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Contract No.  
01-WC-20-1758

MEMORANDUM OF UNDERSTANDING  
BETWEEN THE U.S. BUREAU OF RECLAMATION  
AND  
THE U.S. FISH AND WILDLIFE SERVICE  
PROVIDING FOR  
PROJECT AND ACQUIRED WATER SUPPLIES  
TO  
UNITS OF THE NATIONAL WILDLIFE REFUGE SYSTEM  
IN THE SAN JOAQUIN VALLEY  
AND  
THE NATIONAL WILDLIFE REFUGES  
IN THE TULARE LAKE BASIN  
OF  
CALIFORNIA

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18  
19                   THIS MEMORANDUM OF UNDERSTANDING (MOU), made this 19<sup>th</sup> day  
20 of January, 2001, by and between THE UNITED STATES BUREAU OF  
21 RECLAMATION (Reclamation), and THE U.S. FISH AND WILDLIFE SERVICE (Service),  
22 hereinafter called the "parties," defines the parties' roles and responsibilities to meet the  
23 requirements of Section 3406(d) of the Central Valley Project Improvement Act of October 30,  
24 1992, Title XXXIV of Pub. L. No. 102-575 (CVPIA) which states, in pertinent part, "... the  
25 Secretary shall provide, either directly or through contractual agreements with other  
26 appropriate parties, firm water supplies of suitable quality to maintain and improve wetland  
27 habitat areas on units of the National Wildlife Refuge System in the Central Valley of  
28 California; ..."

29                                   EXPLANATORY RECITALS

30                   WHEREAS, the United States has constructed and is operating the Central  
31 Valley Project, California (Project), for diversion, storage, carriage, and distribution of the

32 waters of the Sacramento River, the American River, the Trinity River, and the San Joaquin  
33 River and their tributaries for the following beneficial uses, including, but not limited to, flood  
34 control, irrigation, municipal, domestic, industrial water service, the protection, restoration  
35 and enhancement of fish, and wildlife, and associated habitats in the Central Valley, the  
36 generation and distribution of electric energy, salinity control, and navigation; and

37 WHEREAS, Reclamation and the Service are entering into this long-term MOU  
38 pursuant to Section 3406(d) of the CVPIA to make available and convey water supplies  
39 pursuant to this MOU for lands of the National Wildlife Refuge (NWR) System in the San  
40 Joaquin Valley, which include: Units of the San Luis NWR, San Luis, Kesterson, West Bear  
41 Creek (formerly West Gallo), Freitas, and East Bear Creek (formerly East Gallo), Merced  
42 NWR; and in the Tulare Lake Basin which includes Kern NWR and Pixley NWR; and

43 WHEREAS, the wetlands of the Central Valley have declined to approximately  
44 300,000 acres and these remaining wetlands provide critical wildlife habitat and other  
45 environmental benefits, and important recreational and educational opportunities; and

46 WHEREAS, the Bureau of Reclamation's 1989 Refuge Water Supply Report  
47 concluded that "... it is clear that each refuge requires a dependable supply of good quality  
48 water to facilitate proper wetland habitat management for the migratory birds of the Pacific  
49 Flyway and resident wildlife and flora."; and

50 WHEREAS, Section 3406(d) of the CVPIA requires the Secretary to provide  
51 firm water supplies of suitable quality, through long-term contractual agreements with  
52 appropriate parties, to maintain and improve certain wetland habitat areas in the Central Valley

53 in furtherance of the objectives of the Central Valley Habitat Joint Venture and the Central  
54 Valley Project to protect, restore and enhance fish and wildlife and associated habitats; and

55 WHEREAS, the directives of Section 3406(d) of the CVPIA have been carried  
56 out through a cooperative and collaborative effort between the Bureau of Reclamation and Fish  
57 and Wildlife Service, acting for the Secretary of the Interior, the California Department of  
58 Fish and Game, the Grassland Water District, and the Central Valley Habitat Joint Venture  
59 partners; and this cooperative and collaborative effort is expected to continue; and

60 WHEREAS, Reclamation intends to use Project facilities, in part, to provide  
61 firm water supplies of suitable quality to maintain and improve the Refuges; and

62 WHEREAS, the Service has demonstrated to the satisfaction of Reclamation  
63 that the Service has fully utilized the water supplies available to it for reasonable and beneficial  
64 use for fish and wildlife preservation and enhancement (wetland management) and/or  
65 Reclamation has concluded through the Bureau of Reclamation's 1989 Refuge Water Supply  
66 Report and the San Joaquin Basin Action Plan/Kesterson Mitigation Action Plan Report that  
67 the Service has projected future demand for water use such that the Service has the capability  
68 and expects to fully utilize for reasonable and beneficial use the quantity of water to be made  
69 available to it pursuant to this MOU; and

70 WHEREAS, Reclamation and the Service are willing to execute this MOU  
71 pursuant to subsection 3406(d) of the CVPIA on the terms and conditions set forth below;

72 NOW, THEREFORE, in consideration of the mutual and dependent covenants  
73 herein contained, it is hereby mutually agreed by the parties hereto as follows:

74 DEFINITIONS

75 1. When used herein unless otherwise distinctly expressed, or manifestly  
76 incompatible with the intent of the parties or expressed in this MOU, the term:

77 (a) "Calendar Year" shall mean the period January 1 through December 31,  
78 both dates inclusive;

79 (b) "Service's Boundary" shall mean the Refuge(s) to which the Service is  
80 permitted to provide Delivered Water under this MOU as identified in Exhibit "A". Exhibit  
81 "A" may be revised without amending this MOU upon mutual agreement of the Service and  
82 Reclamation;

83 (c) Omitted

84 (d) "Critically Dry Year" shall mean any Year in which either of the  
85 following eventualities exists:

86 (1) The forecasted full natural inflow to Shasta Lake for the current  
87 water year (October 1 of the preceding Calendar Year through September 30 of the current  
88 Calendar Year), as such forecast is made by Reclamation, on or before February 20, and  
89 reviewed as frequently thereafter as conditions and information warrant, is equal to or less  
90 than 3,200,000 acre feet: or

91 (2) The total accumulated actual deficiencies below 4,000,000 acre-  
92 feet in the immediately prior water year or series of successive prior water years, each of  
93 which had inflows of less than 4,000,000 acre-feet, together with the forecasted deficiency for  
94 the current water year exceed 800,000 acre-feet;

95 For the purpose of determining a Critically Dry Year, the computed  
96 inflow to Shasta Lake under present upstream development above Shasta Lake shall be used as  
97 the full natural inflow to Shasta Lake. In the event that major construction completed above  
98 Shasta Lake materially alters the present regimen of the stream systems contributing to Shasta  
99 Lake, the computed inflow to Shasta Lake used to define a Critically Dry Year will be  
100 adjusted to eliminate the effect of such material alterations.

101 After consultation with the State, the National Weather Service, and  
102 other recognized forecasting agencies, Reclamation shall select the forecast to be used and will  
103 make the details of it available to the Service. The same forecast used by Reclamation for  
104 operation of the Project shall be used to make forecasts hereunder.

105 (e) "CVPIA" shall mean the Central Valley Project Improvement  
106 Act, Title XXXIV of the Act of October 30, 1992 (106 Stat. 4706);

107 (f) "Delivered Water" shall mean the Level 2 Water Supplies and the  
108 Incremental Level 4 Water Supplies diverted by the Service pursuant to this MOU at the  
109 Point(s) of Delivery in accordance with Article 4(c) of this MOU;

110 (g) "Hydrologic Circumstances" shall mean the conditions described in  
111 subdivision (d) of this Article;

112 (h) "Incremental Level 4 Water Supplies" shall mean the difference between  
113 the Level 2 Water Supplies and the Level 4 Water Supplies depicted in Exhibit "B";

114 (i) "Level 2 Water Supplies" shall mean the quantities of water referred to  
115 in section 3406 (d)(1) of the CVPIA and depicted in Exhibit "B" of this MOU;

116 (j) "Level 4 Water Supplies" shall mean the quantities of water referred to  
117 in section 3406 (d)(2) of the CVPIA and depicted in Exhibit "B" of this MOU;

118 (k) "Non-Project Facilities" shall mean any non-Project water conveyance or  
119 storage facilities;

120 (l) "Non-Project Water" shall mean water or water rights, other than  
121 "Project Water", acquired, appropriated by, transferred to or assigned to the Service or,  
122 transferred to the United States for delivery to one or more of the Service's Refuges, as  
123 identified in Exhibit "B";

124 (m) "Point(s) of Delivery" shall mean the location(s) established and revised  
125 pursuant to Article 5(a) of this MOU, at which Level 2 Water Supplies of Project Water and  
126 Incremental Level 4 Water Supplies are deemed to be delivered to the Service and at which the  
127 Service shall assume the responsibility for the further control, carriage, handling, use, disposal  
128 or distribution of such water supplies so long as such water supplies are being used in  
129 accordance with the terms and conditions of this MOU;

