands Restoration Project

Dear Mr. Simón:

This letter transmits our Dredge Material Analysis requested by the California Coastal Commission. We have continued to work with the Corps of Engineers, Environmental Protection Agency, and Coastal Commission staff to identify the specific dredge material volumes for use in constructing the ebb shoal. The following four points were included in the adopted November 2001 Consistency Determination.

1. Prior to the start of construction, the Service will submit to the Commission for its review the final sediment dredging and disposal plan for the project (including evidence of plan review and approval by the U.S. Army Corps of Engineers and concurrence by the U.S. EPA);

2. The final sediment dredging and disposal plan will provide for nearshore (i.e., to create the offshore ebb bar and to nourish adjacent beaches) and/or upland beach disposal of only those dredged materials from the Bolsa Chica Lowlands that are physically and chemically suitable for unconfined aquatic disposal;

3. as used above, the term "physically suitable" means the greater of either: a) 80% sand by total volume; or b) in the case of upland beach disposal, within 10% of the existing proportion of sand in the material on the receiving beach; and

4. as used above, the term "chemically suitable" means that the results of chemical analysis demonstrate that: a) the dredged materials are not hazardous waste (as defined by California Health and Safety Code §§ 25117 and 25141); and b) meet the requirements of the "Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. -- Inland Testing Manual" (U.S. EPA and Corps of Engineers (February, 1998)), which addresses sediment disposal requirements contained in the federal Clean Water Act Section 404(b)(1) guidelines (40 CFR Part 230).

We believe we have demonstrated that it is feasible to construct the ebb shoal, as proposed and approved by CCC in November 2001, with dredge material that is both sandy enough and clean enough for placement in the ocean nearshore zone. We believe this submittal complies with the four points listed above to the maximum extent possible. We expect that the CCC will agree that the project is consistent with Sections 30230, 30231, and 30233(a) of the Coastal Act.

The proponents of the Bolsa Chica Lowland Restoration Plan believe that the proposed tidal restoration alternative would be highly beneficial to coastal fish and wildlife resources and incur no significant impacts. We are happy to continue working with the CCC on this matter and hope that we may conclude this matter in March. I may be reached at (760) 431-9440.

Sincerely,

Jack M. Fancher
Fish and Wildlife Service
Bolsa Chica Project Manager

attachments

cc: Bolsa Chica Project Steering Committee

BOLSA CHICA WETLAND RESTORATION PROJECT

DREDGING AND GRADING QUANTITIES

Prepared for:

U.S. Fish and Wildlife Service
2730 Loker Avenue West
Carlsbad, CA 92008

Prepared by:

MOFFATT & NICHOL ENGINEERS
250 W. Wardlow Road
Long Beach, CA 90807

M&N File: 4012-20

February 1, 2002

CONTENTS

TABLES

ATTACHMENTS

1.0 INTRODUCTION

Material dredge and grading quantities were calculated as part of the Preliminary Engineering Studies completed in December 1999 (Moffatt & Nichol Engineers, 1999). The quantities were determined for purposes of budgeting, construction feasibility and environmental review based on available information of material grain size and chemistry provided in the report by Kinnetic Laboratories/Toxscan, 1999. This work was completed prior to review by permit agencies.

Since then, the project has entered into the permitting stage and the USFWS is providing additional information to the permit agencies. The agencies requested that material grain size information be provided by depth throughout the dredge area. The USFWS provided the data and reached preliminary concurrence with the agencies about areas to be excluded from dredging.

USFWS staff requested that Moffatt & Nichol Engineers review and recalculate the dredge and grading quantities based on excluding the specified areas, a total of 57.1 acres of the full tidal area, from dredging. The excluded areas are shown in Exhibit A, provided by the U.S. Fish & Wildlife Service. Exhibit A also provides grain size mapping and chemistry information.

This report presents the prior and updated estimates of dredge and grading quantities, and confirms the construction methods to be used.

2.0 PREVIOUS AND UPDATED ESTIMATES

2.1 PRELIMINARY ENGINEERING STUDIES

The Preliminary Engineering Studies (Moffatt & Nichol Engineers, 1999) calculated preliminary construction quantities, shown in Table 1. A total of approximately 2.7 million cubic yards (cy) of material will be "cut" or excavated/dredged from the site. Of this quantity, approximately 1.1 million cy will be reused onsite (cordgrass bench and other fill areas, beach, nesting islands and levees) and 1.3 million will be used to create the ebb bar. Only 0.25 million cy, less than 10% of the total material, are anticipated to be hauled offsite (debris and vegetation from clearing and grubbing the existing surface, and fine or contaminated materials for which no appropriate onsite use has been identified). Conserving the volume of material onsite and maximizing its beneficial reuse is the most economical and environmentally sensitive project strategy. Placing coarse material in the nearshore to prenourish the ebb bar or the beach is considered to be a beneficial use.

