



SPP *Southwest
Power Pool*

*System Impact Study
SPP-2003-117-2
For The Designation of a New
Network Resource
Requested By
Empire District Electric Company*

*For a Reserved Amount of 250 MW
From 6/1/2008
To 6/1/2028*

SPP Engineering, Tariff Studies

System Impact Study

Empire District Electric Company has requested a system impact study to designate a New Network Resource in the EDE Control Area for 250 MW to serve EDE Network Load in the EDE Control Area. The period of the service requested is from 6/1/2008 to 6/1/2028. The OASIS reservation number is 515019. The principal objective of this study is to identify system constraints on the SPP Regional Tariff System and potential system facility upgrades that may be necessary to provide the requested service.

The requested service was modeled as a 250 MW transfer from the New Network Resource to existing marginally dispatched EDE Network Resources in the EDE Control Area. The request was studied to determine the facility upgrades required based on the actual queue position of the request with only those higher priority requests in Facility Study mode included in the models. Higher priority requests still in study mode that have not gone to facility study mode were not included in the models. The results of the transfer analysis are documented in Table 1. The results given in Table 1 include upgrades that may be assigned to higher priority requests. The results of this study gives the customer an estimated cost of the facility upgrades that may be required in order to accommodate the EDE to EDE 250 MW request.

Seven seasonal models were used to study the EDE to EDE 250 MW request for the requested service period. The SPP 2003 Series Cases 2004 April Min (04AP), 2004 Spring Peak (04G), 2004 Summer Peak (04SP), 2004 Fall Peak (04FA), 2004/05 Winter Peak (04WP), 2009 Summer Peak (09SP), and 2009/10 Winter Peak (09WP) were used to study the impact of the 250 MW request on the SPP system during a the requested service period of 6/1/2008 to 6/1/2028. The chosen base case models were modified to reflect the most current modeling information. The cases were modified to reflect firm transfers during the requested service period that were not already included in the January 2003 base case series models.

PTI's MUST First Contingency Incremental Transfer Capability (FCITC) DC analysis was used to study the request. The MUST option to convert MVA branch ratings to estimated MW ratings was used to partially compensate for reactive loading.

With only the higher priority requests that have signed Facility Study Agreements included in the models, the study results of the EDE to EDE 250 MW transfer show that limiting constraints exist. Due to the limiting constraints identified, the Transmission Service Request cannot be granted. Any solutions, upgrades, and costs provided in the System Impact Study are planning estimates only. The final ATC and upgrades required may vary from these results due to the status of higher priority requests, unknown facility upgrades and proposed transmission plans that will be identified during the facility study process, and the final results of the full AC analysis. Execution of a Facility Study Agreement is now required to maintain queue position. The final upgrade solutions and cost assignments will be determined upon the completion of the facility study.