130 (n) "Project" shall mean the Central Valley Project owned by the United  
131 States and managed by the Department of the Interior, Bureau of Reclamation;

132 (o) "Project Water" shall mean all water that is developed, diverted, stored,  
133 or delivered by the Secretary in accordance with the statutes authorizing the Central Valley  
134 Project and in accordance with the terms and conditions of applicable water rights acquired  
135 pursuant to California law;

136 (p) "Refuge(s)" shall mean the lands in the units of the National Wildlife  
137 Refuge System in the Central Valley of California; Gray Lodge, Los Banos, Volta, North

138 Grasslands and Mendota state wildlife management areas; and the Grassland Resource  
139 Conservation District all identified in the Refuge Water Supply Report and the land(s)  
140 identified in the San Joaquin Basin Action Plan/Kesterson Mitigation Action Plan Report  
141 prepared by the Bureau of Reclamation as set forth in Section 3406(d) of the CVPIA and/or as  
142 revised in accordance with subdivision (b) of this Article;

143 (q) "Refuge Water Supply Report" shall mean the report issued by the Mid-  
144 Pacific Region of the Bureau of Reclamation of the United States Department of the Interior  
145 entitled "Report on Refuge Water Supply Investigations, Central Valley Hydrologic Basin,  
146 California" (March 1989);

147 (r) "Secretary" shall mean the Secretary of the Interior, a duly appointed  
148 successor, or an authorized representative acting pursuant to any authority of the Secretary  
149 through any agency of the Department of the Interior;

150 (s) "Year" shall mean the period from and including March 1 of  
151 each Calendar Year through the last day of February of the following Calendar Year;

152 TERM OF MOU

153 2. (a) This MOU shall be effective on March 1, 2001 and shall remain in  
154 effect through February 28, 2026.

155 (b) Upon request by the Service, this MOU shall be renewed for successive  
156 periods of twenty-five (25) years each, subject to the terms and conditions mutually agreeable  
157 to the parties. The Service shall request renewal of the MOU at least two (2) years prior to the  
158 date on which this MOU expires.



159                    WATER TO BE MADE AVAILABLE AND DELIVERED TO THE SERVICE

160                    3.        (a)        During each Year, consistent with State water rights, permits and  
161 licenses, federal law, and subject to the provisions set forth in Articles 8 and 9 of this MOU,  
162 Reclamation shall make available at the established Point(s) of Delivery, and/or convey to the  
163 Service the maximum quantities of Project Water and Non-Project Water, respectively,  
164 required to provide each of the Refuges with the Level 2 Water Supplies set forth in Exhibit  
165 "B" and the Incremental Level 4 Water Supplies set forth in Exhibit "B". The quantities of  
166 Level 2 Water Supplies and Incremental Level 4 Water Supplies made available and/or  
167 conveyed to the Service shall be scheduled in accordance with the provisions of Article 4 of  
168 this MOU; Provided, that, Section 3406(d)(2) of the CVPIA provides that the Incremental  
169 Level 4 Water Supplies shall be acquired in cooperation with the State of California and in  
170 consultation with the Central Valley Habitat Joint Venture and other interests in cumulating  
171 increments of not less than ten percent per annum, from the date the CVPIA was enacted,  
172 through voluntary measures which include, but are not limited to, water conservation,  
173 conjunctive use, purchase, lease, donations, or similar activities, or a combination of such  
174 activities which do not require involuntary reallocation of Project yield, water being provided  
175 as all or part of the Incremental Level 4 Water Supplies for each of the Refuges can be made  
176 available only to the extent that Reclamation is able to acquire the Incremental Level 4 Water  
177 Supplies from willing sources; Accordingly, Reclamation shall use its best efforts to acquire  
178 the Incremental Level 4 Water Supplies and shall coordinate acquisitions of Level 4 Water  
179 Supplies with acquisitions of Environmental Water Account (EWA) water pursuant to the  
180 Operating Principles Agreement, dated August 28, 2000, attached to the Record of Decision

181 for the CALFED Bay-Delta Program, dated August 28, 2000, and/or other acquisitions of  
182 water for environmental purposes to ensure that acquisitions of Incremental Level 4 Water  
183 Supplies have a priority at least equal to acquisitions of EWA and/or other environmental  
184 water each year. Reclamation also agrees that the Interagency Refuge Management Team,  
185 created pursuant to Article 6 of this Contract, shall be included among the interests consulted  
186 in acquiring Incremental Level 4 Water Supplies.

187 (b) The Service shall continue use of the Non-Project Water component of  
188 the Level 2 Water Supplies set forth in Exhibit "B" as long as such Non-Project Water remains  
189 available to the Service and is of suitable quality. In the event that such water supply is  
190 unavailable to the Service, or is not of suitable quality, subject to the provisions set forth in  
191 Articles 8 and 9 of this MOU, Reclamation shall deliver to the Service sufficient substitute  
192 Project Water to ensure that the quantities of Level 2 Water Supplies are available to the  
193 Service in accordance with subdivision (a) of this Article.

194 (c) The Service shall comply with all requirements of any biological  
195 opinion(s) addressing the execution of this MOU developed pursuant to Section 7 of the  
196 Endangered Species Act of 1973, as amended, which are applicable to each of the Refuge(s)  
197 and comply with environmental requirements applicable to each of the Refuge(s) as may be  
198 required for specific activities.

199 (d) The Service shall make reasonable and beneficial use of all Delivered  
200 Water furnished pursuant to this MOU consistent with the wetland habitat water management  
201 plan(s) described in Article 14 of this MOU.

202 (e) In order to maximize water available to Refuges and better manage such  
203 water, the Service may request Reclamation's permission to reschedule a portion of the Level  
204 2 Water Supplies and/or a portion of the Incremental Level 4 Water Supplies made available to  
205 the Service for use within the Service's Boundary during the current Year for use within the  
206 subsequent Year. Reclamation may permit such rescheduling in accordance with applicable  
207 law, and the then-current applicable rescheduling guidelines and policies. Upon execution of  
208 this MOU, Reclamation shall have adopted amendments to any applicable rescheduling  
209 guidelines and policies to provide for the rescheduling of refuge water in accordance with this  
210 Article. After execution of this MOU and annually thereafter, Reclamation shall provide the  
211 Service with a copy of the then-current rescheduling guidelines and policies.

212 (f) Reclamation shall not interfere with the Service's right pursuant to  
213 Federal Reclamation law and applicable California law to the beneficial use of water furnished  
214 pursuant to this MOU so long as the Service fulfills all of its obligations under this MOU. A  
215 reduction in water supplies pursuant to Article 9 of this MOU shall not be deemed to constitute  
216 such interference.

217 TIME FOR DELIVERY OF WATER

218 4. (a) On or about February 20 of each Calendar Year, Reclamation shall  
219 provide the Service, in writing, with a preliminary forecast of whether the upcoming Year will  
220 be a Critically Dry Year; and, if a Critically Dry Year is forecast, the extent to which Level 2  
221 Water Supplies to be made available to the Service during the upcoming Year are to be shorted  
222 pursuant to Article 9 of this MOU; and the amount of Incremental Level 4 Water Supplies  
223 estimated to be made available to the Service pursuant to this MOU for the upcoming Year.

224 The forecast will be updated monthly, as necessary, based on then-current hydrologic  
225 conditions. Upon the request of the Service, Reclamation shall make available to the Service  
226 the data on which Reclamation relied to determine whether the Year in question will or will  
227 not be a Critically Dry Year and to determine the amounts of Level 2 Water Supplies and  
228 Incremental Level 4 Water Supplies to be made available to the Service pursuant to this MOU  
229 during a Critically Dry Year.

230 (b) Based on the forecast(s) referred to in subdivision (a) of this Article, on  
231 or before March 1 of each Calendar Year, the Service shall submit to Reclamation a written  
232 schedule, satisfactory to Reclamation, showing both the monthly and annual quantities of  
233 Level 2 Water Supplies and Incremental Level 4 Water Supplies to be delivered by  
234 Reclamation to each of the Refuges pursuant to this MOU. Each schedule shall be updated on  
235 a monthly basis to reflect actual use and remaining estimated needs.

236 (c) In accordance with subdivision (a) of Article 3 of this MOU,  
237 Reclamation shall make available and/or convey Level 2 Water Supplies and Incremental Level  
238 4 Water Supplies for diversion by the Service at the Points of Delivery in accordance with the  
239 schedule submitted by the Service pursuant to subdivision (b) of this Article, or any written  
240 revision(s) thereto, mutually agreed to by Reclamation and the Service which are submitted to  
241 Reclamation within a reasonable time prior to the date(s) on which the requested change(s)  
242 is/are to be implemented.