Of the cut material, 683,000 cy were found to be unsuitable for nearshore placement, based on grain size or contaminant levels. The majority of the unsuitable material will be used to fill the cores of levees and nesting islands onsite (a total of 544,500 cy). The excess unsuitable material, 138,500 cy, together with debris and vegetation from clearing and grubbing, will be hauled offsite to a landfill.

TABLE 1: CONSTRUCTION VOLUME BUDGET ESTIMATES: PRELIMINARY ENGINEERING STUDIES

Estimate	Initial Grading [1]		Disposal for Coarse, Clean Materials [2]				Disposal for Excluded Materials [3]		Hauled Offsite [4]	
	Cut	Fill	Beach Pre-Nourish	Ebb Bar [5]	Nesting Cap	Levee Caps	Nesting Core	Levee Cores	Clear & Grub [6]	Excess Fine Mat'ls
Previous	2,695,100	98,300	190,000	1,331,100	96,300	181,400	269,900	274,600	115,000	138,500

Notes:
1. All volumes are in cubic yards.
2. Materials from the excluded areas, which may be fine and/or contaminated, are unsuitable for these uses
3. Fine materials (exceeding 40% silt/clay content) and some contaminated materials are suitable for these uses
4. Materials used to pre-nourish the ebb-shoal bar should be at least 80% coarse
5. Clearing and grubbing is assumed to remove a 6-inch depth, of which 40% is assumed to be unsuitable for onsite uses

The assumptions for construction were as follows. After clearing and grubbing, it was assumed that earthmoving equipment would scrape the ground surface above 0 feet mean sea level (MSL) and place fine-grained materials (considered unsuitable for nearshore discharge) in the cores of the levees and nesting islands. The equipment would also excavate below 0 feet MSL to remove material unsuitable for nearshore discharge and place it in the cores of levees and nesting islands to the extent possible. The remainder would be hauled offsite, away from Bolsa Chica, in trucks. The site would then be flooded, and a hydraulic dredge would pump all remaining suitable

materials to the nearshore. This simplified construction scenario minimized the need for double-handling of material and reduced costs and site impacts.

2.2 DEFINITION OF EXCLUDED AREAS AND QUANTITY CALCULATIONS

The excluded areas were defined by USFWS with preliminary concurrence with the permitting agencies. First, at each core sample location, the percentage of silt and clay between 0 and -2 feet MSL, between -2 and -4 feet MSL, and between -4 and -6 below MSL, were calculated. Contours of this silt/clay percentage were then defined for each layer using ArcView's 3D Analyst software [1]. Exhibit A shows the areas with greater than 40% silt/clay and 30% to 40% silt/clay for each two-foot layer. The locations of samples with detected contaminants are also shown in Exhibit A; the subsequent tables show the measured levels at these locations together with ER-L and LC-20 thresholds.

Based on the locations of fine and contaminated materials, the excluded areas shown in Exhibit A were defined. The materials in these excluded areas are considered to be unsuitable for capping the nesting islands and levees, and for dredging and discharge to the nearshore (beach or ebb bar). Specific excluded areas were not defined in the previous calculations; this is a refinement of the earlier work.

Moffatt & Nichol Engineers then calculated the volume of material within these excluded areas above -6.8 feet MSL. This calculated volume was 612,000 cy, slightly less than the 683,000 cy used in the Preliminary Engineering Studies.

2.3 REVISED QUANTITIES AND CONSTRUCTION METHODS

The previous and revised quantity estimates are compared in Table 2. The revised estimates are based upon 612,000 cy being unsuitable for nearshore placement, calculated as described above from the excluded areas specified by the USFWS in concurrence with permitting agencies. The same quantities of material will be required for onsite construction, so that the only change in construction volumes will be in the quantities available for nearshore discharge, and in the quantities hauled offsite. With the updated estimate, the quantity available for nearshore discharge (pre-nourishing the ebb-shoal) increases slightly from 1.3 million to 1.4 million cy, and the total quantity to be hauled offsite decreases slightly from 0.25 million to 0.18 million cy.

[1] A Natural Neighbors interpolation was used to create polygonal areas of a given grain size from the point core sample data. Natural Neighbors is a weighted-average interpolation method where a raster surface is interpolated using the input data points that are natural neighbors of the cell. The interpolation method creates a triangulation of the input points, with the triangles collectively constrained to be as close to equilateral triangles as possible. For each data point, the natural neighbors are the minimum number of nodes in the triangulation that connect to form a convex hull. The weight of each neighbor point is then determined through the use of a Thiessen/Voroni technique that evaluates its area of influence.

