Survey Area

CDFW Aquatic Resources

- Streambed Unvegetated
- Streambed Unvegetated - Bank
- Streambed Vegetated
- Streambed Vegetated - Bank

CDFW Aquatic Resources Survey Results

LUGO-VICTORVILLE 500-KV
TRANSMISSION LINE REMEDIAL
ACTION SCHEME PROJECT
AQUATIC RESOURCES DELINEATION

N

0 200 Feet

Artemis Environmental Services, Inc.

Survey Area

NDEP

- Streambed Unvegetated
- Streambed Unvegetated - Bank
- Streambed Vegetated
- Streambed Vegegetated - Bank

Figure 10, Page 1 of 4

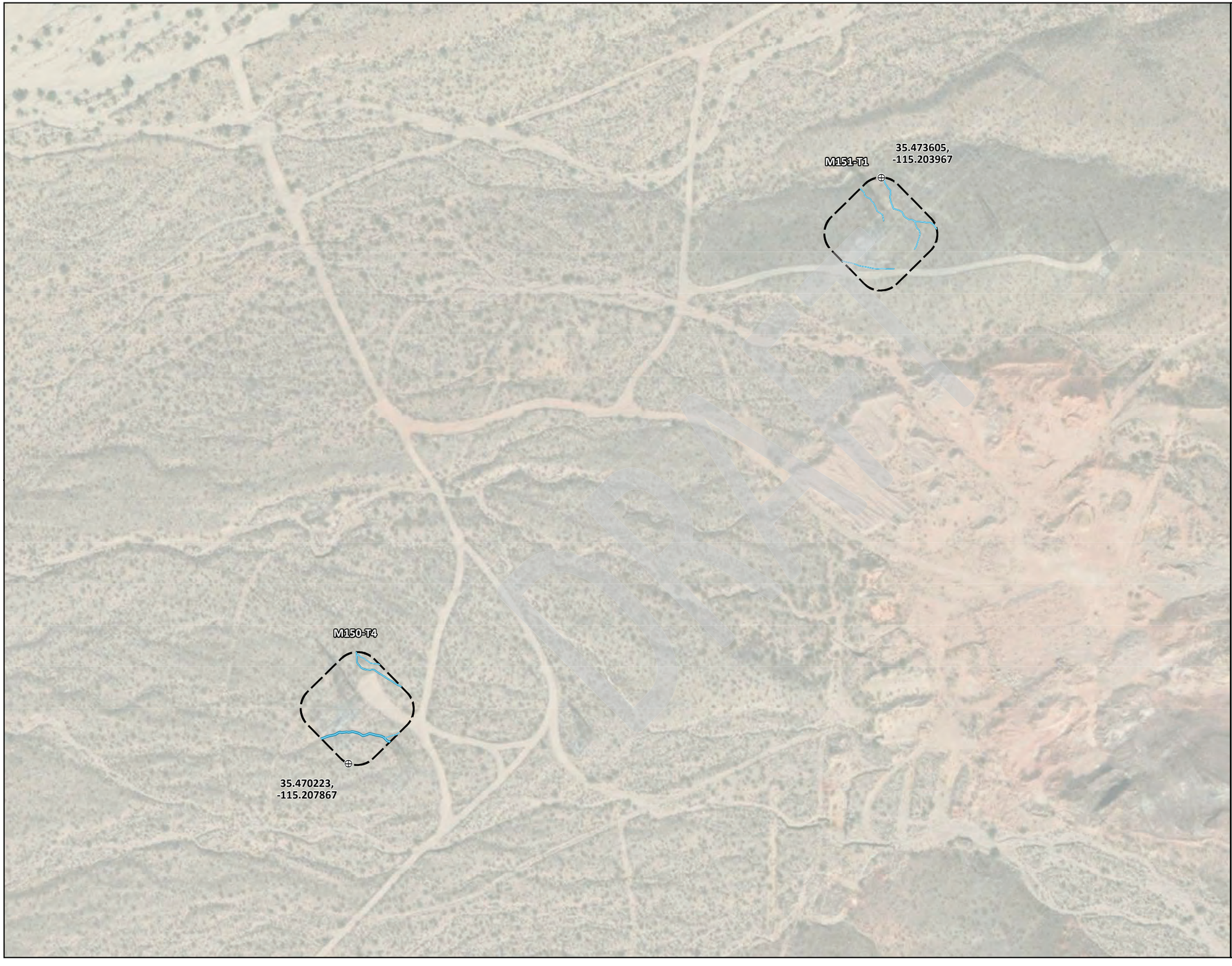
NDEP Aquatic Resource Survey Results

LUGO-VICTORVILLE 500-KV TRANSMISSION LINE REMEDIAL ACTION SCHEME PROJECT
AQUATIC RESOURCES DELINEATION

N

0 200 Feet

Artemis Environmental Services, Inc.



Survey Area

NDEP

Streambed Unvegetated

Streambed Unvegetated - Bank

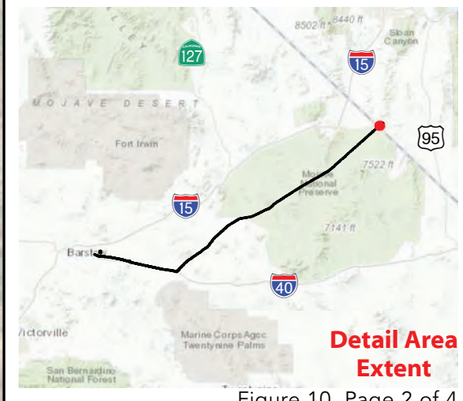


Figure 10, Page 2 of 4

NDEP Aquatic Resource Survey Results

LUGO-VICTORVILLE 500-KV TRANSMISSION LINE REMEDIAL ACTION SCHEME PROJECT
AQUATIC RESOURCES DELINEATION

N

0 200 Feet

Artemis Environmental Services, Inc.

Survey Area

NDEP

Streambed Unvegetated

Streambed Unvegetated - Bank

Non-Jurisdictional Lines

Erosional

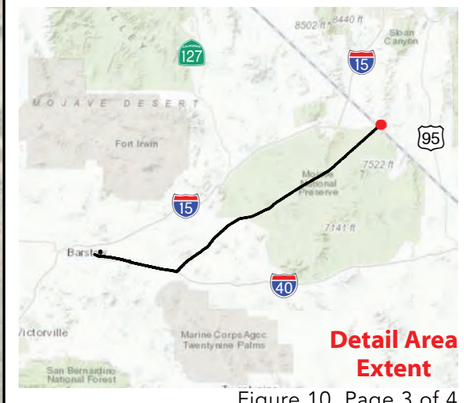


Figure 10, Page 3 of 4

NDEP Aquatic Resource Survey Results

LUGO-VICTORVILLE 500-KV TRANSMISSION LINE REMEDIAL ACTION SCHEME PROJECT AQUATIC RESOURCES DELINEATION

N

0 200 Feet

Artemis Environmental Services, Inc.

M152-T2

35.484861,
-115.187637

M152-T1

35.4815,
-115.192873

Survey Area

NDEP

- Streambed Unvegetated
- Streambed Unvegetated - Bank
- Streambed Vegetated
- Streambed Vegegetated - Bank

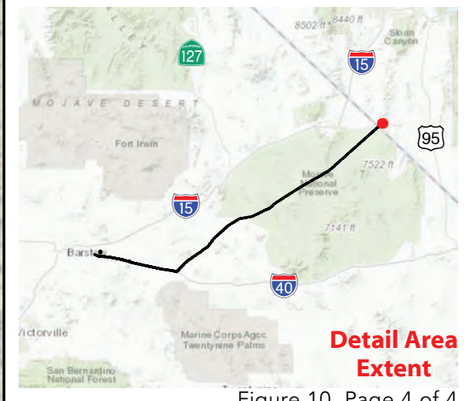


Figure 10, Page 4 of 4

NDEP Aquatic Resource Survey Results

LUGO-VICTORVILLE 500-KV TRANSMISSION LINE REMEDIAL ACTION SCHEME PROJECT AQUATIC RESOURCES DELINEATION

N

0 200 Feet

Artemis Environmental Services, Inc.

APPENDIX B

Assessor's Parcel Numbers

Assessor's Parcel Numbers and Township, Range, Section

APN	Township, Range, Section	Owner Name
San Bernardino County, California		
052918106	08N 04E 11	DAVIS, BOYD R
052917150	08N 04E 11	THOMAS, JERRY L
052917109	08N 04E 11	WARNER, JOSEPH
052917108	08N 04E 10	DE VOY, MARGARIET J 1999 TRUST (7/20
052917103	08N 04E 10	BAKER, FRED I
052917165	08N 04E 10	HANSON, DONNIE J
052917161	08N 04E 10	GUDLOW, MICHAEL
052917163	08N 04E 10	GOOD, PAUL
052917159	08N 04E 10	GUDLOW, MICHAEL W
052917151	08N 04E 10	BUSHNELL, KEVIN M
052917144	08N 04E 10	KIRNIG, PAULETTE V
052917145	08N 04E 10	HELMAND, ROBERT B
052917143	08N 04E 10	KHAN, AQIL
052917107	08N 04E 10	GOVERNMENT LAND
052917105	08N 04E 10	ENTERPRIZZZ LLC
052906101	08N 04E 10	UNITED STATES OF AMERICA
052819214	08N 03E 1	STEARN, FREDERIC E REVOCABLE TRUST
052819213	08N 03E 1	CALICO GHOST ASSOCIATES LLC
052819223	08N 03E 1	CAMPGROUNDS OF THE MOJAVE DESERT LLC
052819216	08N 03E 1	DODGE FAMILY TRUST 7-21-08
052819224	08N 03E 1	CAMPGROUNDS OF THE MOJAVE DESERT LLC
052819225	08N 03E 1	CAMPGROUNDS OF THE MOJAVE DESERT LLC
052819220	08N 03E 1	SPERRY, WESLEY S
052819219	08N 03E 1	SPERRY, WESLEY
052819221	08N 03E 1	TAHIR, AMANULLAH
052816107	08N 03E 1	SANTA MARINA PROPERTIES LLC
052816108	08N 03E 1	BAKER, PAULINE G
052816103	08N 03E 1	SPERRY, WESLEY S
052816102	08N 03E 1	SPERRY, WESLEY S
051627227	09N 01E 23	KERN RIVER GAS TRANSMISSION CO
052915101	08N 04E 4	GOVERNMENT LAND
052914127	08N 04E 5	POLAND, JOHN R
052915108	08N 04E 5	CALIFORNIA INSTIITUTE OF TECHNOLOGY
052911106	08N 04E 5	JEONG, BUM SIK TR
052914111	08N 04E 6	SCHNEIDER, RICKEY R
052913120	08N 04E 6	MILES, MARGARET - EST OF
052913123	08N 04E 6	HUERTA, ACOSTA JUAN
052913163	08N 04E 6	CALIMESA OIL CO
052913131	08N 04E 6	JONES, CLAYTON
052913132	08N 04E 6	BUTLER, ROY L

APN	Township, Range, Section	Owner Name
052913110	08N 04E 6	KIM FAMILY TRUST 3/10/15
052913125	08N 04E 6	SPERRY, WESLEY S
052913121	08N 04E 6	PHAM, JASON
052913124	08N 04E 6	PHAM, JASON
052913126	08N 04E 6	HILLENDALE CORP
052913128	08N 04E 6	SCHAFFER, TEDDY C
052913127	08N 04E 6	ROCKWELL, BARBARA J
052913140	08N 04E 6	CALIMESA OIL COMPANY
052913162	08N 04E 6	CALIMESA OIL COMPANY
052819212	08N 03E 1	CALICO GHOST ASSOCIATES LLC
052819211	08N 03E 1	CALICO GHOST ASSOCIATES LLC
052819210	08N 03E 1	BUTLER, ROY L
052819215	08N 03E 1	STEARN, FREDERIC E REVOCABLE TRUST
052816105	08N 03E 1	HOOSHPACK DEVELOPMENT INC
052816104	08N 03E 1	SPERRY, WESLEY S
052816111	08N 03E 1	BARSTOW PARTNERS LLC
052821101	08N 03E 1	WOOKEY, DELPHIA
052816110	08N 03E 1	SPERRY, WESLEY S
052823107	08N 03E 2	KBK CORPORATION MANAGEMENT
052823106	08N 03E 2	GEIL, PAMELA A
052822102	08N 03E 2	WOOD, EARL E
052821113	08N 03E 2	JR PLAZA LLC
052821114	08N 03E 2	JR PLAZA LLC
052821103	08N 03E 2	JR PLAZA LLC
052821104	08N 03E 2	JR PLAZA LLC
052821105	08N 03E 2	HULL, DANIEL J
052821116	08N 03E 2	HULL, DANIEL J
052821107	08N 03E 2	KERSHAW, J
052822115	08N 03E 2	WALLEEN FAMILY REV LIVING TRUST 9-9-
052822116	08N 03E 2	JOHANNINGSMEIER, MABEL LIVING TRUST
052822104	08N 03E 2	FAHIM LIVING TRUST
052822112	08N 03E 2	TUAN, FANG-YUAN
052822101	08N 03E 2	REYNOSO, STEVEN E
052823108	08N 03E 2	NEAL, TY
052821121	08N 03E 2	PAULIN, FRANCISCO B
055204116	09N 06E 34	GOVERNMENT LAND
055204118	09N 06E 35	GOVERNMENT LAND
055204108	09N 06E 26	GOVERNMENT LAND
055204107	09N 06E 25	UNITED STATES OF AMERICA
055211112	09N 07E 30	GOVERNMENT LAND
055211101	09N 07E 19	GOVERNMENT LAND
051627123	09N 01E 23	STEARN, FREDERIC E REV TR

APN	Township, Range, Section	Owner Name
051627118	09N 01E 22	SDKRUP 1 LLC
051627211	09N 01E 22	OHAI, REYNOLDS K REV LIV TR 3/28/19
051627101	09N 01E 22	SAUER, ROBERT CHANCE
051627210	09N 01E 22	BARSUGLIA, MICHAEL G
051627208	09N 01E 22	PEREZ, JUAN
051627124	09N 01E 22	LI, SAM
051628101	09N 01E 22	COOL WATER ASSOCIATES
051628208	09N 01E 22	SOUTHERN CALIFORNIA EDISON COMPANY
051627221	09N 01E 22	SDKRUP 1 LLC
055211102	09N 07E 20	GOVERNMENT LAND
055210106	09N 07E 17	UNITED STATES OF AMERICA
051634118	09N 01E 13	SOUTHERN CALIFORNIA EDISON
051634119	09N 01E 13	SOUTHERN CALIFORNIA EDISON
051634114	09N 01E 13	SUNRAY LAND COMPANY LLC
051633105	09N 01E 14	SOUTHERN CALIFORNIA EDISON COMPANY
051633106	09N 01E 14	SOUTHERN CALIFORNIA EDISON COMPANY
055221106	09N 07E 16	UNITED STATES OF AMERICA
055221105	09N 07E 16	CHANG, JOHN S
055221107	09N 07E 16	STATE OF CALIFORNIA
055221103	09N 07E 10	GOVERNMENT LAND
055222106	09N 07E 11	GOVERNMENT LAND
055222101	09N 07E 2	GOVERNMENT LAND
052926108	08N 06E 18	AVANIAN, SARKIS
n/a	08N 06E 18	n/a
052926107	08N 05E 13	GENUINO, ANGELITO S TRUST DTD 06/26/
052926106	08N 05E 13	EATWELL, FRANCIS R
052926105	08N 05E 13	BEDNER, THOMAS M
052926104	08N 05E 13	COOK, PENELOPE L
052926111	08N 05E 13	CHILDERS, DARYL & LINDA LIV TR 11-10
052926101	08N 05E 13	MI CASA PROPERTY LLC
055203113	08N 06E 18	GOVERNMENT LAND
055203144	08N 06E 17	UNITED STATES OF AMERICA
055202104	08N 06E 17	ATCHISON TOPEKA AND SANTA FE RR CO
055203143	08N 06E 17	UNITED STATES OF AMERICA
052922101	08N 05E 17	GOVERNMENT LAND
052919136	08N 04E 12	BLASZCAK, FRANK & G LIV TR 2009 12/9
052918101	08N 04E 12	LOWE, ANDREW
052918110	08N 04E 11	JORDAN DESERT PROPERTY LLC
052918103	08N 04E 11	HAIDARNIA, KHALIL
052918104	08N 04E 11	KWON, SAE SIL
052918108	08N 04E 11	SHOFNER, DWIGHT
052918107	08N 04E 11	SIEG, JASON

APN	Township, Range, Section	Owner Name
052918109	08N 04E 11	LYNN, RUSSELL F
053108224	09N 03E 34	SPERRY, WESLEY S
053108102	09N 03E 34	DE CARVALHO, KEIKO S
053107114	09N 03E 33	LIN, KUAN JUNG
053107202	09N 03E 33	WARD, RAYMOND
053107106	09N 03E 33	DRAKE FAMILY TRUST TRUST B 01/14/88
053107107	09N 03E 33	DRAKE, WILLIAM P - EST OF
053106123	09N 03E 33	ATCHISON TOPEKA AND SANTA FE RR CO
053105106	09N 03E 33	ATCHISON TOPEKA AND SANTA FE RR CO
053103110	09N 03E 32	STEARN, FREDERIC E REV TR
053102112	09N 03E 31	GOVERNMENT LAND
053102103	09N 03E 31	HENNEY, ALAN G
053102202	09N 03E 31	AT AND SF RY CO
053102203	09N 03E 31	AT AND SF RY CO
053102102	09N 03E 31	JONES, DOUGLAS C
053102110	09N 03E 31	GOVERNMENT LAND
052110123	09N 02E 25	SAYED, MARK LIVING TRUST 6/22/15
052109210	09N 02E 25	SAYED, MARK LIVING TRUST 6/22/15
052109209	09N 02E 25	CSER FAMILY TRUST 8/21/09
052109208	09N 02E 25	STATE OF CALIFORNIA
052109207	09N 02E 26	CLEMINSON, GEORGE D
052109206	09N 02E 26	BLACKWOOD, GARY DALE
052109214	09N 02E 26	DOYLE, ORVILLE K JR
052109213	09N 02E 26	ALDRICH, RICK M & ANN M REV LIV TR 7
052109211	09N 02E 26	ALDRIDGE, PAUL
052109204	09N 02E 26	DAVIES, GERALD
052109203	09N 02E 26	DOUGLASS, SHARON L
052109202	09N 02E 26	JENNINGS FAMILY TRUST 4-7-03
052109201	09N 02E 26	LJG PROPERTY FAMILY TRUST 7/7/11
052104226	09N 02E 27	TROUBERMAN, JANA S
052104225	09N 02E 27	LICOMITROS, PETER
052104224	09N 02E 27	ARTE FINEST INC
052104223	09N 02E 27	CA BEST HOMES INC
052104208	09N 02E 27	TINAJERO, ANGEL
052104227	09N 02E 27	CAVALLI, ROBERT L
052104207	09N 02E 27	TINAJERO, ANGEL
052104228	09N 02E 27	WITTE, NATHAN
052104218	09N 02E 27	PURDY, AMANDA
052104217	09N 02E 27	FUIAVA, TUIFAGALILO
052104204	09N 02E 27	BROCK, BETTY J
052104205	09N 02E 27	BROCK, BETTY J
052104203	09N 02E 27	CRAIG, PAUL

APN	Township, Range, Section	Owner Name
052104202	09N 02E 27	HUANG, HUEY-CHIN L
052104101	09N 02E 27	KOEGLER, WILLIAM M
052104102	09N 02E 27	ATCHISON TOPEKA AND SANTA FE RR CO
052104103	09N 02E 27	FREEDNER, JAMES
052105211	09N 02E 28	KASNER FAMILY LIMITED PARTNERSHIPP
052105210	09N 02E 28	NA VAL, MICHELE
052105227	09N 02E 28	PUENTES, JOSE L
052105224	09N 02E 28	ROTHWELL, CALLIE
052105205	09N 02E 28	MOTA, JAVIER
052105223	09N 02E 28	BRUCE, DAVID L
052105203	09N 02E 28	CHRISTIAN, HELEN M
052105202	09N 02E 28	BETHARD, HERBERT T
052105222	09N 02E 28	NICHELSON, SHIRLEY A
052105214	09N 02E 28	PULVERS, DANIEL L
052105216	09N 02E 28	PULVERS, DANIEL L
052101203	09N 02E 29	COUNTY OF SAN BERNARDINO
052101104	09N 02E 30	BOHLAT, KIRAN
052101207	09N 02E 30	SORIANO, JOJI A
052101210	09N 02E 30	MC CRAY, MARSHA
052101212	09N 02E 30	PRICE, BOBBY N
052101211	09N 02E 30	LARANJO FAMILY TRUST 6-18-1999
052101209	09N 02E 30	VILLANUEVA, VICTOR B REV TR 5/13/06
041604151	09N 01E 25	HAWN, LORETTA 1994 TR 4-21-94 - EST
041604152	09N 01E 25	LAKS, RALPH
041604106	09N 01E 25	QUIGG, JAMES R
041604121	09N 01E 25	HAWN, LORETTA 1994 TR 4-21-94 - EST
041604159	09N 01E 25	BOONE, CHARLES P
052926102	08N 05E 13	MENSA, D L & J M INTER VIVOS TR (2-1
052926110	08N 05E 13	JULIANI, ANNELEN
055202101	08N 06E 19	GOVERNMENT LAND
052921126	08N 05E 17	JONES LIVING TRUST (5-28-98)
052921117	08N 05E 17	CORTEZ, JOHN ANTHONY REVOCABLE TRUST
052921120	08N 05E 17	CORTEZ, JOHN ANTHONY REV TR OF 2009
052921118	08N 05E 17	CORTEZ, JOHN ANTHONY REVOCABLE TR 09
052921122	08N 05E 15	TONG, NHIEM
052921153	08N 05E 16	FERINGA, MARY 2011 TRUST
052921152	08N 05E 16	KUCHTA, TERRY W
052921147	08N 05E 16	SULPIZIO, RICHARD
052921125	08N 05E 16	DAY, BUREN B AND WILMA K LEMERE
052921121	08N 05E 16	BOHLAT, KIRAN
052921149	08N 05E 16	FERINGA, MARY 2011 TRUST
055203111	08N 06E 8	GOVERNMENT LAND

APN	Township, Range, Section	Owner Name
052920106	08N 05E 7	GOVERNMENT LAND
052919144	08N 05E 7	GOVERNMENT LAND
052919135	08N 04E 12	BLASZCAK, FRANK & G LIV TR 2009 12/9
055203110	08N 06E 9	UNITED STATES OF AMERICA
055203103	08N 06E 9	GOVERNMENT LAND
055203104	08N 06E 3	GOVERNMENT LAND
053108243	09N 03E 34	SPERRY, WESLEY S
053108244	09N 03E 34	WISE, SANDRA
053108241	09N 03E 34	WANG, MARGARET
053108210	09N 03E 34	SPERRY, WESLEY S
052808118	09N 03E 34	WELCH, GREGORY CHARLES
052808151	09N 03E 34	WANG, MARGARET
052808124	09N 03E 34	BECERRA, ADELA & EMILIANO REV LIV TR
052824104	08N 03E 2	PRUETT, ANDREA
052824105	08N 03E 2	ALTENEDER, HEIDI COLLEEN
052824106	08N 03E 2	LOO, DORI
052809101	08N 03E 2	FAHIM LIVING TRUST
052823102	08N 03E 2	SPERRY, KELLY
052824112	08N 03E 2	LANGDON, FRANK E
052824102	08N 03E 2	WARD, RAYMOND II
052824103	08N 03E 2	ROBERTS, FRANCES J
052809102	08N 03E 3	L & J DUNCAN FAMILY LIMITED PARTNERS
052809103	08N 03E 3	VALOV, WILLIAM
052809104	08N 03E 3	FOURTNER, CHARLES H TR
052809105	08N 03E 3	RAMOS FAMILY LIVING TRUST 7/24/17
052809107	08N 03E 3	AHMED, ZEESHAN
052809106	08N 03E 3	MORA, GERARDO
052809108	08N 03E 3	SULPIZIO, RICHARD
053108238	09N 03E 34	EDIGA, NARASHIMA B
053108239	09N 03E 34	PRINGLE, LOUIS R
053108226	09N 03E 34	PACIFIC GAS AND ELECTRIC CO
053103102	09N 03E 32	CALIF ARIZONA AND SANTA FE RR CO
053102205	09N 03E 31	GOVERNMENT LAND
053103109	09N 03E 31	MOJAVE PIPELINE COMPANY
052101205	09N 02E 30	ALMARAZ, RITA T
041604154	09N 01E 25	CITY OF LOS ANGELES
041604103	09N 01E 25	GOVERNMENT LAND
041604153	09N 01E 25	INTERMOUNTAIN POWER AGENCY
055222103	09N 07E 1	UNITED STATES OF AMERICA
055209121	10N 07E 36	UNITED STATES OF AMERICA
055209120	10N 07E 36	STATE OF CALIFORNIA
055219112	10N 08E 31	GOVERNMENT LAND

APN	Township, Range, Section	Owner Name
055219113	10N 08E 31	GOVERNMENT LAND
055219101	10N 08E 19	GOVERNMENT LAND
055219102	10N 08E 20	GOVERNMENT LAND
055220115	10N 08E 16	STATE OF CALIFORNIA
055220114	10N 08E 16	UNITED STATES OF AMERICA
055220109	10N 08E 10	GOVERNMENT LAND
055220116	10N 08E 15	GOVERNMENT LAND
055220108	10N 08E 11	GOVERNMENT LAND
055220105	10N 08E 11	GOVERNMENT LAND
055301118	11N 08E 35	UNITED STATES OF AMERICA
055301119	11N 08E 36	STATE OF CALIFORNIA
055301106	11N 08E 25	UNITED STATES OF AMERICA
055315114	11N 09E 30	GOVERNMENT LAND
055315112	11N 09E 29	GOVERNMENT LAND
055315102	11N 09E 20	GOVERNMENT LAND
055315103	11N 09E 21	GOVERNMENT LAND
055316121	11N 09E 15	GOVERNMENT LAND
055316120	11N 09E 15	GOVERNMENT LAND
055316119	11N 09E 13	UNION PACIFIC RAILWAY CO
055316118	11N 09E 13	GOVERNMENT LAND
056216113	11N 10E 18	GOVERNMENT LAND
056216114	11N 10E 17	GOVERNMENT LAND
056216111	11N 10E 8	GOVERNMENT LAND
056216110	11N 10E 9	GOVERNMENT LAND
056216109	11N 10E 10	GOVERNMENT LAND
056216104	11N 10E 3	GOVERNMENT LAND
056216105	11N 10E 2	GOVERNMENT LAND
056216106	11N 10E 1	GOVERNMENT LAND
056219120	11N 10E 1	OHR, SHAN LEE LIVING TRUST
056219119	11N 10E 1	SOUTHERN CALIFORNIA EDISON COMPANY
056218114	12N 11E 31	GOVERNMENT LAND
056218115	12N 11E 32	GOVERNMENT LAND
056218112	12N 11E 29	GOVERNMENT LAND
056218111	12N 11E 28	GOVERNMENT LAND
056218103	12N 11E 21	GOVERNMENT LAND
056218104	12N 11E 22	GOVERNMENT LAND
056221116	12N 11E 22	GOVERNMENT LAND
056221117	12N 11E 14	GOVERNMENT LAND
056221118	12N 11E 13	GOVERNMENT LAND
056221107	12N 11E 13	GOVERNMENT LAND
057305102	16N 16E 36	GOVERNMENT LAND
056317102	12N 12E 6	GOVERNMENT LAND

APN	Township, Range, Section	Owner Name
056317103	12N 12E 5	GOVERNMENT LAND
056226122	13N 12E 33	GOVERNMENT LAND
056226121	13N 12E 34	GOVERNMENT LAND
056226120	13N 12E 27	GOVERNMENT LAND
056701112	13N 12E 26	GOVERNMENT LAND
056701106	13N 12E 25	GOVERNMENT LAND
056701105	13N 12E 24	GOVERNMENT LAND
056702101	13N 13E 19	GOVERNMENT LAND
056702102	13N 13E 19	GOVERNMENT LAND
056703114	13N 13E 17	GOVERNMENT LAND
056703115	13N 13E 17	UNITED STATES OF AMERICA
056703119	13N 13E 17	SOUTHERN CALIFORNIA EDISON CO
056703109	13N 13E 9	GOVERNMENT LAND
056703110	13N 13E 9	GOVERNMENT LAND
056703108	13N 13E 11	GOVERNMENT LAND
056703105	13N 13E 2	GOVERNMENT LAND
056703106	13N 13E 2	GOVERNMENT LAND
056704139	13N 14E 6	UNITED STATES OF AMERICA
057022134	14N 14E 31	CALIFORNIA DESERT LAND CONSERVANCY
057022131	14N 14E 31	SOUTHERN CALIFORNIA EDISON COMPANY
057022120	14N 14E 32	SOUTHERN CALIFORNIA EDISON COMPANY
057022128	14N 14E 32	ANDERSON, GLENN M
057022129	14N 14E 32	CALIFORNIA DESERT LAND CONSERVANCY
057022111	14N 14E 32	GOVERNMENT LAND
057022107	14N 14E 28	GOVERNMENT LAND
057024127	14N 14E 22	GOVERNMENT LAND
057024128	14N 14E 23	GOVERNMENT LAND
057024117	14N 14E 14	GOVERNMENT LAND
057024118	14N 14E 13	GOVERNMENT LAND
057024107	14N 14E 12	GOVERNMENT LAND
056905118	14N 15E 7	GOVERNMENT LAND
056905101	14N 15E 6	GOVERNMENT LAND
056905102	14N 15E 5	GOVERNMENT LAND
056915116	15N 15E 32	GOVERNMENT LAND
056915117	15N 15E 33	GOVERNMENT LAND
056915112	15N 15E 28	GOVERNMENT LAND
056915111	15N 15E 27	GOVERNMENT LAND
056915105	15N 15E 23	GOVERNMENT LAND
056916120	15N 15E 13	GOVERNMENT LAND
056916121	15N 15E 13	FREEMAN-LANG REVOCABLE LIV TRUST
056917114	15N 16E 7	GOVERNMENT LAND
056917115	15N 16E 7	GOVERNMENT LAND

APN	Township, Range, Section	Owner Name
056917113	15N 16E 8	GOVERNMENT LAND
056917102	15N 16E 5	GOVERNMENT LAND
056917103	15N 16E 4	GOVERNMENT LAND
057303113	15.5N 16E 33	GOVERNMENT LAND
057303114	15.5N 16E 34	GOVERNMENT LAND
057303107	15.5N 16E 27	GOVERNMENT LAND
057303106	15.5N 16E 26	GOVERNMENT LAND
057305105	15.5N 16E 23	GOVERNMENT LAND
057305104	15.5N 16E 24	GOVERNMENT LAND
056317111	12N 12E 7	GOVERNMENT LAND
Clark County, Nevada		
240-36-000-001	28S 60E 36	Nevada
240-25-000-002	28S 60E 25	Nevada
241-30-000-002	28S 60E 25	Nevada

APPENDIX C

Climatological Data

Antecedent Precipitation Tool v.1.0 - Watershed Sampling Summary

Generated on 2021-05-04

User Inputs

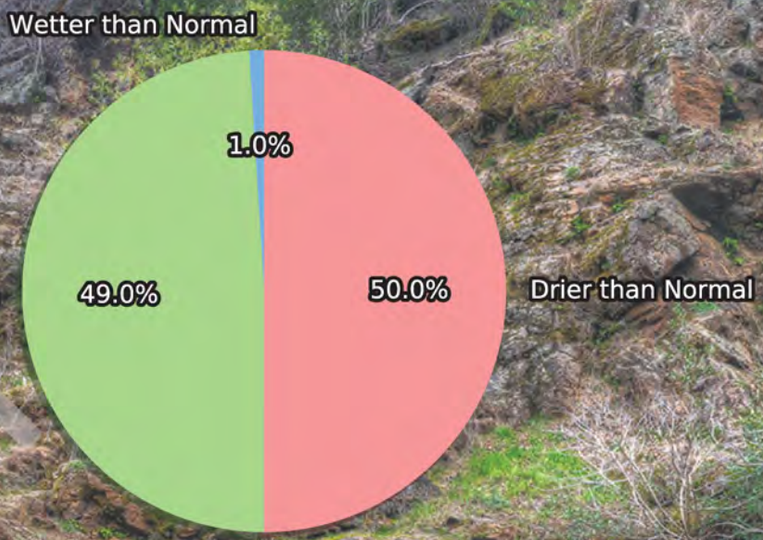
Coordinates	34.853667, -116.786667
Date	2021-03-18
Geographic Scope	HUC8

Intermediate Data

Hydrologic Unit Code	18090208
Watershed Size	4618.33 mi^2
# Random Sampling Points	239

Preliminary Result

Average Antecedent Precipitation Score	9.82
Preliminary Determination	Drier than Normal



Sampling Point Breakdown

Antecedent Precipitation Score	Antecedent Precipitation Condition	WebWIMP H_2O Balance	Drought Index (PDSI)	# of Points
16	Wetter than Normal	Dry Season	Extreme drought	1
16	Wetter than Normal	Wet Season	Extreme drought	2
14	Normal Conditions	Dry Season	Extreme drought	5
13	Normal Conditions	Dry Season	Extreme drought	4
12	Normal Conditions	Dry Season	Extreme drought	6
11	Normal Conditions	Dry Season	Extreme drought	28
10	Normal Conditions	Wet Season	Extreme drought	20
10	Normal Conditions	Dry Season	Extreme drought	53
9	Drier than Normal	Wet Season	Extreme drought	14
9	Drier than Normal	Dry Season	Extreme drought	93
8	Drier than Normal	Dry Season	Extreme drought	11
8	Drier than Normal	Wet Season	Extreme drought	1
8	Drier than Normal	Wet Season	Severe drought	1

WETS Table

WETS Station: BARSTOW-DAGGETT AIRPORT, CA								
Requested years: 2001 - 2021								
Month	Avg Max Temp	Avg Min Temp	Avg Mean Temp	Avg Precip	30% chance precip less than	30% chance precip more than	Avg number days precip 0.10 or more	Avg Snowfall
Jan	61.7	36.4	49.1	0.48	0.09	0.45	2	0.0
Feb	65.7	39.8	52.7	0.51	0.08	0.44	1	0.0
Mar	73.1	45.9	59.5	0.30	0.08	0.30	1	0.0
Apr	80.1	51.8	65.9	0.23	0.00	0.20	1	0.0
May	89.4	60.0	74.7	0.05	0.00	0.02	0	0.0
Jun	100.6	69.1	84.8	0.00	0.00	0.00	0	0.0
Jul	-	-	-	0.20	0.07	0.20	1	0.0
Aug	104.2	73.6	88.9	0.21	0.00	0.18	1	0.0
Sep	96.7	66.6	81.6	0.09	0.00	0.06	0	0.0
Oct	83.4	54.9	69.2	0.18	0.00	0.13	1	0.0
Nov	70.2	43.2	56.7	0.44	0.12	0.42	1	0.0
Dec	59.7	35.5	47.6	0.63	0.19	0.68	2	0.3
Annual:					2.21	4.06		
Average	-	-	-	-	-	-	-	-
Total	-	-	-	3.33			9	0.3

GROWING SEASON DATES

Years with missing data:	24 deg = 1	28 deg = 2	32 deg = 2
Years with no occurrence:	24 deg = 12	28 deg = 0	32 deg = 0
Data years used:	24 deg = 20	28 deg = 19	32 deg = 19
Probability	24 F or higher	28 F or higher	32 F or higher
50 percent *	No occurrence	Insufficient data	Insufficient data
70 percent *	No occurrence	Insufficient data	Insufficient data

* Percent chance of the growing season occurring between the Beginning and Ending dates.