243 POINT OF DIVERSION, MEASUREMENT AND RESPONSIBILITY FOR DISTRIBUTION

244 OF WATER

245 5. (a) The original Point(s) of Delivery shall be established by written mutual  
246 agreement of the Service and Reclamation. Such Point(s) of Delivery may be revised without  
247 amending this MOU upon written mutual agreement of Reclamation and the Service.

248 (b) All water delivered to the Service pursuant to this MOU is to be  
249 measured at the Point(s) of Delivery to reflect the quantities of Level 2 Water Supplies and  
250 Incremental Level 4 Water Supplies delivered to the Service's Boundary. Upon the request of  
251 the Service or on Reclamation's own initiative, Reclamation shall investigate the accuracy of  
252 such measurements and the parties will jointly take any necessary steps to adjust any errors  
253 appearing therein. For any period of time when accurate measurement has not been made,  
254 Reclamation shall consult with the Service prior to making a determination of the quantity of  
255 Delivered Water for that period of time. The Service shall advise Reclamation on or before  
256 the 10th calendar day of each month of the quantities of Level 2 Water Supplies and  
257 Incremental Level 4 Water Supplies taken during the preceding month at the Point(s) of  
258 Delivery.

259 (c) Reclamation shall not be responsible for the control, carriage, handling,  
260 use, disposal, or distribution of water delivered to the Service pursuant to this MOU beyond  
261 the Point(s) of Delivery specified in subdivision (a) of this Article.

262 POOLING OF WATER SUPPLIES

263 6. (a) Whenever the maximum quantities of Level 2 Water Supplies and/or the  
264 Incremental Level 4 Water Supplies depicted in Exhibit "B" are reduced pursuant to Article 9

265 of this MOU, the remaining Level 2 Water Supplies and/or the Incremental Level 4 Water  
266 Supplies may be pooled for use on other Refuge(s); Provided, that no individual Refuge shall  
267 receive more Level 2 Water Supplies than would have been made available to it absent a  
268 reduction pursuant to Article 9 of this MOU; or be reduced by more than twenty-five (25)  
269 percent; Provided further, that Reclamation makes a written determination that pooling of  
270 water for use on other Refuge(s) would not have an adverse impact, that cannot be reasonably  
271 mitigated, on Project operations, other Project Contractors, or other Project purposes;  
272 Provided further, that Reclamation determines that such reallocation is permitted under the  
273 terms and conditions of the applicable underlying water right permit and/or license; and  
274 Provided still further, that water made available under this MOU may not be scheduled for  
275 delivery outside the Service's Boundary without prior written approval of Reclamation.

276 (b) An Interagency Refuge Water Management Team, to be chaired by  
277 Reclamation and to be established upon execution of this MOU, shall be entitled to  
278 collaboratively allocate the pooled water supplies and provide a schedule for delivery of the  
279 pooled supplies to meet the highest priority needs of the Refuge(s) as depicted in Exhibit "B";  
280 Provided, however, nothing in this Article is intended to require the Service to pool the water  
281 supply provided for in this MOU. The Interagency Refuge Water Management Team shall be  
282 composed of designees of the Bureau of Reclamation, the United States Fish and Wildlife  
283 Service, the California Department of Fish and Game, and the Grassland Water District.

284 TRANSFERS, REALLOCATIONS OR EXCHANGES OF WATER

285 7. Subject to the prior written approval of Reclamation, the Project Water made  
286 available under this MOU may be transferred, reallocated or exchanged in that Year to other

287 Refuge(s) or Project contractors if such transfer, reallocation or exchange is requested by the  
288 Service and is authorized by applicable Federal and California State laws, and then-current  
289 applicable guidelines or regulations.

290 TEMPORARY REDUCTIONS--RETURN FLOWS

291 8. (a) Consistent with the authorized purposes and priorities of the Project and  
292 the requirements of Federal law, Reclamation shall make all reasonable efforts to optimize  
293 water deliveries to the Service as provided in this MOU.

294 (b) The quantity of water to be delivered to the Service as herein provided  
295 may be temporarily discontinued or reduced when investigation, inspection, maintenance,  
296 repair, or replacement of any of the Project facilities and/or Non-Project Facilities or any part  
297 thereof necessary for the delivery of water to the Service is required. Reclamation shall give  
298 and/or arrange to have the owner/operator of Non-Project Facilities give the Service due  
299 written notice in advance of such temporary discontinuance or reduction, except in case of an  
300 emergency, when no advance notice is possible, in which case Reclamation shall notify and/or  
301 arrange to have the owner/operator of the Non-Project Facilities notify the Service of said  
302 discontinuance or reduction as soon as is feasible; Provided, that Reclamation shall use its best  
303 efforts to avoid any discontinuance or reduction in such service. Upon resumption of service  
304 after such reduction or discontinuance, and if requested by the Service, Reclamation will make  
305 all reasonable efforts, consistent with other obligations and operational constraints, to deliver  
306 the quantity of water which would have been delivered hereunder in the absence of such  
307 discontinuance or reduction.

308 (c) The United States reserves the right to all seepage and return flow water  
309 derived from Delivered Water which escapes or is discharged beyond the Service's Boundary;  
310 Provided, that this shall not be construed as claiming for the United States any right to seepage  
311 or return flow being put to beneficial use pursuant to this MOU within the Service's Boundary  
312 by the Service or those claiming by, through, or under the Service.

313 WATER SHORTAGE AND APPORTIONMENT

314 9. (a) In a Critically Dry Year, Reclamation may temporarily reduce, for that  
315 Year, the availability of Level 2 Water Supplies up to twenty-five (25) percent of the  
316 maximum quantities set forth in Exhibit "B" whenever reductions due to Hydrologic  
317 Circumstances are imposed upon agricultural deliveries of Project Water; Provided, that such  
318 reductions shall not exceed in percentage terms the reductions imposed on agricultural service  
319 contractors. The quantity of Non-Project Water available to one or more of the Refuges as part  
320 of its/their Level 2 Water Supplies may be reduced by more than twenty-five (25) percent in  
321 Years when the quantity of Project Water made available to the Service can be reduced by no  
322 more than twenty-five (25) percent. In such cases, Reclamation shall make up the supply  
323 difference with water supplies provided by Reclamation to ensure that Level 2 Water Supplies  
324 from all sources are not reduced by more than twenty-five (25) percent.

325 (b) Reductions in the Level 2 Water Supplies to be made available to the  
326 individual Refuge(s) pursuant to this MOU, shall be imposed only in a Critically Dry Year.  
327 For the Incremental Level 4 Water Supplies provided from Non-Project Water and Project  
328 Water, reductions shall be imposed in accordance with the priority or priorities that were



329 applied to such Non-Project Water and the shortages assigned to Project Water prior to its  
330 transfer or acquisition as Incremental Level 4 Water Supplies.

331 RULES AND REGULATIONS

332 10. The parties agree that the delivery of water pursuant to this MOU is subject to  
333 Federal Reclamation law, as may be amended and supplemented, as applicable, and the rules  
334 and regulations promulgated by the Secretary of the Interior under Federal Reclamation law.

335 QUALITY OF WATER

336 11. (a) Consistent with other legal obligations, the water delivered by  
337 Reclamation to the Service pursuant to this MOU shall be of suitable quality to maintain and  
338 improve wetland habitat areas and of comparable quality to water provided to other Project  
339 purposes within the same geographical areas; Provided, that Reclamation is under no obligation  
340 to construct or furnish water treatment facilities to maintain or to improve the quality of the  
341 water furnished to the Service pursuant to this MOU. The quality of Delivered Water may be  
342 monitored by the Service at the Point(s) of Delivery on an as needed basis. Should  
343 Reclamation, in consultation with the Service, determine that the Level 2 Water Supplies  
344 and/or the Level 4 Water Supplies to be made available to the Service pursuant to this MOU  
345 during all or any part of a Year will not be of the quality that the Service feels is suitable to  
346 maintain and improve wetland habitat areas, the Service and Reclamation shall meet within 48  
347 hours or at a time mutually agreeable to the parties and determine the appropriate actions  
348 necessary to identify and address the source of the water quality problems.

349 (b) The operation and maintenance of Project facilities shall be performed in  
350 such manner as is practicable to maintain the quality of raw water made available through such  
351 facilities at the highest level reasonably attainable as determined by Reclamation. The Service  
352 shall be responsible for compliance with all State of California and Federal water quality  
353 standards and directives applicable to surface return flows and subsurface agricultural drainage  
354 discharges generated within its boundaries arising from water conveyed to the Refuges  
355 pursuant to this MOU. This MOU does not create any obligation on Reclamation to provide  
356 drainage services.

357 USE OF NON-PROJECT FACILITIES FOR WATER DELIVERY

358 12. Any use of Non-Project Facilities, including use of State Water Project facilities  
359 pursuant to Joint Point of Diversion or other use of State Water Project facilities to deliver the  
360 water supplies provided for in the MOU, or any agreement for the use of such Non-Project  
361 Facilities, shall in no way alter the obligation of Reclamation to make available and deliver  
362 water supplies in accordance with all of the terms and conditions of this MOU. In addition,  
363 any costs incurred in the use of Non-Project Facilities to deliver water supplies pursuant to this  
364 MOU shall be paid for in accordance with Section 3406(d)(3) of the CVPIA.