Table 1 – SPP facility overloads identified for the EDE to EDE 250 MW transfer

Study Case	From Area - To Area	Branch Overload	Rating <MW>	Pre Transfer Loading	%TDF	Outaged Branch Causing Overload	ATC <MW>	Solution	Estimated Cost
04AP		NONE IDENTIFIED					250		-
04G		NONE IDENTIFIED					250		-
04SP	AEPW-AEPW	53139 FLINTCR5 161 53187 GENTRYR5 161 1	353	365	0.5	53144 LOWELL 5 161 53170 TONTITN5 161 1	0	Rebuild 1.09 miles of 2-397.5 ACSR with 2156 ACSR. Replace Flint Creek wavetrap & jumpers	\$450,000
04SP	AEPW-AEPW	53139 FLINTCR5 161 53187 GENTRYR5 161 1	353	358	0.5	53144 LOWELL 5 161 53152 ROGERS 5 161 1	0	See Previous	-
04SP	EMDE-EMDE	59467 ORO110 5 161 59494 OAK432 5 161 1	214	215	14.6	59472 TIP292 5 161 59483 JOP389 5 161 1	0	Reconstruct and replace 1.4 miles of 556 ACSR with Bundled 556 ACSR.	\$800,000
04SP	EMDE-EMDE	59483 JOP389 5 161 B095 JOPLINSW 1 1	75	73	4.7	59472 TIP292 5 161 59483 JOP389 5 161 1	34	Replace 161/69 KV Transformer with a 150 MVA Transformer.	\$1,565,000
04SP	EMDE-EMDE	59592 JOP389 2 69 B095 JOPLINSW 1 1	75	73	4.7	59472 TIP292 5 161 59483 JOP389 5 161 1	35	See Previous	-
04SP	EMDE-EMDE	59500 RNM393 5 161 B148 REINMILL 1 1	75	72	3.8	59472 TIP292 5 161 59483 JOP389 5 161 1	82	Replace 161/69 KV Transformer with a 150 MVA Transformer.	\$1,565,000
04SP	EMDE-EMDE	59595 RNM393 2 69 B148 REINMILL 1 1	75	72	3.8	59472 TIP292 5 161 59483 JOP389 5 161 1	92	See Previous	-
04SP	EMDE-EMDE	59467 ORO110 5 161 59494 OAK432 5 161 1	214	199	14.5	59476 ASB349 5 161 59491 PUR421 5 161 1	101	See Previous	-
04SP	SWPA-EMDE	52688 CARTHAG5 161 59466 ATL109 5 161 1	167	154	12.1	59472 TIP292 5 161 59483 JOP389 5 161 1	108	Replace 600 Amp disconnect switches	\$60,000
04SP	EMDE-EMDE	59466 ATL109 5 161 59494 OAK432 5 161 1	214	197	14.6	59472 TIP292 5 161 59483 JOP389 5 161 1	117	Solution Undetermined	-
04SP	EMDE-EMDE	59483 JOP389 5 161 B095 JOPLINSW 1 1	75	69	4.6	59483 JOP389 5 161 59607 JOP422 5 161 1	127	See Previous	-
04SP	EMDE-EMDE	59592 JOP389 2 69 B095 JOPLINSW 1 1	75	69	4.6	59483 JOP389 5 161 59607 JOP422 5 161 1	128	"	-
04SP	EMDE-EMDE	59467 ORO110 5 161 59494 OAK432 5 161 1	214	194	14.5	59485 CAR395 5 161 59491 PUR421 5 161 1	135	See Previous	-
04SP	EMDE-EMDE	59467 ORO110 5 161 59494 OAK432 5 161 1	175	153	12.4	Base Case	177	"	-
04SP	EMDE-EMDE	59467 ORO110 5 161 59494 OAK432 5 161 1	214	187	14.5	52688 CARTHAG5 161 59485 CAR395 5 161 1	184	"	-
04SP	EMDE-EMDE	59483 JOP389 5 161 B095 JOPLINSW 1 1	75	66	4.6	59470 JOP145 5 161 59498 STL439 5 161 1	194	See Previous	-
04SP	EMDE-EMDE	59592 JOP389 2 69 B095 JOPLINSW 1 1	75	66	4.6	59470 JOP145 5 161 59498 STL439 5 161 1	195	"	-