STATS TABLE - total precipitation (inches)

Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annl
1943												1.58	1.58
1944	0.25	1.80	0.52	0.05	T	0.00	0.00	0.00	0.00	0.02	2.04	0.07	4.75
1945	0.11	0.41	1.07	T	T	T	T	1.54	T	0.11	0.00	1.63	4.87
1946	T	0.13	0.32	0.06	0.00	0.00	0.61	0.16	T	T	0.57	0.36	2.21
1947	0.25	0.00	0.35	0.08	0.01	0.00	0.00	0.50	T	0.31	0.07	0.75	2.32
1948	0.00	0.58	0.08	0.00	T	T	0.07	T	0.02	0.88	0.00	0.49	2.12
1949	1.55	T	0.45	T	T	T	T	T	0.00	0.01	0.18	0.20	2.39
1950	0.14	0.14	0.48	T	T	T	0.03	T	0.27	T	0.07	T	1.13
1951	0.94	T	0.01	0.82	0.25	0.00	0.32	0.17	0.18	0.37	0.29	2.14	5.49
1952	1.14	0.04	0.38	0.44	0.00	T	1.12	0.05	0.93	0.00	0.74	0.91	5.75

1953	0.01	0.20	0.08	0.37	T	0.00	0.15	T	0.00	0.00	0.15	T	0.96
1954	1.97	0.09	0.70	T	T	0.05	0.32	0.03	0.26	0.03	0.46	0.15	4.06
1955	0.82	T	0.00	0.06	0.07	0.00	0.93	1.01	0.00	0.00	0.17	0.01	3.07
1956	0.98	T	0.01	0.11	0.00	0.00	0.10	0.00	0.00	0.20	0.00	0.00	1.40
1957	0.96	0.28	0.10	0.31	0.05	T	0.96	0.01	T	0.45	0.16	0.23	3.51
1958	0.23	0.97	0.86	1.25	0.09	0.00	0.56	3.22	1.29	0.45	0.36	0.00	9.28
1959	0.29	0.33	0.00	0.01	0.00	T	T	0.83	0.34	T	0.18	0.64	2.62
1960	0.29	0.60	0.01	0.05	T	0.01	0.11	0.90	2.16	0.41	0.10	0.03	4.67
1961	0.07	0.11	0.02	0.02	0.00	0.00	0.03	0.63	0.00	0.09	0.29	0.37	1.63
1962	0.06	0.38	0.18	0.00	0.37	0.00	0.29	0.00	0.03	0.32	T	0.07	1.70
1963	0.06	0.09	0.10	0.12	T	T	0.00	0.30	2.31	1.01	0.33	0.00	4.32
1964	0.05	0.06	0.08	0.23	T	0.00	0.57	0.17	0.00	0.20	1.14	T	2.50
1965	0.10	T	0.80	1.83	T	0.29	0.25	0.47	T	0.00	1.74	2.02	7.50
1966	0.03	0.27	0.25	0.00	0.03	0.02	0.06	0.00	0.12	T	0.15	0.30	1.23
1967	0.44	0.00	T	0.51	T	0.00	0.20	0.83	0.54	0.00	0.46	1.18	4.16
1968	T	0.02	1.01	0.01	0.00	0.32	0.77	0.78	0.00	0.13	0.17	0.25	3.46
1969	0.93	1.50	0.28	0.17	0.49	0.15	0.08	0.34	0.88	0.03	0.21	0.00	5.06
1970	0.24	0.25	0.52	T	0.00	0.00	0.67	0.54	0.00	0.00	0.24	0.12	2.58
1971	T	0.04	0.02	0.03	0.39	0.00	T	1.15	0.00	T	0.02	0.77	2.42
1972	0.00	0.00	0.00	0.08	T	1.24	0.00	0.07	0.21	0.67	0.33	0.19	2.79
1973	0.31	1.15	0.90	0.14	0.10	0.00	0.21	0.65	0.00	0.00	0.40	0.09	3.95
1974	0.93	0.01	0.54	T	T	0.00	0.01	T	T	0.32	0.10	0.42	2.33
1975	T	0.22	0.43	0.68	0.00	0.00	T	0.01	0.17	0.04	0.00	0.08	1.63
1976	0.00	0.63	0.13	0.51	0.01	0.00	0.06	0.00	3.36	0.35	0.02	T	5.07
1977	1.48	0.01	0.07	0.08	0.26	0.02	0.15	1.34	0.30	0.07	0.02	1.06	4.86
1978	1.86	1.26	1.29	0.19	0.13	0.00	0.69	0.28	0.06	0.01	0.27	0.36	6.40
1979	1.40	0.53	0.95	0.00	T	0.00	0.60	1.03	0.15	0.05	T	0.30	5.01
1980	1.20	1.76	0.65	0.21	0.36	0.35	0.38	0.10	0.00	0.00	0.00	T	5.01
1981	0.39	0.24	0.64	0.01	0.14	0.00	0.00	0.19	0.29	0.37	0.18	0.01	2.46
1982	0.90	0.51	0.16	0.61	0.05	0.06	1.40	1.02	0.08	0.16	0.35	0.85	6.15
1983	1.15	0.98	1.83	0.54	0.00	0.00	0.00	2.59	0.14	1.15	0.30	0.70	9.38
1984	0.00	T	T	T	T	0.02	3.20	MT	0.13	0.00	0.39	2.03	5.77
1985	0.37	0.14	0.05	T	T	T	0.20	0.00	0.09	0.05	0.83	0.59	2.32
1986	0.24	0.62	0.54	0.07	0.00	T	1.16	0.04	T	0.18	0.20	0.98	4.03

1987	0.70	0.19	1.58	T	0.60	0.72	0.02	0.00	0.06	0.52	0.52	0.58	5.49
1988	0.64	0.18	0.01	0.58	0.01	0.08	0.05	0.39	0.00	0.00	0.25	0.41	2.60
1989	0.68	0.07	0.11	0.00	0.03	0.00	0.15	0.16	0.00	T	0.00	T	1.20
1990	0.54	0.36	0.05	0.10	0.05	0.06	0.80	0.07	1.47	0.00	0.12	T	3.62
1991	0.78	0.41	1.91	0.00	T	0.00	2.05	T	0.39	0.19	0.02	0.77	6.52
1992	0.36	1.61	1.91	0.07	0.07	0.00	0.18	0.13	T	0.38	0.00	0.79	5.50
1993	2.49	2.02	0.16	0.00	T	0.08	0.00	0.06	0.00	T	0.03	0.23	5.07
1994	0.14	0.58	0.44	0.07	T	T	T	0.66	0.04	0.25	T	0.94	3.12
1995	2.04	0.17	0.74	0.10	MT	0.02	T	0.40	T	T	0.00	0.50	3.97
1996	0.56	0.86	0.12	T	0.11	T	0.09	0.01	T	0.10	0.54	0.28	2.67
1997	0.46	0.08	0.00	T	0.06	0.16	0.37	0.02	2.01	T	0.30	0.76	4.22
1998	0.32	2.54	0.59	0.12	0.12	T	0.61	0.01	0.78	0.01	0.07	0.03	5.20
1999	0.16	0.08	0.04	1.30	T	0.14	1.01	T	0.24	0.00	0.00	0.00	2.97
2000	0.08	0.59	0.60	0.01	T	0.47	T	M0.60	0.00	T	T	T	2.35
2001	0.87	0.20	0.59	0.31	T	0.00	0.41	0.18	0.04	0.07	0.51	0.35	3.53
2002	0.02	T	0.06	T	T	0.00	1.23	0.00	0.01	0.09	0.46	0.23	2.10
2003	0.01	1.21	0.66	0.26	T	0.04	T	0.13	0.02	0.00	1.11	0.17	3.61
2004	T	1.89	0.65	0.13	0.00	T	0.43	0.20	0.11	1.01	0.94	1.10	6.46
2005	1.63	2.12	0.96	0.13	T	T	T	0.36	0.28	0.15	T	0.00	5.63
2006	0.05	T	0.23	0.27	T	T	0.05	0.00	T	0.10	0.00	0.05	0.75
2007	0.07	0.05	0.01	0.25	T	0.00	0.05	0.10	0.01	0.00	1.57	0.05	2.16
2008	0.77	0.03	T	0.00	0.35	0.00	0.15	T	T	T	1.09	1.79	4.18
2009	0.03	0.73	0.01	T	0.01	T	0.05	T	0.00	0.00	0.26	0.45	1.54
2010	1.62	1.58	0.23	0.05	0.00	0.00	0.02	0.49	0.00	1.10	0.07	2.52	7.68
2011	0.01	0.32	0.06	T	0.02	0.00	0.10	0.60	0.31	0.06	0.28	0.15	1.91
2012	0.10	0.03	0.03	0.18	0.00	0.00	0.25	0.23	T	T	0.03	0.44	1.29
2013	0.30	0.02	0.36	T	0.01	0.00	0.27	1.12	0.59	0.01	1.76	0.11	4.55
2014	0.00	0.24	0.04	0.30	0.02	0.00	0.07	0.76	T	0.00	T	0.61	2.04
2015	0.63	0.56	T	T	T	0.03	0.62	0.05	0.17	0.53	0.06	0.24	2.89
2016	0.46	0.02	0.12	0.71	T	0.00	T	T	0.00	0.49	0.05	1.74	3.59
2017	1.59	0.35	T	T	T	0.00	0.03	0.01	0.18	0.00	T	T	2.16
2018	0.40	0.01	0.62	0.00	0.28	0.00	0.11	T	0.00	MT	0.10	0.22	1.74
2019	1.19	1.24	0.75	0.03	0.34	0.00	0.19	0.00	0.02	0.00	0.44	2.26	6.46
2020	T	T	0.94	2.23	0.00	0.00	0.00	0.01	0.00	0.00	0.03	0.14	3.35

2021	0.37	0.02	0.04	T	M0.00	0.43

Notes: Data missing in any month have an "M" flag. A "T" indicates a trace of precipitation.

Data missing for all days in a month or year is blank.

Creation date: 2016-07-22

APPENDIX D

Photos

Photo 1. A paleo channel in Segment 1, looking northeast.

Photo 2. A Detention basin in Segment 1, looking south.

Photo 3. Disturbed playa along Route 66 in Segment 1, looking west (Datasheet OHWM_LVRAS-S1-ATG-Playa 1).

Photo 4. A ditch in Segment 1.

Photo 5. A culvert in Segment 1, looking northwest.

Photo 6. Degraded and pebbly soil in Segment 1, looking north.

Photo 7. Playa amongst *Suaeda nigra* community in Segment 1, looking west (Datasheet OHWM_LVRAS-S1-ATG-Playa 3).

Photo 8. OHWM transect Segment 1, looking south/ upstream (Datasheet OHWM_LVRAS-S1-EK5).

Photo 9. OHWM transect Segment 1, looking northeast (Datasheet OHWM_LVRAS-S1-EK5).

Photo 10. OHWM transect Segment 1, looking north/ downstream (Datasheet OHWM_LVRAS-S1-EK5).

Photo 11. Drainage spilling into ponding basin in Segment 1, looking northwest, with mesquites.

Photo 12. A basin in Segment 1, looking northeast.

Photo 13. OHWM transect Segment 1, looking north/ downstream (OHWM_LVRAS-S1-EK1).

Photo 14. OHWM transect Segment 1, looking south/ upstream (Datasheet OHWM_LVRAS-S1-EK1).

Photo 15. OHWM transect Segment 1, looking southwest (Datasheet OHWM_LVRAS-S1-EK1.

Photo 16. Desert pavement in Segment 1, looking northwest.

Photo 17. OHWM transect Segment 1, looking west/ downstream (Datasheet OHWM_LVRAS-S1-EK4).

Photo 18. OHWM transect Segment 1, looking west (Datasheet OHWM_LVRAS-S1-EK4).

Photo 19. OHWM transect Segment 1, looking east/ upstream (Datasheet OHWM_LVRAS-S1-EK4).

Photo 20. Culvert in Segment 1.

Photo 21. OHWM transect Segment 1, looking east/ upstream (Datasheet OHWM_LVRAS-S1-EK3).

Photo 22. OHWM transect Segment 1, looking west (Datasheet OHWM_LVRAS-S1-EK3).

Photo 23. OHWM transect Segment 1, looking west/ downstream (Datasheet OHWM_LVRAS-S1-EK3).

Photo 24. OHWM transect Segment 1, looking west (Datasheet OHWM_LVRAS-S1-EK2).

Photo 25. OHWM transect Segment 1, looking east/ downstream (Datasheet OHWM_LVRAS-S1-EK2).

Photo 26. OHWM transect Segment 1, looking west/ upstream (Datasheet OHWM_LVRAS-S1-EK2).

Photo 27. Single thread channel in Segment 2, looking southwest.

Photo 28. Braided channel in Segment 2, looking north.

Photo 29. OHWM transect Segment 2, looking south/ downstream (Datasheet OHWM_LVRAS-S2-AG1).

Photo 30. OHWM transect Segment 2, looking north/ upstream (Datasheet OHWM_LVRAS-S2-AG1).

Photo 31. Rock and cobble bank Segment 2, looking south.

Photo 32. OHWM transect Segment 2, looking northwest/ upstream (Datasheet OHWM_LVRAS-S2-AG2).

Photo 33. OHWM transect Segment 2, looking southeast/ downstream (Datasheet OHWM_LVRAS-S2-AG2).

Photo 34. Photo of terrace above OHWM channel in Segment 2, looking west.

Photo 35. OHWM transect Segment 2, looking east (Datasheet OHWM_LVRAS-S2-EK-2).

Photo 36. OHWM transect Segment 2, looking southeast (Datasheet OHWM_LVRAS-S2-EK-2).

Photo 37. OHWM transect Segment 2, looking southeast/ downstream (Datasheet OHWM_LVRAS-S2-EK-2).

Photo 38. Single low flow channel with broad floodplain on margins in Segment 2, looking west

Photo 39. OHWM transect Segment 2, looking northwest/ upstream (Datasheet OHWM_LVRAS-S2-EK-1).

Photo 40. OHWM transect Segment 2, looking southeast/ downstream (Datasheet OHWM_LVRAS-S2-EK-1).

Photo 41. OHWM transect Segment 2, looking northeast (Datasheet OHWM_LVRAS-S2-EK-1).

Photo 42. OHWM transect on alluvial fan, Segment 2, looking west (Datasheet OHWM_LVRAS-S2-AG3).

Photo 43. channel and fanned area within alluvial fan in Segment 2, looking west.

Photo 44. Floodplain in Segment 2, looking north.

Photo 45. OHWM transect Segment 2, looking east (Datasheet OHWM_LVRAS-S2-AG5).

Photo 46. OHWM transect Segment 2 and compound channel, looking east/ upstream (Datasheet OHWM_LVRAS-S2-AG5).

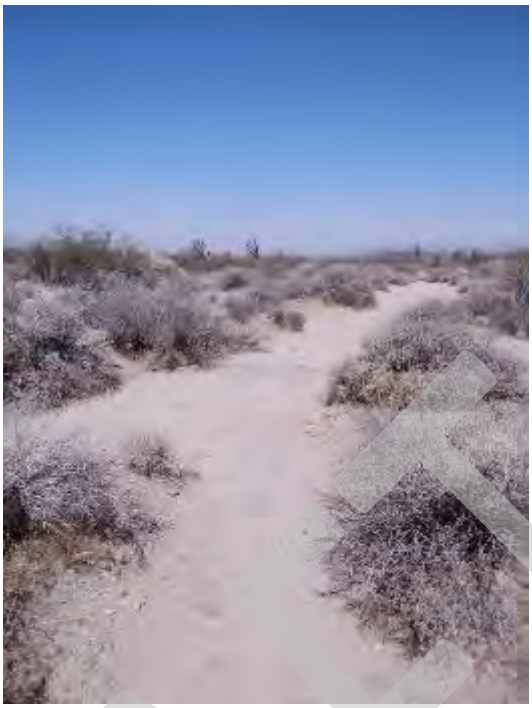


Photo 47. OHWM transect Segment 2, looking west/ downstream (Datasheet OHWM_LVRAS-S2-AG5).

Photo 48. OHWM transect Segment 2, looking south/ downstream (Datasheet OHWM_LVRAS _EK-0408).

Photo 49. OHWM transect Segment 2, looking north/ upstream (Datasheet OHWM_LVRAS _EK-0408).

Photo 50. OHWM transect Segment 2, looking west (Datasheet OHWM_LVRAS _EK-0408).

Photo 51. OHWM transect Segment 2, looking upstream (Datasheet OHWM_LVRAS-EK-06022021).

Photo 52. OHWM transect Segment 2, looking downstream (Datasheet OHWM_LVRAS-EK-06022021).

Photo 53. OHWM transect Segment 2 (Datasheet OHWM_LVRAS-EK-06022021).

Photo 54. OHWM transect Segment 2 (Datasheet OHWM_LVRAS-EK-06112021).

Photo 55. OHWM transect Segment 2, looking upstream (Datasheet OHWM_LVRAS-EK-06112021).

Photo 56. OHWM transect Segment 2, looking downstream (Datasheet OHWM_LVRAS-EK-06112021).

APPENDIX E

Data Forms

Data Forms for Segment 1: Gale to Pisgah

Project: LVRAS **Date:** 1 April 2021

Location: Section 1 - Playa 1 ATG **Investigator(s):** ATG

Project Description:

Installation of telecommunications all-dielectric self-supporting cable line from Gale substation to Pisgah substation along SCG distributional line ROW.

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

Highly disturbed playa on Allscale scrub. Distributed by powerline route route 66 to 5, RR, and manmade (ORU) road to the north and trash.

Off-site Information

Remotely sensed image(s) acquired? ☒ **Yes** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

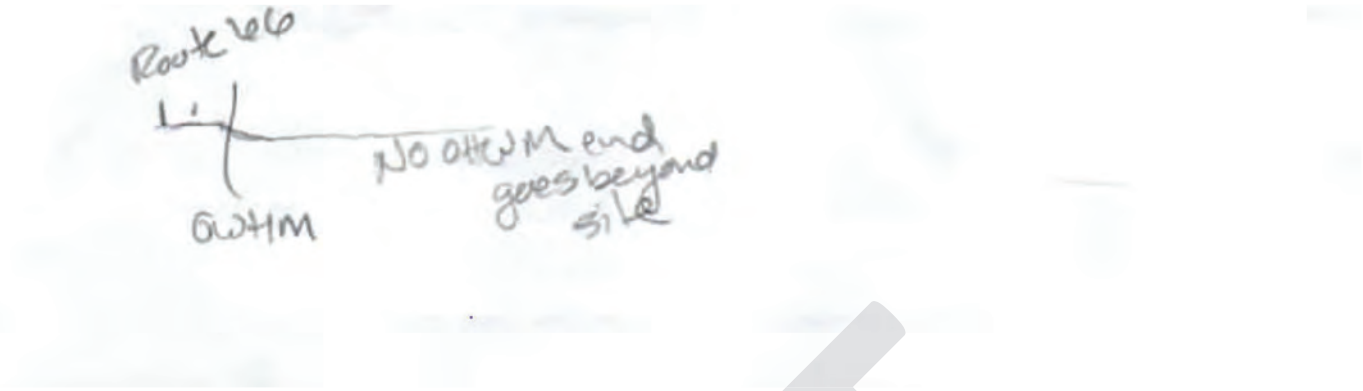
Aerial imagery

Hydrologic/hydraulic information acquired? ☐ **Yes** ☒ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

List and describe any other supporting information received/acquired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☐ Sharp (> 60°) | ☐ Moderate (30–60°) | ☐ Gentle (< 30°) | ☒ None

Notes/Description:

Flat playa.

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM			100			
Below OHWM	98		2			

Notes/Description:

Alkaline soils.

Above man-made gravel and pavement.

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM		50		50
Below OHWM		50		50

Notes/Description: Atriplex sp., Atriplex polycarpa, Atriplex confertifolia, and Suaeda nigra on gravel and road (bare ground).

Atriplexes are Atriplex polycarpa dominate mixed with Atriplex confertifolia and Suaeda nigra.

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

Cracked, dry soil.

OHWM Delineation Cover Sheet Page ____ of ____

Project: LVRAS **Date:** 1 April 2021

Location: Section 1 - Playa 3 ATG **Investigator(s):** ATG

Project Description:

Installation of telecommunications all-dielectric self-supporting cable line from Gale substation to Pisgah substation along SCG distributional line ROW.

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

Playa in suaeda/ community highly disturbed by route 66 to 5, a manmade ORV road to Nomal(?) utility line.

Off-site Information

Remotely sensed image(s) acquired? ☒ **Yes** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

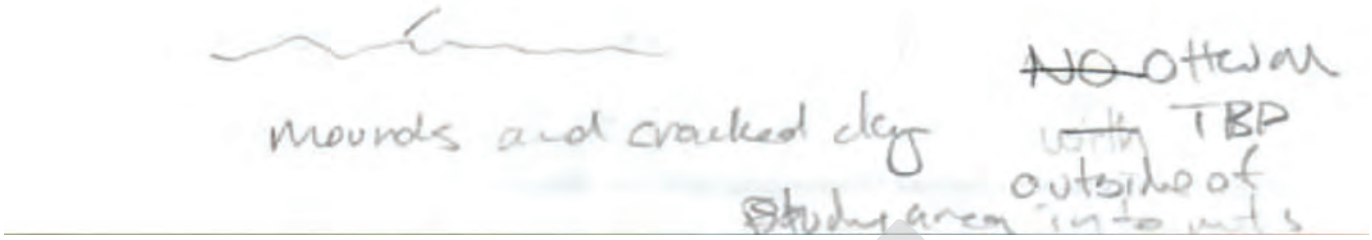
Aerial imagery

Hydrologic/hydraulic information acquired? ☐ **Yes** ☒ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

List and describe any other supporting information received/acquired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☐ Sharp (> 60°) | ☐ Moderate (30–60°) | ☐ Gentle (< 30°) | ☒ None

Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM						
Below OHWM	99		1			

Notes/Description:

Above unknown
Clay silt cracked dry soil

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM		30		70
Below OHWM		50		50

Notes/Description:

Above OHWM along the road berm the shrubs are 70% *Suaeda nigra*, *Atriplex polycarpa.*
Below shrub *Suaeda nigra* > 2%, *Atriplex polycarpa*, arthal

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

Cracked dry, driftlines, soft soils

OHWM Delineation Cover Sheet

Project: LVRAS **Date:** 3/25/2021

Location: LVRAS-S1-EK5 **Investigator(s):** Ed Kentner

Project Description:

Installation of telecommunications all-dielectric self-supporting cable line from Gale substation to Pisgah substation along SCG distributional line ROW.

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

The Stream is a medium sized wash that has been confined with berms constructed under an overpass for RTE-66. The sample point location is immediately downstream of the berm. The banks are down cut ~ 2 ft at the OHWM

Off-site Information

Remotely sensed image(s) acquired? ☑ **Yes** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

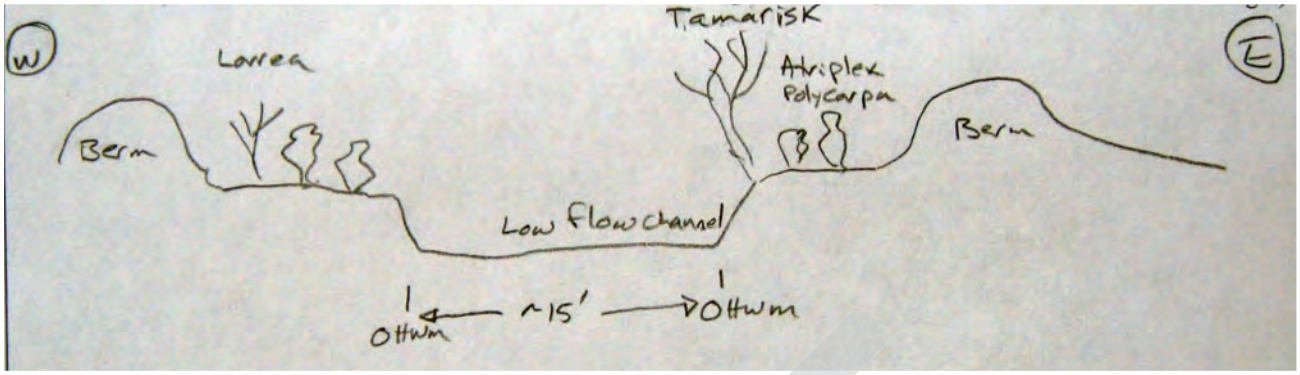
Aerial photos from various sources used (ESRI, Google, Apple Maps, etc.). Transect lines and point locations collected with a submeter GPS unit and plotted with ArcGIS Field Maps app on mobile device.

Hydrologic/hydraulic information acquired? ☑ **Yes** ☐ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

List and describe any other supporting information received/acquired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☑ Sharp (> 60°) | ☐ Moderate (30–60°) | ☐ Gentle (< 30°) | ☐ None

Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	2	93	4	1	0	
Below OHWM	50	47	3	0	0	

Notes/Description:

Deep channel with cut banks

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	1	7	5	87
Below OHWM	0	0	1	99

Notes/Description:

Atriplex polycarpa, Hymenoclea, Larrea above OHWM

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

OHWM indicators include:
Break in slope
ripples in sand

OHWM Delineation Cover Sheet

Project: LVRAS **Date:** 3/24/2021

Location: LVRAS-S1-EK1 **Investigator(s):** Ed Kentner

Project Description:

Installation of telecommunications all-dielectric self-supporting cable line from Gale substation to Pisgah substation along SCG distributional line ROW.

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

The stream course has been confined to the current channel by the construction of a levee on the west side. The levee directs the flow of water under bridges for RTE-66 and I-40.

Off-site Information

Remotely sensed image(s) acquired? ☑ **Yes** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

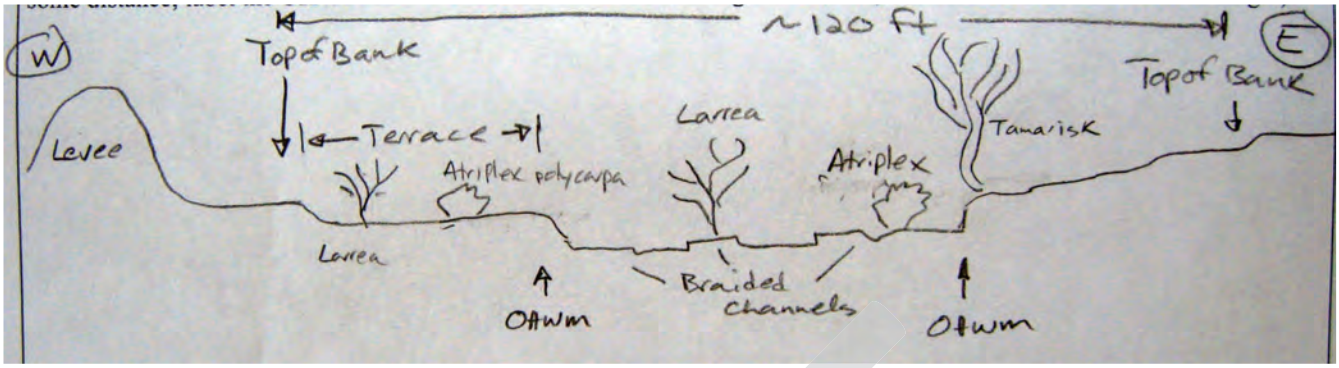
Aerial photos from various sources used (ESRI, Google, Apple Maps, etc.). Transect lines and point locations collected with a submeter GPS unit and plotted with ArcGIS Field Maps app on mobile device.

Hydrologic/hydraulic information acquired? ☑ **Yes** ☐ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

List and describe any other supporting information received/acquired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☑ Sharp (> 60°) | ☐ Moderate (30–60°) | ☐ Gentle (< 30°) | ☐ None

Notes/Description:

Break in slope is about 1.5 ft.

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	30	68	2	0	0	
Below OHWM	3	50	35	10	2	

Notes/Description:

Cobbles, boulders and gravel concentrated in low flow channels

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	<1	3	3	94
Below OHWM	0	4	1	95

Notes/Description:

Larrea and Atriplex scattered throughout. Herbs mostly Schismus

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

OHWM indicators include:
Change in particle size distribution
Break in slope
Wrack lines/litter

OHWM Delineation Cover Sheet

Project: LVRAS **Date:** 3/25/2021

Location: LVRAS-S1-EK4 **Investigator(s):** Ed Kentner

Project Description:

Installation of telecommunications all-dielectric self-supporting cable line from Gale substation to Pisgah substation along SCG distributional line ROW.

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

The stream runs parallel and adjacent to a gas line berm which directs the flow of water to the west. The channel is downcut about 2 ft. with near vertical sides.

Off-site Information

Remotely sensed image(s) acquired? ☑ **Yes** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

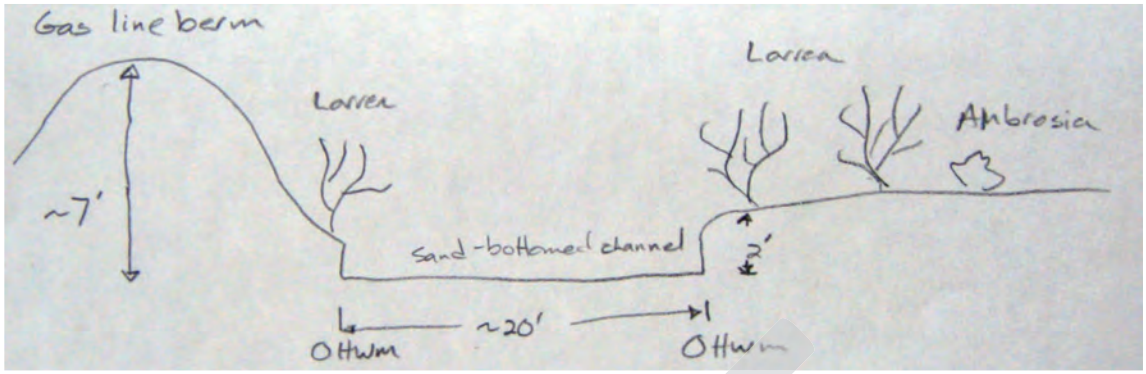
Aerial photos from various sources used (ESRI, Google, Apple Maps, etc.). Transect lines and point locations collected with a submeter GPS unit and plotted with ArcGIS Field Maps app on mobile device.

Hydrologic/hydraulic information acquired? ☑ **Yes** ☐ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

List and describe any other supporting information received/acquired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☑ Sharp (> 60°) | ☐ Moderate (30–60°) | ☐ Gentle (< 30°) | ☐ None

Notes/Description:

Cut bank at OHWM

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	0	37	60	2	1	
Below OHWM	0	94	5	1	0	

Notes/Description:

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	0	5	2	93
Below OHWM	0	0	0	100

Notes/Description:

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

OHWM indicators include
Break in slope
Change in particle size distribution
Ripples in sand

OHWM Delineation Cover Sheet

Project: LVRAS **Date:** 3/25/2021

Location: LVRAS-S1-EK3 **Investigator(s):** Ed Kentner

Project Description:

Installation of telecommunications all-dielectric self-supporting cable line from Gale substation to Pisgah substation along SCG distributional line ROW.

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

The stream is a unvegetated channel adjacent to the road berm of RTE66. The berm directs flows into the channel which lies within reletively undisturbed creosote bush scrub. The channel is sand and the substrate in the upland areas is sand, cobble, and gravel.

Off-site Information

Remotely sensed image(s) acquired? ☑ **Yes** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

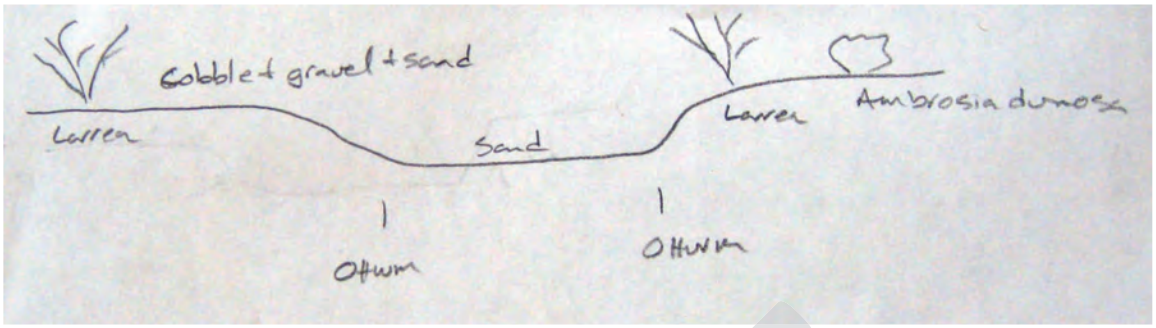
Aerial photos from various sources used (ESRI, Google, Apple Maps, etc.). Transect lines and point locations collected with a submeter GPS unit and plotted with ArcGIS Field Maps app on mobile device.