365 OPINIONS AND DETERMINATIONS

366 13. (a) Where the terms of this MOU provide for actions to be based upon the  
367 opinion or determination of either party to this MOU, said terms shall not be construed as  
368 permitting such action to be predicated upon opinions or determinations that are arbitrary,  
369 capricious or unreasonable. Both parties, notwithstanding any other provisions of this MOU,  
370 expressly reserve the right to seek relief from and appropriate adjustment for any such

371 arbitrary, capricious, or unreasonable opinion or determination. Each opinion or  
372 determination by either party shall be provided in a timely manner. Nothing in this  
373 subdivision of this Article is intended to or shall affect or alter the standard of judicial review  
374 applicable under federal law to any opinion or determination implementing a specific provision  
375 of federal law embodied in statute or regulation.

376 (b) Both parties to this MOU shall have the right to make determinations  
377 necessary to administer this MOU that are consistent with the provisions of this MOU, the  
378 laws of the United States and of California, and the rules and regulations promulgated by the  
379 Secretary of the Interior. Each party shall make such determinations in consultation with the  
380 other party to the extent reasonably practicable.

381 WATER CONSERVATION

382 14. (a) The Service shall prepare individual refuge wetland habitat water  
383 management plan(s) in order to ensure the effective use of water supplies to meet wetland  
384 resource needs and to meet the objectives of the Central Valley Habitat Joint Venture and the  
385 purposes of the CVPIA to maintain and improve certain Central Valley wetland habitat areas.  
386 Criteria to prepare and evaluate refuge wetland habitat water management plan(s) shall be  
387 developed by the Interagency Refuge Water Management Team within one (1) year of the  
388 execution of this MOU, and reviewed and updated every five (5) years thereafter taking into  
389 consideration the provisions of the Interagency Coordinated Program Task Force report dated  
390 June 1998. The criteria shall include economically feasible water management measures  
391 which can improve the Services' efficient use of water in a manner appropriate for wetland  
392 and wildlife management, and shall also include time schedules for meeting the water use

393 efficiency and conservation objectives. The criteria shall grant substantial deference to on-  
394 going state efforts related to wetlands water management and shall take into account the unique  
395 requirements associated with water use for the maintenance and enhancement of wetland and  
396 wildlife habitat. The Service shall make all reasonable efforts to complete the original wetland  
397 habitat water management plan(s) within one (1) year of the establishment of the criteria.

398 Reclamation will review and determine if the wetland habitat water management plan(s) meet  
399 the established criteria for evaluating said plan within ninety (90) days of receipt of each plan.

400 (b) Prior to the Service being afforded opportunities such as pooling  
401 and rescheduling of water supplies pursuant to Articles 3 and 6 of this MOU, the Service must  
402 be implementing a wetland habitat water management plan that has been determined by  
403 Reclamation to meet the established criteria developed pursuant to subdivision (a) of this  
404 Article for preparing and evaluating said plan. Continued pooling and rescheduling benefits  
405 pursuant to Articles 3 and 6 of this MOU shall be contingent upon the Service's continued  
406 implementation of such wetland habitat water management plans. In the event Reclamation  
407 determines the Service is unable to implement its wetland habitat water management plan, due to  
408 circumstances beyond its control, the benefits of Articles 3 and 6 of this MOU shall be continued  
409 so long as the Service diligently works with Reclamation to obtain such determination at the  
410 earliest practicable date, and thereafter the Service begins implementing its wetland habitat  
411 water management plan immediately after the circumstances preventing implementation have  
412 ceased.

413 (c) In the event that implementation of the wetland habitat water  
414 management plan(s) prepared pursuant to subdivision (a) of this Article results in water

415 savings, all conserved water supplies may be transferred/reallocated, under the terms and  
416 conditions of this MOU, to other wetland, wildlife and fishery needs or to other Project  
417 contractors in accordance with the recommendations of the Interagency Refuge Water  
418 Management Team established pursuant to Article 6 of this MOU; Provided, that Reclamation  
419 makes a written determination that such transfer/reallocation of conserved water would not  
420 have an adverse impact, that cannot be reasonably mitigated, on Project operations, other  
421 Project Contractors or other Project purposes; Provided further, that the transfer/reallocation  
422 is requested by the Service and Reclamation determines that the transfer/reallocation is  
423 authorized by applicable laws, and then-current applicable guidelines and/or regulations.

424 (d) The Service shall submit to Reclamation an annual update on the status  
425 of its implementation of the wetland habitat water management plan(s) for the previous Water  
426 Year.

427 (e) At five (5) year intervals, the Service shall revise its wetland habitat  
428 water management plan(s), as necessary, to reflect the then-current criteria for preparing and  
429 evaluating said plans and submit such revised plan(s). Upon completion of such revised  
430 plan(s), the Service shall submit such revised plan(s) to Reclamation for review and so  
431 Reclamation can determine whether such plan(s) meet the then-current criteria.

432 EXISTING OR ACQUIRED WATER OR WATER RIGHTS

433 15. Except as provided in subdivision (b) of Article 3, the exercise of existing water  
434 rights by the Service, or its acquisition of additional water or water rights from other than the  
435 United States, shall not alter the obligation of Reclamation to provide the maximum quantities

- 436 of Level 2 Water Supplies and Incremental Level 4 Water Supplies under subdivision (a) of  
437 Article 3 of this MOU.

- 438 IN WITNESS WHEREOF, the parties hereto have executed this MOU as of the day and year  
439 first above written.

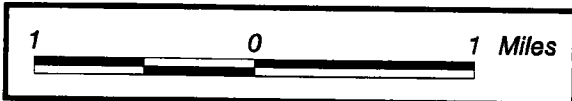
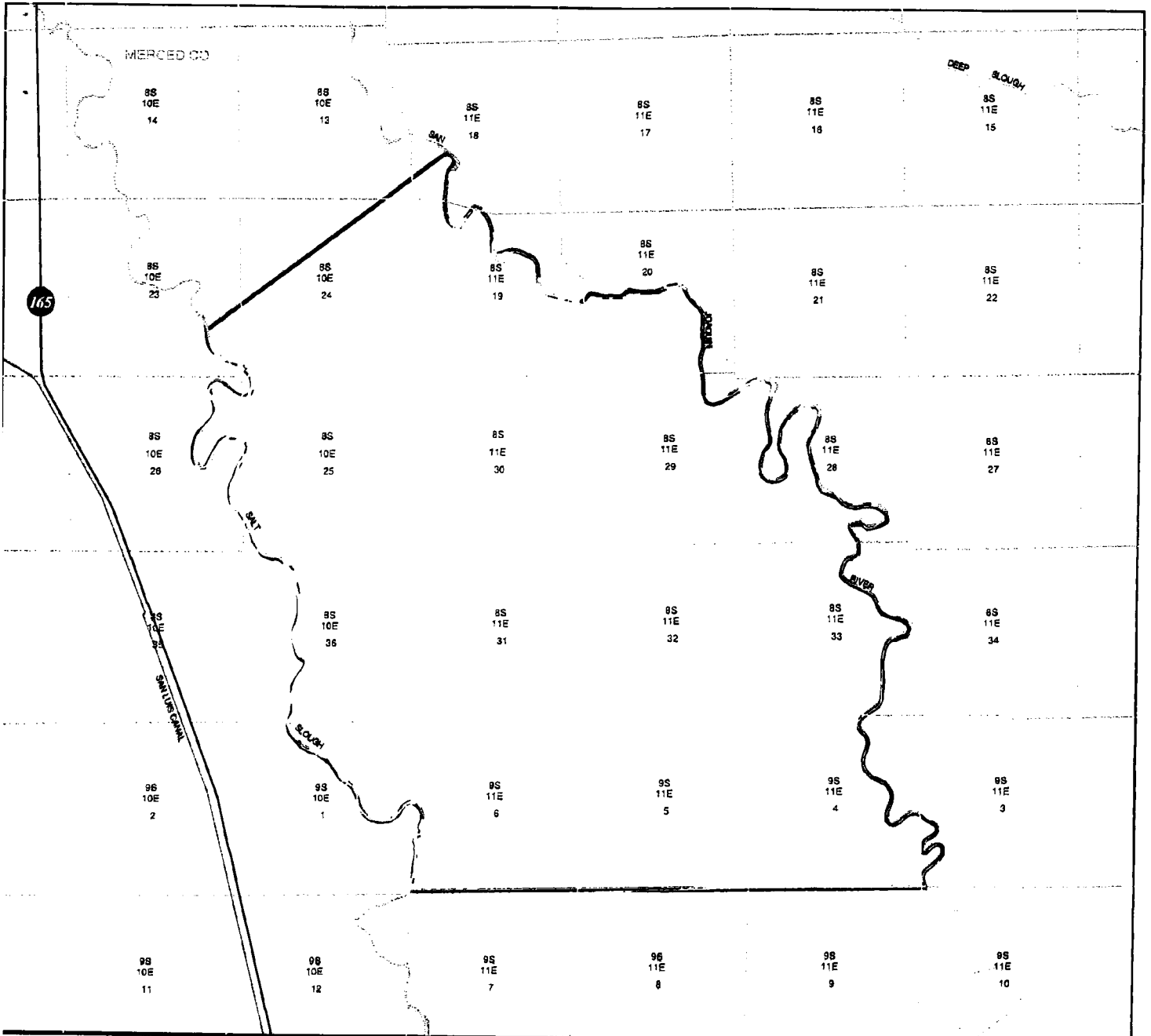
440  
441  
442