04SP	EMDE-EMDE	59467 ORO110 5 161 59469 RIV167 5 161 1	214	165	25.1	59470 JOP145 5 161 59498 STL439 5 161 1	196	See Previous	-
04SP	EMDE-EMDE	59483 JOP389 5 161 B095 JOPLINSW 1 1	75	64	5.8	59470 JOP145 5 161 B096 JOPLINW 1 1	196	"	-
04SP	EMDE-EMDE	59483 JOP389 5 161 B095 JOPLINSW 1 1	75	64	5.8	59539 JOP145 2 69 B096 JOPLINW 1 1	196	"	-
04SP	EMDE-EMDE	59592 JOP389 2 69 B095 JOPLINSW 1 1	75	63	5.8	59539 JOP145 2 69 B096 JOPLINW 1 1	197	"	-
04SP	EMDE-EMDE	59592 JOP389 2 69 B095 JOPLINSW 1 1	75	63	5.8	59470 JOP145 5 161 B096 JOPLINW 1 1	197	"	-
04SP	EMDE-EMDE	59466 ATL109 5 161 59494 OAK432 5 161 1	214	181	14.5	59476 ASB349 5 161 59491 PUR421 5 161 1	229	Solution Undetermined	-
04SP	EMDE-EMDE	59554 BAX271 2 69 59601 HOC404 2 69 1	61	35	11.4	59539 JOP145 2 69 B096 JOPLINW 1 1	230	Solution Undetermined	-
04SP	EMDE-EMDE	59554 BAX271 2 69 59601 HOC404 2 69 1	61	35	11.4	59470 JOP145 5 161 B096 JOPLINW 1 1	230	"	-
04FA		NONE IDENTIFIED					250		-
04WP		NONE IDENTIFIED					250		-
09SP	SWPA-SPRM	52692 SPRGFLD5 161 59969 BRKLINE 5 161 1	309	379	6.4	59954 SWPS 5 161 59960 SWDISP 5 161 1	0	Replace disconnect switches at Springfield.	\$60,000
09SP	SWPA-SPRM	52692 SPRGFLD5 161 59969 BRKLINE 5 161 1	309	376	6.4	59959 BATFLD 5 161 59960 SWDISP 5 161 1	0	See Previous	-
09SP	SWPA-SPRM	52692 SPRGFLD5 161 59969 BRKLINE 5 161 1	309	357	5.4	59955 JUNCTN 5 161 59969 BRKLINE 5 161 1	0	"	-
09SP	AEPW-AEPW	53133 ECNTRTN5 161 53187 GENTRYR5 161 1	353	438	0.5	53139 FLINTCR5 161 53170 TONTITN5 161 1	0	Rebuild 19.16 miles of 2-397.5 ACSR with 2156 ACSR. Replace East Centerton Wavetrap & jumpers	\$8,000,000
09SP	AEPW-AEPW	53133 ECNTRTN5 161 53187 GENTRYR5 161 1	353	402	0.6	53144 LOWELL 5 161 53170 TONTITN5 161 1	0	See Previous	-
09SP	AEPW-AEPW	53133 ECNTRTN5 161 53187 GENTRYR5 161 1	353	393	0.6	53144 LOWELL 5 161 53152 ROGERS 5 161 1	0	"	-
09SP	AEPW-AEPW	53133 ECNTRTN5 161 53187 GENTRYR5 161 1	353	384	0.5	53154 CHAMSPR5 161 53195 FARMGTN5 161 1	0	"	-
09SP	AEPW-AEPW	53133 ECNTRTN5 161 53187 GENTRYR5 161 1	353	382	0.5	53154 CHAMSPR5 161 53170 TONTITN5 161 1	0	"	-
09SP	AEPW-ENTR	53136 EUREKA 5 161 99832 5OSAGE # 161 1	244	245	0.4	52660 BULL SH5 161 99802 5BULLSH 161 1	0	Rebuild 5.34 miles of 666 ACSR with 1590 ACSR. Replace wavetrap jumpers @ Eureka Springs	\$2,400,000
09SP	AEPW-AEPW	53139 FLINTCR5 161 53170 TONTITN5 161 1	305	479	0.4	53139 FLINTCR5 161 53187 GENTRYR5 161 1	0	Rebuild 16.3 miles of 2-297 ACSR with 2156 ACSR. Replace Flint Creek wavetrap & jumpers. Replace Flint Creek switch # 1K75	\$8,200,000