TABLE 2: CONSTRUCTION VOLUME BUDGET ESTIMATES: PREVIOUS AND REVISED

Estimate	Initial Grading [1]		Disposal for Coarse, Clean Materials [2]				Disposal for Excluded Materials [3]		Hauled Offsite [4]	
	Cut	Fill	Beach Pre-Nourish	Ebb Bar [5]	Nesting Cap	Levee Caps	Nesting Core	Levee Cores	Clear & Grub [6]	Excess Fine Mat'ls
Previous	2,695,100	98,300	190,000	1,331,100	96,300	181,400	269,900	274,600	115,000	138,500
Revised	2,695,100	98,300	190,000	1,402,100	96,300	181,400	269,900	274,600	115,000	67,500

Notes:

1. All volumes are in cubic yards.
2. Materials from the excluded areas, which may be fine and/or contaminated, are unsuitable for these uses
3. Fine materials (exceeding 40% silt/clay content) and some contaminated materials are suitable for these uses
4. Materials used to pre-nourish the ebb-shoal bar should be at least 80% coarse
5. Clearing and grubbing is assumed to remove a 6-inch depth, of which 40% is assumed to be unsuitable for onsite uses

The construction methods described previously will still apply with the newly specified excluded areas, where the materials are considered unsuitable for nearshore discharge. The site will first be cleared and grubbed of debris and other undesired vegetation. Since the majority of the contaminated material onsite is in the top 6 inches, much of the contaminated material will be removed during the clear and grub process. This contaminated material and the debris and undesired vegetation, corresponding to 60% of the uppermost six inches, will be hauled offsite to sanitary landfill.

The excluded areas shown in Exhibit A will be excavated in the dry by conventional earthmoving equipment, and the material will be used to build the cores of the levees and nesting islands. The material may have a higher water content than the material previously assumed to be used to build these features because a larger portion of it may be below the water table. However, the excavated material will be dewatered and will drain rapidly when placed because it is relatively sandy in grade (although relatively high in fines content, it is still predominantly silty sand).

Material remaining outside of the excluded areas will either be excavated and used as needed onsite, or dredged after the site is flooded and pumped to the nearshore. The dredge will work within the pits created by excavation of the excluded areas and will gradually remove surrounding materials within the dredge footprint.

2.4 MATERIAL QUALITY

The majority of the material outside the excluded areas is to be discharged in the nearshore to prenourish the ebb bar. The material to be used to prenourish the ebb bar is required to contain, on average, at least 80% coarse materials (sand). At equilibrium, after losses of fine-grained particles, the ebb bar requires 623,000 cy.

The material outside of the excluded areas has been analyzed for grain size. On average over the site, this material is 81.6% sand and 18.4% fines (Table 3). The median grain size is consistent with fine sand.

TABLE 3: GRADATION OF MATERIAL OUTSIDE THE EXCLUDED AREA (ABOVE -6.8 FEET MSL)

Sand	81.6%
Silt	13.8%
Clay	4.6%

As shown in Table 4, the effective quantity of material present in the ebb bar after losses of fine-grain particles is 902,000 cy, compared to the previous estimate of 862,000 cy. This quantity was calculated using the methods employed in the Environmental Impact Report/Statement prepared for the project (Chambers Group, 2001). The ebb bar requires 623,000 cy at equilibrium.

TABLE 4: BREAKDOWN OF MATERIAL SAMPLED WITH FINES CONTENT (ABOVE -6.8 FEET MSL)

	FINES FRACTION					
	>40%	30% to 40%	20% to 30%	10% to 20%	<10%	**Total**
Fraction of soils	6.7%	8.5%	21.1%	35.5%	28.3%	100.0%
Initial volume	93,483	118,726	295,444	498,158	396,289	1,402,100
Volume loss	Not used	50%	40%	30%	20%	
Final volume		59,363	177,266	348,711	317,031	902,371

3.0 CONCLUSIONS

The analysis presented in this report is based on known conditions at the site, and assumes that the explorations to date are representative of subsurface conditions in the project area. The quantities presented here can be expected to change slightly, based on more detailed cut and fill specifications to be carried out in the final design, and on unanticipated soil conditions that may be encountered during construction.

3.1 CONTAMINANTS

Exhibit A, which is based on the information provided by Kinnetic Laboratories/Toxscan (1999), lists all core sample contaminant test results where the measured levels exceeded the lower of the ER-L and LC-20 thresholds.

USFWS has advised Moffatt & Nichol Engineers that the material outside the excluded areas appears to be suitable for ebb bar construction based on these contaminant levels. This determination is to be made by the U.S. Army Corps of Engineers with EPA concurrence.

3.2 CONSTRUCTION QUANTITIES AND GRAIN SIZES

This report presents recalculated dredge and grading quantities. The new quantities are based on a revised definition of the areas containing materials suitable for dredging and nearshore discharge, compared to those presented in the Preliminary Engineering Studies (Moffatt & Nichol Engineers, 1999). The project can be implemented as previously described, with no significant changes in construction quantities, methods or costs resulting from the newly defined excluded areas. Sufficient materials will be available onsite for construction; the amount of excess fine-grained materials will decrease slightly compared to the previous calculations.