APPROVED AS TO LEGAL  
FORM AND SUFFICIENCY  
*James E. Swartz*  
OFFICE OF REGIONAL SOLICITOR  
DEPARTMENT OF THE INTERIOR

By: *[Signature]* 1/19/01  
Regional Director, Mid-Pacific Region  
Bureau of Reclamation

443  
444  
445

By: *[Signature]* 1/19/01  
Manager, California, Nevada Operations Office  
U.S. Fish and Wildlife Service



**San Luis Unit  
San Luis NWR**

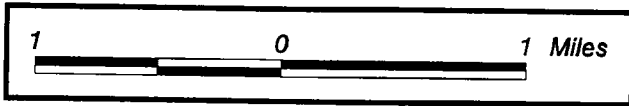
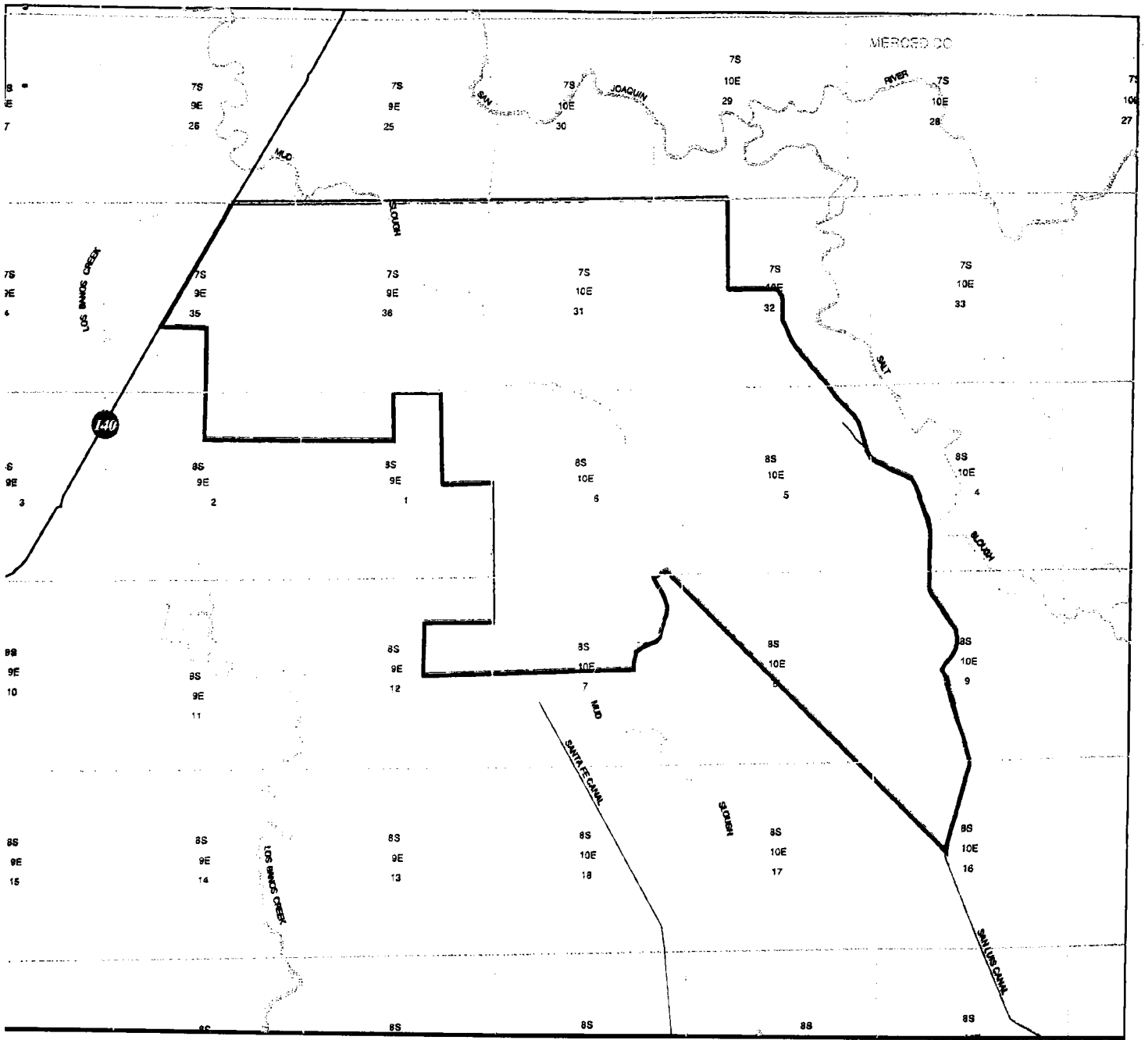


- Major Roads
- - - County
- Public Land Survey System
- Refuge



**Exhibit No.  
A-1**





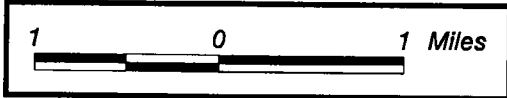
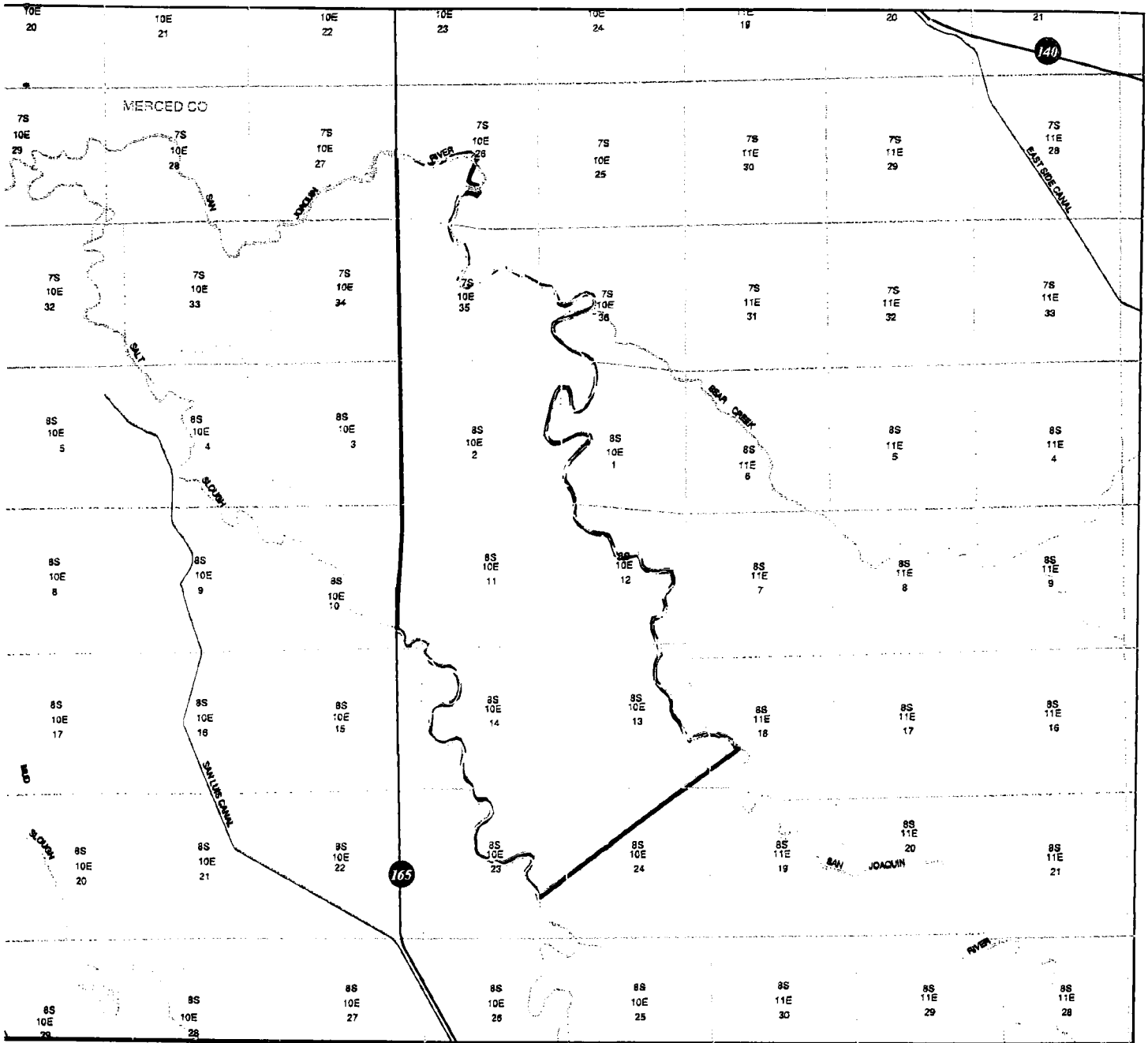
**Kesterson Unit  
San Luis NWR**