Hydrologic/hydraulic information acquired? ☑ **Yes** ☐ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

List and describe any other supporting information received/acquired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☐ Sharp (> 60°) | ☐ Moderate (30–60°) | ☑ Gentle (< 30°) | ☐ None

Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	0	60	32	8	<1	
Below OHWM	0	98	2	<1	0	

Notes/Description:

Strong break in particle size distribution at channel/ OHWM boundary

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	0	4	3	93
Below OHWM	0	0	0	100

Notes/Description:

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

OHWM indicators include
Break in slope
Change in particle size distribution
Ripples in sand

OHWM Delineation Cover Sheet

Project: LVRAS **Date:** 3/25/21

Location: LVRAS-S1-EK2 **Investigator(s):** EK

Project Description:

Installation of telecommunications all-dielectric self-supporting cable line from Gale substation to Pisgah substation along SCG distributional line ROW.

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

Small single thread channel in creosote bush scrub

Off-site Information

Remotely sensed image(s) acquired? ☑ **Yes** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

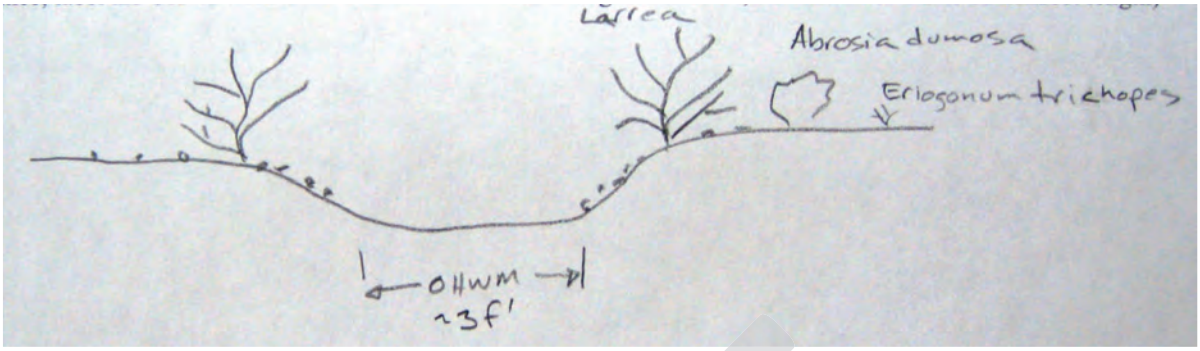
Aerial photos from various sources used (ESRI, Google, Apple Maps, etc.). Transect lines and point locations collected with a submeter GPS unit and plotted with ArcGIS Field Maps app on mobile device.

Hydrologic/hydraulic information acquired? ☑ **Yes** ☐ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

List and describe any other supporting information received/acquired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☐ Sharp (> 60°) | ☐ Moderate (30–60°) | ☑ Gentle (< 30°) | ☐ None

Notes/Description:

Channel bottom is unvegetated sand

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	0	49	40	10	1	
Below OHWM	0	99	1	0	0	

Notes/Description:

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	0	5	2	93
Below OHWM	0	0	0	100

Notes/Description:

Upland vegetation is Larrea tridentata Alliance, very few Ambrosia present

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

OHWM indicators include:
Change in particle size distribution
Ripples in sand

Data Forms for Segment 2: Pisgah to Nipton

Project: LVRAS Section 2 **Date:** 3-18-2021

Location: Section 2 M70-T1
LVRAS OHWM AG1 **Investigator(s):** ATG, KG

Project Description:

Installation of telecommunications all-dielectric, self-supporting cable-line from Pisgah substation to Nipton substation along SCE distribution right-of-way.

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

Alluvial fans that emerge from upland areas disturbed by power-line towers and access road.

Off-site Information

Remotely sensed image(s) acquired? ☒ **Yes** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

Aerial imagery

Hydrologic/hydraulic information acquired? ☐ **Yes** ☒ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

List and describe any other supporting information received/acquired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)

Break in Slope at OHWM: ☐ Sharp (> 60°) | ☐ Moderate (30–60°) | ☒ Gentle (< 30°) | ☐ None

Notes/Description:

Gently breaking slope from upland to channel.

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM		88	10		2	
Below OHWM	2	10	88			

Notes/Description:

Above: A few boulders in open sandy areas between upland vegetation. Gravel is intermittent.
Below: Main channel dominated by sand with upper areas of alluvial fans mostly gravel.

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM		50	25	25
Below OHWM		25	25	50

Notes/Description:

Above: *Larrea tridentata* shrubs dominant in upland with *Ambrosia dumosa* and *Schismus* in under-story. Under: Channels lined with *Schismus sp.*, *Larrea tridentata* and *Ambrosia dumosa* found intermittently.

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

Channel bank erosion, local bed scour, shifting of runoff obvious among existing channels due to vegetation barriers. Sheet flow from fan-shaped channels.

Project: LVRAS **Date:** 3-18-2021

Location: Section 2 OHWM AG2 **Investigator(s):** ATG, KG

Project Description:

Installation of telecommunications all-dielectric, self-supporting cable-line from Pisgah substation to Nipton substation along SCE distribution right-of-way.

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

Compound channel with side channels. Disturbed moderately by electrical tower and access roads.

Off-site Information

Remotely sensed image(s) acquired? ☒ **Yes** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

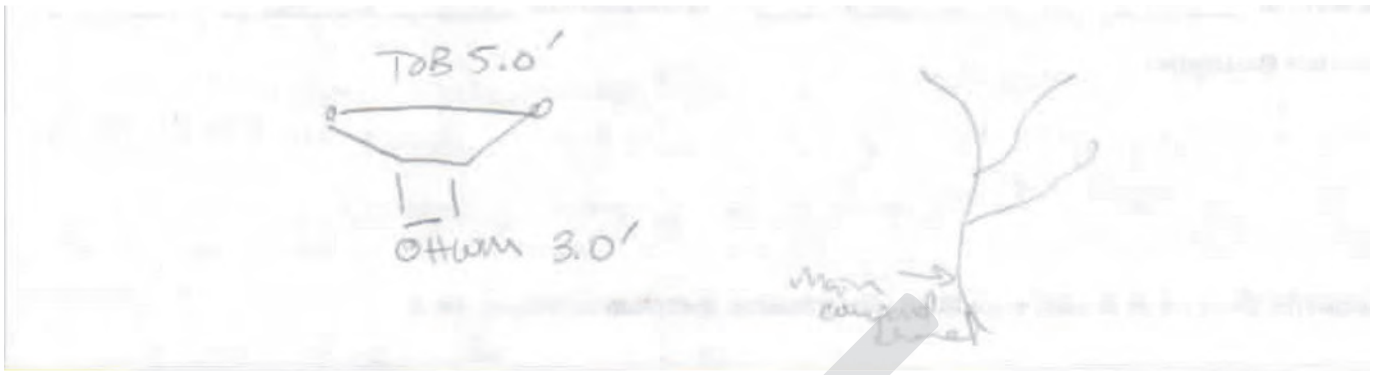
Aerial imagery

Hydrologic/hydraulic information acquired? ☐ **Yes** ☒ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

List and describe any other supporting information received/acquired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☐ Sharp (> 60°) | ☒ Moderate (30–60°) | ☐ Gentle (< 30°) | ☐ None

Notes/Description:

About 45 degree cut in bank, moderate slope on south side and more gentle on north side.

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM		2	8	85	5	
Below OHWM	2	2	85	10	1	

Notes/Description:

Below: Some large boulders in drainage with gravel in the main channel and sand on the edges.
Above: Cobble lined slopes with intermittent boulders and bare sandy patches.

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM		45	30	25
Below OHWM			5	95

Notes/Description:

Below: *Schimus sp.*, *Lepidium* sp., and *Chaenactis* sp. in and along drainage.
Above: Upland vegetation dominated by *Larrea tridentata*, *Ambrosia dumosa*, and *Ericameria paniculata*.

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

Clear cut in channel with obvious OHWM from sediment sorting.

Project: LVRAS **Date:** 3/19/21

Location: LVRAS-EK-2 **Investigator(s):** Ed Kentner

Project Description:

Installation of telecommunications all-dielectric self-supporting cable line from Gale substation to Pisgah substation along SCG distributional line ROW.

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

The stream is a broad watercourse with a single low flow channel containing the OHWM. A broad terrace occurs on the south side of the channel and a narrow terrace on the north side. Well defined banks 8-10 ft. high occur outside of the terraces. There is little to no disturbance to the watercourse.

Off-site Information

Remotely sensed image(s) acquired? ☑ **Yes** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

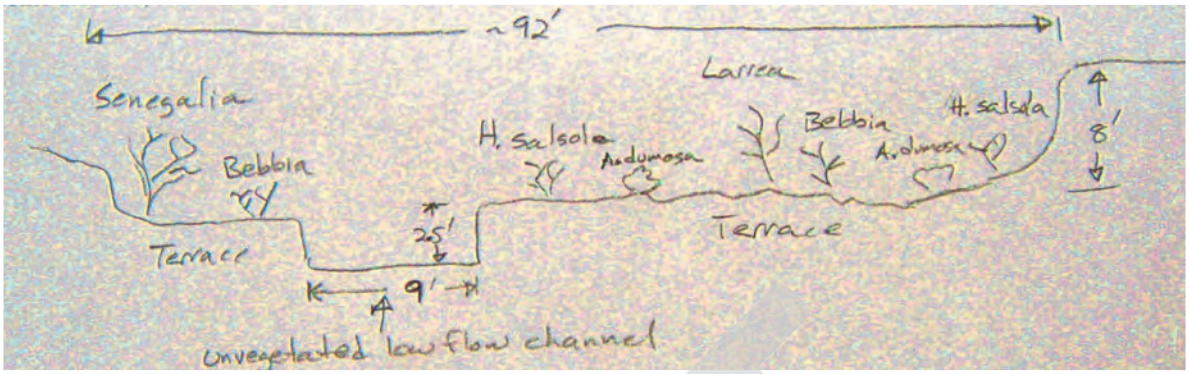
Aerial photos from various sources used (ESRI, Google, Apple Maps, etc.). Transect lines and point locations collected with a submeter GPS unit and plotted with ArcGIS Field Maps app on mobile device.

Hydrologic/hydraulic information acquired? ☑ **Yes** ☐ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

List and describe any other supporting information received/acquired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☑ Sharp (> 60°) | ☐ Moderate (30–60°) | ☐ Gentle (< 30°) | ☐ None

Notes/Description:

Cut bank about 2.5 ft. high

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	0	50	35	15	0	
Below OHWM	0	93	6	1	0	

Notes/Description:

Channels in terrace appear inactive with no indicators of recent flow.

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	1	6	2	92
Below OHWM	0	0	0	100

Notes/Description:

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

OHWM indicators include:
Break in bank slope
Surface relief
Change in particle size distribution

Project: So Cal Gas Line 235E **Date:** 3/18/21

Location: LVRAS-EK-1 **Investigator(s):** Ed Kentner

Project Description:

Installation of telecommunications all-dielectric self-supporting cable line from Gale substation to Pisgah substation along SCG distributional line ROW.

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

Deeply incised single thread channel on alluvium. The channel is disturbed upstream by the tower access road.

Off-site Information

Remotely sensed image(s) acquired? ☑ **Yes** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

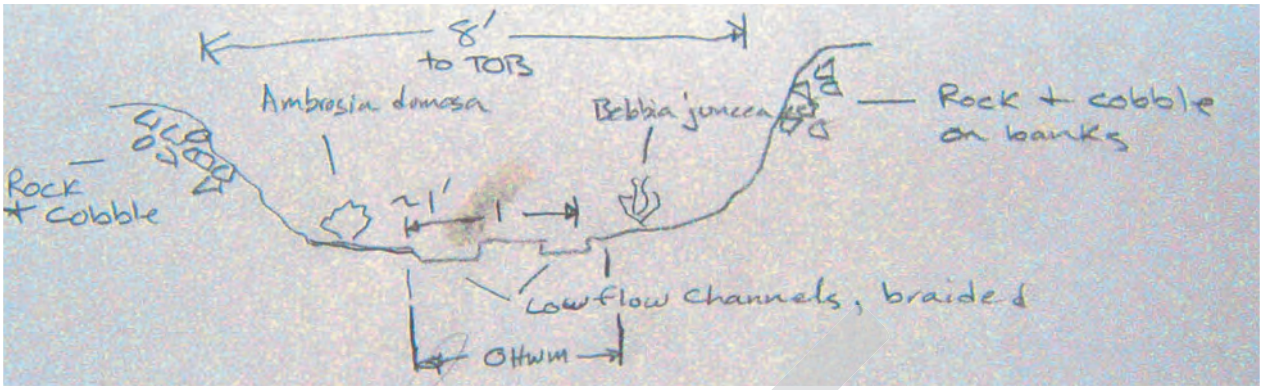
Aerial photos from various sources used (ESRI, Google, Apple Maps, etc.). Transect lines and point locations collected with a submeter GPS unit and plotted with ArcGIS Field Maps app on mobile device.

Hydrologic/hydraulic information acquired? ☑ **Yes** ☐ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

List and describe any other supporting information received/acquired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☐ Sharp (> 60°) | ☐ Moderate (30–60°) | ☑ Gentle (< 30°) | ☐ None

Notes/Description:

Break in slope gentle at OHWM, but quickly steepens

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	0	20	30	50	0	
Below OHWM	0	83	15	2	0	

Notes/Description:

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	0	3	5	92
Below OHWM	0	5	1	94

Notes/Description:

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

OHWM indicators include:
Change in particle size distribution
Break in slope

Project: LVRAS Section 2 **Date:** 3-18-2021

Location: OHWM - AG3 (M76-T5) **Investigator(s):** ATG

Project Description:

Installation of telecommunications all-dielectric self-supporting cable line from Gale substation to Pisgah substation along SCG distributional line ROW.

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

Alluvial fans that emerge from upland mountain areas disturbed by powerline towers and access roads.

Off-site Information

Remotely sensed image(s) acquired? ☒ **Yes** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

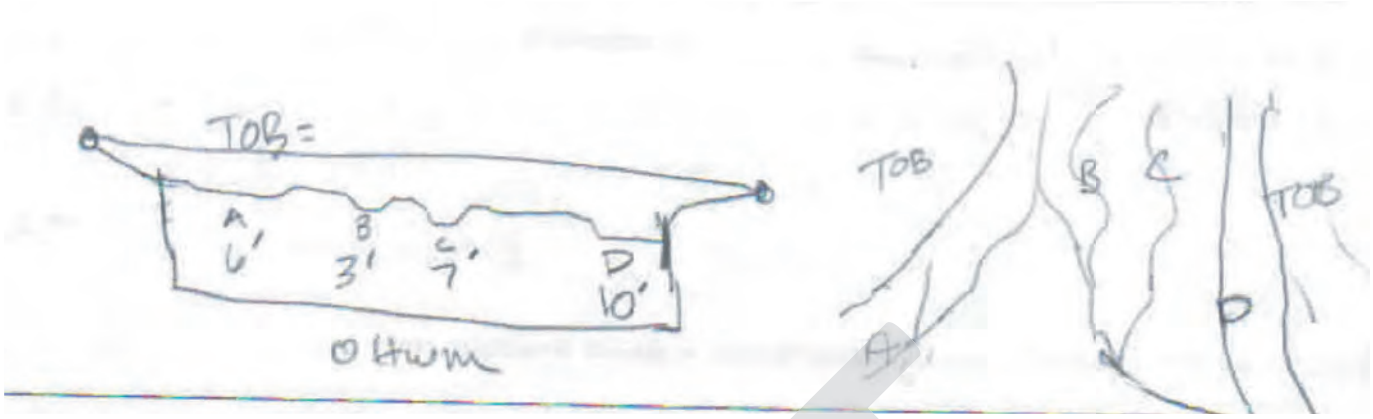
Aerial imagery

Hydrologic/hydraulic information acquired? ☐ **Yes** ☒ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

List and describe any other supporting information received/acquired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☐ Sharp (> 60°) | ☐ Moderate (30–60°) | ☒ Gentle (< 30°) | ☐ None

Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM			40	40	20	
Below OHWM		85	10	5		

Notes/Description:

Above OHWM boulders, cobbles, mound around shrubs
Gravel found around herbaceous plants
Large boulders create bare areas

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM		70	20	10
Below OHWM		10	10	80

Notes/Description:

Vegetation is lands below OHWM diverting channels by lartri and ambdum shurbs. Boulders and gravel create bare areas.
Upland veg: *Larrea tridentata*, *Ambrosia dumosa*, *Cylindropuntia ramosissima*, *Yucca schidigera*

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

Local bed scour, shifting of runoff obvious due to vegetation, sheet flow, fanned widely-sloped channels.
Channel bank erosion.
Sediment dams.

Project: LVRAS AG-5 **Date:** 4-13-2021

Location: Section 2 **Investigator(s):** ATG

Project Description:

Installation of telecommunications all-dielectric, self-supporting cable-line from Pisgah substation to Nipton substation along SCE distribution right-of-way.

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

Compound channel with a single channel threading into it. Disturbed by electrical tower and access road.

Off-site Information

Remotely sensed image(s) acquired? ☒ **Yes** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

Aerial imagrey

Hydrologic/hydraulic information acquired? ☐ **Yes** ☒ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

List and describe any other supporting information received/acquired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)

Break in Slope at OHWM: ☐ Sharp (> 60°) | ☐ Moderate (30–60°) | ☒ Gentle (< 30°) | ☐ None

Notes/Description:

Gently sloping on both north and south sided approximately 20 degrees.

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM		55	40	3	2	N
Below OHWM		75	20	4	1	Y

Notes/Description:

Intermittent boulders in upland with open areas of sand and gravel between shrubs.
Occasional boulders in stream bed dominated by sand.

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	1	79	10	20
Below OHWM	1			99

Notes/Description:

Above: Joshua tree woodland with some *Yucca schidigera*, *Larrea tridentata*, and *Lycium* sp. as co-dominants.
Schimus sp. and *Erodium* sp. on edges of OHWM.

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

Clearly defined bed and bank with shelving in north and south sides of banks.

Project: LVRAS **Date:** 4/8/21

Location: LVRAS-EK-0408 **Investigator(s):** Ed Kentner

Project Description:

Installation of telecommunications all-dielectric self-supporting cable line from Gale substation to Pisgah substation along SCG distributional line ROW.

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

Small ephemeral stream channel in undisturbed Joshua Tree woodland

Off-site Information

Remotely sensed image(s) acquired? ☑ **Yes** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

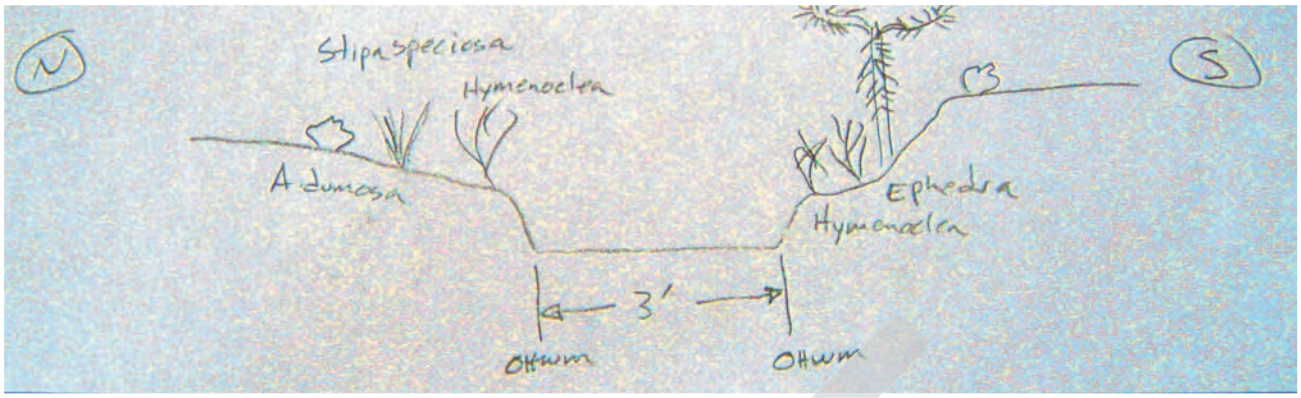
Aerial photos from various sources used (ESRI, Google, Apple Maps, etc.). Transect lines and point locations collected with a submeter GPS unit and plotted with ArcGIS Field Maps app on mobile device.

Hydrologic/hydraulic information acquired? ☑ **Yes** ☐ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

List and describe any other supporting information received/acquired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☑ Sharp (> 60°) | ☐ Moderate (30–60°) | ☐ Gentle (< 30°) | ☐ None

Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	0	30	70	0	0	
Below OHWM	0	80	20	0	0	

Notes/Description:

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	1	7	0	93
Below OHWM	0	0	0	100

Notes/Description:

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

Change in particle size distribution
Cut bank

Project: LVRAS **Date:** 06/02/2021

Location: LVRAS_EK06022021 **Investigator(s):** EK

Project Description:

Installation of telecommunications all-dielectric self-supporting cable line from Gale substation to Pisgah substation along SCG distributional line ROW.

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

A series of minimally disturbed small single-thread channels in creosote bush scrub.

Off-site Information

Remotely sensed image(s) acquired? ☑ **Yes** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

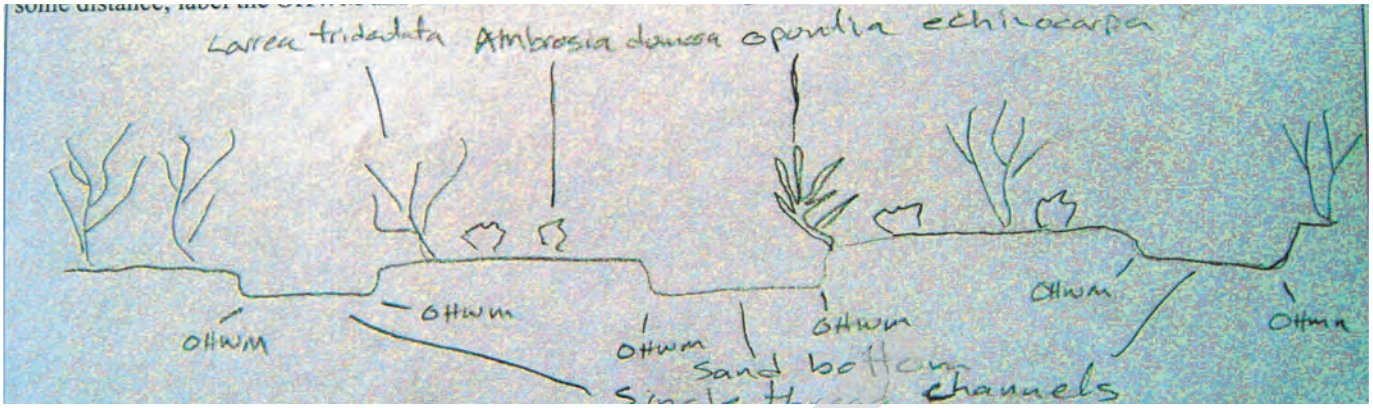
Aerial photos from various sources used (ESRI, Google, Apple Maps, etc.). Transect lines and point locations collected with a submeter GPS unit and plotted with ArcGIS Field Maps app on mobile device.

Hydrologic/hydraulic information acquired? ☑ **Yes** ☐ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

List and describe any other supporting information received/acquired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☑ Sharp (> 60°) | ☐ Moderate (30–60°) | ☐ Gentle (< 30°) | ☐ None

Notes/Description:

Sharp break at OHWM is about 4 inches high

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	0	54	45	1	0	N/A
Below OHWM	0	80	20	0	0	N/A

Notes/Description:

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	0	7	5	88
Below OHWM	0	0	0	100

Notes/Description:

Herb cover is an estimate due to late season survey and very dry conditions

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

Change in particle size distribution
Change in vegetation cover

Project: LVRAS **Date:** 06/11/2021

Location: LVRAS_EK06112021 **Investigator(s):** EK

Project Description:

Installation of telecommunications all-dielectric self-supporting cable line from Gale substation to Pisgah substation along SCG distributional line ROW.

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

A small minimally disturbed single-thread channel in Joshua tree woodland

Off-site Information

Remotely sensed image(s) acquired? ☑ **Yes** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

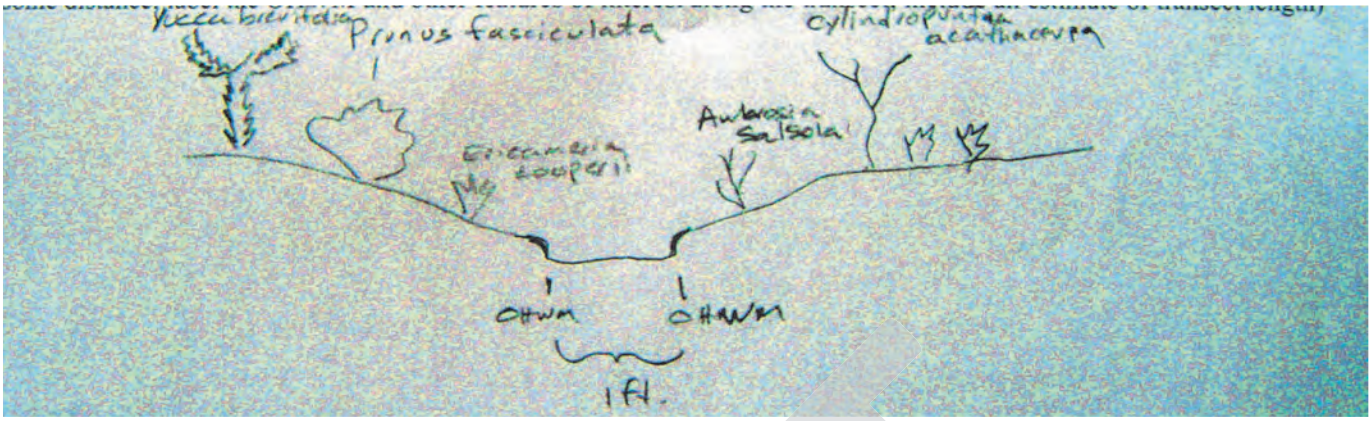
Aerial photos from various sources used (ESRI, Google, Apple Maps, etc.). Transect lines and point locations collected with a submeter GPS unit and plotted with ArcGIS Field Maps app on mobile device.

Hydrologic/hydraulic information acquired? ☑ **Yes** ☐ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

List and describe any other supporting information received/acquired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☐ Sharp (> 60°) | ☑ Moderate (30–60°) | ☐ Gentle (< 30°) | ☐ None

Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	0	10	90	<1	0	N/A
Below OHWM	0	20	80	<1	0	N/A

Notes/Description:

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	2	7	2	89
Below OHWM	0	0	0	100

Notes/Description:

"Trees" are Joshua trees. Channel bottom is unvegetated

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

Change in sediment texture
Break in slope
Change in vegetation cover

APPENDIX F

USACE 2020 Verification and NWP

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT
915 WILSHIRE BOULEVARD, SUITE 930
LOS ANGELES, CALIFORNIA 90017

August 27, 2020

SUBJECT: Nationwide Permit (NWP) Verification

Hazem Gabr
Southern California Edison
2244 Walnut Grove Avenue
Rosemead, California 91770

Dear Mr. Gabr:

I am responding to your request (SPL-2020-00130-VN) for a Department of the Army permit for your proposed project, Lugo-Victorville 500kV Transmission Line Remedial Action Scheme Project. The proposed project consists of two segments and is located in San Bernardino County, California and Clark County, Nevada. Segment 1 begins at SCE's Gale substation (34.858435, -116.866544) and continues for 29 miles to Pisgah substation (lat/lon: 34.781706, -116.384702). Segment 2 begins at Pisgah substation and continues for 84 miles to transmission tower M152-T2 (lat/lon: 35.485003, -115.188334).

Because this project would result in a discharge of fill material into waters of the U.S., a Department of the Army permit is required pursuant to Section 404 of the Clean Water Act (33 USC 1344; 33 CFR parts 323 and 330).

I have determined construction of your proposed project, if constructed as described in your application, would comply with NWP 18 – *Minor Discharges*. Specifically, and as shown in the enclosed figures, you are authorized to temporarily impact 0.24 acre (14 crossings) of non-wetland waters of the U.S. for: site access, existing access road maintenance, telecommunications infrastructure construction, installation of optical ground wire, conductor stringing, guard structure installation/removal, overhead clearance improvements, and fiber optic repeater installation;

For this NWP verification letter to be valid, you must comply with all of the terms and conditions in Enclosure 1. Furthermore, you must comply with the non-discretionary Special Conditions listed below:

1. This permit is contingent upon the issuance of a Section 401 Water Quality Certification (WQC) from the Regional Water Quality Control Board (RWQCB). The permittee shall abide by the terms and conditions of the Clean Water Act Section 401 WQC. The permittee shall submit the Section 401 WQC to the Corps Regulatory Division (preferably via email) within two weeks of receipt from the issuing state agency. The permittee shall not proceed with construction until receiving an email or other written

notification from Corps Regulatory Division acknowledging the Clean Water Act 401 WQC has been received, reviewed, and determined to be acceptable. If the RWQCB fails to act on a request for certification within 60 days after receipt of a complete application, please notify the Corps so we may consider whether a waiver of water quality certification is warranted pursuant to 33 CFR 325.2(b)(1)(ii).

2. This Corps permit does not authorize you to take any threatened or endangered species, in particular the desert tortoise (*Gopherus agassizii*) or adversely modify its designated critical habitat. In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (ESA) (e.g. ESA Section 10 permit, or a Biological Opinion (BO) under ESA Section 7, with "incidental take" provisions with which you must comply). The enclosed FWS BOs (File No: 08ENVS00-2019-F-0153; FWS-KRN/SBD/INY/LA/IMP/RIV-17B0532-17F1029; FWS-SB-190068-19F0391) contain mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that is also specified in the BOs. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the attached BOs, the terms and conditions of which are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BOs, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit. The FWS and BLM are the appropriate authority to determine compliance with the terms and conditions of these BOs and with the ESA.

3. Pursuant to 36 C.F.R. section 800.13, in the event of any discoveries during construction of either human remains, archeological deposits, or any other type of historic property, the permittee shall notify the Corps' Archeology Staff within 24 hours (Daniel Grijalva at 760-602-4838) and the Regulatory Project Manager (Vanessa Navarro at 213-452-3420). The permittee shall immediately suspend all work in any area(s) where potential cultural resources are discovered. The permittee shall not resume construction in the area surrounding the potential cultural resources until the Corps Regulatory Division re-authorizes project construction, per 36 C.F.R. section 800.13.

4. No later than one month following completion of authorized work in waters of the U.S., the permittee shall ensure all sites within waters of the U.S. subject to authorized, temporary impacts are restored to pre-project alignments, elevation contours, and conditions to the maximum extent practicable to ensure expeditious resumption of aquatic resource functions. No later than 45 calendar days following completion of authorized work in waters of the U.S., the permittee shall submit a memorandum documenting compliance with this special condition.

5. Within 45 calendar days of completion of authorized work in waters of the U.S., the permittee shall submit to the Corps Regulatory Division a post-project implementation memorandum including the following information:
    a. Date(s) work within waters of the U.S. was initiated and completed;
    b. Summary of compliance status with each special condition of this permit (including any noncompliance that previously occurred or is currently occurring and corrective actions taken or proposed to achieve compliance);
    c. Color photographs (including map of photopoints) taken at the project site before and after construction for those aspects directly associated with permanent impacts to waters of the U.S. such that the extent of authorized fills can be verified;
    d. One copy of "as built" drawings for the entire project. Electronic submittal (Adobe PDF format) is preferred. All sheets must be signed, dated, and to-scale. If submitting paper copies, sheets must be no larger than 11 x 17 inches; and
    e. Signed Certification of Compliance (attached as part of this permit package).

This verification is valid through **March 18, 2022.** If on March 18, 2022 you have commenced or are under contract to commence the permitted activity you will have an additional twelve (12) months to complete the activity under the present NWP terms and conditions. However, if I discover noncompliance or unauthorized activities associated with the permitted activity I may request the use of discretionary authority in accordance with procedures in 33 CFR part 330.4(e) and 33 CFR part 330.5(c) or (d) to modify, suspend, or revoke this specific verification at an earlier date. Additionally, at the national level the Chief of Engineers, any time prior to March 18, 2022, may choose to modify, suspend, or revoke the nationwide use of a NWP after following procedures set forth in 33 CFR part 330.5. It is incumbent upon you to comply with all of the terms and conditions of this NWP verification and to remain informed of any change to the NWPs.

A NWP does not grant any property rights or exclusive privileges. Additionally, it does not authorize any injury to the property, rights of others, nor does it authorize interference with any existing or proposed Federal project. Furthermore, it does not obviate the need to obtain other Federal, state, or local authorizations required by law.

Thank you for participating in the Regulatory Program. If you have any questions, please contact Vanessa Navarro at (213) 452-3420 or via email at Vanessa.Navarro@usace.army.mil. Please help me to evaluate and improve the regulatory experience for others by completing the customer survey form at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey.

Sincerely,

Aaron O. Allen, Ph.D.
Chief, North Coast Branch
Regulatory Division

Enclosures

LOS ANGELES DISTRICT
U.S. ARMY CORPS OF ENGINEERS

CERTIFICATE OF COMPLIANCE WITH DEPARTMENT OF THE ARMY NATIONWIDE PERMIT

Permit Number: *SPL-2020-00130-VN*

Name of Permittee: *Hazem Gabr, Southern California Edison*

Date of Issuance: *August 27, 2020*

Upon completion of the activity authorized by this permit and the mitigation required by this permit, sign this certificate, and return it by **ONE** of the following methods:

1) Email a digital scan of the signed certificate to
Vanessa.Navarro@usace.army.mil

OR

2) Mail the signed certificate to
U.S. Army Corps of Engineers
ATTN: Regulatory Division SPL-2020-00130-VN
915 Wilshire Boulevard, Suite 930
Los Angeles, California 90017

I hereby certify that the authorized work and any required compensatory mitigation has been completed in accordance with the NWP authorization, including all general, regional, or activity-specific conditions. Furthermore, if credits from a mitigation bank or in-lieu fee program were used to satisfy compensatory mitigation requirements I have attached the documentation required by 33 CFR 332.3(l)(3) to confirm that the appropriate number and resource type of credits have been secured.

_____ _____

Signature of Permittee Date

LOS ANGELES DISTRICT
U.S. ARMY CORPS OF ENGINEERS

COMPLIANCE DELIVERABLES CHECKLIST FOR DEPARTMENT OF ARMY PERMIT

Permit Number: *SPL-2020-00130-VN*

Name of Permittee: *Hazem Gabr, Southern California Edison (SCE)*

Date of Issuance: *August 27, 2020*

Please submit this checklist along with all required compliance deliverables (listed in the table below) to the Corps via email to splreglasb@usace.army.mil and to the Regulatory Project Manager via email to Vanessa.Navarro@usace.army.mil. Upon receipt, the Corps will review proffered deliverables for sufficiency and, if approved, return an electronically-signed/dated copy of this checklist to you. The Corps Project Manager will provide e-signature upon receipt/approval of each compliance deliverable and will return the signed checklist to the applicant/agent in a progressive manner.