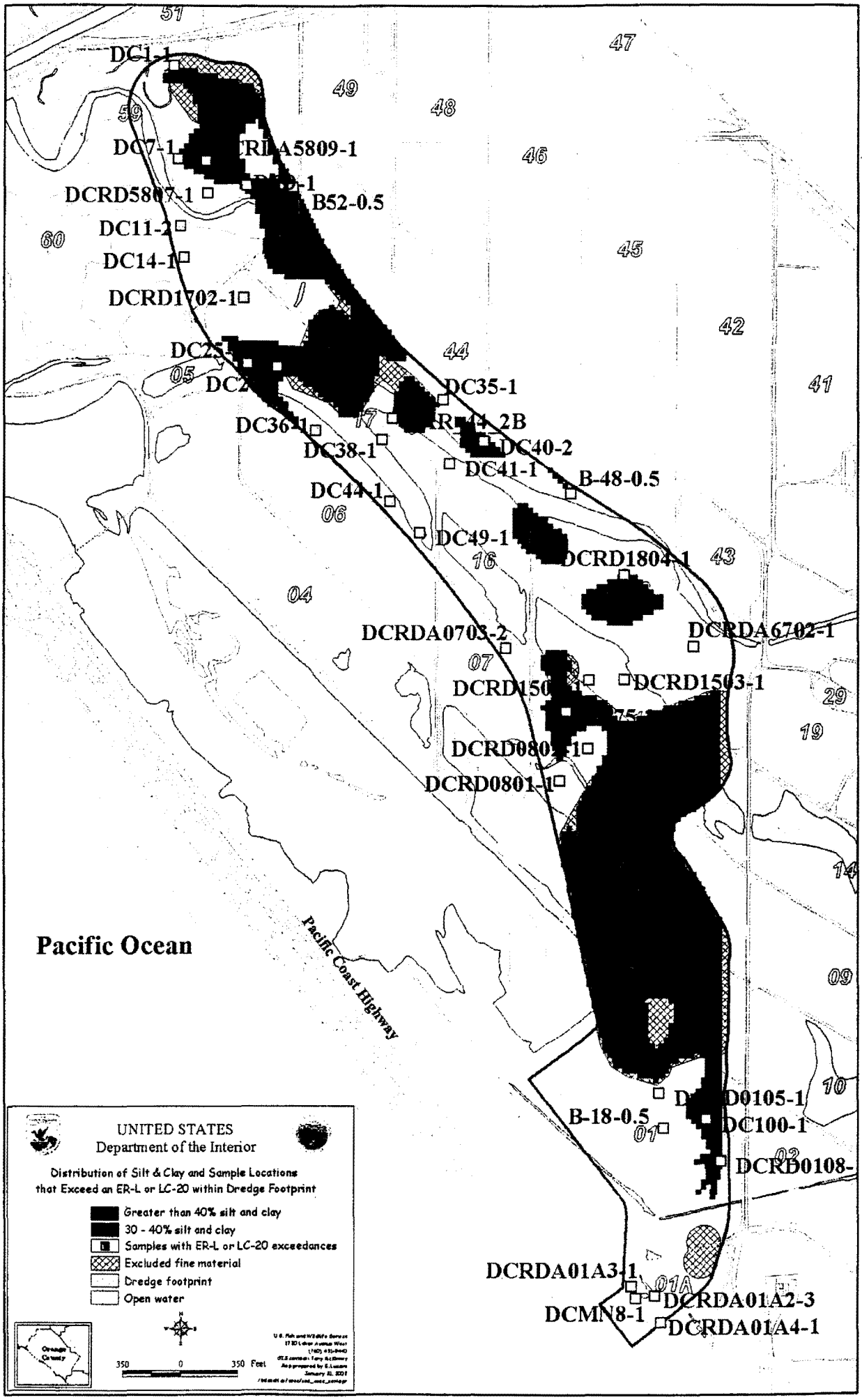
The material quality calculations provided here, indicate that sufficient coarse material (with an average fines content of less than 20%) will still be available for construction of the ebb bar.

4.0 REFERENCES

Chambers Group, Inc. 2001. Final Environmental Impact Report/Statement, Bolsa Chica Wetlands Restoration Project.

Kinnetic Laboratories/Toxscan, Inc. 1999. Bolsa Chica Wetlands Restoration Project, Proposed Dredge Areas Sediment Sampling and Analyses Results.

Moffatt & Nichol Engineers, 1999. Preliminary Engineering Studies for Bolsa Chica Wetlands Restoration, Final Report.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DC25-1
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DC38-1
DC40-2
DC41-1
B-48-0.5
DC44-1
DC49-1
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DCRDA6702-1
DCRD1503-1
DCRD0801-1
B-18-0.5
DC100-1
DCRD0108-
DCRDA01A3-1
DCRDA01A2-3
DCMN8-1
DCRDA01A4-1
Pacific Ocean
Pacific Coast Highway
UNITED STATES
Department of the Interior
Distribution of Silt & Clay and Sample Locations
that Exceed an ER-L or LC-20 within Dredge Footprint
Greater than 40% silt and clay
30 - 40% silt and clay
Samples with ER-L or LC-20 exceedances
Excluded fine material
Dredge footprint
Open water
350 0 350 Feet