Table 1 continued – SPP facility overloads identified for the EDE to EDE 250 MW transfer

Study Case	From Area - To Area	Branch Overload	Rating <MW>	Pre Transfer Loading	%TDF	Outaged Branch Causing Overload	ATC <MW>	Solution	Estimated Cost
09SP	AEPW-AEPW	53139 FLINTCR5 161 53170 TONTITN5 161 1	305	468	0.4	53133 ECNTRTN5 161 53187 GENTRYR5 161 1	0	See Previous	-
09SP	AEPW-AEPW	53139 FLINTCR5 161 53187 GENTRYR5 161 1	350	463	0.5	53139 FLINTCR5 161 53170 TONTITN5 161 1	0	See Previous	-
09SP	AEPW-AEPW	53139 FLINTCR5 161 53187 GENTRYR5 161 1	350	426	0.6	53144 LOWELL 5 161 53170 TONTITN5 161 1	0	"	-
09SP	AEPW-AEPW	53139 FLINTCR5 161 53187 GENTRYR5 161 1	350	417	0.6	53144 LOWELL 5 161 53152 ROGERS 5 161 1	0	"	-
09SP	AEPW-AEPW	53139 FLINTCR5 161 53187 GENTRYR5 161 1	350	408	0.5	53154 CHAMSPR5 161 53195 FARMGTN5 161 1	0	"	-
09SP	AEPW-AEPW	53139 FLINTCR5 161 53187 GENTRYR5 161 1	350	406	0.5	53154 CHAMSPR5 161 53170 TONTITN5 161 1	0	"	-
09SP	AEPW-AEPW	53154 CHAMSPR5 161 53170 TONTITN5 161 1	244	395	0.5	53154 CHAMSPR5 161 53195 FARMGTN5 161 1	0	Rebuild 12 miles with 2156MCM ACSR. Replace Chamber Springs wavetrap & reset relays.	\$7,200,000
09SP	AEPW-AEPW	53154 CHAMSPR5 161 53170 TONTITN5 161 1	244	375	0.5	53139 FLINTCR5 161 53170 TONTITN5 161 1	0	See Previous	-
09SP	AEPW-AEPW	53154 CHAMSPR5 161 53170 TONTITN5 161 1	244	361	0.5	53157 SFAYTVL5 161 53195 FARMGTN5 161 1	0	"	-
09SP	AEPW-AEPW	53154 CHAMSPR5 161 53170 TONTITN5 161 1	244	307	0.5	53139 FLINTCR5 161 53187 GENTRYR5 161 1	0	"	-
09SP	AEPW-AEPW	53154 CHAMSPR5 161 53170 TONTITN5 161 1	244	302	0.5	53133 ECNTRTN5 161 53187 GENTRYR5 161 1	0	"	-
09SP	EMDE-EMDE	59483 JOP389 5 161 B094 JOPLINSW 1 1	75	78	7.1	59472 TIP292 5 161 59483 JOP389 5 161 1	0	See Previous	-
09SP	EMDE-EMDE	59592 JOP389 2 69 B094 JOPLINSW 1 1	75	78	7.1	59472 TIP292 5 161 59483 JOP389 5 161 1	0	"	-
09SP	EMDE-EMDE	59500 RNM393 5 161 B150 REINMILL 1 1	75	74	6.5	59472 TIP292 5 161 59483 JOP389 5 161 1	3	See Previous	-
09SP	EMDE-EMDE	59467 ORO110 5 161 59494 OAK432 5 161 1	214	212	27.6	59472 TIP292 5 161 59483 JOP389 5 161 1	6	See Previous	-
09SP	EMDE-EMDE	59483 JOP389 5 161 B094 JOPLINSW 1 1	75	74	6.0	59483 JOP389 5 161 59607 JOP422 5 161 1	11	See Previous	-
09SP	EMDE-EMDE	59592 JOP389 2 69 B094 JOPLINSW 1 1	75	74	6.0	59483 JOP389 5 161 59607 JOP422 5 161 1	13	"	-
09SP	EMDE-EMDE	59595 RNM393 2 69 B150 REINMILL 1 1	75	74	6.5	59472 TIP292 5 161 59483 JOP389 5 161 1	14	See Previous	-
09SP	SWPA-SPRM	52692 SPRGFLD5 161 59969 BRKLN5 5 161 1	309	306	5.4	59955 JUNCTN 5 161 59956 NICHOLS5 161 1	59	See Previous	-
09SP	SWPA-EMDE	52686 NEO SPA5 161 59472 TIP292 5 161 1	157	150	11.4	59472 TIP292 5 161 59480 MON383 5 161 1	62	Solution Undetermined	-
09SP	EMDE-EMDE	59483 JOP389 5 161 B094 JOPLINSW 1 1	75	71	6.0	59593 JOP391 5 161 59607 JOP422 5 161 1	66	See Previous	-
09SP	EMDE-EMDE	59592 JOP389 2 69 B094 JOPLINSW 1 1	75	71	6.0	59593 JOP391 5 161 59607 JOP422 5 161 1	68	"	-