- Major Roads
- - - County
- ⋯ Public Land Survey System
- Refuge



**Exhibit No.  
A-2**



**West Bear Creek Unit  
San Luis NWR**

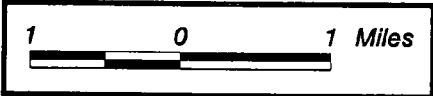
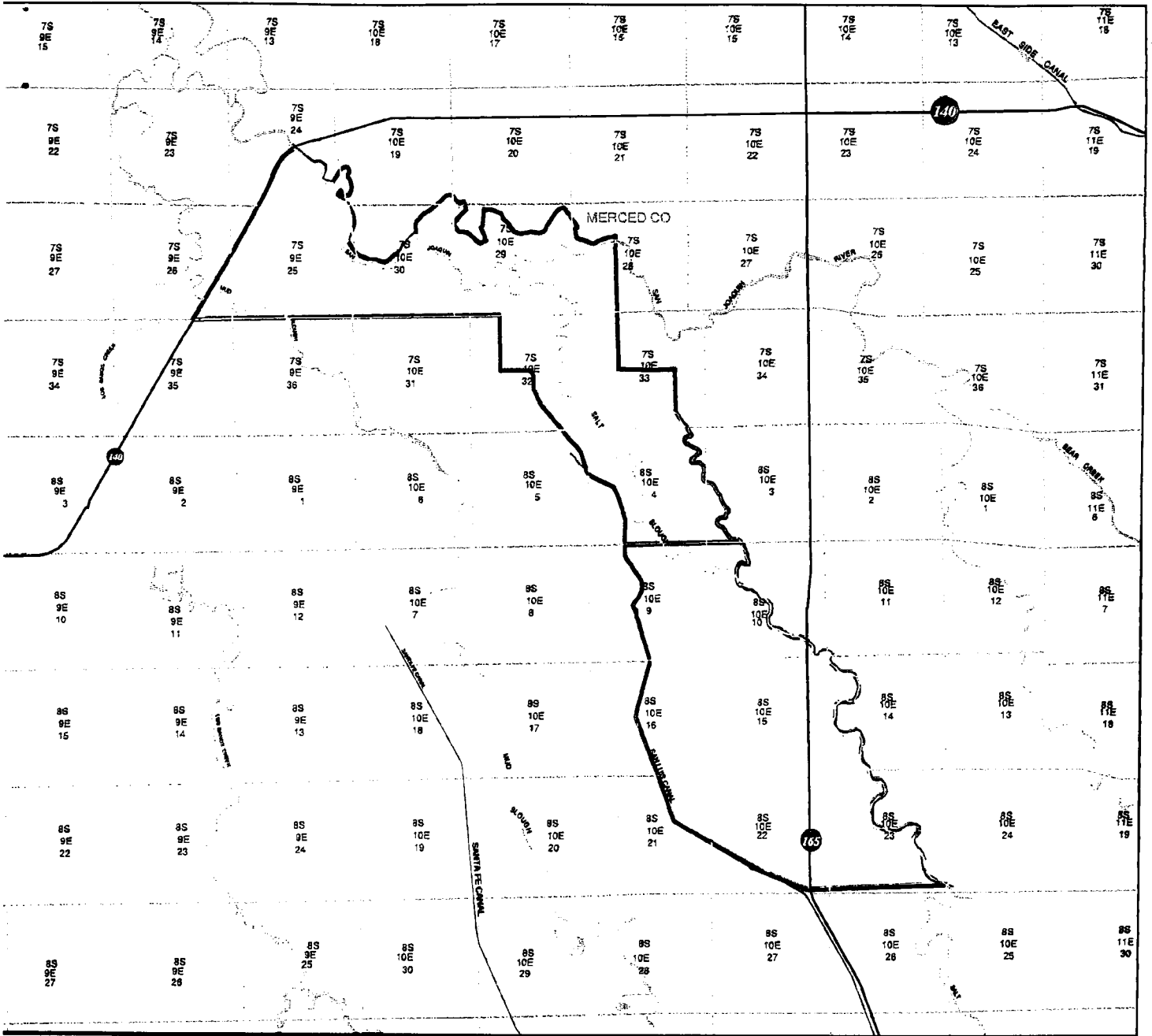


- Major Roads
- County
- Public Land Survey System
- Refuge

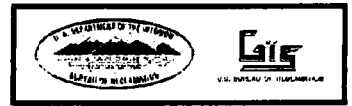


**Exhibit No.  
A-3**

1/22/20  
http://nwl.usgs.gov/arc2000/arcmap/arc.apr



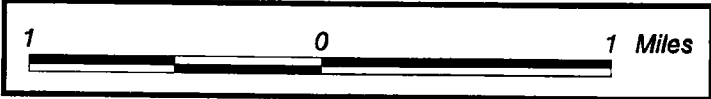
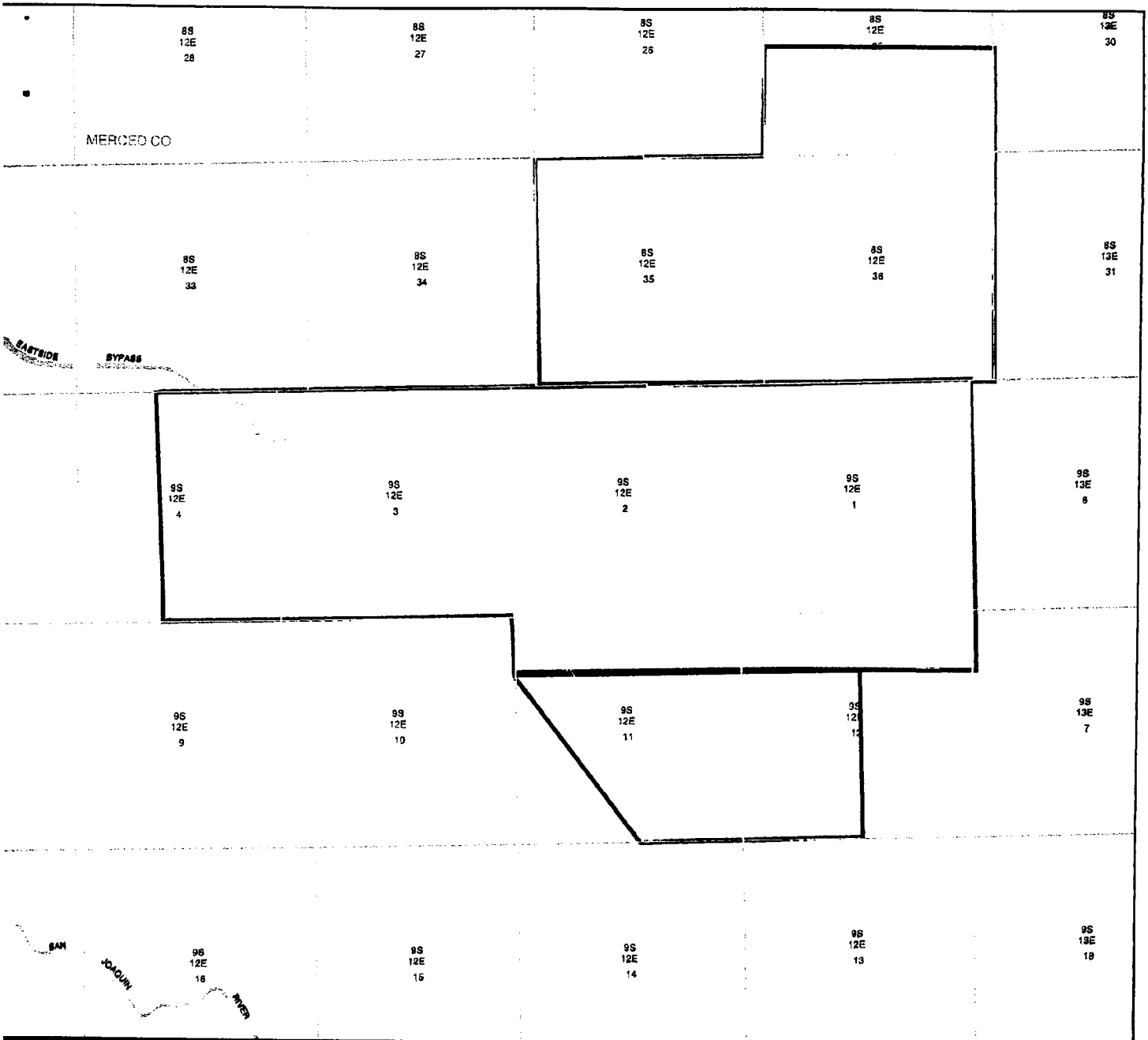
**Freitas Unit  
San Luis NWR**