EXHIBIT "A"

List of ERL or LC20 Exceedence in 0.5-2 feet layer. (Top layer without surface)

SITE	FIELDID	ANALYTE	ER_L	LC20	RESULTS **0.5-2'**
CELL 01	B-18-0.5	Fluorene	0.01900		0.03600
CELL 01	B-18-0.5	4,4'-DDD	0.00200		0.01600
CELL 01	B-18-0.5	4,4'-DDE	0.00220		0.00900
CELL 01	B-18-0.5	4,4'-DDT	0.00100		0.03000
CELL 18	B-48-0.5	4,4'-DDD	0.00200		0.04400
CELL 18	B-48-0.5	4,4'-DDE	0.00220		0.02600
CELL 58	B52-0.5	Selenium		0.28000	0.43000
CELL 01	DC100-1	Oil and Grease		346.00000	40
CELL 01	DC100-1	Benzo(b)fluoranthen		0.05810	0.30000
CELL 01	DC100-1	Di-n-octylphthalate		0.05190	0.12000
CELL 01	DC100-1	Dibenz(a,h)anthrace	0.06340		0.08100
CELL 01	DC100-1	4,4'-DDT	0.00100		0.00350
CELL 17	DC49-1	4,4'-DDD	0.00200		0.01600
CELL 17	DC49-1	4,4'-DDE	0.00220		0.01200
CELL 17	DC49-1	Selenium		0.28000	0.30000
CELL 17	DC44-1	Di-n-octylphthalate		0.05190	0.06300
CELL 17	DC44-1	Selenium		0.28000	0.36000
CELL 17	DC41-1	Di-n-octylphthalate		0.05190	0.08200
CELL 17	DC41-1	4,4'-DDT	0.00100		0.00180
CELL 17	DC38-1	4,4'-DDE	0.00220		0.00670
CELL 17	DC36-1	4,4'-DDT	0.00100		0.00480
CELL 18	DC67-1	4,4'-DDD	0.00200		0.00260
CELL 44	DC35-1	Aldrin		0.00022	0.00048
CELL 58	DC9-1	4,4'-DDD	0.00200		0.00680
CELL 58	DC9-1	4,4'-DDT	0.00100		0.00170
CELL 67	DCRDA6702-1	Cobalt		1	14.00000
CELL 67	DCRDA6702-1	Beryllium		1.10000	1.20000
CELL 67	DCRDA6702-1	Selenium		0.28000	0.51000
CELL 58	DCRDA5809-1	4,4'-DDE	0.00220		0.00290
CELL 58	DCRDA5809-1	Aldrin		0.00022	0.00067
CELL 58	DCRDA5809-1	Arsenic	8.20000	19.90000	9.10000
CELL 60	DC14-1	Aldrin		0.00022	0.00032
CELL 58	DC7-1	Vanadium		65.30000	7
CELL 58	DC1-1	4,4'-DDT	0.00100		0.00300
CELL 17	DC26-1	Cobalt		1	18.00000
CELL 17	DC26-1	Nickel	20.90000	19.60000	25.00000
CELL 17	DC26-1	Beryllium		1.10000	1.30000
CELL 17	DC26-1	Cadmium	1.20000		1.60000
CELL 17	DC26-1	Thallium		0.34000	0.54000
CELL 17	DC26-1	Oil and Grease		346.00000	39
CELL 17	DC26-1	4,4'-DDE	0.00220		0.00450
CELL 17	DC26-1	Selenium		0.28000	1.30000
CELL 17	DC25-1	Cobalt		1	22.00000
CELL 17	DC25-1	Nickel	20.90000	19.60000	34.00000
CELL 17	DC25-1	Zinc	15	104.00000	17
CELL 17	DC25-1	Beryllium		1.10000	1.60000
CELL 17	DC25-1	Cadmium	1.20000		1.60000
CELL 17	DC25-1	Thallium		0.34000	0.80000
CELL 17	DC25-1	Oil and Grease		346.00000	73