Condition #	Compliance deliverable	Corps approval
Special Condition #1	Section 401 WQC from the Regional Water Quality Control Board	
Special Condition #5	Post-project Implementation Memorandum	
General Condition #30	Certificate of Compliance with Department of the Army Nationwide Permit	

Upon receipt and approval of all items listed in the table above, the Corps will consider you in full compliance with compliance deliverable requirements in your permit authorization. Note, however, that any ongoing reporting obligations associated with the permit may remain unaffected by this compliance deliverables determination.

Nationwide Permit (NWP) 18 – *Minor Discharges*

Minor discharges of dredged or fill material into all waters of the United States, provided the activity meets all of the following criteria:

a) The quantity of discharged material and the volume of area excavated do not exceed 25 cubic yards below the plane of the ordinary high water mark or the high tide line;
b) The discharge will not cause the loss of more than 1/10-acre of waters of the United States; and
c) The discharge is not placed for the purpose of a stream diversion.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if: (1) the discharge or the volume of area excavated exceeds 10 cubic yards below the plane of the ordinary high water mark or the high tide line, or (2) the discharge is in a special aquatic site, including wetlands. (See general condition 32.) (Authorities: Sections 10 and 404)

Enclosure 1: GENERAL CONDITIONS
The following general conditions must be followed in order for any authorization by an NWP to be valid:

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers. (a) No NWP activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status.

(b) If a proposed NWP activity will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the permittee must submit a pre-construction notification (see general condition 32). The district engineer will coordinate the PCN with the Federal agency with direct management responsibility for that river. The permittee shall not begin the NWP activity until notified by the district engineer that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status.

(c) Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: http://www.rivers.gov/.

17. Tribal Rights. No NWP activity may cause more than minimal adverse effects on tribal rights (including treaty rights), protected tribal resources, or tribal lands.

18. Endangered Species. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless ESA section 7 consultation addressing the effects of the proposed activity has been completed. Direct effects are the immediate effects on listed species and critical habitat caused by the NWP activity. Indirect effects are those effects on listed species and critical habitat that are caused by the NWP activity and are later in time, but still are reasonably certain to occur.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. If pre-construction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed activity or that utilize the designated critical habitat that might be affected by the proposed activity. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activity will have "no effect" on listed species or critical habitat, or until ESA section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific permit conditions to the NWPs.

(e) Authorization of an activity by an NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the FWS or the NMFS, the Endangered Species

Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word “harm” in the definition of “take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) If the non-federal permittee has a valid ESA section 10(a)(1)(B) incidental take permit with an approved Habitat Conservation Plan for a project or a group of projects that includes the proposed NWP activity, the non-federal applicant should provide a copy of that ESA section 10(a)(1)(B) permit with the PCN required by paragraph (c) of this general condition. The district engineer will coordinate with the agency that issued the ESA section 10(a)(1)(B) permit to determine whether the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation conducted for the ESA section 10(a)(1)(B) permit. If that coordination results in concurrence from the agency that the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation for the ESA section 10(a)(1)(B) permit, the district engineer does not need to conduct a separate ESA section 7 consultation for the proposed NWP activity. The district engineer will notify the non-federal applicant within 45 days of receipt of a complete pre-construction notification whether the ESA section 10(a)(1)(B) permit covers the proposed NWP activity or whether additional ESA section 7 consultation is required.

(g) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the FWS and NMFS or their world wide web pages at http://www.fws.gov/ or http://www.fws.gov/ipac and http://www.nmfs.noaa.gov/pr/species/esa/ respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for ensuring their action complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting appropriate local office of the U.S. Fish and Wildlife Service to determine applicable measures to reduce impacts to migratory birds or eagles, including whether “incidental take” permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

20. Historic Properties. (a) In cases where the district engineer determines that the activity may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of section 106 of the National Historic Preservation Act. If pre-construction notification is required for the proposed NWP activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including

previously unidentified properties. For such activities, the pre-construction notification must state which historic properties might have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause effects on the historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the district engineer determines that the activity has the potential to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect determinations for the purposes of section 106 of the NHPA: no historic properties affected, no adverse effect, or adverse effect. Where the non-Federal applicant has identified historic properties on which the activity might have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects to historic properties or that NHPA section 106 consultation has been completed.

(d) For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to

determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, 38, and 54, notification is required in accordance with general condition 32, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation to ensure that the activity results in no more than minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation, since streams are difficult-to-replace resources (see 33 CFR 332.3(e)(3)).

(e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g.,

conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. Restored riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or maintaining/protecting a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of minimization or compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(f) Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in no more than minimal adverse environmental effects. For the NWPs, the preferred mechanism for providing compensatory mitigation is mitigation bank credits or in-lieu fee program credits (see 33 CFR 332.3(b)(2) and (3)). However, if an appropriate number and type of mitigation bank or in-lieu credits are not available at the time the PCN is submitted to the district engineer, the district engineer may approve the use of permittee-responsible mitigation.

(2) The amount of compensatory mitigation required by the district engineer must be sufficient to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see 33 CFR 330.1(e)(3)). (See also 33 CFR 332.3(f)).

(3) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, aquatic resource restoration should be the first compensatory mitigation option considered for permittee-responsible mitigation.

(4) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) through (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).

(5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.

(6) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be

addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan (see 33 CFR 332.4(c)(1)(ii)).

(g) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any NWP activity resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that an NWP activity already meeting the established acreage limits also satisfies the no more than minimal impact requirement for the NWPs.

(h) Permittees may propose the use of mitigation banks, in-lieu fee programs, or permittee-responsible mitigation. When developing a compensatory mitigation proposal, the permittee must consider appropriate and practicable options consistent with the framework at 33 CFR 332.3(b). For activities resulting in the loss of marine or estuarine resources, permittee-responsible mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(i) Where certain functions and services of waters of the United States are permanently adversely affected by a regulated activity, such as discharges of dredged or fill material into waters of the United States that will convert a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse environmental effects of the activity to the no more than minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions

added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

"When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

_____
(Transferee)

_____
(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized activity was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the activity and mitigation.

The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

31. Activities Affecting Structures or Works Built by the United States. If an NWP activity also requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally authorized Civil Works project (a "USACE project"), the prospective permittee must submit a pre-construction notification. See paragraph (b)(10) of general condition 32. An activity that requires section 408 permission is not authorized by NWP until the appropriate Corps office issues the section 408 permission to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

32. Pre-Construction Notification. (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or are in the vicinity of the activity, or to notify the Corps pursuant to general condition 20 that the activity might have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed activity;

(3) Identify the specific NWP or NWP(s) the prospective permittee wants to use to authorize the proposed activity;

(4) A description of the proposed activity; the activity's purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or other mitigation measures. For single and complete linear projects, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other waters. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the activity and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(5) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(6) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(7) For non-Federal permittees, if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed activity or utilize the designated critical habitat that might be affected by the proposed activity. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with the Endangered Species Act;

(8) For non-Federal permittees, if the NWP activity might have the potential to cause effects to a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, the PCN must state which historic property might have the potential to be affected by the proposed activity or include a vicinity map indicating the location of the historic property. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with section 106 of the National Historic Preservation Act;

(9) For an activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the PCN must identify the Wild and Scenic River or the "study river" (see general condition 16); and

(10) For an activity that requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a written request for section 408 permission from the Corps office having jurisdiction over that USACE project.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is an NWP PCN and must include all of the applicable information required in paragraphs (b)(1) through (10) of this general condition. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and supporting materials if the district engineer has established tools and procedures for electronic submittals.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the activity's adverse environmental effects so that they are no more than minimal.

(2) Agency coordination is required for: (i) all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States; (ii) NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of stream bed; (iii) NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and (iv) NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line in tidal waters or the ordinary high water mark in the Great Lakes.

(3) When agency coordination is required, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (FWS, state natural resource or water quality agency, EPA, and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to notify the district engineer via telephone, facsimile transmission, or e-mail that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse environmental effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for

mitigation to ensure the net adverse environmental effects of the proposed activity are no more than minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(4) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(5) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

3. Regional Conditions for the Los Angeles District:

1. For all activities in waters of the U.S. that are suitable habitat for federally listed fish species, including designated critical habitat for such species, the permittee shall design all new or substantially reconstructed linear transportation crossings (e.g. roads, highways, railways, trails, bridges, culverts) to ensure that the passage and/or spawning of fish is not hindered. In these areas, the permittee shall employ bridge designs that span the stream or river, including pier- or pile-supported spans, or designs that use a bottomless arch culvert with a natural stream bed, unless determined to be impracticable by the Corps.

2. Nationwide Permits (NWP) 3, 7, 12-15, 17-19, 21, 23, 25, 29, 35, 36, or 39-46, 48-54 cannot be used to authorize structures, work, and/or the discharge of dredged or fill material that would result in the "loss" of wetlands, mudflats, vegetated shallows or riffle and pool complexes as defined at 40 CFR Part 230.40-45. The definition of "loss" for this regional condition is the same as the definition of "loss of waters of the United States" used for the Nationwide Permit Program. Furthermore, this regional condition applies only within the State of Arizona and within the Mojave and Sonoran (Colorado) desert regions of California. The desert regions in California are limited to four USGS Hydrologic Unit Code (HUC) accounting units (Lower Colorado -150301, Northern Mojave-180902, Southern Mojave-181001, and Salton Sea-181002).

3. When a pre-construction notification (PCN) is required, the Los Angeles District shall be notified in accordance with General Condition 32 using either the South Pacific Division PCN Checklist or a signed application form (ENG Form 4345) with an attachment providing information on compliance with all of the General and Regional Conditions. The PCN Checklist and application form are available at: http://www.spl.usace.army.mil/Missions/Regulatory/PermitProcess.aspx. In addition, unless specifically waived by the Los Angeles District, the PCN shall include:

    a. A written statement describing how the activity has been designed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States;

b. Drawings, including plan and cross-section views, clearly depicting the location, size and dimensions of the proposed activity as well as the location of delineated waters of the U.S. on the site. The drawings shall contain a title block, legend and scale, amount (in cubic yards) and area (in acres) of fill in Corps jurisdiction, including both permanent and temporary fills/structures. The ordinary high water mark or, if tidal waters, the mean high water mark and high tide line, should be shown (in feet), based on National Geodetic Vertical Datum (NGVD) or other appropriate referenced elevation. All drawings shall follow the Updated Map and Drawing Standards for the South Pacific Division Regulatory Program (Feb 2016), or most recent update (available at the South Pacific Division website at: http://www.spd.usace.army.mil/Missions/Regulatory/PublicNoticesandReferences.aspx/);

c. Numbered and dated pre-project color photographs showing a representative sample of waters proposed to be impacted on the project site, and all waters proposed to be avoided on and immediately adjacent to the project site. The compass angle and position of each photograph shall be documented on the plan-view drawing required in subpart b of this regional condition.

d. Delineation of aquatic resources in accordance with the current Los Angeles District's Minimum Standards for Acceptance of Aquatic Resources Delineation Reports (available at: http://www.spl.usace.army.mil/Missions/Regulatory/Jurisdictional-Determination/).

4. Submission of a PCN pursuant to General Condition 32 and Regional Condition 3 shall be required for specific regulated activities in the following locations:

a. All perennial waterbodies and special aquatic sites throughout the Los Angeles District as well as intermittent waters within the State of Arizona for any regulated activity that would result in a loss of waters of the United States. The definition of "loss of waters of the United States" for this regional condition is the same as the definition used for the Nationwide Permit Program.

b. All areas designated as Essential Fish Habitat (EFH) by the Pacific Fishery Management Council, and that would result in an adverse effect to EFH, in which case the PCN shall include an EFH assessment and extent of proposed impacts to EFH. EFH Assessment Guidance and other supporting information can be found at: http://www.westcoast.fisheries.noaa.gov/habitat/fish_habitat/efh_consultations_go.html.

c. All watersheds in the Santa Monica Mountains in Los Angeles and Ventura counties bounded by Calleguas Creek on the west, by Highway 101 on the north and east, and by Sunset Boulevard and Pacific Ocean on the south.

d. The Santa Clara River watershed in Los Angeles and Ventura counties, including but not limited to Aliso Canyon, Agua Dulce Canyon, Sand Canyon, Bouquet Canyon, Mint Canyon, South Fork of the Santa Clara River, San Francisquito Canyon, Castaic Creek, Piru Creek, Sespe Creek and the main-stem of the Santa Clara River.

e. The Murrieta and Temecula Creek watersheds in Riverside County, California for any regulated activity that would result in a loss of waters of the U.S. The definition of "loss of waters of the United States" for this regional condition is the same as the definition used for the Nationwide Permit Program.

f. All waterbodies designated by the Arizona Department of Environmental Quality as Outstanding Arizona Waters (OAWs), within 1600 meters (or 1 mile) upstream and/or 800 meters (1/2 mile) downstream of a designated OAW, and on tributaries to OAWs within 1600 meters of the OAW (see http://www.azdeq.gov/index.html).

g. All waterbodies designated by the Arizona Department of Environmental Quality as 303(d)-impaired surface waters, within 1600 meters (or 1 mile) upstream and/or 800 meters (1/2 mile) downstream of a designated impaired surface water, and on tributaries to impaired waters within 1600 meters of the impaired water (see http://www.azdeq.gov/index.html).

5. Individual Permits shall be required for all discharges of fill material in jurisdictional vernal pools, with the exception that discharges for the purpose of restoration, enhancement, management or scientific study of vernal pools may be authorized under NWPs 5, 6, and 27 with the submission of a PCN in accordance with General Condition 32 and Regional Condition 3.

6. Within the Murrieta Creek and Temecula Creek watersheds in Riverside County the use of NWPs 29, 39, 42 and 43, and NWP 14 combined with any of those NWPs shall be restricted. The loss of waters of the U.S. cannot exceed 0.25 acre. The definition of "loss of waters of the United States" for this regional condition is the same as the definition used for the Nationwide Permit Program.

7. Individual Permits (Standard Individual Permit or 404 Letter of Permission) shall be required in San Luis Obispo Creek and Santa Rosa Creek in San Luis Obispo County for bank stabilization projects, and in Gaviota Creek, Mission Creek and Carpinteria Creek in Santa Barbara County for bank stabilization projects and grade control structures.

8. In conjunction with the Los Angeles District's Special Area Management Plans (SAMPs) for the San Diego Creek Watershed and San Juan Creek/Western San Mateo Creek Watersheds in Orange County, California, the Corps' Division Engineer, through his discretionary authority has revoked the use of the following 26 selected NWPs within these SAMP watersheds: 03, 07, 12, 13, 14, 16, 17, 18, 19, 21, 25, 27, 29, 31, 33, 39, 40, 41, 42, 43, 44, 46, 49, and 50. Consequently, these NWPs are no longer available in those watersheds to authorize impacts to waters of the United States from discharges of dredged or fill material under the Corps' Clean Water Act section 404 authority.

9. Any requests to waive the applicable linear foot limitations for NWPs 13, 21, 29, 39, 40 and 42, 43, 44, 51, 52, and 54, must include the following:

a. A narrative description of the affected aquatic resource. This should include known information on: volume and duration of flow; the approximate length, width, and depth of the waterbody and characters observed associated with an Ordinary High Water Mark (e.g. bed and bank, wrack line, or

scour marks) or Mean High Water Line; a description of the adjacent vegetation community and a statement regarding the wetland status of the associated vegetation community (i.e. wetland, non-wetland); surrounding land use; water quality; issues related to cumulative impacts in the watershed, and; any other relevant information.

b. An analysis of the proposed impacts to the waterbody in accordance with General Condition 32 and Regional Condition 3;

c. Measures taken to avoid and minimize losses, including other methods of constructing the proposed project; and

d. A compensatory mitigation plan describing how the unavoidable losses are proposed to be compensated, in accordance with 33 CFR Part 332.

10. The permittee shall complete the construction of any compensatory mitigation required by special condition(s) of the NWP verification before or concurrent with commencement of construction of the authorized activity, except when specifically determined to be impracticable by the Corps. When mitigation involves use of a mitigation bank or in-lieu fee program, the permittee shall submit proof of payment to the Corps prior to commencement of construction of the authorized activity.

4. Further information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:
   (X) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).
   (X) Section 404 of the Clean Water Act (33 U.S.C. 1344).
   ( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.
   (a) This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.
   (b) This permit does not grant any property rights or exclusive privileges.
   (c) This permit does not authorize any injury to the property or rights of others.
   (d) This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:
   (a) Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
   (b) Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
   (c) Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
   (d) Design or construction deficiencies associated with the permitted work.
   (e) Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:
   (a) You fail to comply with the terms and conditions of this permit.
   (b) The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).
   (c) Significant new information surfaces which this office did not consider in reaching the original public interest decision.

   Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 330.5 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measure ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. This letter of verification is valid for a period not to exceed two years unless the nationwide permit is modified, reissued, revoked, or expires before that time.

7. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition H below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

8. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished with the terms and conditions of your permit.

Exhibit 1. Regional Location

Lugo-Victorville 500-kV Transmission Line Remedial Action Scheme Project | San Bernardino County, CA and Clark County, NV

Table 1: Temporary Impacts to Waters of the U.S.

Feature Name	Acres	Linear Feet	Tower
Feature 5B	0.01	47	M71-T3
Feature 16B	0.01	234	M78-T1
Feature 17B	0.001	43	M78-T1
Feature 18B	0.003	58	M78-T2
Feature 25B	0.02	26	M84-T6
Feature 27B	0.02	131	M88-T2
Feature 35B	0.03	45	M105-T1
Feature 43B	0.002	43	M111-T5
Feature 49B	0.001	20	M115-T1
Feature 51B	0.02	291	M118-T1
Feature 66B	0.11	346	M134-T2
Feature 71B	0.01	85	M137-T3
Feature 81B	0.001	30	M144-T3
Feature 84B	0.01	199	M147-T4
Total	**0.24**	**1599**	

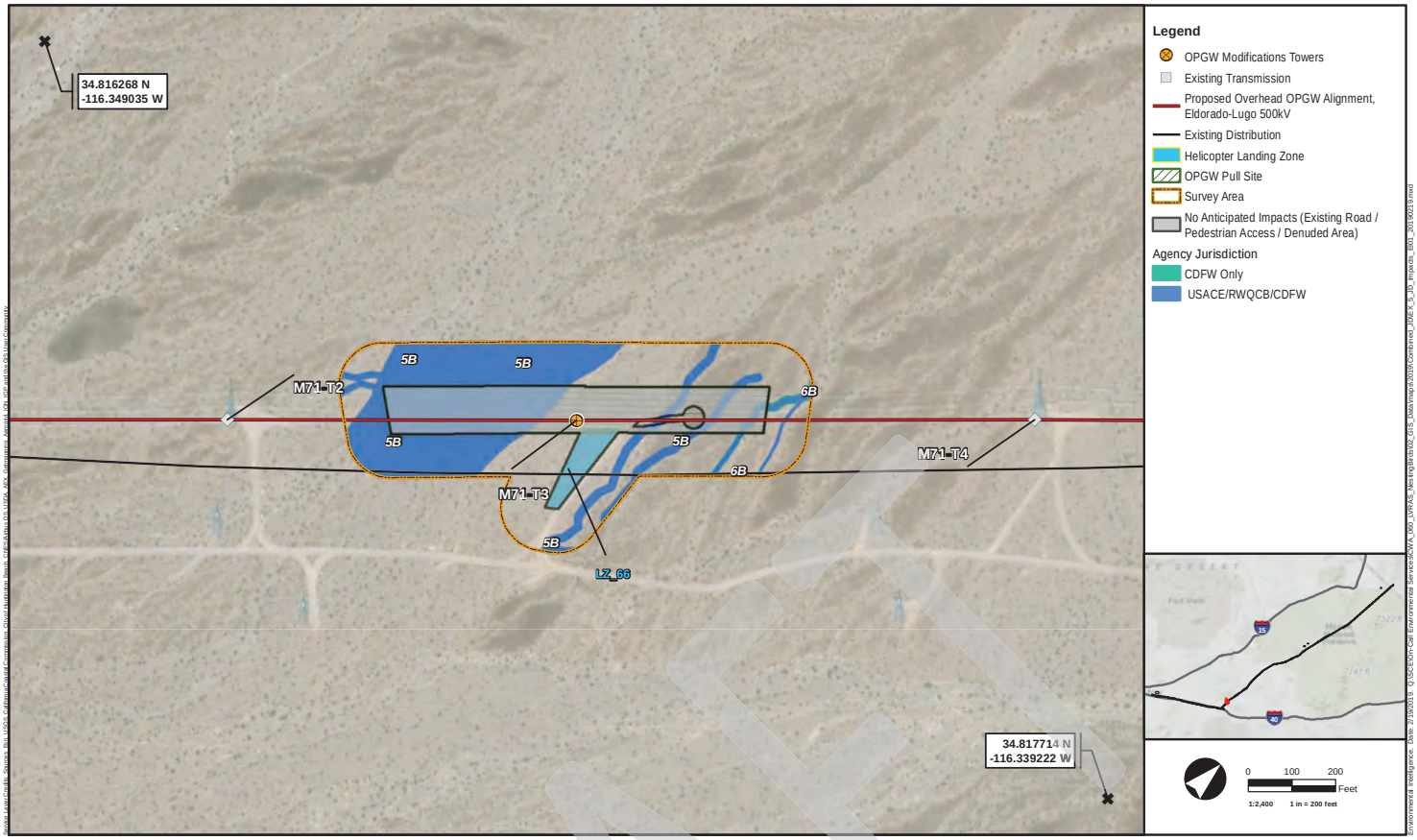


Exhibit 5. Proposed Impacts (Page 1 of 13)
Lugo-Victorville 500-kV Transmission Line Remedial Action Scheme Project | San Bernardino County, CA and Clark County, NV

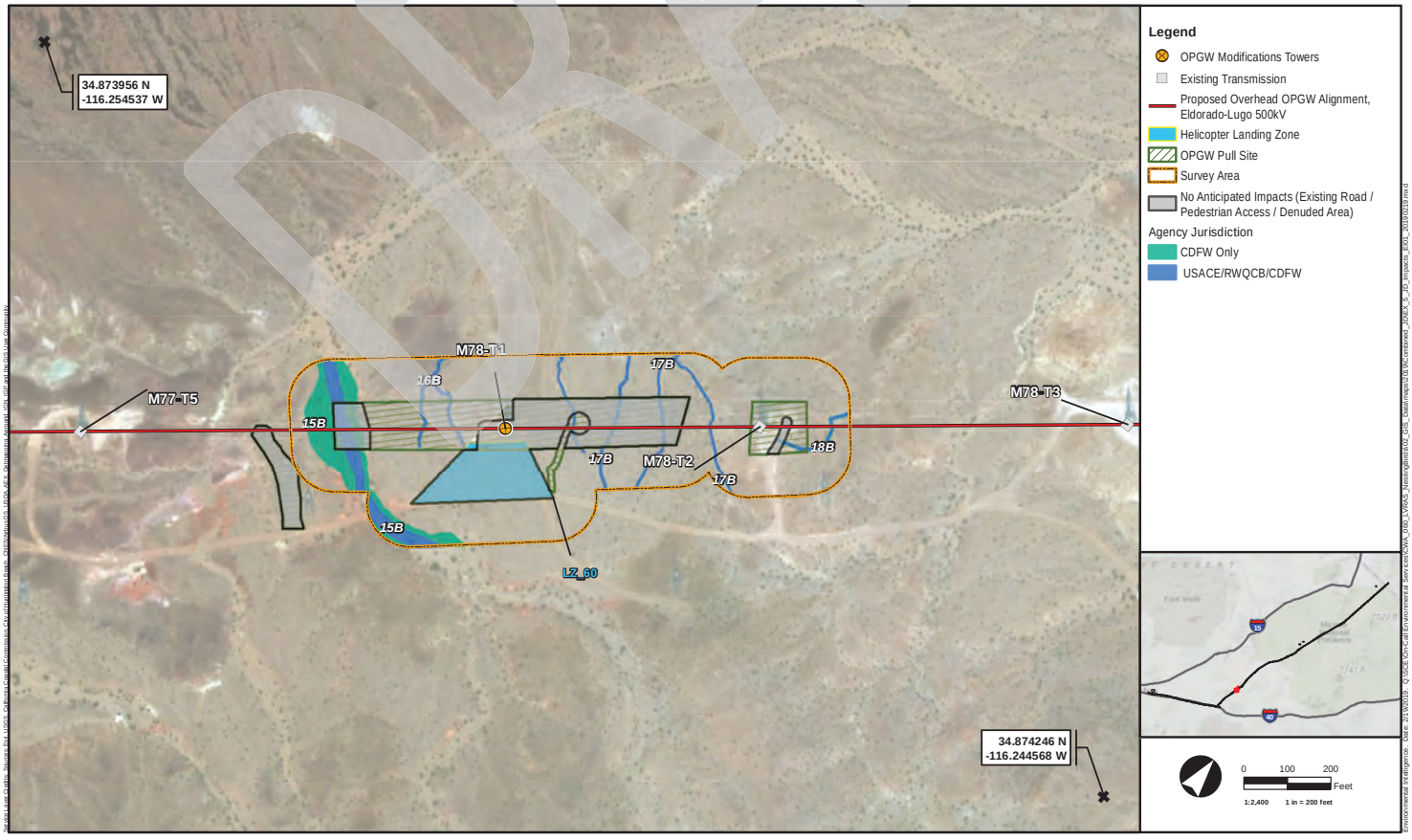


Exhibit 5. Proposed Impacts (Page 2 of 13)
Lugo-Victorville 500-kV Transmission Line Remedial Action Scheme Project | San Bernardino County, CA and Clark County, NV

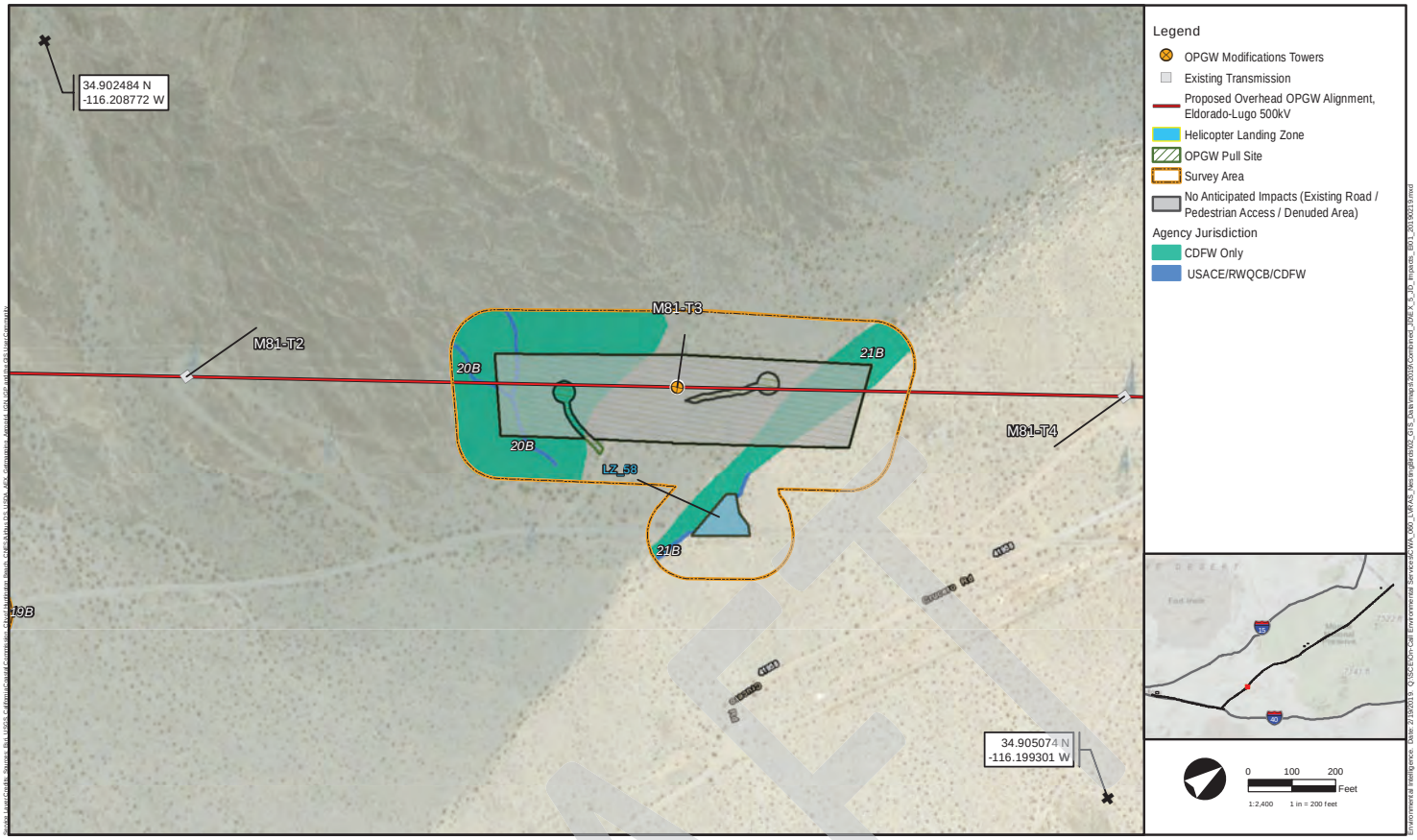


Exhibit 5. Proposed Impacts (Page 3 of 13)
Lugo-Victorville 500-kV Transmission Line Remedial Action Scheme Project | San Bernardino County, CA and Clark County, NV

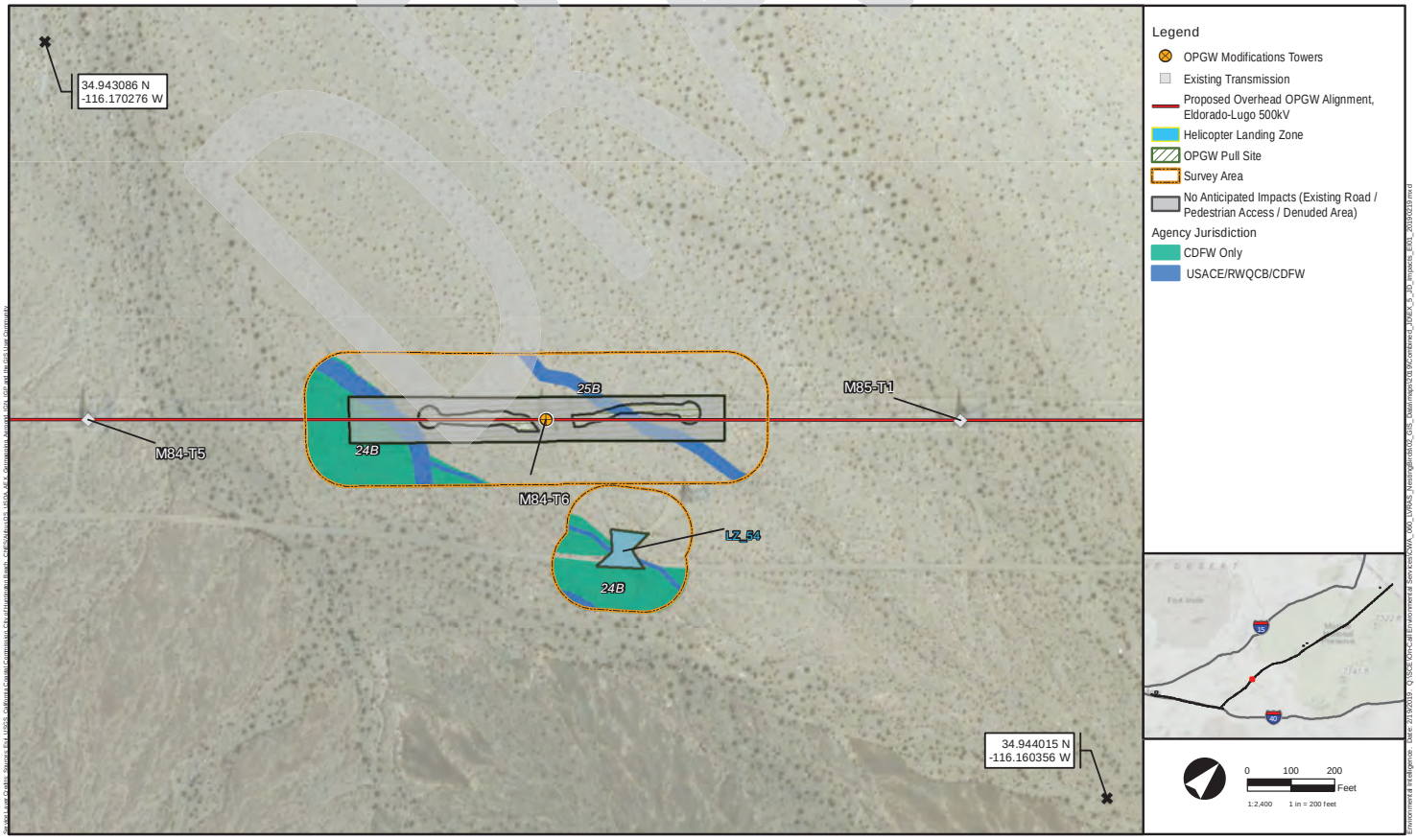


Exhibit 5. Proposed Impacts (Page 4 of 13)
Lugo-Victorville 500-kV Transmission Line Remedial Action Scheme Project | San Bernardino County, CA and Clark County, NV