09SP	EMDE-EMDE	59467 ORO110 5 161 59494 OAK432 5 161 1	214	195	25.7	59476 ASB349 5 161 59491 PUR421 5 161 1	73	See Previous	-
09SP	EMDE-EMDE	59483 JOP389 5 161 B094 JOPLINSW 1 1	75	70	6.6	59470 JOP145 5 161 59498 STL439 5 161 1	78	See Previous	-
09SP	EMDE-EMDE	59592 JOP389 2 69 B094 JOPLINSW 1 1	75	70	6.6	59470 JOP145 5 161 59498 STL439 5 161 1	80	"	-
09SP	EMDE-EMDE	59483 JOP389 5 161 B094 JOPLINSW 1 1	75	69	7.2	59470 JOP145 5 161 B095 JOPLINW 1 1	87	"	-
09SP	EMDE-EMDE	59592 JOP389 2 69 B094 JOPLINSW 1 1	75	68	7.2	59470 JOP145 5 161 B095 JOPLINW 1 1	89	"	-
09SP	EMDE-EMDE	59466 ATL109 5 161 59494 OAK432 5 161 1	214	189	27.6	59472 TIP292 5 161 59483 JOP389 5 161 1	90	Solution Undetermined	-
09SP	EMDE-EMDE	59467 ORO110 5 161 59494 OAK432 5 161 1	214	189	25.7	59485 CAR395 5 161 59491 PUR421 5 161 1	97	See Previous	-
09SP	SWPA-EMDE	52688 CARTHAG5 161 59466 ATL109 5 161 1	167	139	26.9	59472 TIP292 5 161 59483 JOP389 5 161 1	104	See Previous	-
09SP	EMDE-EMDE	59467 ORO110 5 161 59494 OAK432 5 161 1	175	148	21.9	Base Case	124	See Previous	-
09SP	EMDE-EMDE	59467 ORO110 5 161 59494 OAK432 5 161 1	214	181	25.7	52688 CARTHAG5 161 59485 CAR395 5 161 1	130	"	-
09SP	SWPA-SPRM	52692 SPRGFLD5 161 59969 BRKLN5 5 161 1	309	299	7.1	52692 SPRGFLD5 161 59959 BATFLD 5 161 1	137	See Previous	-
09SP	EMDE-EMDE	59467 ORO110 5 161 59469 RIV167 5 161 1	214	162	33.7	59470 JOP145 5 161 59498 STL439 5 161 1	154	Solution Undetermined	-
09SP	EMDE-EMDE	59500 RNM393 5 161 B150 REINMILL 1 1	75	65	5.9	59470 JOP145 5 161 59498 STL439 5 161 1	161	See Previous	-
09SP	EMDE-EMDE	59466 ATL109 5 161 59494 OAK432 5 161 1	214	172	25.7	59476 ASB349 5 161 59491 PUR421 5 161 1	164	Solution Undetermined	-
09SP	EMDE-EMDE	59470 JOP145 5 161 59498 STL439 5 161 1	268	229	22.7	59472 TIP292 5 161 59483 JOP389 5 161 1	172	Solution Undetermined	-
09SP	EMDE-EMDE	59595 RNM393 2 69 B150 REINMILL 1 1	75	65	5.9	59470 JOP145 5 161 59498 STL439 5 161 1	173	See Previous	-
09SP	EMDE-EMDE	59467 ORO110 5 161 B144 ORONOGO 1 1	75	63	6.7	59467 ORO110 5 161 59494 OAK432 5 161 1	177	Solution Undetermined	-
09SP	EMDE-EMDE	59467 ORO110 5 161 B144 ORONOGO 1 1	75	63	6.7	59470 JOP145 5 161 B095 JOPLINW 1 1	177	"	-
09SP	EMDE-EMDE	59467 ORO110 5 161 B144 ORONOGO 1 1	75	63	6.7	59539 JOP145 2 69 B095 JOPLINW 1 1	177	"	-
09SP	EMDE-EMDE	59534 ORO110 2 69 B144 ORONOGO 1 1	75	63	6.7	59467 ORO110 5 161 59494 OAK432 5 161 1	186	"	-
09SP	EMDE-EMDE	59534 ORO110 2 69 B144 ORONOGO 1 1	75	63	6.7	59470 JOP145 5 161 B095 JOPLINW 1 1	186	"	-
09SP	EMDE-EMDE	59534 ORO110 2 69 B144 ORONOGO 1 1	75	63	6.7	59539 JOP145 2 69 B095 JOPLINW 1 1	186	"	-
09SP	AEPW-ENTR	53136 EUREKA 5 161 99832 5OSAGE # 161 1	244	243	0.4	99802 5BULLSH 161 99809 5FLIPN 161 1	186	See Previous	-
09SP	EMDE-EMDE	59466 ATL109 5 161 59494 OAK432 5 161 1	214	166	25.7	59485 CAR395 5 161 59491 PUR421 5 161 1	187	Solution Undetermined	-