SITE	FIELDID	ANALYTE	ER_L	LC20	RESULTS **0.5-2'**
CELL 17	DC25-1	4,4'-DDE	0.00220		0.00500
CELL 17	DC25-1	Selenium		0.28000	1.50000
CELL 01A	DCRDA01A2-3	Selenium		0.28000	0.36000
CELL 01A	DCMN8-1	Nickel	20.90000	19.60000	33.00000
CELL 01A	DCMN8-1	Thallium		0.34000	0.38000
CELL 01A	DCMN8-1	Waste oil		282.00000	46
CELL 01A	DCMN8-1	Oil and Grease		346.00000	78
CELL 01A	DCMN8-1	Di-n-octylphthalate		0.05190	0.05400
CELL 15	DCRD1503-1	Thallium		0.34000	0.41000
CELL 15	DCRD1503-1	4,4'-DDE	0.00220		0.00980
CELL 15	DCRD1502-1	TPH-Diesel		35.40000	10
CELL 15	DCRD1502-1	Waste oil		282.00000	37
CELL 15	DCRD1502-1	Oil and Grease		346.00000	140
CELL 18	DCRD1804-1	Thallium		0.34000	0.40000
CELL 01	DCRD0108-1	Vanadium		65.30000	93.00000
CELL 01	DCRD0108-1	Thallium		0.34000	0.36000
CELL 01	DCRD0105-1	Vanadium		65.30000	7
CELL 08	DCRD0801-1	Thallium		0.34000	0.47000
CELL 08	DCRD0802-1	Thallium		0.34000	0.54000
CELL 17	DCRD1702-1	Thallium		0.34000	0.36000
CELL 58	DCRD5807-1	4,4'-DDD	0.00200		0.00290
CELL 01A	DCRDA01A3-1	Oil and Grease		346.00000	48
CELL 01A	DCRDA01A4-1	Mercury	0.15000		0.16000
CELL 01A	DCRDA01A4-1	4,4'-DDD	0.00200		0.00370
CELL 01A	DCRDA01A4-1	4,4'-DDT	0.00100		0.00130
CELL 01A	DCRDA01A4-1	Oil and Grease		346.00000	200
CELL 01A	DCRDA01A4-1	Lead	46.70000		64.00000

List of ERL or LC20 Exceedences in layer 2-4 feet

SITE	FIELDID	ANALYTE	ER_L	LC20	RESULTS	2-4'
CELL 17	CAR_44_2B	Waste oil		282.00000		43
CELL 08	DC75-2	Thallium		0.34000		0.36000
CELL 17	DC41-1	Di-n-octylphthal		0.05190		0.08200
CELL 17	DC41-1	4,4'-DDT	0.00100			0.00180
CELL 17	DC38-1	4,4'-DDE	0.00220			0.00670
CELL 17	DC36-1	4,4'-DDT	0.00100			0.00480
CELL 18	DC67-1	4,4'-DDD	0.00200			0.00260
CELL 18	DC40-2	Thallium		0.34000		0.36000
CELL 44	DC35-1	Aldrin		0.00022		0.00048
CELL 08	DC75-3	Thallium		0.34000		0.41000
CELL 58	DC7-1	Vanadium		65.30000		7
CELL 60	DC11-2	Thallium		0.34000		0.37000
CELL 07	DCRDA0703-2	Vanadium		65.30000		74.00000
CELL 07	DCRDA0703-2	Thallium		0.34000		0.38000
CELL 17	DC25-1	Cobalt		1		22.00000
CELL 17	DC25-1	Nickel	20.90000	19.60000		34.00000
CELL 17	DC25-1	Zinc	15	104.00000		17
CELL 17	DC25-1	Beryllium		1.10000		1.60000
CELL 17	DC25-1	Cadmium	1.20000			1.60000
CELL 17	DC25-1	Thallium		0.34000		0.80000
CELL 17	DC25-1	Oil and Grease		346.00000		73
CELL 17	DC25-1	4,4'-DDE	0.00220			0.00500
CELL 17	DC25-1	Selenium		0.28000		1.50000
CELL 01A	DCRDA01A2-3	Selenium		0.28000		0.36000
CELL 01A	DCMN8-1	Nickel	20.90000	19.60000		33.00000
CELL 01A	DCMN8-1	Thallium		0.34000		0.38000
CELL 01A	DCMN8-1	Waste oil		282.00000		46
CELL 01A	DCMN8-1	Oil and Grease		346.00000		78
CELL 01A	DCMN8-1	Di-n-octylphthal		0.05190		0.05400
CELL 15	DCRD1503-1	Thallium		0.34000		0.41000
CELL 15	DCRD1503-1	4,4'-DDE	0.00220			0.00980
CELL 15	DCRD1502-1	TPH-Diesel		35.40000		10
CELL 15	DCRD1502-1	Waste oil		282.00000		37
CELL 15	DCRD1502-1	Oil and Grease		346.00000		140
CELL 18	DCRD1804-1	Thallium		0.34000		0.40000
CELL 08	DCRD0801-1	Thallium		0.34000		0.47000
CELL 17	DCRD1702-1	Thallium		0.34000		0.36000
CELL 58	DCRD5807-1	4,4'-DDD	0.00200			0.00290
CELL 01A	DCRDA01A3-1	Oil and Grease		346.00000		48

List of Exceedences of ERL or LC20 in Layer 4-6 feet.