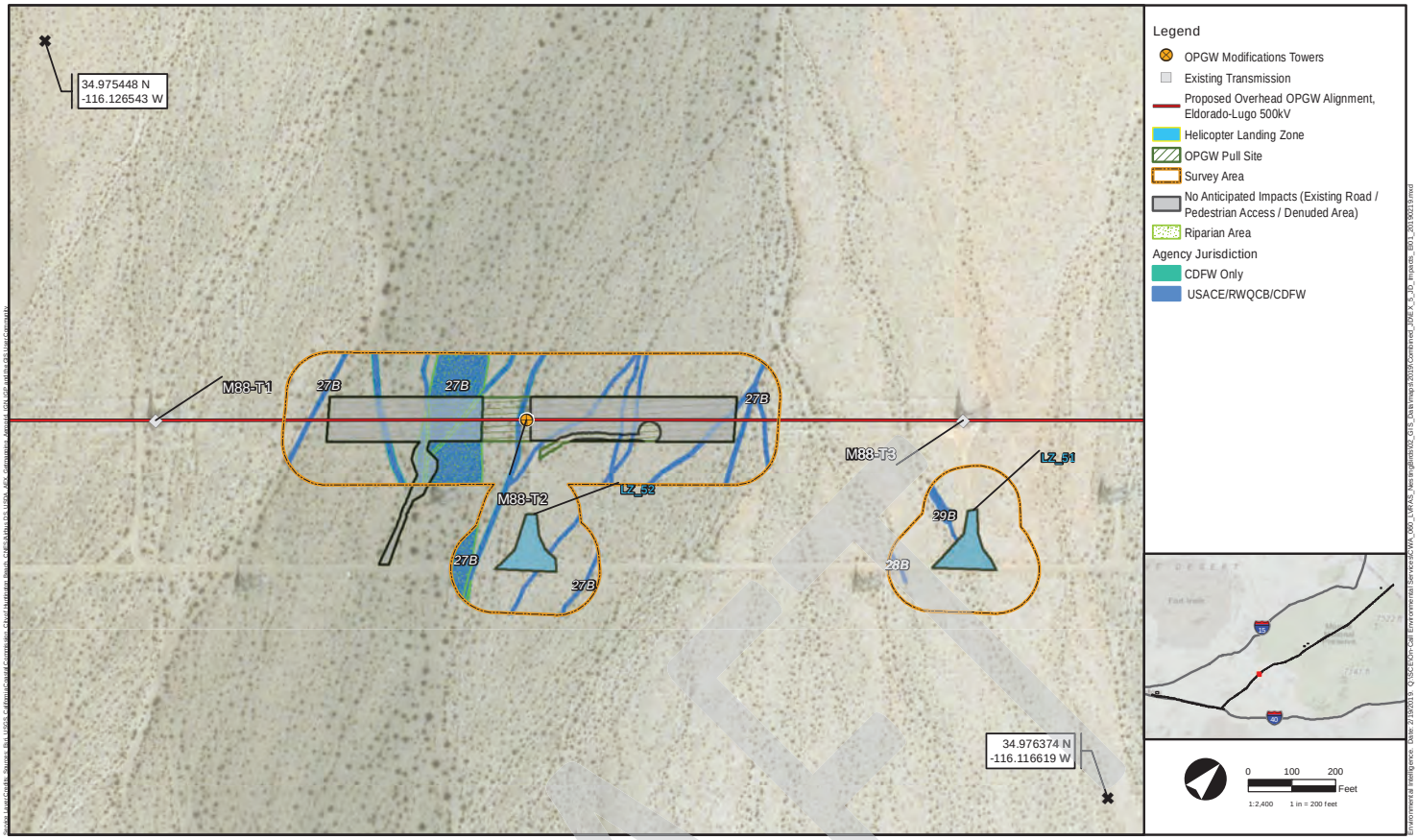


Exhibit 5. Proposed Impacts (Page 5 of 13)
Lugo-Victorville 500-kV Transmission Line Remedial Action Scheme Project | San Bernardino County, CA and Clark County, NV

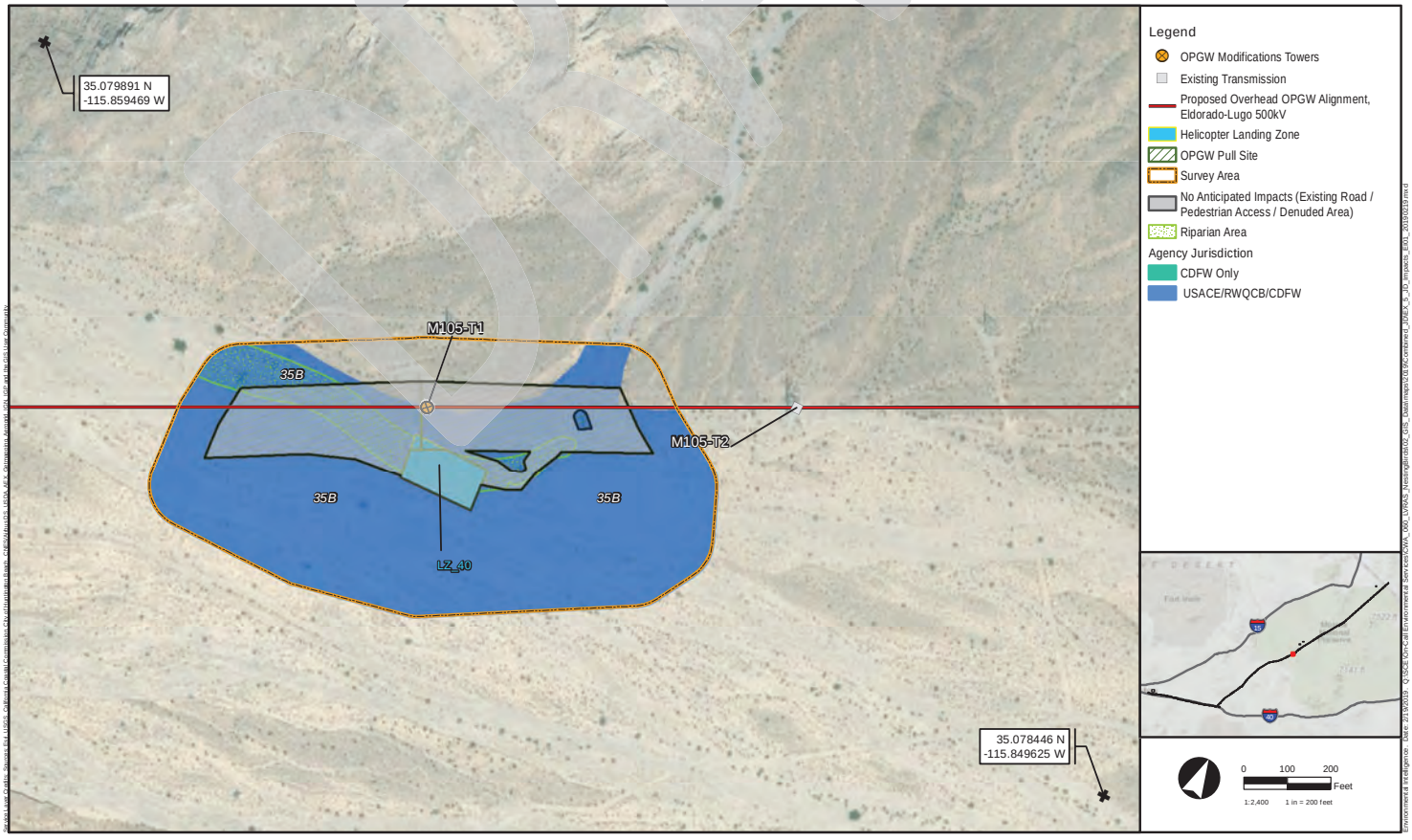


Exhibit 5. Proposed Impacts (Page 6 of 13)
Lugo-Victorville 500-kV Transmission Line Remedial Action Scheme Project | San Bernardino County, CA and Clark County, NV

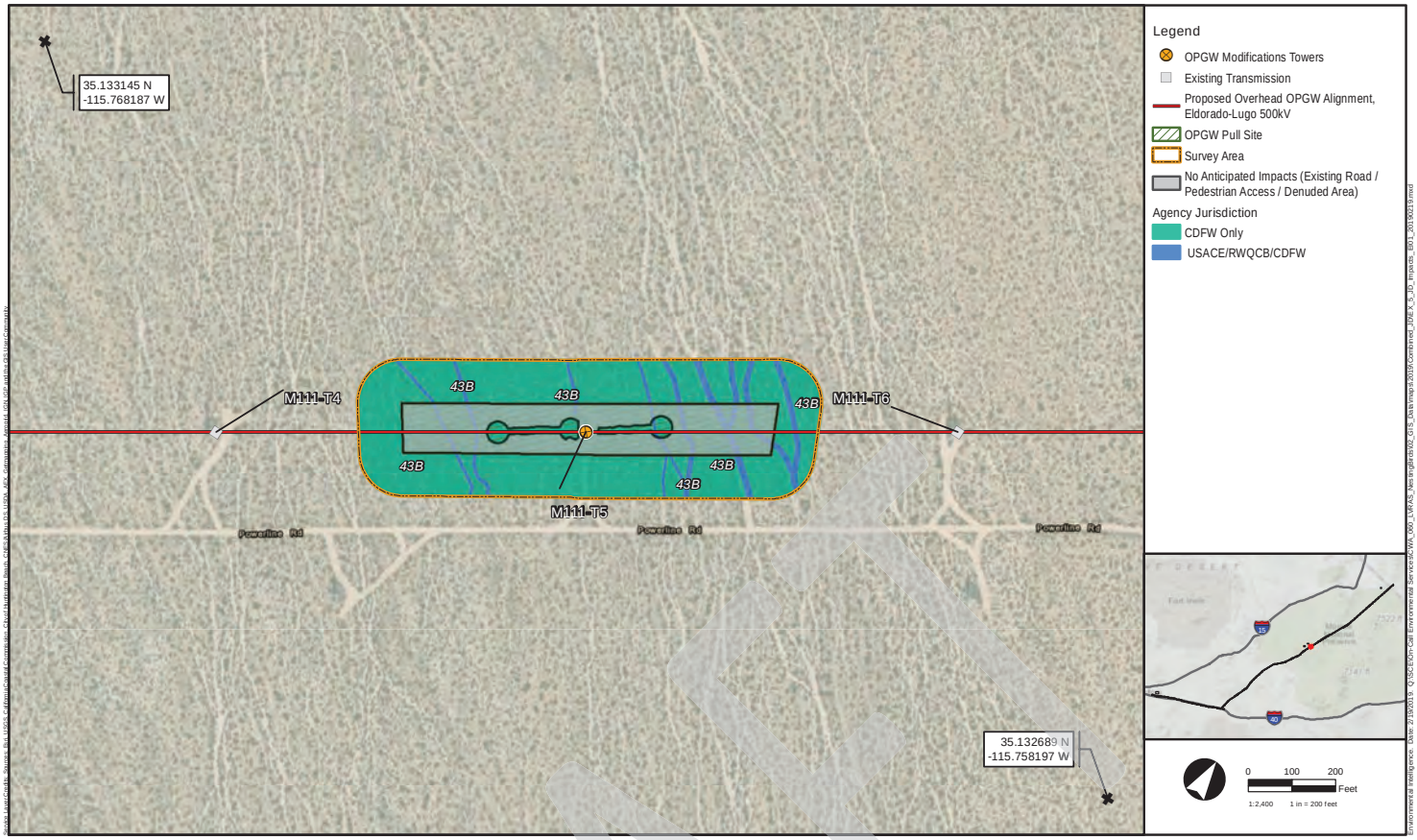


Exhibit 5. Proposed Impacts (Page 7 of 13)
Lugo-Victorville 500-kV Transmission Line Remedial Action Scheme Project | San Bernardino County, CA and Clark County, NV

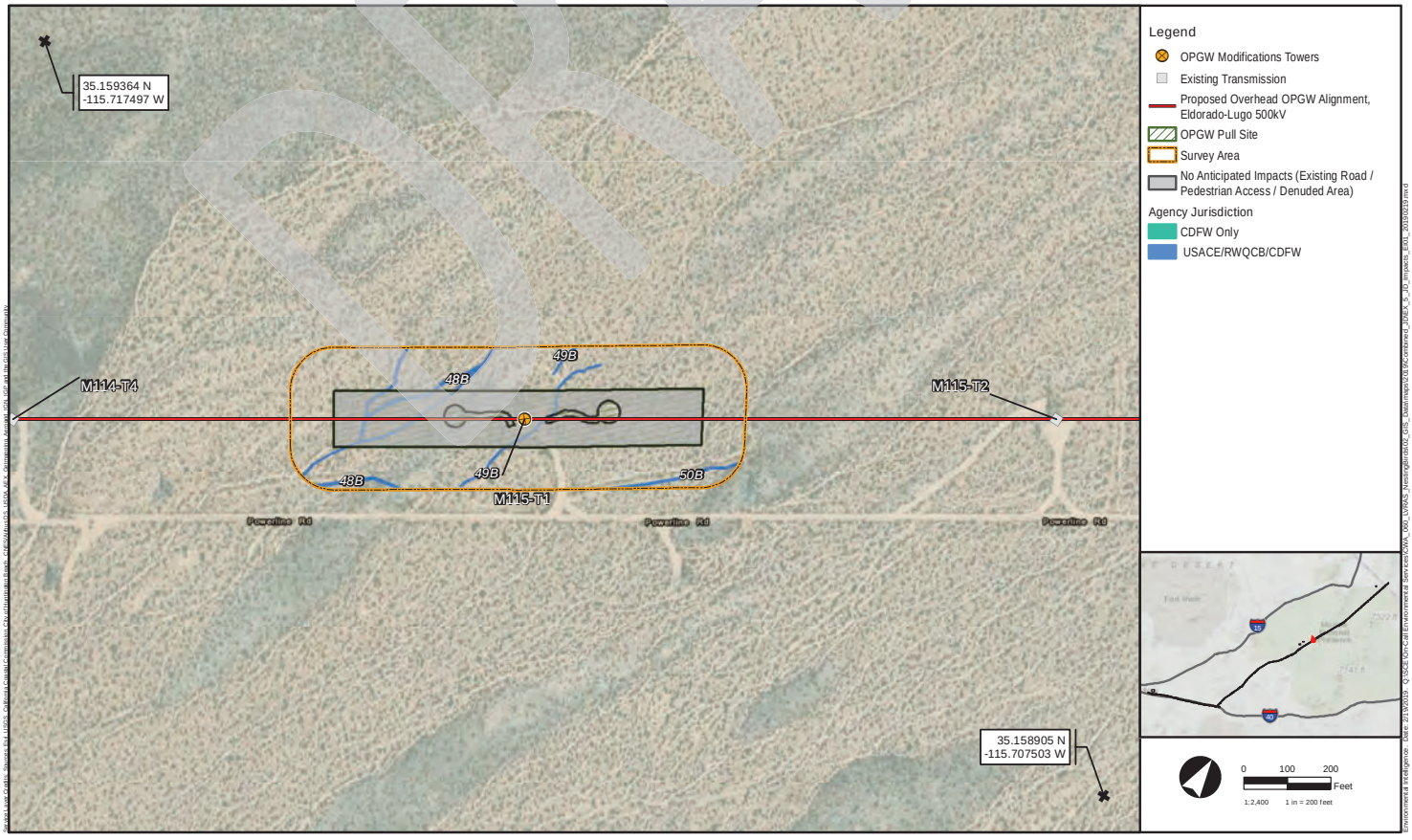


Exhibit 5. Proposed Impacts (Page 8 of 13)
Lugo-Victorville 500-kV Transmission Line Remedial Action Scheme Project | San Bernardino County, CA and Clark County, NV

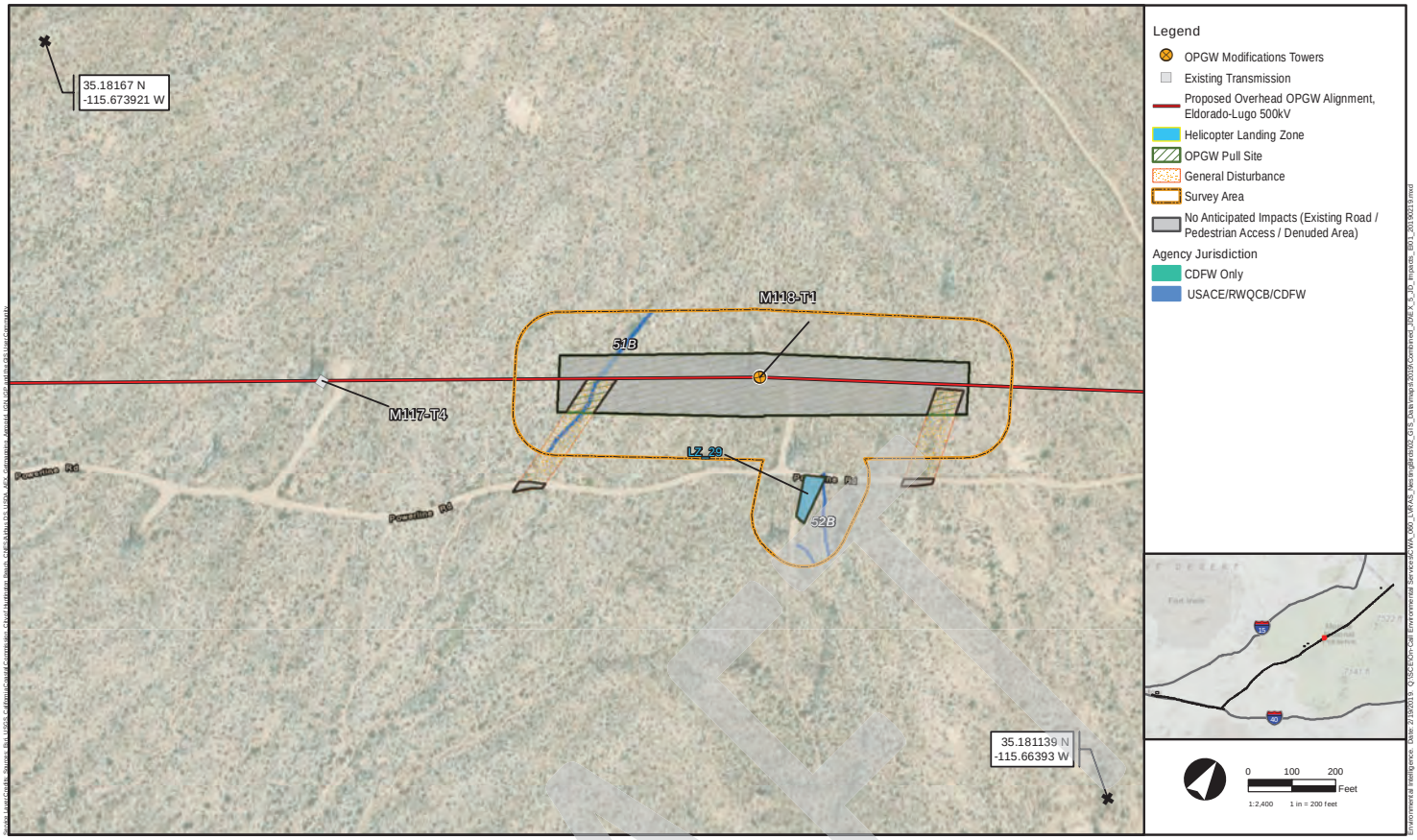


Exhibit 5. Proposed Impacts (Page 9 of 13)
Lugo-Victorville 500-kV Transmission Line Remedial Action Scheme Project | San Bernardino County, CA and Clark County, NV

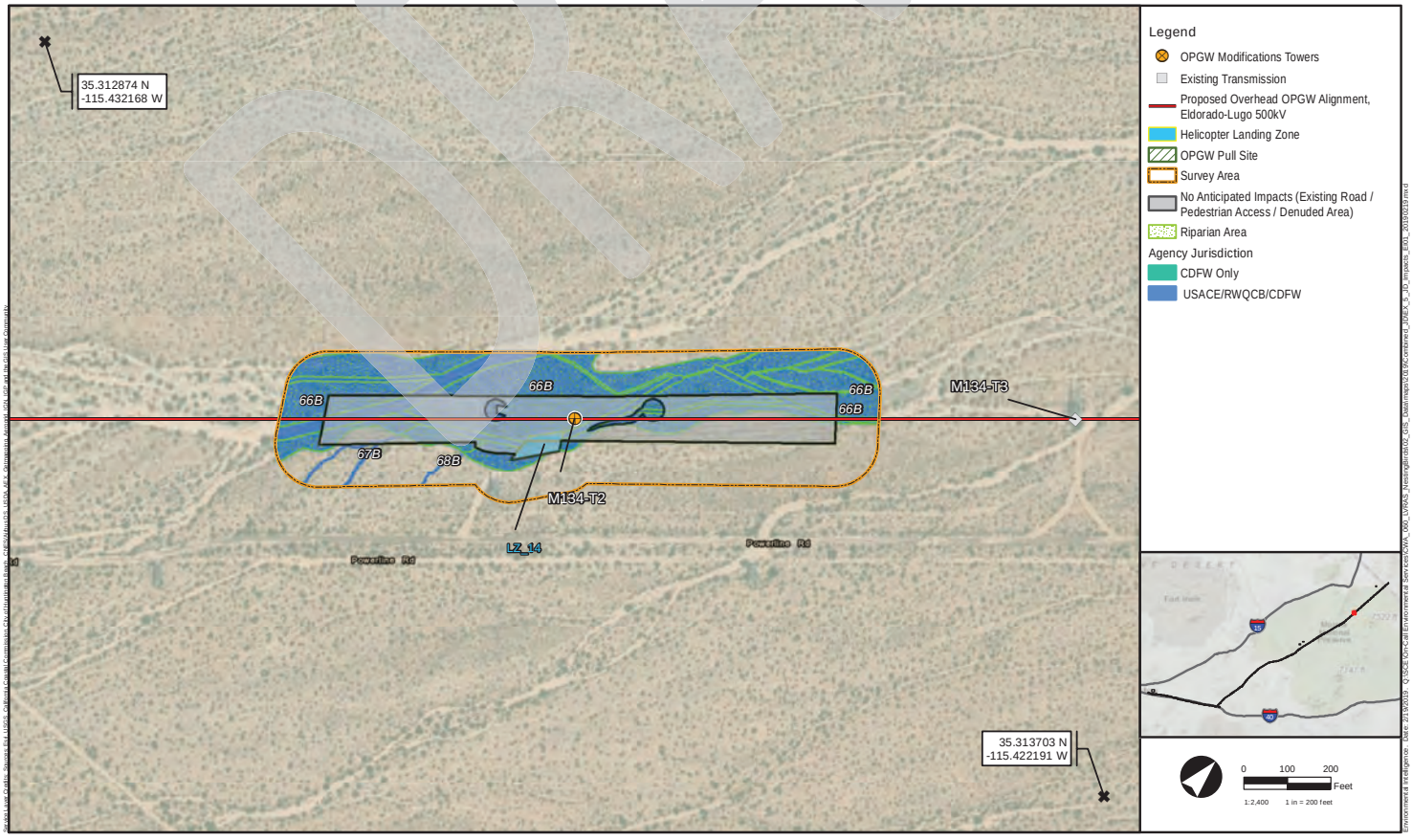


Exhibit 5. Proposed Impacts (Page 10 of 13)
Lugo-Victorville 500-kV Transmission Line Remedial Action Scheme Project | San Bernardino County, CA and Clark County, NV

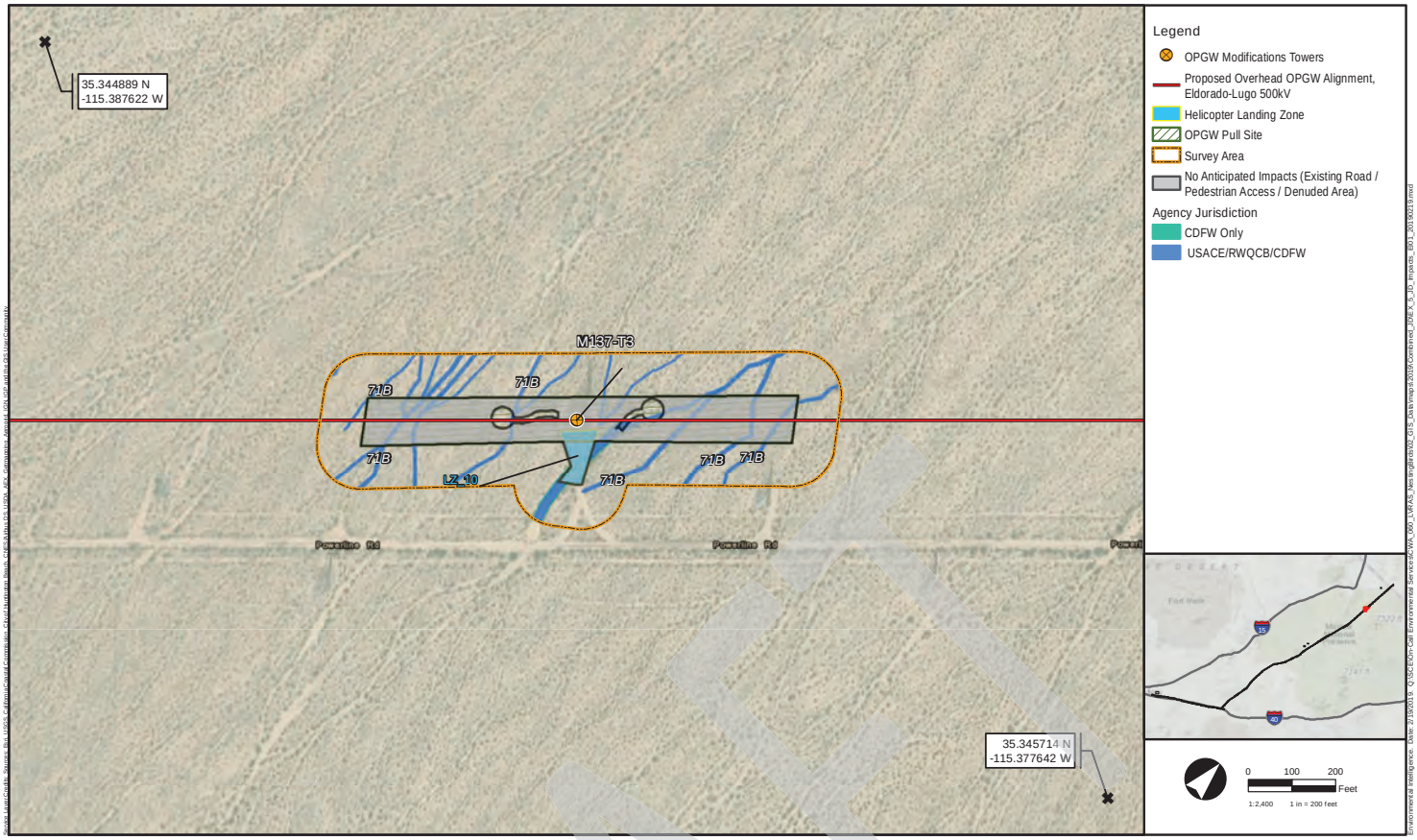


Exhibit 5. Proposed Impacts (Page 11 of 13)

Lugo-Victorville 500-kV Transmission Line Remedial Action Scheme Project | San Bernardino County, CA and Clark County, NV

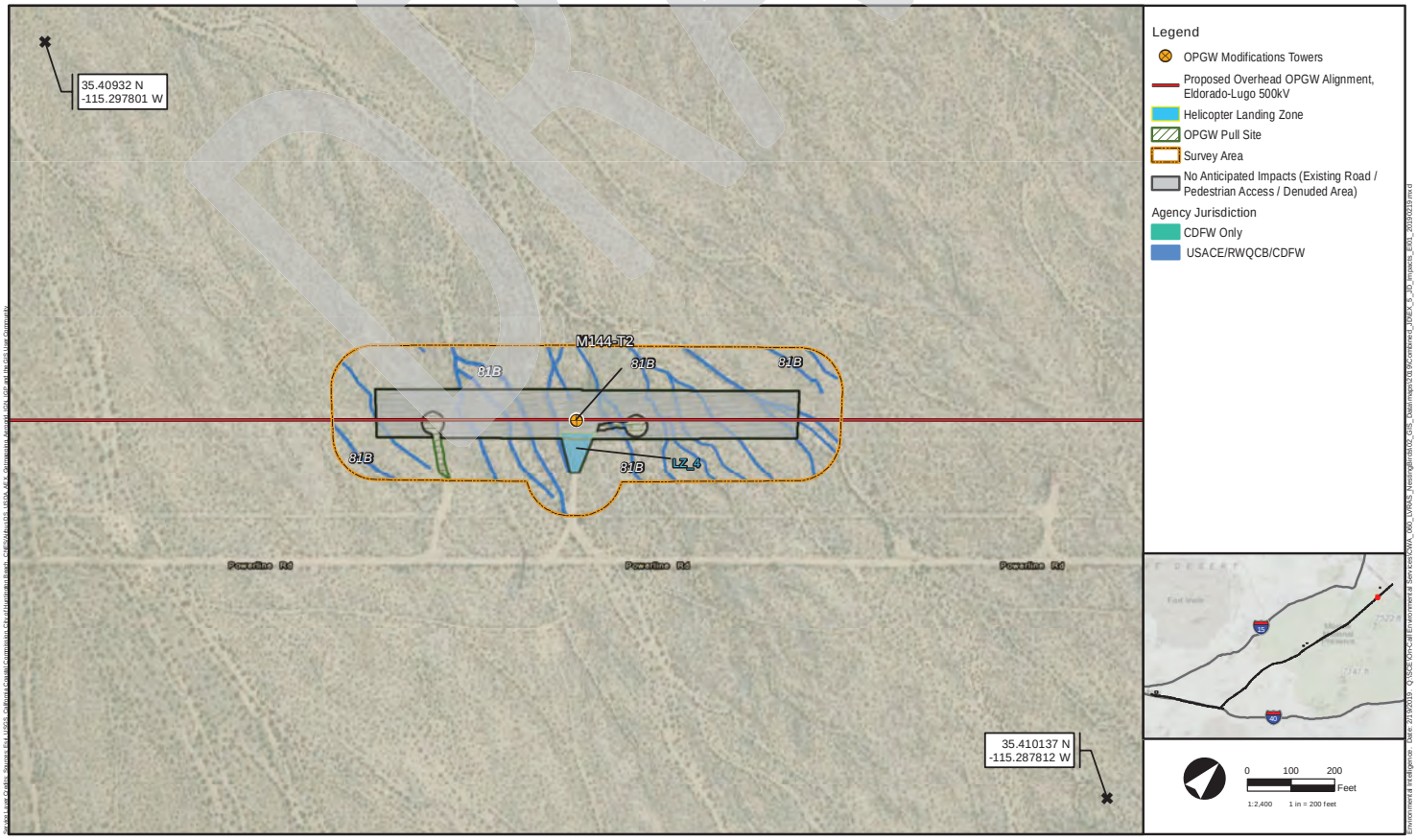


Exhibit 5. Proposed Impacts (Page 12 of 13)

Lugo-Victorville 500-kV Transmission Line Remedial Action Scheme Project | San Bernardino County, CA and Clark County, NV

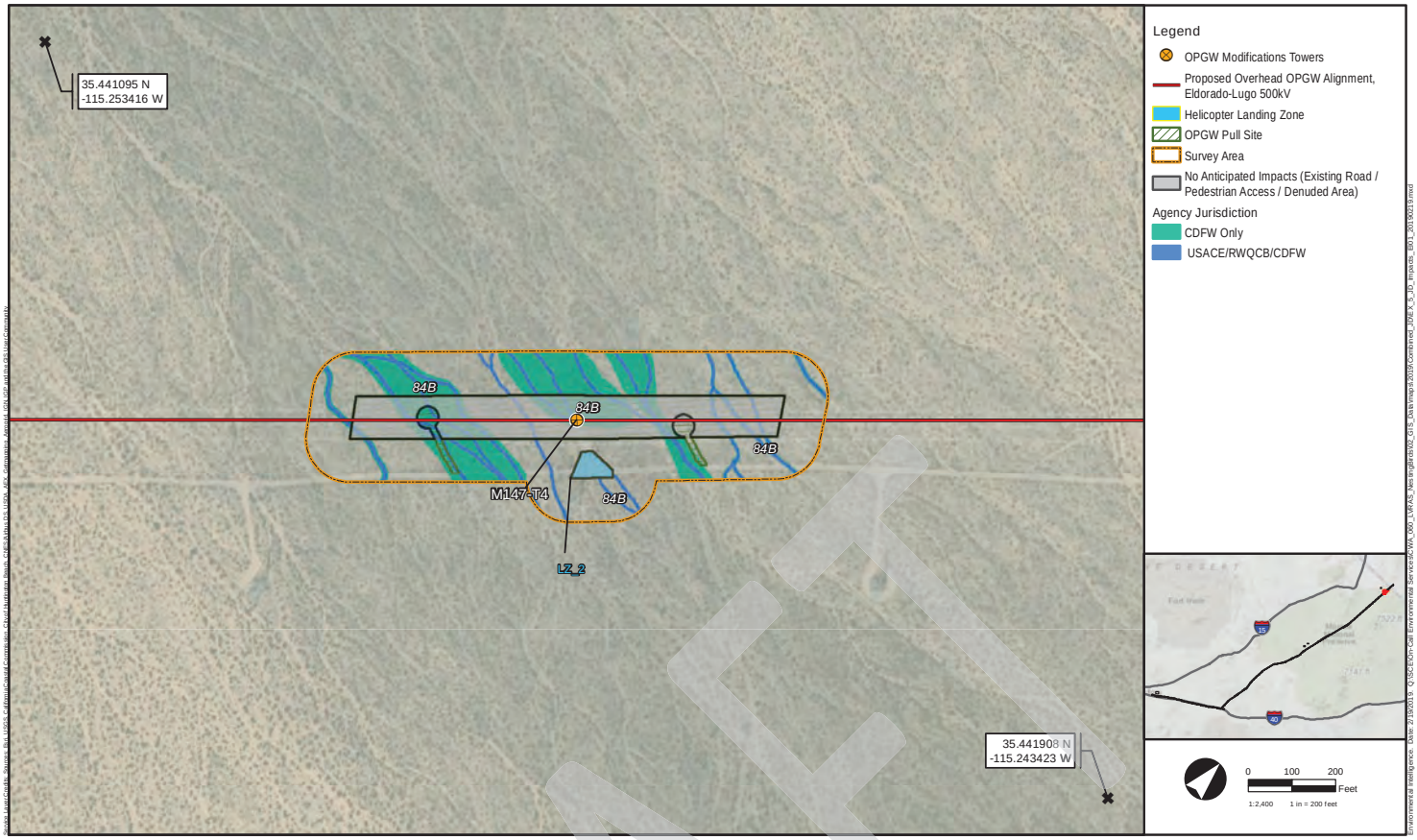


Exhibit 5. Proposed Impacts (Page 13 of 13)
Lugo-Victorville 500-kV Transmission Line Remedial Action Scheme Project | San Bernardino County, CA and Clark County, NV

United States Department of the Interior

U.S. FISH AND WILDLIFE SERVICE
Ecological Services
Palm Springs Fish and Wildlife Office
777 East Tahquitz Canyon Way, Suite 208
Palm Springs, California 92262

In Reply Refer to:
FWS-SB-17B0532-20F0276 (BLM)
FWS-SB-19B0068-20F0284 (NPS)

January 06, 2020
Sent by Email

Memorandum

To: Acting Superintendent, Mojave National Preserve, National Park Service, Barstow, California

District Manager, California Desert District, Bureau of Land Management, Moreno Valley, California

Assistant Field Manager, Renewable Resources, Bureau of Land Management, Las Vegas, Nevada

From: Acting Assistant Field Supervisor, Palm Springs Fish and Wildlife Office, Palm Springs, California

Subject: Lugo-Victorville 500-kV Transmission Line Remedial Action Scheme Project, San Bernardino County, California, and Clark County, Nevada

The Bureau of Land Management (Bureau) and National Park Service (NPS) propose to issue right-of-way grants and a right-of-way permit, respectively to Southern California Edison (SCE) to remove the existing overhead ground wire along this section of transmission line and replace it with optical ground wire, optical fiber non-conducting riser cable, and telecommunication all-dielectric self-supporting fiber optic cable. The new telecommunication cables will enable SCE to interconnect and integrate multiple renewable generation projects in the eastern California and southern Nevada area into the electrical grid.