Table 1 continued – SPP facility overloads identified for the EDE to EDE 250 MW transfer

Study Case	From Area - To Area	Branch Overload	Rating <MW>	Pre Transfer Loading	%TDF	Outaged Branch Causing Overload	ATC <MW>	Solution	Estimated Cost
09SP	EMDE-EMDE	59470 JOP145 5 161 59498 STL439 5 161 1	268	208	31.1	59467 ORO110 5 161 59469 RIV167 5 161 1	194	Solution Undetermined	-
09SP	EMDE-EMDE	59554 BAX271 2 69 59601 HOC404 2 69 1	61	36	11.9	59539 JOP145 2 69 B095 JOPLINW 1 1	206	Solution Undetermined	-
09SP	EMDE-EMDE	59554 BAX271 2 69 59601 HOC404 2 69 1	61	36	11.9	59470 JOP145 5 161 B095 JOPLINW 1 1	206	"	-
09SP	SWPA-EMDE	52688 CARTHAG5 161 59466 ATL109 5 161 1	167	116	24.4	59476 ASB349 5 161 59491 PUR421 5 161 1	210	See Previous	-
09SP	SWPA-EMDE	52686 NEO SPA5 161 59472 TIP292 5 161 1	157	135	10.1	59467 ORO110 5 161 59494 OAK432 5 161 1	218	Solution Undetermined	-
09SP	EMDE-EMDE	59467 ORO110 5 161 B144 ORONOGO 1 1	75	60	6.7	59466 ATL109 5 161 59494 OAK432 5 161 1	219	Solution Undetermined	-
09SP	EMDE-EMDE	59466 ATL109 5 161 59494 OAK432 5 161 1	214	157	25.7	52688 CARTHAG5 161 59485 CAR395 5 161 1	220	Solution Undetermined	-
09SP	EMDE-EMDE	59534 ORO110 2 69 B144 ORONOGO 1 1	75	60	6.7	59466 ATL109 5 161 59494 OAK432 5 161 1	227	Solution Undetermined	-
09SP	EMDE-EMDE	59466 ATL109 5 161 59494 OAK432 5 161 1	175	125	21.9	Base Case	230	Solution Undetermined	-
09SP	EMDE-EMDE	59500 RNM393 5 161 B150 REINMILL 1 1	75	61	5.9	59470 JOP145 5 161 B095 JOPLINW 1 1	234	See Previous	-
09SP	EMDE-EMDE	59500 RNM393 5 161 B150 REINMILL 1 1	75	61	5.9	59539 JOP145 2 69 B095 JOPLINW 1 1	234	"	-
09SP	EMDE-EMDE	59554 BAX271 2 69 59601 HOC404 2 69 1	61	21	16.9	59539 JOP145 2 69 59555 GAL278 2 69 1	236	Solution Undetermined	-
09SP	SWPA-EMDE	52688 CARTHAG5 161 59466 ATL109 5 161 1	167	109	24.4	59485 CAR395 5 161 59491 PUR421 5 161 1	237	See Previous	-
09SP	EMDE-EMDE	59500 RNM393 5 161 B150 REINMILL 1 1	75	62	5.4	59483 JOP389 5 161 B094 JOPLINSW 1 1	244	See Previous	-
09SP	EMDE-EMDE	59595 RNM393 2 69 B150 REINMILL 1 1	75	60	5.9	59470 JOP145 5 161 B095 JOPLINW 1 1	246	"	-
09SP	EMDE-EMDE	59595 RNM393 2 69 B150 REINMILL 1 1	75	60	5.9	59539 JOP145 2 69 B095 JOPLINW 1 1	246	"	-
09WP	SWPA-SPRM	52692 SPRGFLD5 161 59969 BRKLINE 5 161 1	318	337	2.5	59954 SWPS 5 161 59960 SWDISP 5 161 1	0	See Previous	-
09WP	SWPA-SPRM	52692 SPRGFLD5 161 59969 BRKLINE 5 161 1	318	335	2.5	59959 BATFLD 5 161 59960 SWDISP 5 161 1	0	"	-
09WP	SWPA-SPRM	52692 SPRGFLD5 161 59969 BRKLINE 5 161 1	318	321	2.1	59955 JUNCTN 5 161 59969 BRKLINE 5 161 1	0	"	-
09WP	EMDE-EMDE	59500 RNM393 5 161 B150 REINMILL 1 1	75	75	2.8	59472 TIP292 5 161 59483 JOP389 5 161 1	0	See Previous	-
09WP	EMDE-EMDE	59595 RNM393 2 69 B150 REINMILL 1 1	75	74	2.8	59472 TIP292 5 161 59483 JOP389 5 161 1	22	"	-
09WP	SWPA-EMDE	52688 CARTHAG5 161 59466 ATL109 5 161 1	207	202	7.2	59472 TIP292 5 161 59483 JOP389 5 161 1	71	See Previous	-
09WP	EMDE-EMDE	59483 JOP389 5 161 B094 JOPLINSW 1 1	75	72	3.8	59472 TIP292 5 161 59483 JOP389 5 161 1	77	See Previous	-
09WP	EMDE-EMDE	59592 JOP389 2 69 B094 JOPLINSW 1 1	75	72	3.8	59472 TIP292 5 161 59483 JOP389 5 161 1	78	"	-
Total Estimated Cost									\$30,300,000