SITE	FIELDID	ANALYTE	ER_L	LC20	RESULTS 4-6'
CELL 17	CAR_44_2B	Waste oil		282.00000	43
CELL 01	DC100-1	Oil and Grease		346.00000	40
CELL 01	DC100-1	Benzo(b)fluoranthen		0.05810	0.30000
CELL 01	DC100-1	Di-n-octylphthalate		0.05190	0.12000
CELL 01	DC100-1	Dibenz(a,h)anthrace	0.06340		0.08100
CELL 01	DC100-1	4,4'-DDT	0.00100		0.00350
CELL 08	DC75-2	Thallium		0.34000	0.36000
CELL 17	DC49-1	4,4'-DDD	0.00200		0.01600
CELL 17	DC49-1	4,4'-DDE	0.00220		0.01200
CELL 17	DC49-1	Selenium		0.28000	0.30000
CELL 17	DC44-1	Di-n-octylphthalate		0.05190	0.06300
CELL 17	DC44-1	Selenium		0.28000	0.36000
CELL 17	DC41-1	Di-n-octylphthalate		0.05190	0.08200
CELL 17	DC41-1	4,4'-DDT	0.00100		0.00180
CELL 17	DC38-1	4,4'-DDE	0.00220		0.00670
CELL 17	DC36-1	4,4'-DDT	0.00100		0.00480
CELL 18	DC67-1	4,4'-DDD	0.00200		0.00260
CELL 18	DC40-2	Thallium		0.34000	0.36000
CELL 44	DC35-1	Aldrin		0.00022	0.00048
CELL 58	DC9-1	4,4'-DDD	0.00200		0.00680
CELL 58	DC9-1	4,4'-DDT	0.00100		0.00170
CELL 67	DCRDA6702-1	Cobalt		1	14.00000
CELL 67	DCRDA6702-1	Beryllium		1.10000	1.20000
CELL 67	DCRDA6702-1	Selenium		0.28000	0.51000
CELL 58	DCRDA5809-1	4,4'-DDE	0.00220		0.00290
CELL 58	DCRDA5809-1	Aldrin		0.00022	0.00067
CELL 58	DCRDA5809-1	Arsenic	8.20000	19.90000	9.10000
CELL 60	DC14-1	Aldrin		0.00022	0.00032
CELL 58	DC7-1	Vanadium		65.30000	7
CELL 58	DC1-1	4,4'-DDT	0.00100		0.00300
CELL 60	DC11-2	Thallium		0.34000	0.37000
CELL 17	DC26-1	Cobalt		1	18.00000
CELL 17	DC26-1	Nickel	20.90000	19.60000	25.00000
CELL 17	DC26-1	Beryllium		1.10000	1.30000
CELL 17	DC26-1	Cadmium	1.20000		1.60000
CELL 17	DC26-1	Thallium		0.34000	0.54000
CELL 17	DC26-1	Oil and Grease		346.00000	39
CELL 17	DC26-1	4,4'-DDE	0.00220		0.00450
CELL 17	DC26-1	Selenium		0.28000	1.30000
CELL 17	DC25-1	Cobalt		1	22.00000
CELL 17	DC25-1	Nickel	20.90000	19.60000	34.00000
CELL 17	DC25-1	Zinc	15	104.00000	17
CELL 17	DC25-1	Beryllium		1.10000	1.60000
CELL 17	DC25-1	Cadmium	1.20000		1.60000
CELL 17	DC25-1	Thallium		0.34000	0.80000
CELL 17	DC25-1	Oil and Grease		346.00000	73
CELL 17	DC25-1	4,4'-DDE	0.00220		0.00500
CELL 17	DC25-1	Selenium		0.28000	1.50000
CELL 01A	DCRDA01A2-3	Selenium		0.28000	0.36000

SITE	FIELDID	ANALYTE	ER_L	LC20	RESULTS **4-6'**
CELL 01A	DCMN8-1	Nickel	20.90000	19.60000	33.00000
CELL 01A	DCMN8-1	Thallium		0.34000	0.38000
CELL 01A	DCMN8-1	Waste oil		282.00000	46
CELL 01A	DCMN8-1	Oil and Grease		346.00000	78
CELL 01A	DCMN8-1	Di-n-octylphthalate		0.05190	0.05400
CELL 15	DCRD1503-1	Thallium		0.34000	0.41000
CELL 15	DCRD1503-1	4,4'-DDE	0.00220		0.00980
CELL 15	DCRD1502-1	TPH-Diesel		35.40000	10
CELL 15	DCRD1502-1	Waste oil		282.00000	37
CELL 15	DCRD1502-1	Oil and Grease		346.00000	140
CELL 18	DCRD1804-1	Thallium		0.34000	0.40000
CELL 01	DCRD0108-1	Vanadium		65.30000	93.00000
CELL 01	DCRD0108-1	Thallium		0.34000	0.36000
CELL 01	DCRD0105-1	Vanadium		65.30000	7
CELL 08	DCRD0801-1	Thallium		0.34000	0.47000
CELL 08	DCRD0802-1	Thallium		0.34000	0.54000
CELL 17	DCRD1702-1	Thallium		0.34000	0.36000
CELL 58	DCRD5807-1	4,4'-DDD	0.00200		0.00290
CELL 01A	DCRDA01A3-1	Oil and Grease		346.00000	48
CELL 01A	DCRDA01A4-1	Mercury	0.15000		0.16000
CELL 01A	DCRDA01A4-1	4,4'-DDD	0.00200		0.00370
CELL 01A	DCRDA01A4-1	4,4'-DDT	0.00100		0.00130
CELL 01A	DCRDA01A4-1	Oil and Grease		346.00000	200
CELL 01A	DCRDA01A4-1	Lead	46.70000		64.00000