SCE would place some cables underground, although it would mostly mount cables on existing poles. The project involves the transmission line from SCE's Pisgah Substation along Interstate 40 near Ludlow, California, to Nipton Road (Joshua Tree Highway) in Clark County, Nevada. Approximately 26 miles of the Project are located on lands managed by the Bureau. Approximately 51 miles are located on NPS lands within the Mojave National Preserve. Approximately 7 miles would occur on California State Lands Commission Lands and private lands. Approximately 1.8 miles of the project are located in Nevada.

As our staff personnel have discussed previously, the U.S. Fish and Wildlife Service (Service) has developed biological opinions with your offices that appropriately analyze proposed actions such as SCE project in a programmatic manner (Service 2013, 2017, 2019). To that end, the

Bureau (2019a) in California and NPS (2019) requested formal consultation regarding the portions of the proposed action on their lands. The Bureau in Nevada did not specifically request formal consultation because its consultation requires that it only contact the Service for individual actions when the affected area exceeds 20 acres, thereby allowing the Bureau to cover the proposed action under their programmatic biological opinion without further consultation with the Service.

SCE's proposed action is a single action; the segments within the areas that you manage have no independent utility. For that reason, our agencies have agreed that it would be appropriate for the Service to both complete the activity forms for the portions of the proposed action that are in California and to then consider the effects of the entire action on the desert tortoise and its critical habitat. Because our biological opinions address the general effects of activities such as this project on the desert tortoise and its critical habitat, we will not repeat those discussions herein. Instead, we will address the aggregative effects of the proposed action on the desert tortoise and its critical habitat.

Desert Tortoise

Section 7(a)(2) of the Endangered Species Act (Act) of 1973, as amended, requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. "Jeopardize the continued existence of means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species" (50 CFR 402.02). This regulatory definition focuses on how the proposed action would affect the reproduction, numbers, or distribution of the species under consideration in the biological opinion. For that reason, we have used those aspects of the desert tortoise's status as the basis to assess the overall effect of the proposed action on the species. We will also consider how the proposed action may affect recovery of the desert tortoise.

Reproduction

As with any ground-disturbing activity in the desert, the potential exists, that SCE could introduce noxious and invasive weeds to the action area; the proposed action may also cause some local increase in non-native plants that are already present in the action area. Non-native plants may not contain the nutrients necessary to sustain desert tortoises but they can displace the native plants upon which desert tortoises feed. Reductions in the abundance of native forage species could impair the reproductive capacity of desert tortoises.

SCE has proposed to develop and implement a noxious and invasive weed management plan to address this issue; the Bureau and NPS will include the measures in this plan as requirements of their right-of-way grants and permit, respectively. For this reason, we anticipate that the proposed action is not likely to have a measurable effect on the abundance of non-native plants in the action area and is thus not likely to impair the reproductive capacity of desert tortoises.

Numbers

During surveys conducted in 2016 and 2019, SCE detected 13 desert tortoises along the transmission line. Because of the linear nature of the survey corridor along the transmission line, the survey results do not necessarily predict the number of desert tortoises that will be present during construction; that is, desert tortoises can move in and out of narrow linear areas in a relatively short time. Additionally, the number of desert tortoises that SCE is likely to encounter will vary, depending on the time of year that the work occurs and the weather. However, these results do indicate that desert tortoises are present along portions of the project area.

In general, the Service has found that the protective measures proposed by SCE are effective in reducing the number of desert tortoises killed or injured during construction activities. These measures include but are not limited to:

1. Surveying all work areas no more than 7 days prior to the onset of ground-disturbing activities to flag all desert tortoise burrows and pallets;

2. Having an agency-approved desert tortoise biologist on site to monitor any work areas for desert tortoises during construction, excavate by hand any burrows that SCE cannot avoid, and halt non-emergency actions as soon as safely possible that may kill or injure desert tortoises;

3. Implementing a worker education program so that all workers are aware of desert tortoises and the measures that are in place to protect them;

4. Checking under vehicles for desert tortoises; and

5. Limiting vehicles to maintained roads and designated routes.

The biological assessment (Environmental Intelligence 2019) contains a full list of the protective measures and provides a more complete description of those that we have summarized here.

These measures are more effective at protecting larger desert tortoises because they are easier to find. We expect that SCE will find and protect most desert tortoises that it encounters during construction. Although we cannot predict how many desert tortoises are likely to die because of construction of the proposed action, we expect that SCE is likely to kill few, if any, based on our experience with construction projects in the desert.

Because we expect few, if any, desert tortoises to die, the proposed action will not have a measurable effect on the number of desert tortoises in the action area or within the range of the desert tortoise.

Distribution

The Bureau (2019b) provided an updated quantification of the amount of habitat that SCE is likely to disturb during construction. SCE estimates that the proposed action would result in the

permanent loss of approximately 1.03 acres of habitat. It also estimates that the proposed action would temporarily disturb approximately 28.14 acres of habitat. The permanent loss and temporary disturbance of habitat would occur along the 84-mile length of the construction area. For this reason, we conclude that the proposed action will not affect the distribution of the desert tortoise.

Recovery

Because the proposed action is temporary in duration and is not likely to measurably affect the reproduction, number, or distribution of desert tortoises, it is not likely to adversely affect the recovery of the species.

CONCLUSION

After reviewing the current status of the desert tortoise, the environmental baseline for the action area, the effects of the proposed activities, and the cumulative effects, we have concluded that the proposed action is not likely to jeopardize the continued existence of the desert tortoise. We have reached this conclusion because the proposed action:

1. Is thus not likely to impair the reproductive capacity of desert tortoises;

2. Will not have a measurable effect on the number of desert tortoises in the action area or within the range of the desert tortoise;

3. Will not affect the distribution of the desert tortoise; and

4. Is not likely to adversely affect the recovery of the species.

Critical Habitat of the Desert Tortoise

Section 7(a)(2) of the Endangered Species Act of 1973, as amended, requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of critical habitat of listed species. “Destruction or adverse modification means a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species (50 CFR 402.02).

Additionally, we determine whether a proposed action is likely to result in the “destruction or adverse modification” through an analysis of how a proposed action affects the physical and biological features of critical habitat within the action area in relation to the entirety of designated critical habitat. For critical habitat of the desert tortoise, this process involves considering the effects at the level of the action area, then at the level of the critical habitat unit, and then finally for the entirety of designated critical habitat. Logically, if a proposed action is unlikely to cause a measurable effect on critical habitat within the action area, it is unlikely to affect the species throughout the critical habitat unit or the remainder of critical habitat. Conversely, an action with measurable effects on critical habitat in the action area may degrade

the status of critical habitat to the extent that it affects the critical habitat unit or the entire designated area of critical habitat.

The proposed action would result in the permanent loss of approximately 0.05 acre of critical habitat and the temporary disturbance of approximately 7.1 acres Ivanpah Critical Habitat Unit, which covers approximately 632,400 acres. We will now consider how the proposed action may affect the physical and biological features of critical habitat of the desert tortoise

Sufficient Space to Support Viable Populations within Each of the Six Recovery Units and to Provide for Movement, Dispersal, and Gene Flow

The loss and disturbance of critical habitat that would result from the proposed action would not appreciably reduce the amount of space to support viable populations within the Ivanpah Critical Habitat Unit. The proposed action would also not obstruct movement, dispersal, and gene flow. We have reached these conclusions because of the small amount of loss and disturbance that would occur along miles of transmission line within the 632,400-acre critical habitat unit.

Sufficient Quality and Quantity of Forage Species and the Proper Soil Conditions to Provide For the Growth of These Species

The proposed action would result in the loss of approximately 0.05 acre of critical habitat that may support forage species for the desert tortoise and the proper soil conditions for these species to grow. The effect of such a small loss would be insignificant considering the overall size of the critical habitat unit. Areas that are disturbed temporarily are likely to recover their ability to support proper soil conditions for forage species.

Suitable Substrates for Burrowing, Nesting, and Overwintering

The proposed action is not likely to alter substrates in a manner that would make them unsuitable for burrowing, nesting, and overwintering with the exception of the 0.05 acre that would undergo permanent disturbance. Even if some of the temporarily disturbed area becomes too compacted to allow desert tortoises to construct burrows, the total amount of disturbance of substrates is insignificant considering the overall size of the critical habitat unit.

Burrows, Cliché Caves, and Other Shelter Sites

The proposed action is unlikely to result in the loss of caliché caves because this resource generally does not occur in dense aggregations and SCE will have some flexibility to avoid important resources. The proposed action may result in the destruction of some burrows and other shelter sites, such as pallets. Because of the small area that SCE would disturb at any given site, desert tortoises most likely have additional burrows and pallets in the vicinity. Given the size of the critical habitat unit, the total amount of disturbance of burrows and other shelter sites is insignificant.

Sufficient Vegetation for Shelter from Temperature Extremes and Predators

The proposed action would result in the loss of shrub cover from approximately 7.15 acres of critical habitat; that total includes both temporary and permanent disturbance. Because the disturbance would occur in small, discrete areas along the length of the transmission line in critical habitat, we expect that surrounding areas would provide sufficient vegetation for desert tortoises to shelter from temperature extremes and predators.

Habitat Protected from Disturbance and Human-Caused Mortality

Disturbance associated with the proposed action would be temporary. Therefore, the proposed action would not compromise this physical and biological feature.

After reviewing the current status of the critical habitat, the environmental baseline for the action area, the effects of the proposed activities, and the cumulative effects, we have concluded that the proposed action is not likely to result in the destruction or adverse modification of critical habitat of the desert tortoise. We have reached this conclusion because the proposed action would result in small, localized, and mostly temporary effects on the physical and biological features of critical habitat. Therefore, the proposed action is not likely to appreciably diminish the value of the Ivanpah Critical Habitat Unit for the conservation of the desert tortoise. Because the proposed action is not likely to appreciably diminish the value of the Ivanpah Critical Habitat Unit, it is also not likely to appreciably diminish the value of critical habitat for the desert tortoise as a whole.

INCIDENTAL TAKE STATEMENT

The Service will rely on the information in the incidental take statements, reporting requirements, and disposition of dead or injured desert tortoises in the three biological opinions under which the Bureau and NPS are consulting on the proposed action with the following exception of one reasonable and prudent measure and term and condition. We have included a brief explanation of the rationale behind our reasonable and prudent measure because we did not include a detailed project-specific analysis of the proposed action in this memorandum.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of desert tortoises during the implementation of the Lugo-Victorville 500-kV Transmission Line Remedial Action Scheme Project.

1. The Bureau and NPS must ensure that flagged burrows do not result in unauthorized take of desert tortoises. As proposed, SCE would “prominently” flag all desert tortoise burrows and pallets “in all work areas within potential desert tortoise habitat, plus an approximately 300-foot buffer.” Depending on the nature of the flagging, the flagging could attract poachers to desert tortoise burrows and pallets.

2. The Bureau and NPS must ensure that SCE uses appropriate techniques for handling desert tortoises during implementation of the proposed action. In its biological assessment, SCE proposed to use outdated protocols for handling desert tortoises.

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, the Bureau and NPS must ensure that SCE implements the following terms and conditions, which implement the reasonable and prudent measures described in the previous section.

To implement reasonable and prudent measure 1, the Bureau and NPS must ensure that:

1. SCE flags desert tortoise burrows and pallets in a manner that workers associated with the project will recognize but will not attract undue attention from non-project personnel.

2. The worker education program contains an element that specifically discusses the type of flagging used.

3. SCE removes all flagging associated with desert tortoise burrows and pallets as soon as possible it completes work in any given area.

To implement reasonable and prudent measure 2, the Bureau and NPS must ensure that:

1. SCE uses the handling guidance in the USFWS Service Field Manual when monitoring the proposed action.

2. SCE uses a disinfectant to clean re-usable equipment (e.g., scales, etc.) that comes into contact with desert tortoises that is effective against a broad spectrum of organisms and requires short contact times (e.g., RESCUE RTU).

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Endangered Species Act directs Federal agencies to use their authorities to further its purposes by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

Section 1.2 of the biological assessment for the proposed action describes SCE's proposal to manage common ravens (*Corvus corax*) along the transmission line by targeting common ravens that are preying on desert tortoises. SCE would evaluate the management program after 3 years and, if needed, monitor common ravens along the transmission line, fund the control of common ravens that are preying on desert tortoises, and engage in alternative control strategies that it develops in coordination with the Service.

SCE's proposal with regard to common ravens is similar to the one adopted by the Service and several partners through an environmental assessment (Service *et al*. 2008), which we have been implementing for several years. In fact, the Service and its partners have progressed through the proposed phases and are now implementing the third step in SCE's proposal.

For that reason, the Service recommends that the Bureau and NPS encourage SCE revise its proposal with regard to management of common ravens and engage with the Bureau, NPS, and Service immediately in implementing alternative control strategies to address management of the common raven in the California desert.

REINITIATION NOTICE

Re-initiation of consultation is required where discretionary Federal involvement or control over the action has been retained or is authorized by law. The Bureau, NPS, or Service must request reinitiation of consultation under the following circumstances:

1. If the amount or extent of taking specified in the incidental take statement is exceeded;

2. If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered;

3. If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion or written concurrence; or

4. If a new species is listed or critical habitat designated that may be affected by the identified action.

If you have any questions, please contact Ray Bransfield of my staff at (805) 677-3398 or ray_bransfield@fws.gov.

Appendices
Attachments

cc:
Joan Patrovsky, BLM, Mark Massar, BLM, Kevin Bryan, BLM, Danette Nolan, NPS,
Neal Darby, NPS, Carla Wise, USFWS

LITERATURE CITED

[BLM] Bureau of Land Management. 2019a. Activity request form. Lugo-Victorville 500-kV Transmission Line Remedial Action Scheme Project. Dated October 1. California Desert District. Moreno Valley, California.

[BLM] Bureau of Land Management. 2019b. Personal communication. Electronic mail regarding updated acreages of impacts. Dated November 13. From Project Manager, California Desert District, Barstow, California.

Environmental Intelligence. 2019. A biological assessment of anticipated impacts on the desert tortoise associated with the Lugo-Victorville 500 kV Transmission Line Remedial Action Scheme Project located in San Bernardino County, California and Clark County, Nevada. Dated June 21. Prepared for Southern California Edison, Rosemead, California. Laguna Beach, California.

[NPS] National Park Service. 2019. Activity request form. Lugo-Victorville 500-kV Transmission Line Remedial Action Scheme Project. Dated November 8. Mojave National Preserve. Barstow, California.

[Service] U.S. Fish and Wildlife Service. 2013. Formal programmatic consultation under section 7 of the Endangered Species Act for effects to threatened and endangered species and their critical habitat that may occur as a result of actions proposed by the Southern Nevada District Office, Bureau of Land Management (File No. 84320-201O-F-0365). Dated January 2. To Assistant Field Manager, Division of Renewable Resources, Las Vegas Field Office, Bureau of Land Management, Las Vegas, Nevada. From State Supervisor, Nevada Fish and Wildlife Office. Reno, Nevada.

[Service] U.S. Fish and Wildlife Service. 2017. Biological opinion for activities in the California Desert Conservation Area (FWS-KRN/SBD/INY/LA/IMP/RIV-17B0532-17F1029). Dated September 1. To District Manager, California Desert District, Bureau of Land Management, Moreno Valley, California. From Field Supervisor, Carlsbad Fish and Wildlife Office. Carlsbad, California.

[Service] U.S. Fish and Wildlife Service. 2019. Biological opinion for activities in the Mojave National Preserve, San Bernardino County, California (FWS-SB-190068-19F0391). Dated August 7. To Superintendent, Mojave National Preserve, National Park Service Barstow, California. From Acting Field Supervisor, Carlsbad Fish and Wildlife Office. Carlsbad, California.

[Service] U.S. Fish and Wildlife Service, Animal and Plant Health Inspection Service, Edwards Air Force Base, Army National Training Center and Ft. Irwin, Marine Air Ground Task Force Training Command, Marine Corps Logistics Base, Naval Air Weapons Station, Bureau of Land Management, and National Park Service. 2008. Environmental assessment to implement a desert tortoise recovery plan task: Reduce common raven predation on the desert tortoise. Ventura, California.

APPENDIX A

Activity Form

Activity Request Form

This consultation consists of the programmatic biological opinion, the National Park Service's (Park Service) request to use the programmatic biological opinion for the proposed action with project specific information (Part A), the Fish and Wildlife Service's (Service) response Part B), and the Park Service's post-project reporting (Part C). This form will be filled out and sent electronically. If your response to any questions does not fit in the fillable box, **please add extra pages and note the additional pages in the box.**

For projects that require an activity form, the Service's Division Chief will respond within 30 days by signing and returning the activity form via electronic mail. The Park Service will not authorize or implement such projects until it receives notification from the Service.

For projects that are minor activities and do not require an activity form, the Park Service will not be required to notify the Service, unless a desert tortoise was moved out of harm's way. For these activities, the Park Service will notify the Service immediately and include completed Part C of the activity form in the annual report.

Part A: Request to Implement an Activity by the Park Service

Date of request from Park: 11/01/2019

Park Service point of contact: Neal Darby

Phone number/e-mail: (760) 252-6146 / neal_darby@nps.gov

Project/activity title: Lugo-Victorville 500 kV Transmission Line Remedial Action Scheme Project

Proponent/applicant: Southern California Edison Company

Summary and Results of Desert Tortoise Survey:

Attach any relevant reports to indicate habitat quality or survey information ☑

Note: Attachment C: A Biological Assessment of Anticipated Impacts on the Desert Tortoise Associated with the Lugo-Victorville 500 kV Transmission Line Remedial Action Scheme Project and contains survey data for the entire survey alignment, including work areas in Nevada.

Number of acres anticipated to be affected:

Non-critical habitat: 21.71

Critical habitat: 7.43

Description of Proposed Action:

Attach a map with UTM's of the action area to form ☑

Electronically send GIS project data to Service ☑

What is the Federal action (*e.g.*, right-of-way, permit, lease, etc.)? ROW

How will access to work areas be accomplished? List equipment and routes of travel.

Please refer to Attachment A: Supplemental Information and Attachment B: Detailed Route Map.

List proposed Protective Measures

Please refer to Attachment A: Supplemental Information.

Signature (Responsible Park Service Official):

SAMUEL QUAKENBUSH Digitally signed by SAMUEL QUAKENBUSH
Date: 2019.11.08 13:05:58 -08'00'

Lugo-Victorville 500-kV Transmission Line Remedial Action Scheme Project, San Bernardino County, California, and Clark County, Nevada (FWS-SBR-19B0068-20F0284)

Additional protective measures or Conservation and Management Actions agreed to by the National Park Service and Service during consultation:

The National Park Service must ensure that:

a. Southern California Edison flags desert tortoise burrows and pallets in a manner that workers associated with the project will recognize but will not attract undue attention from non-project personnel.

b. The worker education program contains an element that specifically discusses the type of flagging used.

c. Southern California Edison removes all flagging associated with desert tortoise burrows and pallets as soon as possible it completes work in any given area.

d. Southern California Edison uses the handling guidance in the Service's field manual when monitoring the proposed action. The field manual is available at: https://www.fws.gov/carlsbad/PalmSprings/DesertTortoise.html.

e. Southern California Edison uses a disinfectant to clean re-usable equipment (e.g., scales, etc.) that comes into contact with desert tortoises that is effective against a broad spectrum of organisms and requires short contact times (e.g., RESCUE RTU).

Part B: Service Response

Service File No. for Proposed Activity: FWS-SBR-19B0068-20F0284

Date of FWS response to Park Service:

Conclusion

Is this project appropriate for use under the programmatic biological opinion? Yes

Additional Protective Measures agreed to by the Park Service and Service during consultation:

Please see the following page for additional protective measures.

Signature: RAYMOND BRANSFIELD Digitally signed by RAYMOND BRANSFIELD
Date: 2019.12.04 15:10:51 -08'00'

Authorized Official Division Chief)
Palm Springs Fish and Wildlife Office
Palm Springs, California

Part C: Post-project Reporting

Number of desert tortoises:

Killed:

Injured:

Moved:

Number of acres actually disturbed:

Non-critical habitat:

Critical habitat:

Other effects not described above:

Recommendations to improve protection of desert tortoises during future project activities:

Attachment 1

Activity Request Form

This consultation consists of the programmatic biological opinion, the Bureau of Land Management's (Bureau) request to use the programmatic biological opinion for the proposed action with project-specific information (Part A), the Fish and Wildlife Service's (Service) response (Part B), and the Bureau's post-project reporting (Part C). This form will be filled out and sent electronically. If your response to any question does not fit in the fillable box, **please add extra pages and note the additional pages in the box**.

For projects that affect 10 acres of habitat or less or that do not involve ongoing impacts to desert tortoises that are associated with transportation, the Service's Division Chief will have 30 days to respond via electronic mail if she or he has any concerns with use of the programmatic biological opinion. The Bureau may assume that the Service has no concerns if it does not respond by the close of the 30-day period; as a courtesy, the Service's Division Chief will attempt to notify the Bureau of her or his decision as soon as possible.

For projects that affect more than 10 acres or that will involve ongoing impacts to desert tortoises that are associated with transportation, the Service's Division Chief will respond within 30 days by signing and returning the activity form via electronic mail. The Bureau will not authorize or implement such projects until it receives notification from the Service.

Part A: Request to Implement an Activity by the Bureau

Date of request from Bureau: 08/23/2019

Bureau point of contact: Angelica Mendoza

Phone number/e-mail: (951) 697-5233 / angelicamendoza@blm.gov

Project/activity title: Lugo-Victorville 500 kV Transmission Line Remedial Action Scheme Project

Proponent/applicant: Southern California Edison Company

Number of desert tortoises potentially impacted (see Service survey protocol 2018):

> 160 mm: 12

< 160 mm: 1

Number of acres anticipated to be affected:

Non-critical habitat: 21.71

Critical habitat: 7.43

Description of Proposed Action:

Attach a map with UTM's of the action area to form ☑

Electronically send GIS project data to Service ☑

What is the Federal action (*e.g.*, right-of-way, permit, lease, etc.)? ROW

What is the estimated date the action would begin? 01/01/2020

What is the estimated date the action would end? 12/31/2020

What are the specific activities that would be implemented?

Please refer to Attachment A: Supplemental Information and Attachment B: Detailed Route Map.

How will access to work areas be accomplished? List equipment and routes of travel.

Please refer to Attachment A: Supplemental Information and Attachment B: Detailed Route Map.

List proposed Conservation and Management Actions that are desert tortoise specific:

Please refer to Attachment A: Supplemental Information.

Survey Summary and Results: **Note: Attachment C: A Biological Assessment of Anticipated Impacts on the Desert Tortoise Associated with the Lugo-Victorville 500 kV Transmission Line Remedial Action Scheme Project and contains survey data for the entire survey alignment, including work areas in Nevada.**

Attach any relevant reports to indicate habitat quality or survey information ☑

Signature (Responsible Bureau Official):

ANGELICA MENDOZA Digitally signed by ANGELICA MENDOZA
Date: 2019.10.01 09:42:15 -07'00'

Part B: Service Response

Service File No. for Proposed Activity: FWS-SBR-17B0532-20F0276

Date of FWS response to Bureau:

Conclusion

Is this project appropriate for use under the programmatic biological opinion? Yes

Additional protective measures or Conservation and Management Actions agreed to by the Bureau and Service during consultation:

Please see attached sheet.

Signature: RAYMOND BRANSFIELD Digitally signed by RAYMOND BRANSFIELD
Date: 2019.12.04 14:04:33 -08'00'

Authorized Official
Palm Springs Fish and Wildlife Office
Palm Springs, California

Part C: Post-project Reporting

Number of desert tortoises:

Killed:

Injured:

Moved:

Number of acres actually disturbed:

Non-critical habitat:

Critical habitat:

Other effects not described above:

Recommendations to improve protection of desert tortoises during future project activities:

Appendix D-14

Invasive Plant and Noxious Weed Survey Report

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE REMEDIAL ACTION SCHEME PROJECT 2022 INVASIVE PLANT AND NOXIOUS WEED SURVEY REPORT

San Bernardino County, California and Clark County, Nevada

Prepared for:
Southern California Edison
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June 22, 2022

Artemis Environmental Services, Inc.

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1 INTRODUCTION

Artemis Environmental Services, Inc. (Artemis Environmental) was retained by Rincon Consultants, Inc. (Rincon) to perform an invasive plant and noxious weed survey on behalf of Southern California Edison (SCE) for the Lugo-Victorville 500-kilovolt (kV) Transmission Line Remedial Action Scheme Project (Project). The Project, which is located in San Bernardino County, California and Clark County, Nevada, includes two projects/segments, Segment 1: Gale Substation to Pisgah Substation (Gale to Pisgah Project; Segment 1) and Segment 2: Pisgah Substation to tower M152-T2 just beyond Nipton Substation (LVRAS; Pisgah to Nipton; Segment 2). Segment 1 includes the installation of telecommunication all-dielectric self-supporting (ADSS) cable line from SCE's Gale Substation near Barstow, California to SCE's Pisgah Substation near Ludlow, California for approximately 29 miles within an existing SCE right-of-way (ROW) along U.S. Route 66 and Interstate Highway 40. Segment 2 includes the removal of the existing overhead ground wire and replacement with Optical Ground Wire along approximately 84 miles within the existing SCE ROW starting at SCE's Pisgah Substation and ending at transmission tower M152-T2 within Clark County, Nevada (near Nipton Road/Joshua Tree Highway).

The invasive plant and noxious weed survey area (Survey Area) totals 3,013.4 acres and encompasses all disturbance areas with a 50-foot buffer and the entire ROW with a 50-foot buffer (25-feet on each side of the ROW). Disturbance areas are defined as all potential areas where work will be performed based on the current design.

1.1 PROJECT LOCATION

The Project consists of two projects/segments, Segment 1: Gale to Pisgah and Segment 2: Pisgah to Nipton (LVRAS). Segment 1 is located within an existing distribution line ROW adjacent to U.S. Route 66, traversing private land and open space public lands including those administered by the BLM, Department of Defense (DOD), and State Lands Commission (SLC) in San Bernardino County, California (Appendix A, Figures 1 and 2: Project Overview and Project Vicinity, respectively). Segment 2 is located within primarily undisturbed desert scrub spanning lands administered by the BLM, DOD, Mojave National Preserve (MNP), SLC, and private landowners in San Bernardino County, California and Clark County, Nevada (Appendix A, Figure 2: Project Vicinity). The western edge of Segment 1, at Gale Substation, is located at latitude N34.858043, and longitude W-116.866728. Structure 429142S, which represents the eastern edge of Segment 1, is located at latitude N34.780758 and longitude W-116.386662. The Pisgah Substation is located at latitude N34.782406, and longitude W-116.384607, and the eastern edge of Segment 2, at Nipton Substation, is located at latitude N35.484861 and longitude W-115.187637.

1.2 SURVEY AREA SITE DESCRIPTION

The invasive plant and noxious weed survey area (Survey Area), which totals approximately 3,013.4 acres, encompasses all disturbance areas with a 50-foot buffer and the entire ROW with a 50-foot buffer (25-feet on each side of the ROW). Disturbance areas are defined as all potential areas where work will be performed based on the current design.

Elevations vary from approximately 1,800 feet above mean sea level (AMSL) to approximately 2,100 feet AMSL within the Segment 1 and from approximately 1,100 feet AMSL to approximately 4,600 feet AMSL within Segment 2. The Survey Area is located within the American Semidesert and Desert Province ecological region (322), which encompasses the Mojave, Colorado, and Sonoran Deserts (USFS 2018). Specifically, the Survey Area is within the Mojave Desert section and ecoregion subsections: Mojave Valley-

Granite Mountains, Bullion Mountains-Bristol Lake, Silurian Valley-Devil's Playground, Kingston Range-Valley Wells, Ivanpah Valley, Providence Mountains - Lanfair Valley (Walter-Feller 2020).

2 Invasive Plant and Noxious Weed Inventory Methods

This section outlines the methods used to locate and identify invasive plants and noxious weeds within the Survey Area, including a pre-field literature review to develop a list of noxious weeds and invasive plants with the potential to occur in the Survey Area based on federal and state definitions in the regulations as defined in the IWMP (Rincon 2022). The objective of the surveys was to identify and map noxious and invasive weeds to inform management during the pre-construction, construction, and restoration phases of the Project.

2.1 Pre-Field Analysis

2.1.1 Invasive Plant and Noxious Weed Definitions

The following are the types of weeds targeted for surveys:

- Noxious Weeds: Species identified by public law as exerting substantial negative environmental or economic impact. Noxious weeds are a subset of non-native (or exotic) plants. The term "noxious weeds" is a legal classification, not an ecological term.
- Invasive Plants: Species that are capable of spreading beyond their natural range or environmental setting, often in response to disturbance or changing conditions. Invasive plant species are generally but not always non-native. The BLM defines an invasive plant as "a plant that interferes with management objectives for a given area of land at a given point in time."
- Other weedy plants: Other organizations, such as the non-profit California Invasive Plant Council (Cal-IPC) and county agriculture commissioners (California) and weed control districts (Nevada) maintain other lists of weeds. The vast majority of these species were not indigenous to a given area before European settlement.

The term "noxious weed" is defined legally, through federal and state laws, as follows:

U.S. Federal Plant Protection Act (7 U.S.C. § 7702.10): "any plant or plant product that can directly or indirectly injure or cause damage to crops (including nursery stock or plant products); livestock, poultry, or other interests of agriculture; irrigation; navigation; the natural resources of the U.S.; the public health; or the environment."

CDFA Noxious Weed Act of 1989 (CDFA 3 California Administrative Code § 4500): "any species of plant that is, or is liable to be, troublesome, aggressive, intrusive, detrimental, or destructive to agriculture, silviculture, or important native species, and difficult to control or eradicate, which the director, by regulation, designates to be a noxious weed. In determining whether or not a species shall be designated a noxious weed for the purposes of protecting silviculture or important native Integrated Weed Management Plan 2-2 plant species, the director shall not make that designation if the designation will be detrimental to agriculture."

Nevada Department of Agriculture (NDA) Control of Insects, Pests, and Noxious Weeds Statutes (NRS Chapter 555): "any species of plant which is, or is likely to be, a public nuisance, detrimental or destructive and difficult to control."

2.1.2 Invasive Plants and Noxious Weeds with Potential to Occur in the Survey Area

The Non-native Invasive Plants Identified or with Potential to Occur in the LVRAS Project Area list developed for the IWMP was also the list of noxious weeds with potential to occur in the Survey Area used for this survey effort. To reference this list of 40 species, please see Table 2-1 of the IWMP (Rincon 2022).

2.2 Field Surveys

Artemis Environmental performed a focused field survey of the Survey Area for invasive plants and noxious weeds in April 2022. The survey dates and personnel are provided in Table 1. Due to the lack of winter precipitation over much of the Survey Area in 2021/2022, the majority of annual species failed to germinate and were present only as dry remains over large sections of the Project at the time of the surveys. Although dry, many of the annual invasive plants and weeds were standing and identifiable as remains.

Table 1 Survey Dates and Personnel

	Survey Personnel[1]						
Date	EK	FC	JZ	MB	MCH	KG	VM
12- Apr	X	X	X			X	
13- Apr	X	X	X		X	X	
14- Apr	X	X	X	X	X	X	
15- Apr	X	X	X	X	X	X	
16- Apr	X	X		X	X	X	X
17- Apr	X	X		X	X		X
18- Apr	X	X	X	X	X	X	X
19- Apr	X	X	X	X	X	X	X
20- Apr	X	X	X	X	X	X	X
21- Apr	X	X	X	X	X	X	X
22- Apr		X	X			X	

[1] EK = Ed Kentner, FC = Frankie Coburn, JZ = Jordan Zylstra, MB = Marc Baker, MCH = Michelle Cloud Hughes, KG= Kyle Gunther, VM = Vir McCoy

Qualified botanists and technicians conducted pedestrian and vehicle surveys throughout the Survey Area documenting invasive plants and noxious weeds as defined per the IWMP (Rincon 2022). Pedestrian surveys focused on weed infestations and populations within the disturbance areas while more cursory vehicle surveys were conducted for the sections of the ROW between the disturbance areas.

During the surveys, the surveyors mapped all target species observed with the exception of several common ubiquitous weeds, such as Mediterranean grass (*Schismus barbatus*), red brome (*Bromus madritensis* ssp. *rubens*), and several others that were generally too abundant to map. The general range of these ubiquitous species was tracked and recorded but individual occurrences of these species were only mapped at locations apart from the areas where they were documented to be abundant. For all other target species, surveyors mapped points for individual plants and small groups of plants and used polygon features to record larger infestations. In some cases, groups of points in close proximity to each other were digitized into polygons following the surveys for clarity and consistency in the mapping.

The ESRI Collector application installed on tablets and smart phones was used to navigate the Survey Area and for the mapping. The species scientific name, estimated population size, and any observation notes were recorded directly into Collector during the surveys. Populations extending beyond the Survey Area and ubiquitous species were noted to further inform the IWMP. Representative photographs of weed

species, infestations, and areas of note were recorded during the surveys and are provided in Appendix B: Representative Photographs.