- Major Roads
- County
- Public Land Survey System
- Refuge



**Exhibit No.  
A-4**



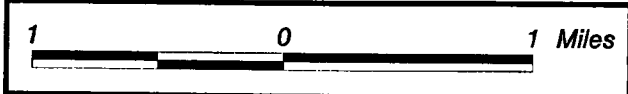
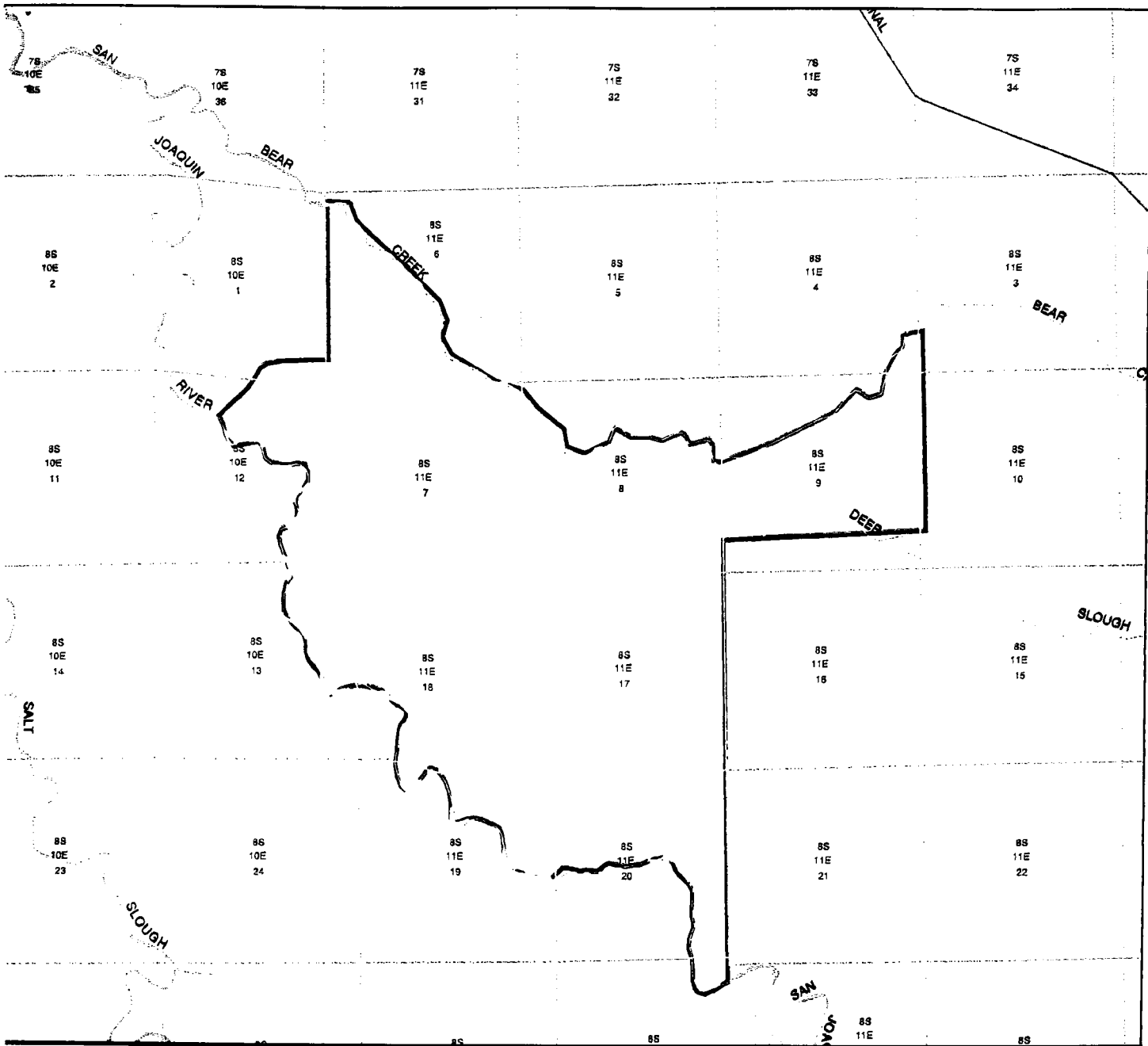
**Merced Unit  
Merced NWR**



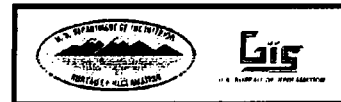
- Major Roads
- - - County
- Public Land Survey System
- Refuge



**Exhibit No.  
A-5**



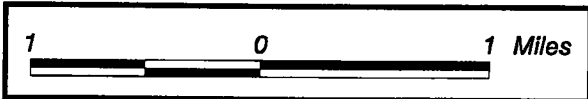
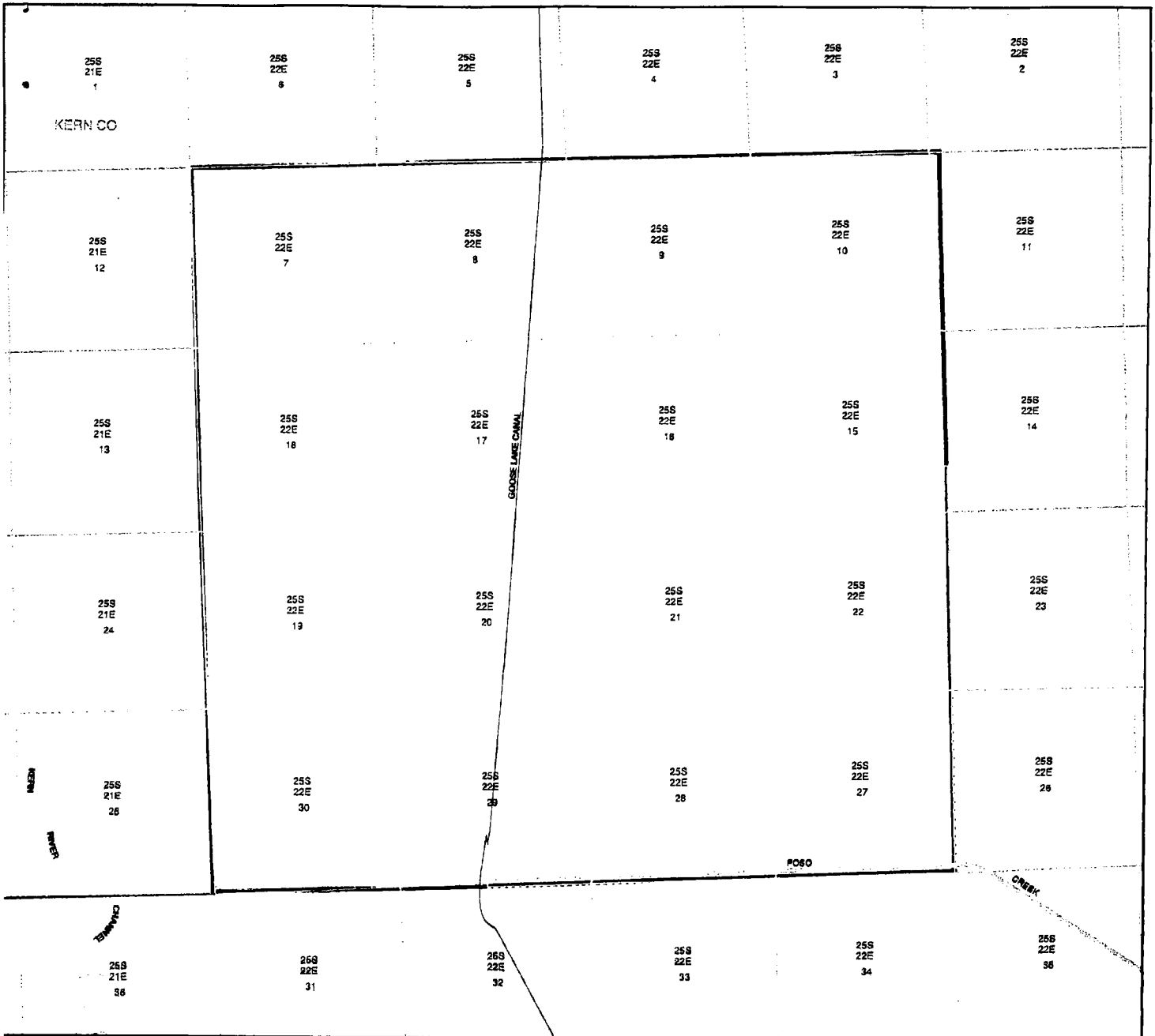
**East Bear Creek Unit  
Merced NWR**