-----Original Message-----
From: John.Steven@epamail.epa.gov [mailto:John.Steven@epamail.epa.gov]
Sent: Thursday, February 07, 2002 4:51 PM
To: rkaiser@spl.usace.army.mil
Subject: Bolsa Chica
Importance: High

Russ -- EPA has had the opportunity to review the sediment quality data provided by the U.S. Fish and Wildlife Service for materials within the dredge footprint of the proposed Bolsa Chica Wetland Restoration project. As the Corps and EPA requested, the FWS has consolidated the large quantities of sediment data (physical and chemical) to focus on the materials to be disposed of into the aquatic environment, either as beach nourishment or to pre-fill the ebb bar. These data are for discreet layers: 0.5 - 2 feet below mean sea level; 2 - 4 feet below MSL; and 4-6 feet below MSL. Based on these data, areas of fine grained and/or contaminated materials within the dredge footprint were delineated and would be excluded from aquatic disposal (see Exhibit A, from the February 1, 2002 report Bolsa Chica Wetland Restoration Project -- Dredging and Grading Quantities, prepared for FWS by Moffatt & Nichol Engineers). Based on this map of the excluded areas, the proposed dredged materials would average 81.6% sand and would, except for a small subset of sample cores, eliminated materials with contaminants of concern with concentrations greater than Long and Morgan Effects Range Low (ERL) values. For the subset of core samples within the dredge footprint not in the excluded areas with contaminants greater than ERL levels EPA has evaluated the chemistry for each core, including the distribution of the cores and the proximity to other cores with elevated levels of contaminants of concern. Based on this evaluation EPA recommended expansion of the excluded areas (EPA's January 8, 2002 memo to the Corps, based on the December 4, 2001 FWS dredge footprint map). The January 31, 2002 maps included in the February 1, 2002 report address EPA's recommended excluded area expansion, with a few minor modifications. (NOTE: As you are aware, only physical and chemical testing of the proposed dredge materials, consistent with the protocols specified in the Inland Testing Manual (ITM), was conducted on the proposed dredge materials. There has been no ITM protocol biological testing of these materials).

Subsequent analysis of the data revealed a core sample (B-18-0.5) with significantly elevated levels of 4,4'-DDT (0.03ug/kg) which EPA does not believe would be acceptable for aquatic disposal. This sample from 1996 was a surface (top 0.5 feet) sample and, as such, might be addressed by the grubbing and removal operations to be conducted prior to the dredging of the site. The data tables provided in the February 1, 2002 report indicate, however, that this contamination is for the full dredge depth. Pending demonstration by the FWS that this contamination is restricted to the top layer and will be removed prior to the dredging operation, EPA recommends that the material to the full dredge depth in an area from the B-18-0.5 sample point half way to the nearest non-contaminated core, be excluded from aquatic disposal.

Based on the January 31, 2002 report, EPA would concur provisionally on a Corps determination that the materials within the proposed dredging footprint, except for the specified exclusion areas and with the additional exclusion of the area around core B-18-0.5, are suitable for aquatic disposal for the purpose of pre-filling the ebb bar. EPA's final concurrence is pending completion and approval of a dredging operations plan and preparation of a draft permit.

Thank you for the opportunity to review and comment on these sediment quality data and the suitability of these materials for aquatic disposal. EPA will provide the FWS with a copy of these comments via facsimile transmission.

Steven

From: Kaiser, Russell L SPL [Russell.L.Kaiser@spl01.usace.army.mil]

Sent: Monday, February 11, 2002 10:31 AM

To: 'lsimon@coastal.ca.gov'

Cc: 'John.Steven@epamail.epa.gov'; Durham, Mark SPL; 'Jack_Fancher@r1.fws.gov'; 'bob.hoffman@NOAA.GOV'; Rose, Paul W SPL

Subject: RE: Bolsa Chica Sediment Suitability Determination

Larry,

Like the Environmental Protection Agency (EPA), I have reviewed the sediment quality data provided by the U.S. Fish and Wildlife Service (USFWS) for materials within the dredge footprint of the proposed Bolsa Chica Wetland Restoration project. The Corps, like the EPA, has similar concerns with the B-18 core. Based on the data provided, the B-18 core area is not suitable for placement in (navigable) waters of the United States (U.S.). Based on a February 11, 2002 conference call with the USFWS, the EPA, and the Corps, the USFWS indicated that the questionable material, located at B-18, would be isolated, as described in the EPA e-mail below, and not placed in (navigable) waters of the U.S., without further testing supporting a positive suitability determination. All other areas, as depicted on the February 1, 2002 exhibit, were determined suitable for placement in waters of the U.S., based on the sediment and chemical analyses provided to the Corps.

Russell L. Kaiser
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