2.2.1 Survey Limitations

Dry conditions prevailed in much of the Mojave Desert during the 2021-2022 winter precipitation season. While portions of Segment 2 showed better germination of spring annuals than was observed in 2021, Segment 1 was extremely dry in 2022 and showed no germination of annuals with the exception of a few roadside weeds near Newberry Springs. The Barstow-Daggett Airport near Segment 1 was documented to have received 0.00 inches of precipitation within the weeks prior to the survey effort (NOAA 2022), with no precipitation in the general vicinity since December 2021. Similarly low precipitation occurred the previous year (2019-2020) along much of the alignment. Although many annual weed species were identifiable during the survey effort, the survey timing and lack of moisture may have limited the detection of some annual weed populations and may have reduced the estimates of weed population sizes recorded.

3 Invasive Plants and Noxious Weeds Occurring within the Project Area

Fourteen species of invasive plants and/or noxious weeds were documented in the Survey Area, with all 14 species occurring in California and four occurring in Nevada. Specific locations were mapped for 13 of these species, while for six species, at least some occurrences were too large and the number of individuals too numerous for mapping to be practical. A summary of the number of mapped specific locations and approximate number of individuals observed for each species is provided in Table 2. The mapping results are provided in Appendix A, Figures, Figure 3: Invasive Plant and Noxious Weed Inventory Results. Ubiquitous occurrences are not shown on Figure 3. For ubiquitous species, the geographic range of the infestations were recorded as spans between pole/structure numbers and/or Project components, and these results are provided in Table 3.

Table 2 Invasive and Noxious Non-native Plant Species Non-Ubiquitous Occurrences in the Survey Area

Scientific Name	Common Name	Cal-IPC Rating[1]	No. of Locations	Approximate Total No.[2]
Avena fatua	wild oat	Moderate	1	100
Brassica tournefortii	Sahara mustard	High	94	10,000+
Bromus rubens	red brome	High	5	N/A
Bromus tectorum	cheatgrass	High	7	N/A
Cynodon dactylon	Bermuda grass	Moderate	5	N/A
Erodium cicutarium	redstem filaree	Limited	8	3,300
Hordeum murinum	hare barley	Moderate	16	N/A
Lepidium latifolium	perennial peppergrass	High	2	16
Portulaca oleracea	common purselane	Not rated	6	11,000
Salsola sp.	Russian thistle	Limited	47	2,500+
Sisymbrium irio	London rocket	Limited	35	N/A
Tamarix aphylla	Athel tamarisk	Limited	14	400
Tamarix ramosissima	branched saltcedar	High	16	110

[1]Cal-IPC (2022) ratings:

High – These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure.

Moderate – These species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure.

Limited – These species are invasive, but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score.

[2] Totals for mapped specific locations only, excluding areas where the species was ubiquitous.

Table 3.Locations of Ubiquitous Species

Scientific Name	Common Name	Cal-IPC Rating[1]	Locations
Brassica tournefortii	Sahara mustard	High	2347276E to 4792803E, 2347453E to 4185421E, M97-T1 to M101-T2, Telecom Structure 9 to 2347490E
Bromus rubens	red brome	High	2347489E to 2347538E, 2347497E to 2347490E, M107-T2 to M135-T4, M147-T3 to M151-T3
Erodium cicutarium	redstem filaree	Limited	M103-T5 to M134-T2, M147-T3 to M151-T3, Telecom Structure 9 to 2347490E
Salsola sp.	Russian thistle	Limited	M102-T2 to M102-T6, M103-T3 to M103-T4, M97-T1 to M101-T2, 228307S to 228313S, 30608S to 30618S, 62308CTC to 1729962E
Schismus barbatus	Mediterranean grass	Limited	1700575E to M97-T1, 1729969E to 30682S, 2347276E to 2347490E, 2347489E to 4185421E, 4185402E to 1730292E, 52005CTC to 60139CIT, M135-T1 to M135-T4, M147-T3 to M151-T3, M97-T1 to M121-T4, Telecom Structure 9 to 2347490E
Sisymbrium irio	London rocket	Limited	2347276E to 2347490E, 2347489E to 4185421E, 4185402E to 1730292E, 52005CTC to 62338CTC, 62312CTC to 30652S, Telecom Structure 9 to 2347490E

[1]Cal-IPC (2022) ratings:

High – These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure.

Moderate – These species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure.

Limited – These species are invasive, but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score.

The following are brief descriptions of each invasive plant and noxious weed species observed within the Survey Area primarily adopted from Cal-IPC Inventory (Cal-IPC 2006). Appendix B provides representative photos of 11 of the 14 species observed during the survey. While some species were observed as live individuals, as previously mentioned in Section 2.2.1 Survey Limitations, the Project alignment has received very little to no precipitation and many of the species observed were senescent individuals; the photos included in Appendix B represent live plants and/or plants or thatch from plants that senesced up to two years ago and represent the overall condition of the majority of plants observed on the Project alignment.

- Wild oat (*Avena fatua*) is a winter annual grass (Poaceae) often growing in sandy/poor soils and often on road verges.
- Sahara mustard (*Brassica tournefortii*) is an erect annual herb that grows 4 to 28 inches (10-70 cm) high. It is a member of the Mustard family (Brassicaceae) and is especially prevalent on sandy soils. Plants reproduce only by seed.
- Red brome (*Bromus madritensis* subsp. *rubens*) is an erect annual grass that is reddish brown to purplish at maturity. It is a member of the Grass family (Poaceae) and is commonly found in disturbed

areas in a climate with hot, dry summers and mild, moist winters. Propagation is by seed (CAB International 2019).

- Cheatgrass (*Bromus tectorum*) is an annual grass that can grow up t0 2.5 ft. (0.76 m) in height that has long-slender yellowish-green seedheads that turn reddish-purple at maturity. It blooms from May to June and reproduces by seed that is easily spread through construction equipment, roads, wind, livestock, and other mechanisms.
- Bermuda grass (*Cynodon dactylon*) is a prostrate, turf-forming perennial grass that grows 4 to 16 inches (10-40 cm) high. It is a member of the Grass family (Poaceae). The leaves are less than 2.4 inches (6 cm) long. It spreads by rhizomes and stolons, and sometimes by seed.
- Redstem filaree (*Erodium cicutarium*) is an aggressive annual/biannual in the Geraniaceae family. It is often found along roadsides, grasslands, fields, and semi-desert areas.
- Hare barley (*Hordeum murinum*) is a cool-season annual grass with long awns. Mature plants can reach up to 12 to 36 inches (30-90 cm) tall with flat and narrow leaves. It is common in disturbed areas, in both wetland and upland habitats. It is a member of the Grass family (Poaceae) and spreads by seed.
- Perennial peppergrass (*Lepidium latifolium*) is a perennial herb in the Brassicaceae family. It grows aggressively, forming dense colonies and outcompeting native species. It reproduces both by seed and vegetatively from its roots and small root fragments.
- Common purselane (*Portulaca oleracea*) is an annual herb that is characteristic of disturbed habitat communities. It blooms from May to September and is a member of the Portulacaceae family.
- Russian thistle ("*Salsola* sp." in this report, but likely includes both *Salsola tragus* and *Salsola paulsenii*) *Salsola tragus* is a rounded annual herb, less than 5 feet (1.5 m) high. It is a member of the Chenopod family (Chenopodiaceae). The leaves are 0.3 to 2 inches (0.8-5.2 cm) long. It spreads by seed. *Salsola paulsenii* is a bushy annual found throughout the Mojave Desert of California within desert scrub and disturbed areas. It is a member of the Chenopod family (Chenopodiaceae) and is often confused and hybridizes with Russian thistle. It spreads by seed.
- Common Mediterranean grass (*Schismus barbatus*) is a winter annual invasive grass found mostly in disturbed areas and deserts. It is a member of the Grass family (Poaceae) and spreads by seed.
- London rocket (*Sisymbrium irio*) is a winter annual forb/herb in the Brassicaceae family. It matures earlier in the year than native species, giving it an advantage to outcompete them. It is often found in abandoned fields, waste places, roadsides, and orchards.
- Athel tamarisk (*Tamarix aphylla*) is a large shrub or tree that grows up to 82 feet (25 m) high. It is a member of the Tamarisk family (Tamaricaceae). The leaves are united around the stem, giving it a jointed appearance. It spreads by planting and wind and flood-borne seed, and it hybridizes with saltcedar (*T. ramosissima*).
- Branched saltcedar (*Tamarix ramosissima*) is a multi-trunked tree or large shrub that grows up to 26 feet (8 m) high. It is a member of the Tamarisk family (Tamaricaceae). The leaves are scale-like, stems green and smooth. It spreads by seed and root sprouts.

4 REFERENCES

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Appendix A

Figures

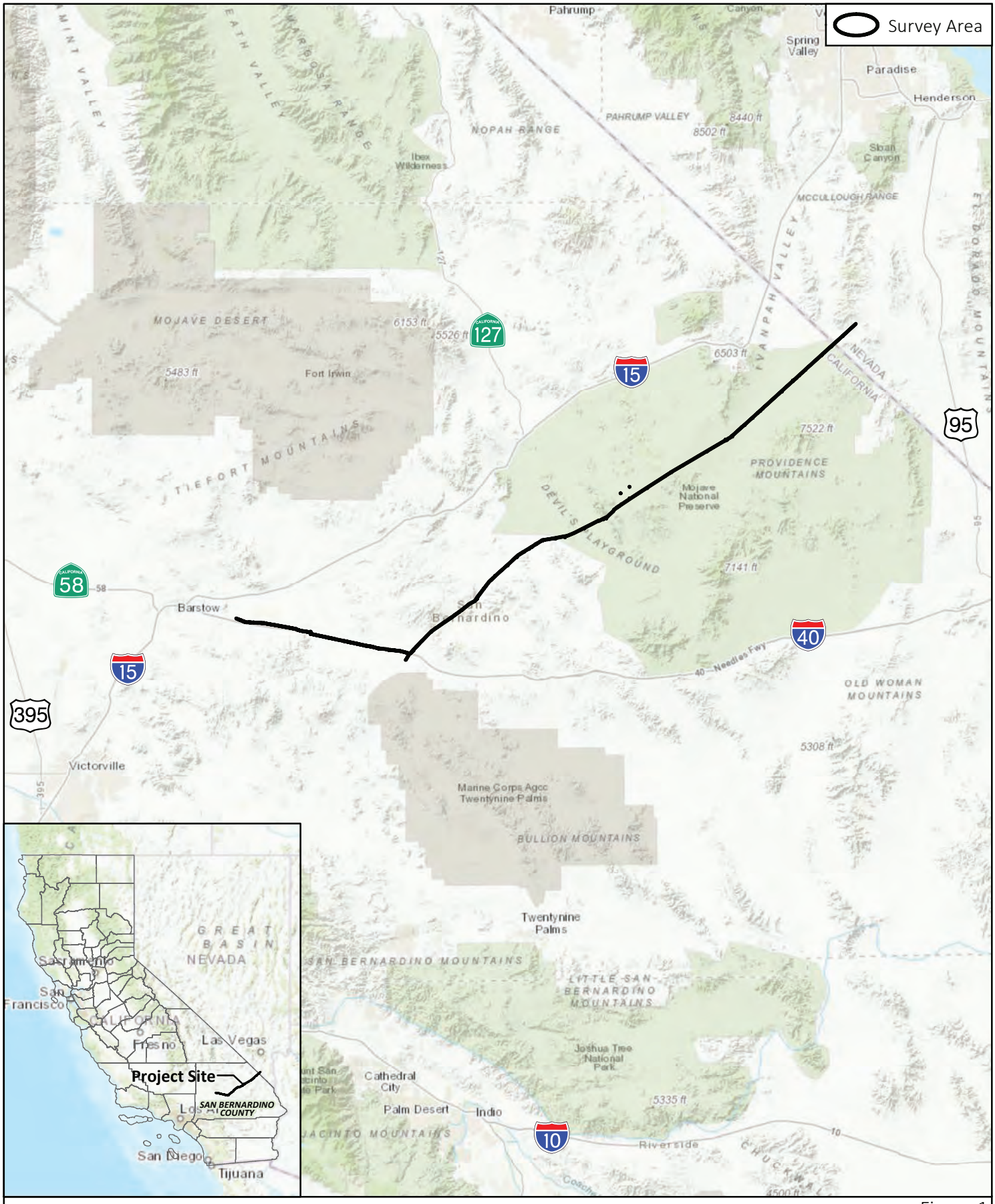


Figure 1

Project Overview

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

Artemis Environmental Services, Inc.

Survey Township
10N 01E

Survey Township
10N 02E

Survey Township
10N 03E

Survey Township
09N 01E

Survey Township
09N 02E

Survey Township
09N 03E

Survey Township
08N 01E

Survey Township
08N 02E

Survey Township
08N 03E

Yermo

Toomey

Water Tank

Radio Tower

Mojave River

Powerplant

Barstow-Daggett Airport

Minneola

Newberry Springs

Water Tank

MARINE CORPS SUPPLY CENTER YERMO AREA

Survey Area
PLSS Survey Township
PLSS Section

Figure 2, Page 1 of 8

Project Vicinity

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 1 Mile

Artemis Environmental Services, Inc.

Survey Township
09N 03E

Survey Township
09N 04E

Survey Township
09N 05E

Survey Township
08N 03E

Survey Township
08N 04E

Survey Township
08N 05E

Troy Lake

Talc Mine

Hector

LAVA

Survey Area
PLSS Survey Township
PLSS Section

Figure 2, Page 2 of 8

Project Vicinity

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 1 Mile

Artemis Environmental Services, Inc.

Survey Area
PLSS Survey Township
PLSS Section

Survey Township
09N 05E

Survey Township
09N 06E

Survey Township
09N 07E

Survey Township
08N 05E

Survey Township
08N 06E

Survey Township
08N 07E

Old Dominion Mine

Black Butte Mine

Preston Mine

Pisgah

Lavic Mine

Figure 2, Page 3 of 8

Project Vicinity

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0
1 Mile

Artemis Environmental Services, Inc.

Survey Township
11N 07E

Survey Township
11N 08E

Survey Township
11N 09E

Survey Township
10N 07E

Survey Township
10N 08E

Survey Township
10N 09E

Survey Township
09N 07E

Survey Township
09N 08E

Survey Township
09N 09E

Survey Area
PLSS Survey Township
PLSS Section

Figure 2, Page 4 of 8

Project Vicinity

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 1 Mile

Artemis Environmental Services, Inc.

Survey Township
12N 09E

Survey Township
12N 10E

Survey Township
12N 11E

Survey Township
11N 09E

Survey Township
11N 10E

Survey Township
11N 11E

Survey Area
PLSS Survey Township
PLSS Section

Figure 2, Page 5 of 8

Project Vicinity

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 1 Mile

Artemis Environmental Services, Inc.

Survey Area
PLSS Survey Township
PLSS Section

Survey Township
13N 11E

Survey Township
13N 12E

Survey Township
13N 13E

Survey Township
12N 11E

Survey Township
12N 12E

Survey Township
12N 13E

Figure 2, Page 6 of 8

Project Vicinity

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 1 Mile

Artemis Environmental Services, Inc.

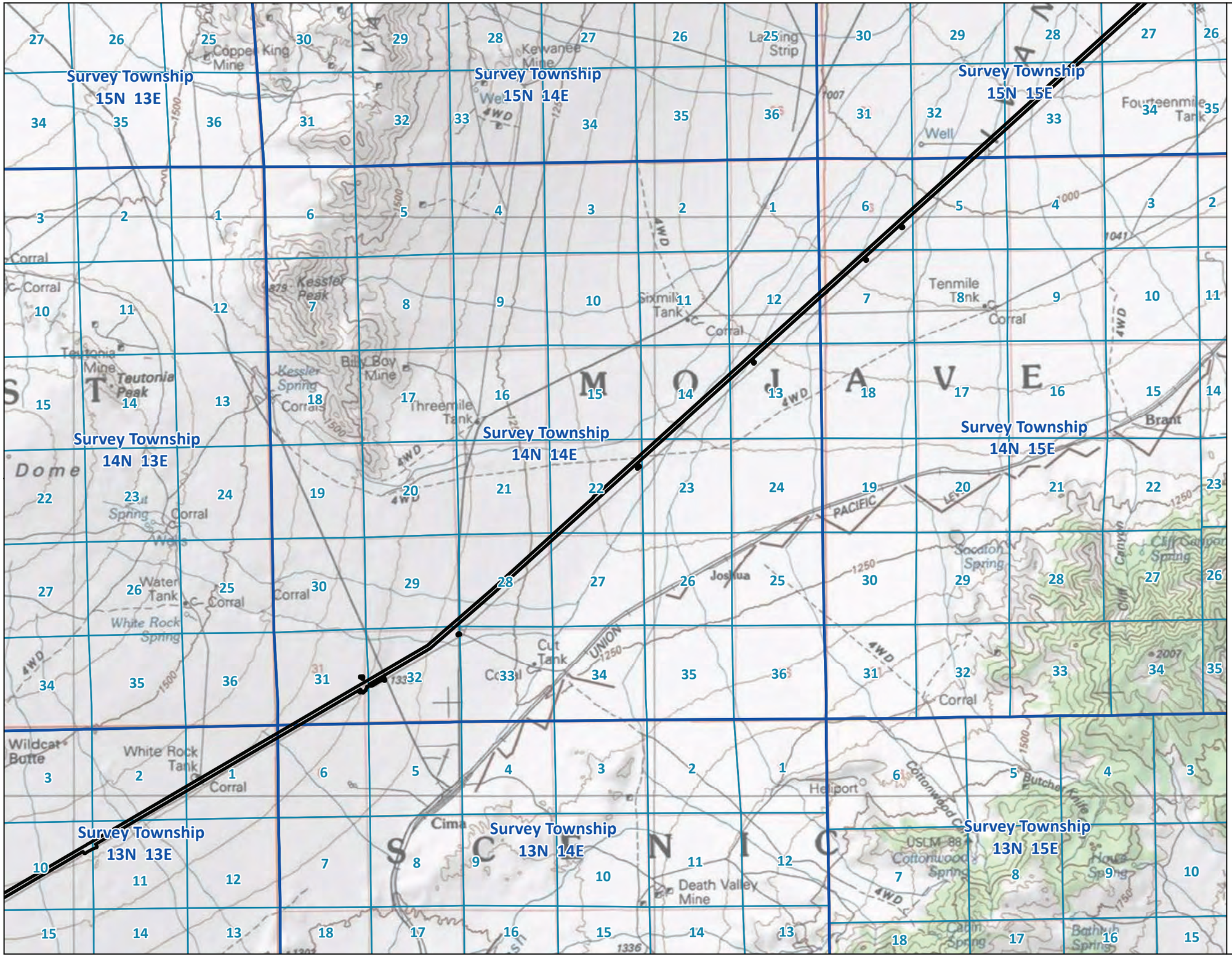


Figure 2, Page 7 of 8

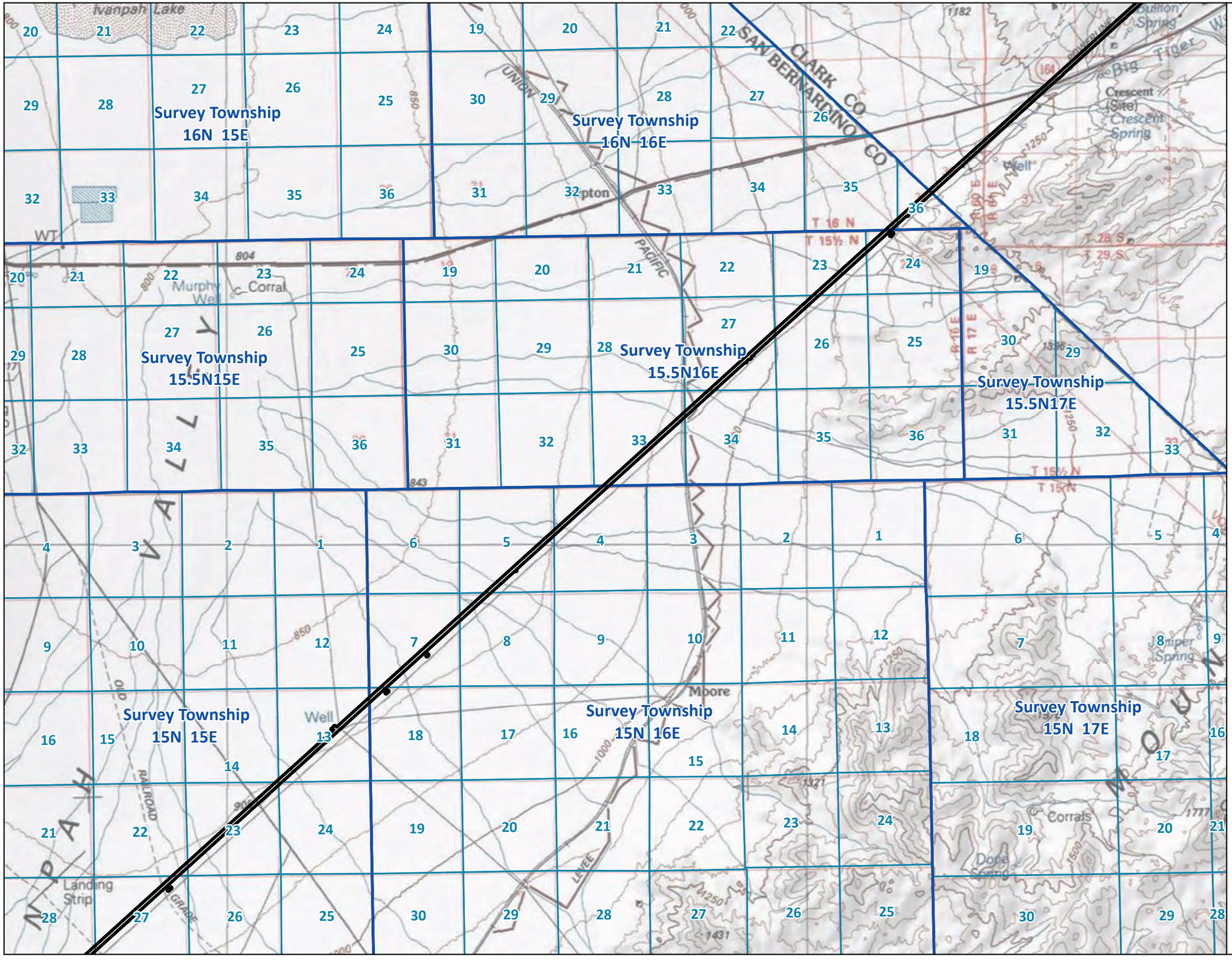
Project Vicinity

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N

0 1 Mile

Artemis Environmental Services, Inc.



Survey Area
PLSS Survey Township
PLSS Section

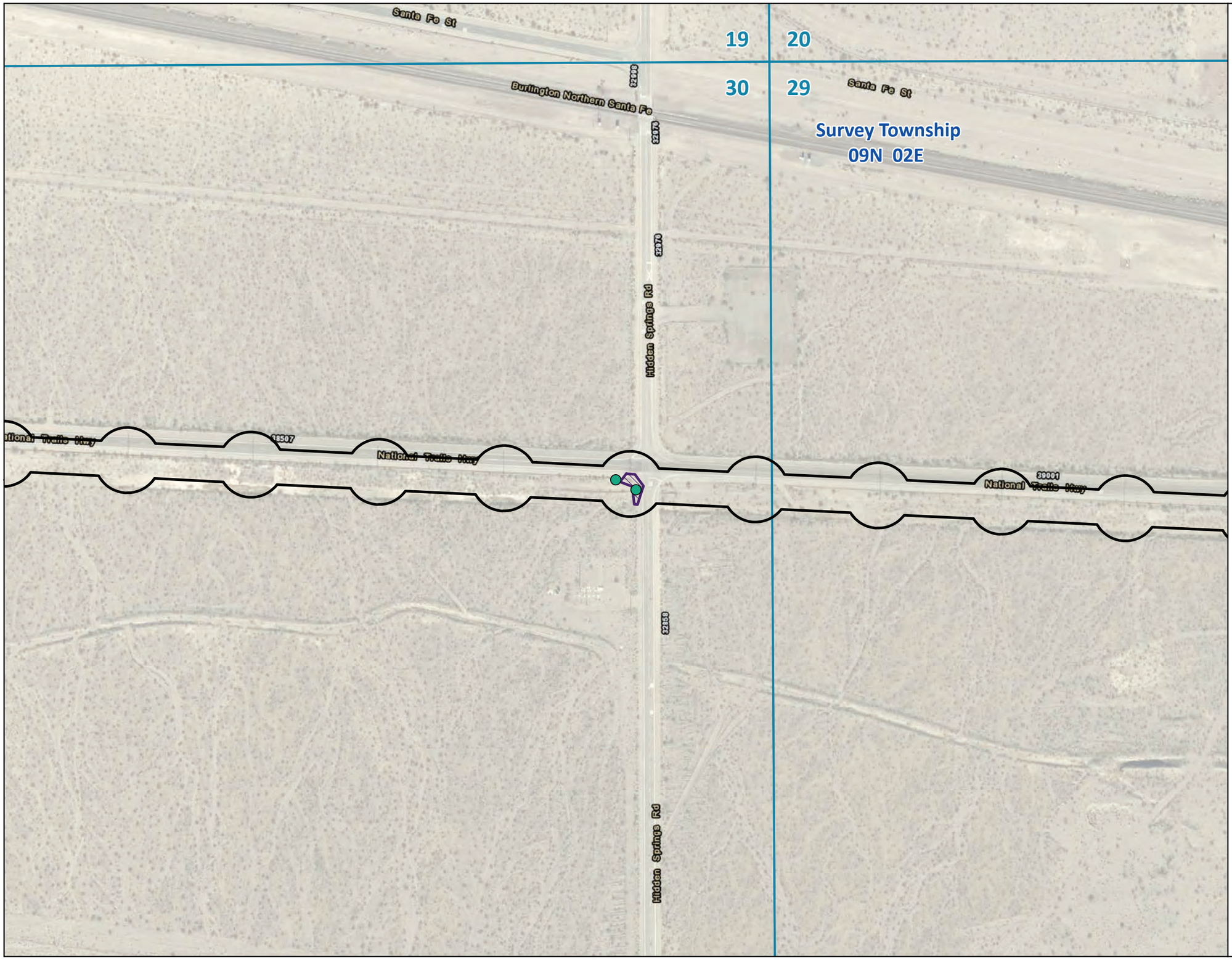
Figure 2, Page 8 of 8

Project Vicinity

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 1 Mile

Artemis Environmental Services, Inc.



Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Common Purselane (*Portulaca oleracea*)
Hare Barley (*Hordeum murinum*)

Figure 3, Page 1 of 65

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.

Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Bermuda Grass (*Cynodon dactylon*)

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.

Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Red Brome (*Bromus rubens*)

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.

Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Sahara Mustard (*Brassica tournefortii*)

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.

Survey Township
09N 02E
26

Dune Rd
32101
National Trails Hwy

Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Hare Barley (*Hordeum murinum*)

Figure 3, Page 5 of 65

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.

Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Sahara Mustard (*Brassica tournefortii*)

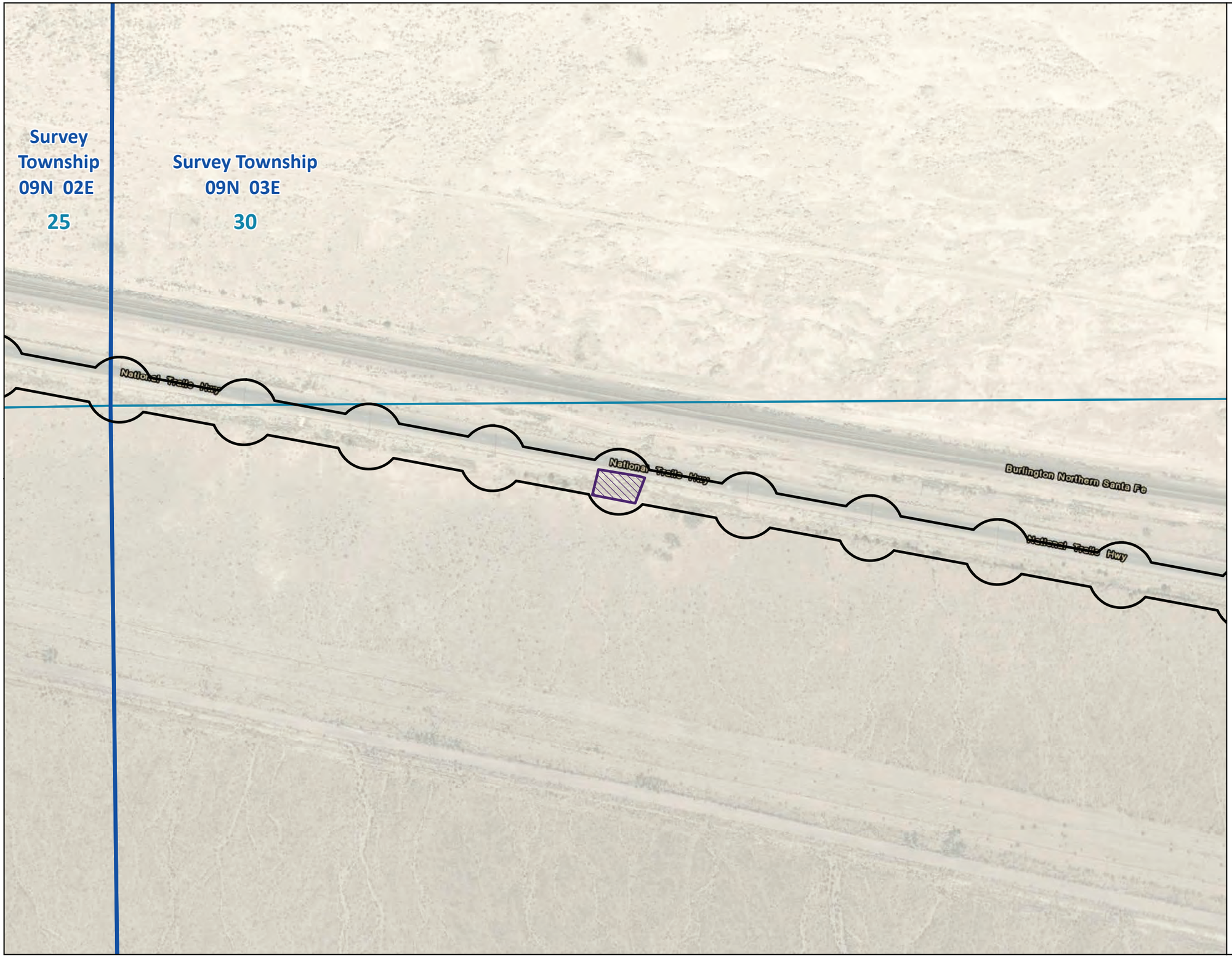
Figure 3, Page 6 of 65

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.



Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Hare Barley (*Hordeum murinum*)

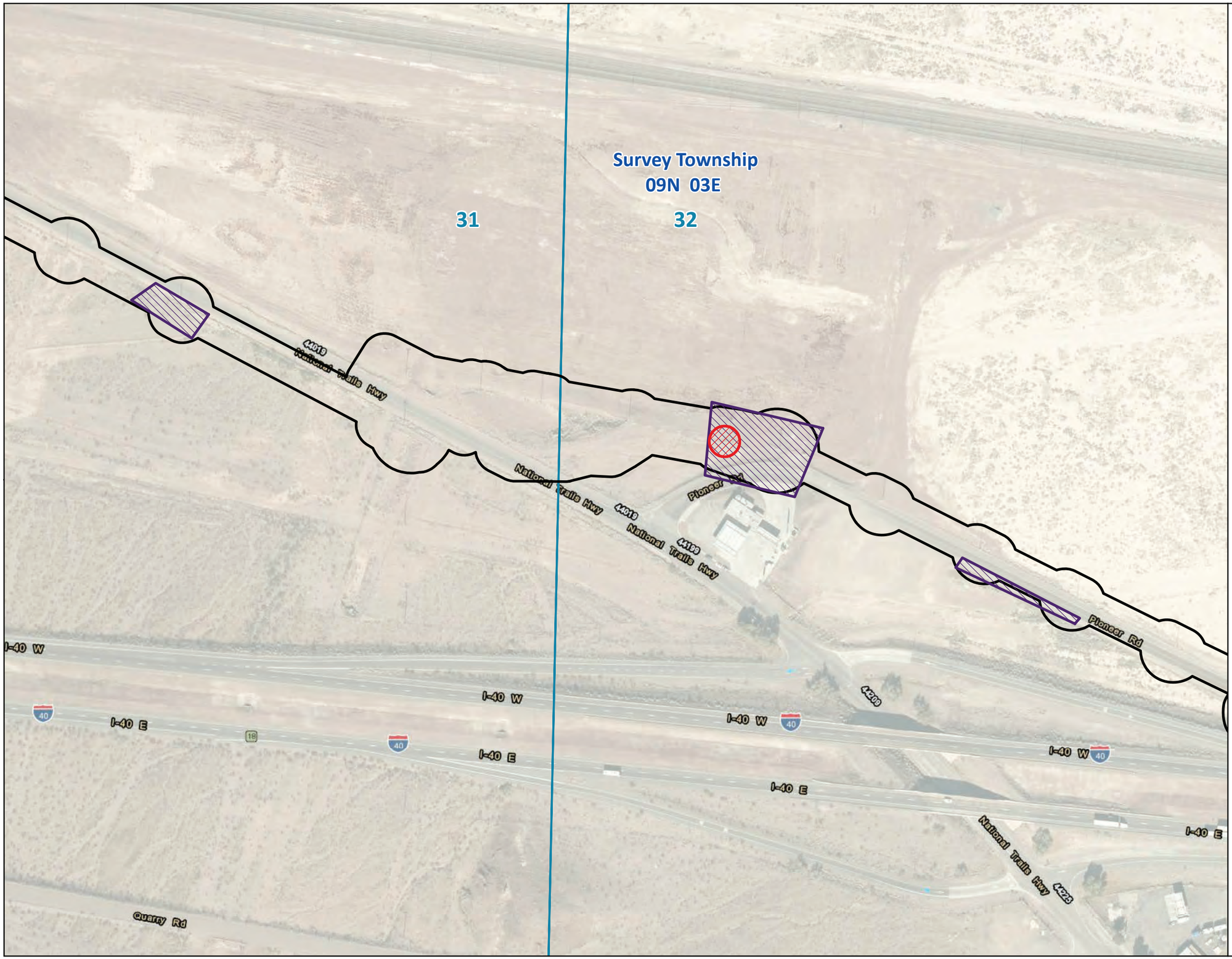
Figure 3, Page 7 of 65

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.