- Major Roads
- - - County
- Public Land Survey System
- Refuge



**Exhibit No.  
A-6**



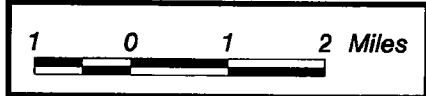
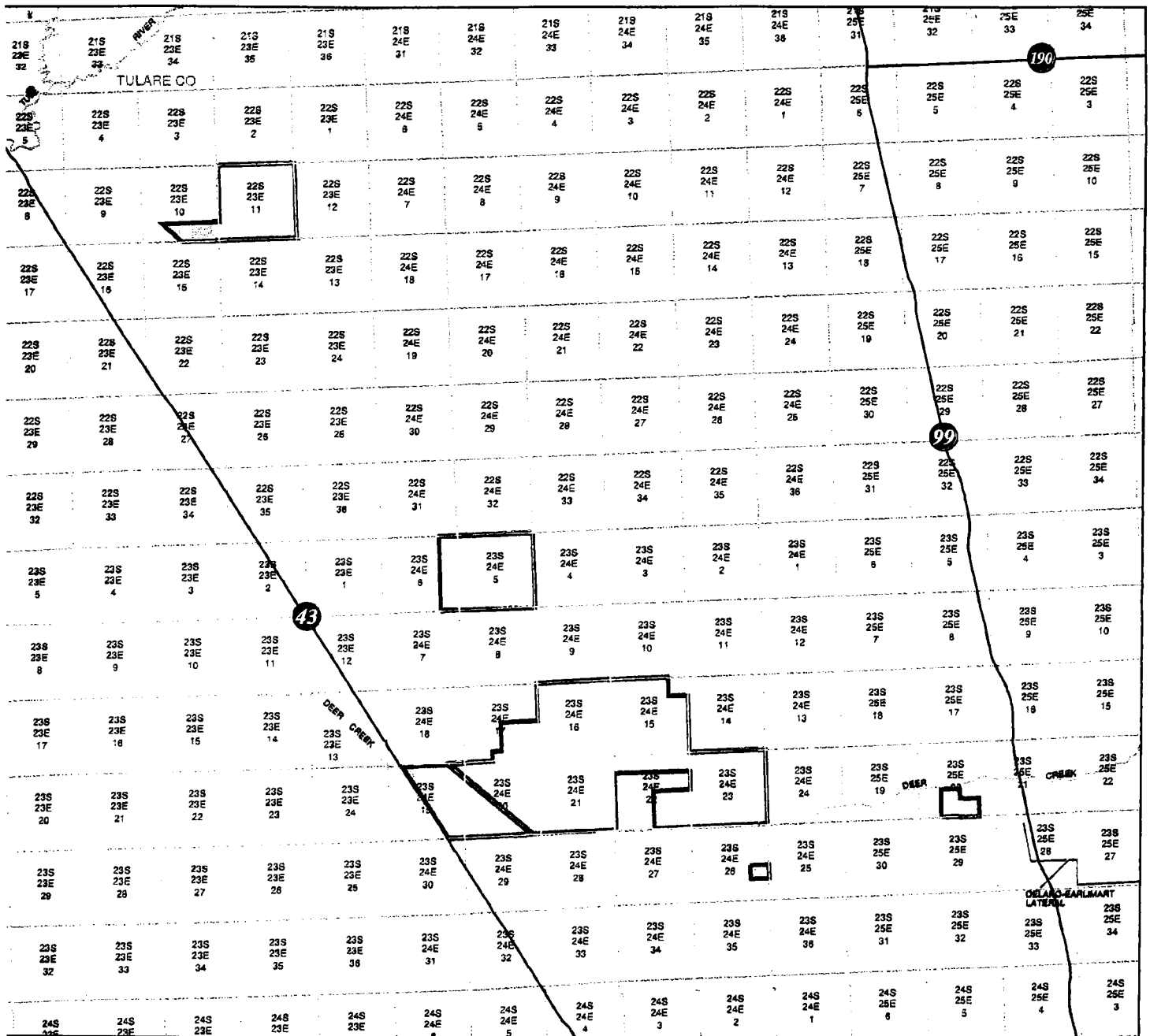
**Kern NWR**



	Major Roads
	County
	Public Land Survey System
	Refuge



**Exhibit No.  
A-7**



Pixley NWR



— Major Roads  
 - - - County  
 ○ Public Land Survey System  
 ○ Refuge



Exhibit No. A-8

EXHIBIT B

Note: Quantities shown below are acre-feet of water		National Wildlife Refuge					
Refuge	Level 2 <sup>1</sup> Water Supplies	Source of Level 2 Water Supplies MOU	Non-Project	Incremental Level 4 <sup>2</sup> Water Supplies	Sources of Incremental Level 4 Water Supply MOU	Replacement	Total Level 4 <sup>3</sup> Supplies
<b>San Joaquin Valley</b>							
San Luis Unit	13,350	19,000 <sup>7</sup>	0	5,650	0	5,650 <sup>8</sup>	19,000
Kesterson	3,500	10,000 <sup>7</sup>	0	6,500	0	6,500 <sup>8</sup>	10,000
West Bear Creek	7,207	7,207	0	3,603	3,603 <sup>4</sup>	0	10,810
Freitas	3,527	5,290 <sup>7</sup>	0	1,763	0	1,763 <sup>8</sup>	5,290
Merced	13,500	0	15,000 <sup>5</sup>	2,500	1,000 <sup>4</sup>	0	16,000
East Bear Creek	8,863 <sup>6</sup>	8,863	0	4,432 <sup>6</sup>	4,432 <sup>4</sup>	0	13,295
<b>Tulare Lake Basin</b>							
Kern	9,950	9,950	0	15,050	15,050 <sup>4</sup>	0	25,000
Pixley	1,280	1,280	0	4,720	4,720 <sup>4</sup>	0	6,000
<b>Total</b>	<b>61,177</b>	<b>61,590</b>	<b>15,000<sup>5</sup></b>	<b>44,218</b>	<b>28,805<sup>4</sup></b>	<b>13,913<sup>8</sup></b>	<b>105,395</b>

<sup>1</sup> Quantity as defined in Article 1(i) of this Contract

<sup>2</sup> Quantity as defined in Article 1(h) of this Contract

<sup>3</sup> Quantity as defined in Article 1(j) of this Contract

<sup>4</sup> To be acquired in accordance with Article 3(a) of this Contract

<sup>5</sup> Mitigation water from Merced Irrigation District per FERC Licensing requirement

<sup>6</sup> Reduced quantities according to the updated San Joaquin Basin Action Plan, 1995

<sup>7</sup> Provided prior to CVPIA

<sup>8</sup> Provided prior to CVPIA - To be replaced to the Project when available and acquired from willing sources - The California Department of Fish and Game's agreement to the inclusion of this figure in this Exhibit is not intended to and should not be construed as constituting an agreement by the State of California to share the costs of acquiring this quantity of water.

Final 01/18/01



MP-410  
WTR-4.00

JAN 30 2001

Mr. Michael J. Spear  
Manager, California/Nevada Operations Office  
2800 Cottage Way, Suite W-2606  
Sacramento, California 95825-1846

Subject: Long-Term Refuge Water Supply Memorandum of Understanding - Contract  
No. 01-WC-20-1758 Between the U. S. Bureau of Reclamation and the U. S. Fish and  
Wildlife Service for Water Supplies to Units of the National Wildlife Refuge System in  
the San Joaquin Valley and the National Wildlife Refuges in the Tulare Lake Basin -  
Central Valley Project, California

Dear Mr. Spear:

Enclosed is an executed original of the subject memorandum of understanding for your records.  
This memorandum of understanding is to provide water supplies for the above referenced  
national wildlife refuges as identified in Section 3406(d) of the CVPIA through March 28, 2026.  
Reclamation appreciates the effort expended by the Fish and Wildlife Service and its  
representatives to assist in meeting these goals.

If you have any questions, please contact Buddy Smith at (209) 836-6279 (TDD 836-6282)

Sincerely,

**(sgd) Lester A. Snow**

Lester A. Snow  
Regional Director

Enclosure

~~bc:~~ Deputy Director, Office of Policy  
Attention: D-5600 (M. Peterson)  
Assistant Solicitor, Water and Power Branch, Washington DC  
Regional Solicitor, Pacific Southwest Region  
Attention: J. Turner  
MP-410 (sry)  
MP-440 (nla)  
SCC-440 (J. Anderson)  
TO-440 (B. Smith)  
Operations Manager, Central Valley Operations Office  
(ea w/c encl)  
MP-3400 (w/original)