Survey Area

PLSS Survey Township

PLSS Section

Survey Results

Hare Barley (*Hordeum murinum*)

Red Brome (*Bromus rubens*)

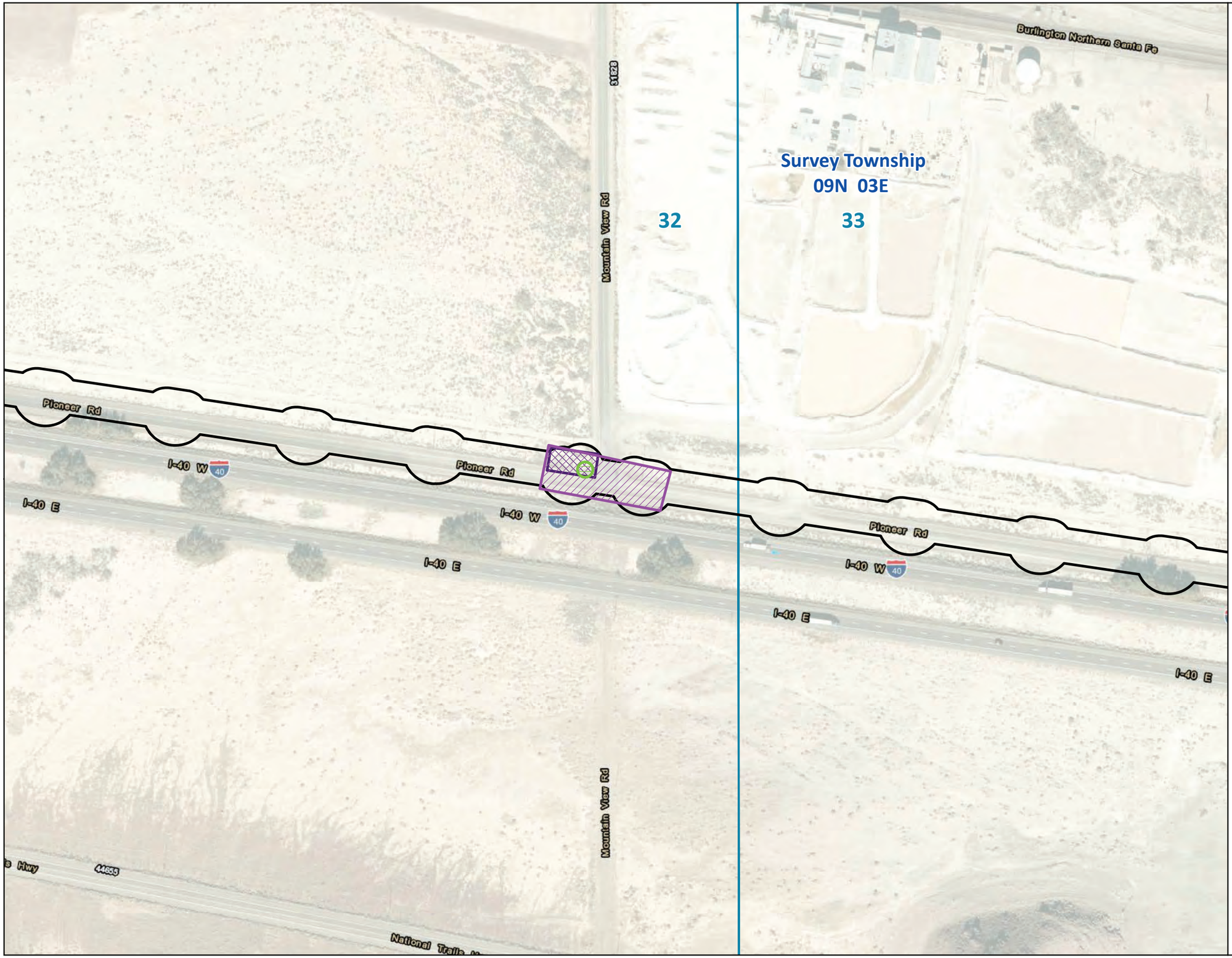
Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N

0 200 Feet

Artemis Environmental Services, Inc.



Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Hare Barley (*Hordeum murinum*)
Redstem Filaree (*Erodium cicutarium*)
Wild Oat (*Avena fatua*)

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.

Survey Area
PLSS Survey Township
PLSS Section

Survey Results

London Rocket (*Sisymbrium irio*)
Athel Tamarisk (*Tamarix aphylla*)
Hare Barley (*Hordeum murinum*)
Red Brome (*Bromus rubens*)

Survey Township
09N 03E

33

34

Newberry Rd

31701

31692

Pioneer Rd

I-40 W

I-40 E

40

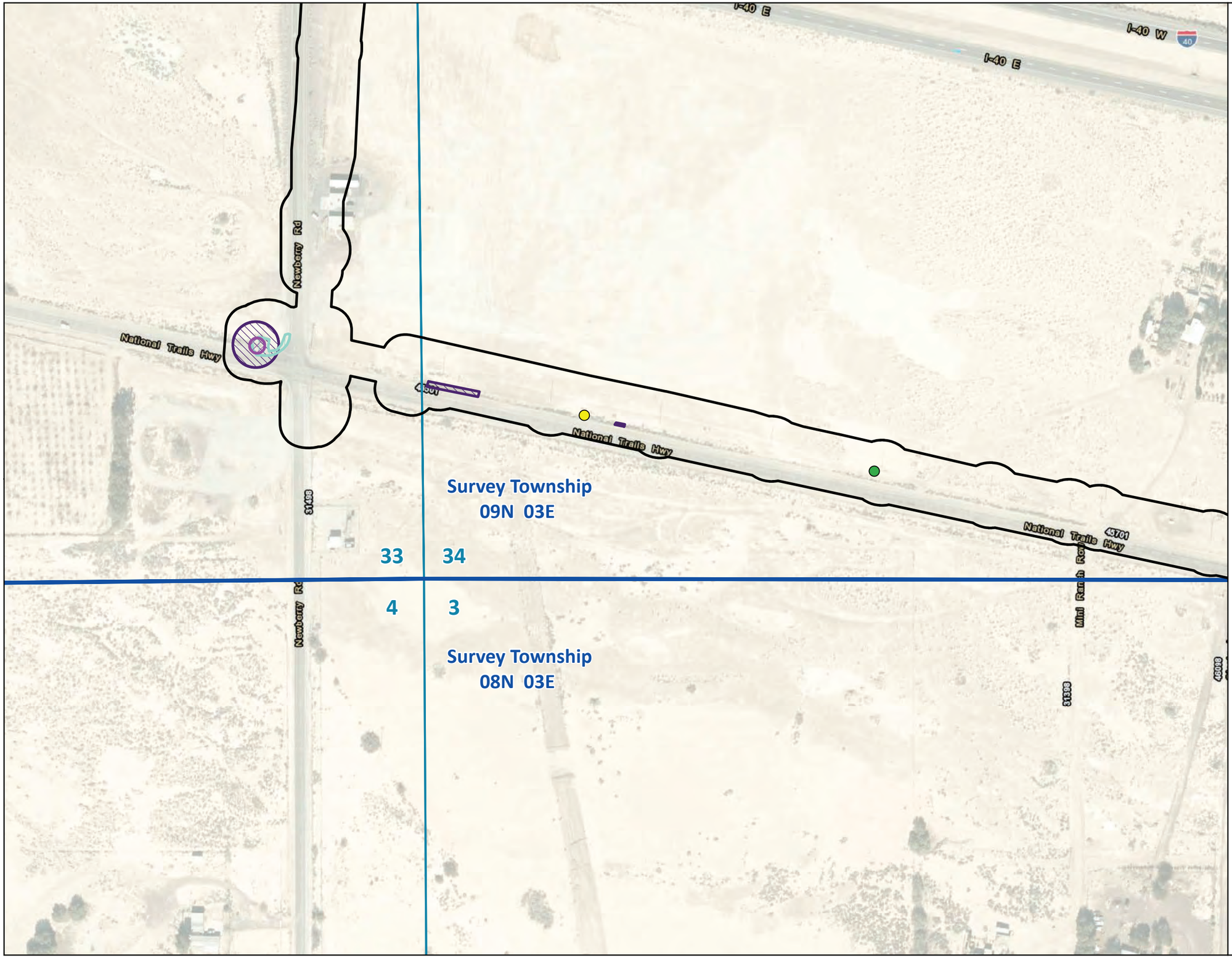
Figure 3, Page 10 of 65

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0
200
Feet

Artemis Environmental Services, Inc.



Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Russian Thistle (*Salsola* sp.)
Sahara Mustard (*Brassica tournefortii*)
Bermuda Grass (*Cynodon dactylon*)
Hare Barley (*Hordeum murinum*)
Redstem Filaree (*Erodium cicutarium*)

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.

Survey Area

PLSS Survey Township

PLSS Section

Survey Results

Sahara Mustard (*Brassica tournefortii*)

Figure 3, Page 12 of 65

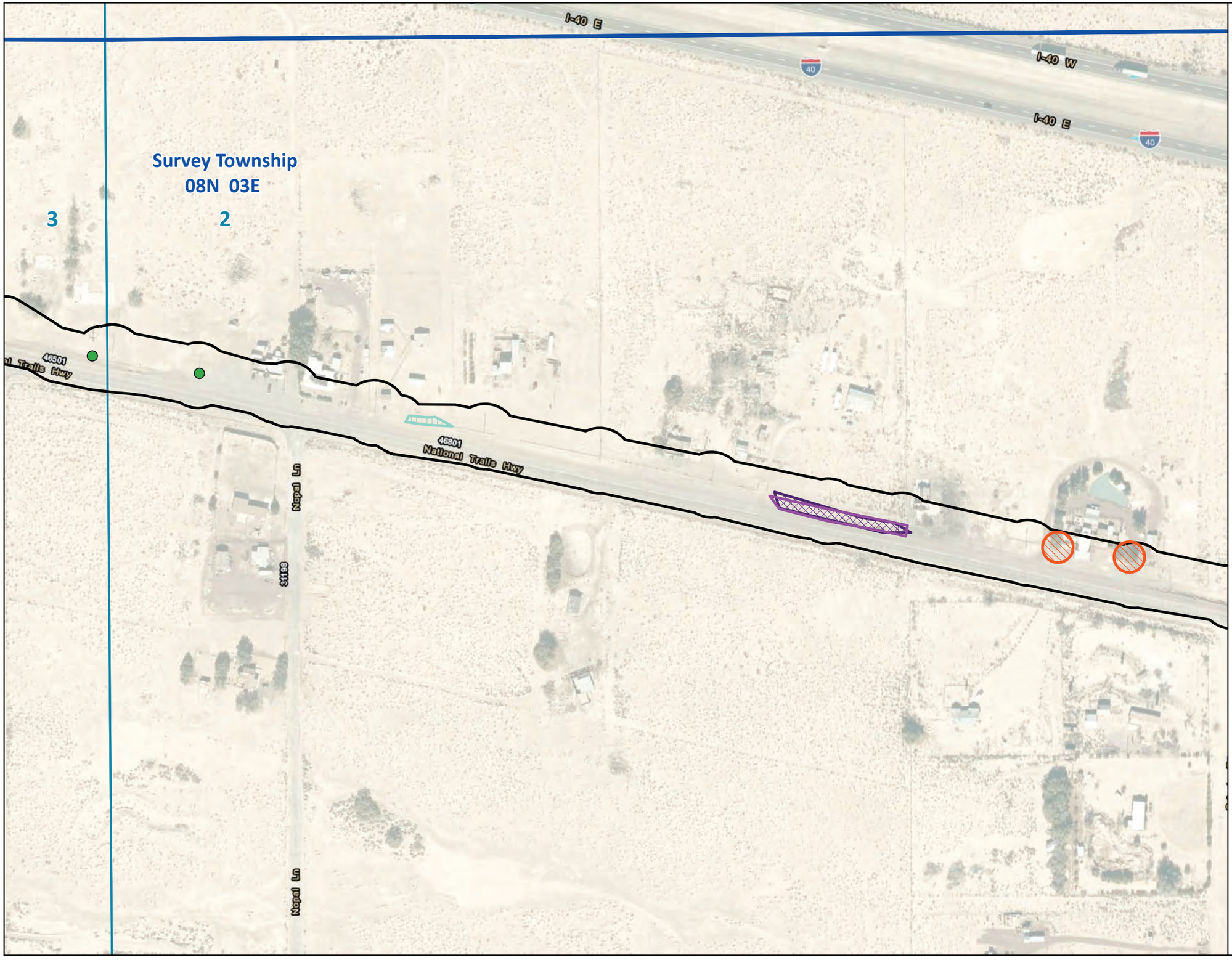
Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N

0 200 Feet

Artemis Environmental Services, Inc.



Survey Area
PLSS Survey Township
PLSS Section

Survey Results

- Sahara Mustard (*Brassica tournefortii*)
- Athel Tamarisk (*Tamarix aphylla*)
- Bermuda Grass (*Cynodon dactylon*)
- Hare Barley (*Hordeum murinum*)
- Redstem Filaree (*Erodium cicutarium*)

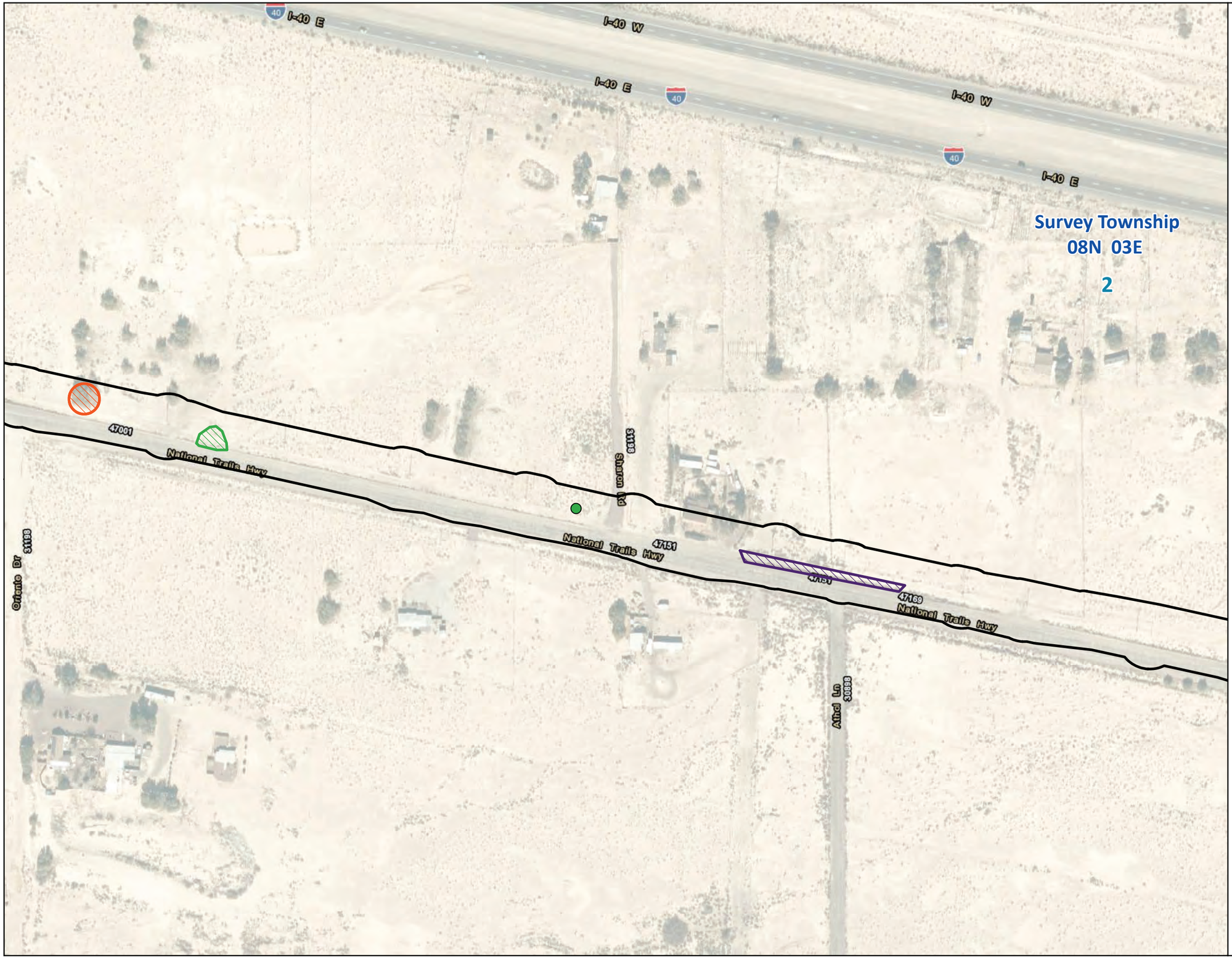
Figure 3, Page 13 of 65

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.



Survey Area
PLSS Survey Township
PLSS Section

Survey Results

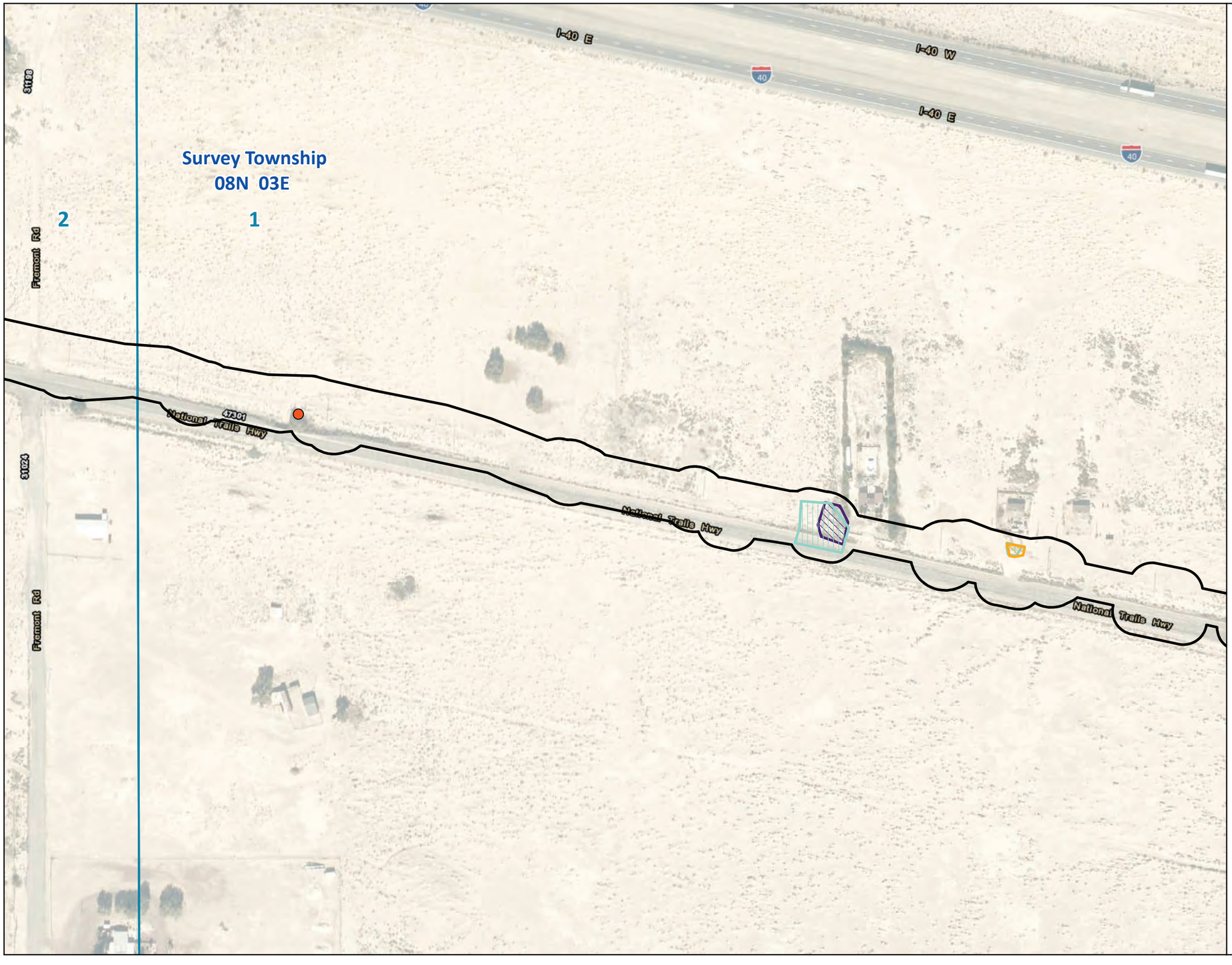
Sahara Mustard (*Brassica tournefortii*)
Athel Tamarisk (*Tamarix aphylla*)
Hare Barley (*Hordeum murinum*)
Sahara Mustard (*Brassica tournefortii*)

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.



Survey Area
PLSS Survey Township
PLSS Section

Survey Results

- Athel Tamarisk (*Tamarix aphylla*)
- Bermuda Grass (*Cynodon dactylon*)
- Branched Saltcedar (*Tamarix ramosissima*)
- Hare Barley (*Hordeum murinum*)

Figure 3, Page 15 of 65

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.

I-40 E
I-40 W
40
23
Fort Cady Rd
National Trails Hwy
48001
30898
30790
Horner St
Survey Township
08N 03E
1
Survey Township
08N 04E
6

- Survey Area
- PLSS Survey Township
- PLSS Section

Survey Results

- Sahara Mustard (*Brassica tournefortii*)
- Athel Tamarisk (*Tamarix aphylla*)
- Branched Saltcedar (*Tamarix ramosissima*)

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.

Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Athel Tamarisk (*Tamarix aphylla*)
London Rocket (*Sisymbrium irio*)

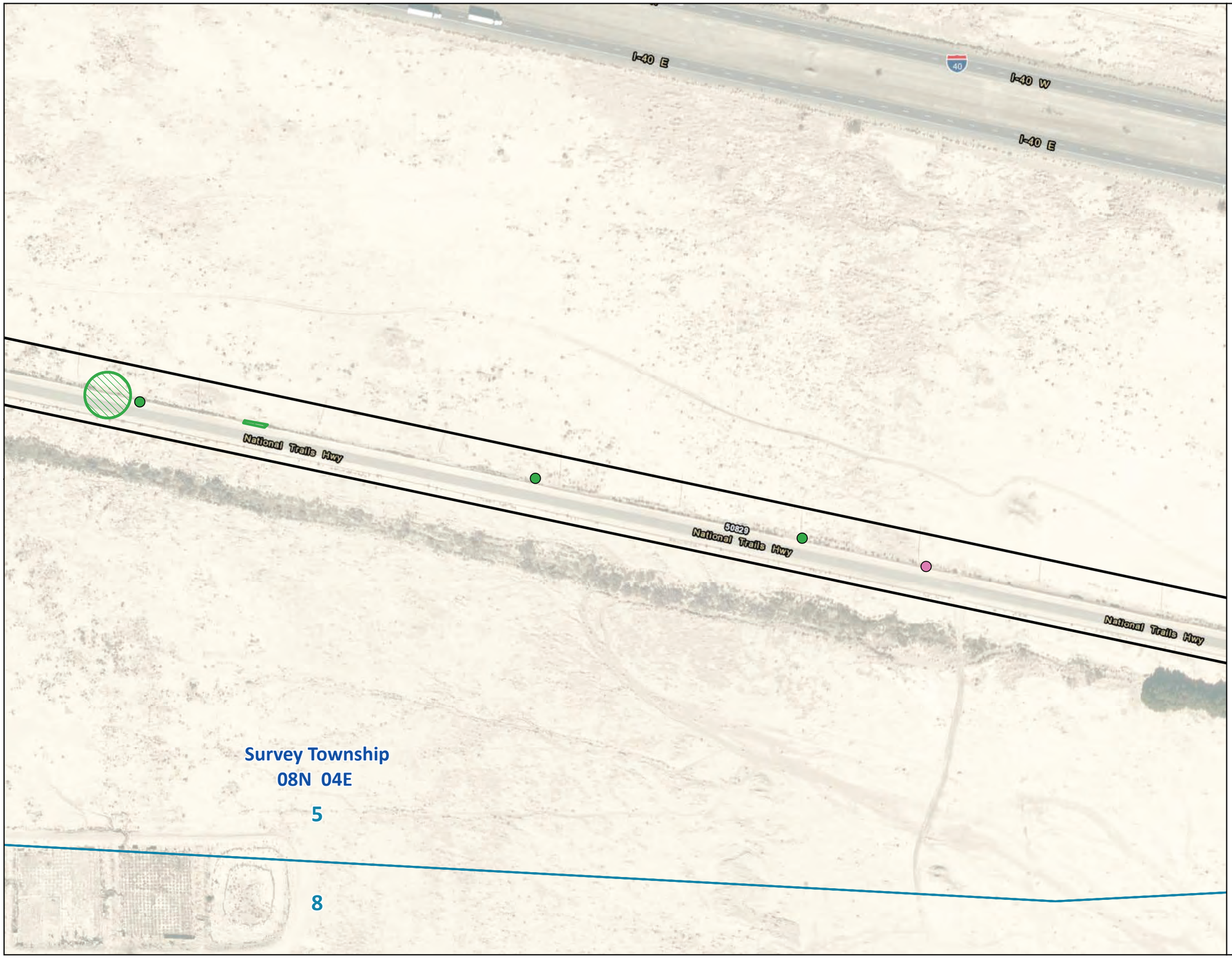
Figure 3, Page 17 of 65

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.



Survey Area
PLSS Survey Township
PLSS Section

Survey Results

London Rocket (*Sisymbrium irio*)
Sahara Mustard (*Brassica tournefortii*)
Sahara Mustard (*Brassica tournefortii*)

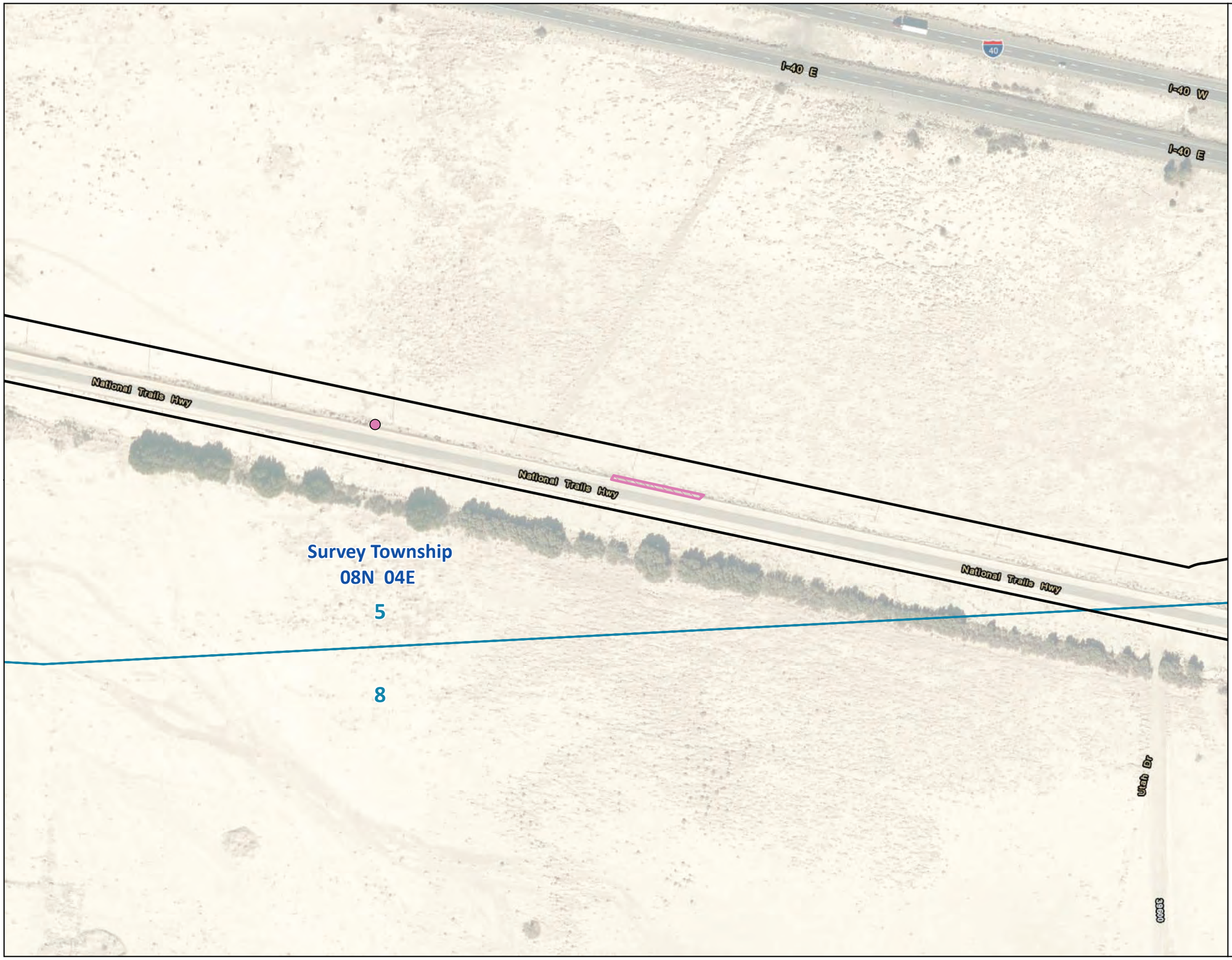
Figure 3, Page 18 of 65

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.



Survey Area
PLSS Survey Township
PLSS Section

Survey Results

London Rocket (*Sisymbrium irio*)
London Rocket (*Sisymbrium irio*)

Figure 3, Page 19 of 65

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.

Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Branched Saltcedar (*Tamarix ramosissima*)
London Rocket (*Sisymbrium irio*)
Branched Saltcedar (*Tamarix ramosissima*)
London Rocket (*Sisymbrium irio*)
Russian Thistle (*Salsola* sp.)

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.

I-40 W
I-40 E
I-40 W
I-40 E
40
40
Survey Township
08N 04E
9
10
National Trails Hwy
National Trails Hwy
515m
Casco Rd

Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Russian Thistle (*Salsola* sp.)
London Rocket (*Sisymbrium irio*)
Russian Thistle (*Salsola* sp.)

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.

Survey Area
PLSS Survey Township
PLSS Section

Survey Results

London Rocket (*Sisymbrium irio*)
Russian Thistle (*Salsola* sp.)
London Rocket (*Sisymbrium irio*)
Russian Thistle (*Salsola* sp.)

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.

Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Russian Thistle (*Salsola* sp.)

Figure 3, Page 23 of 65

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.

Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Athel Tamarisk (*Tamarix aphylla*)

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

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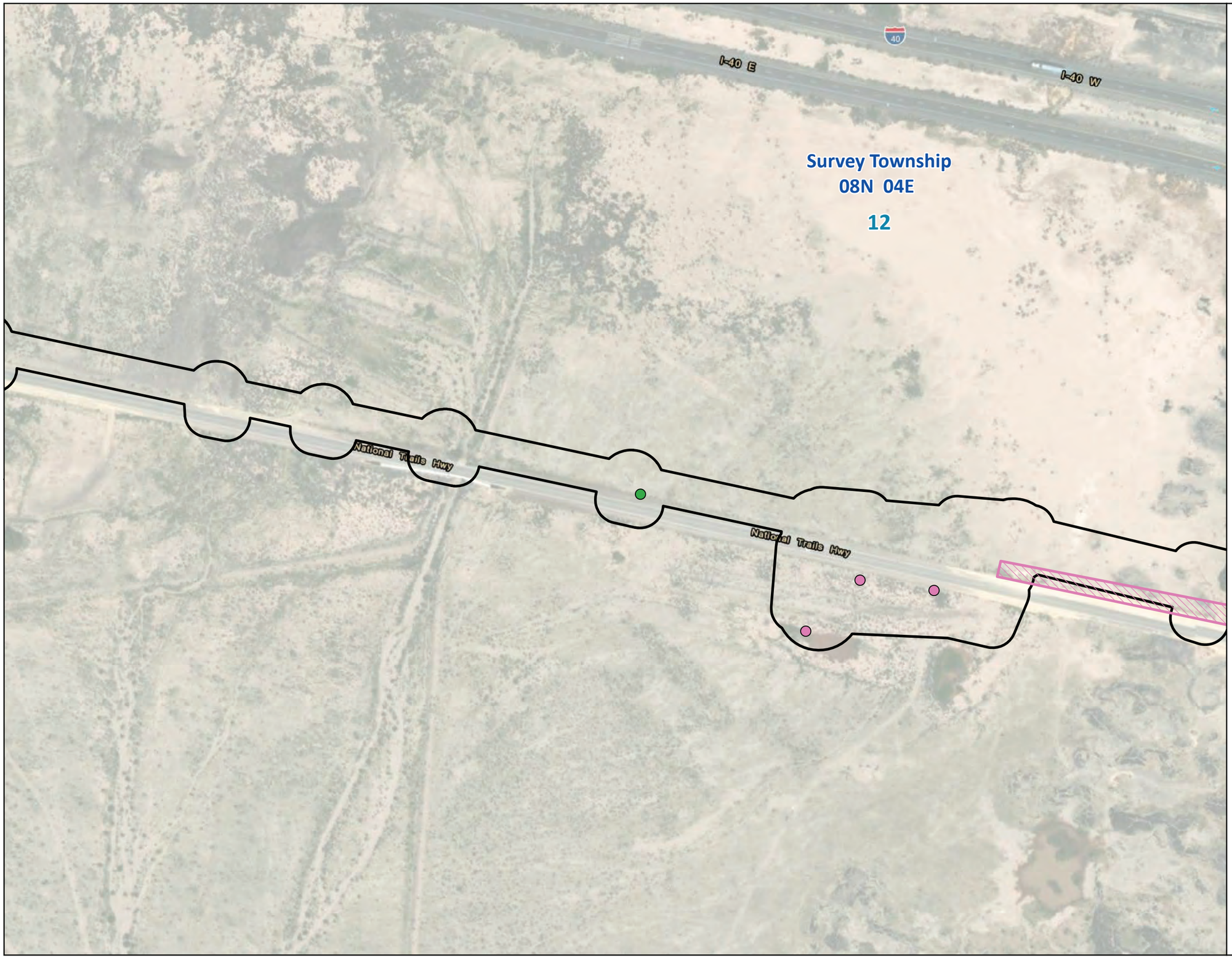
0 200 Feet

Artemis Environmental Services, Inc.



Survey Area
PLSS Survey Township
PLSS Section

Survey Results

London Rocket (*Sisymbrium irio*)
Sahara Mustard (*Brassica tournefortii*)
London Rocket (*Sisymbrium irio*)

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

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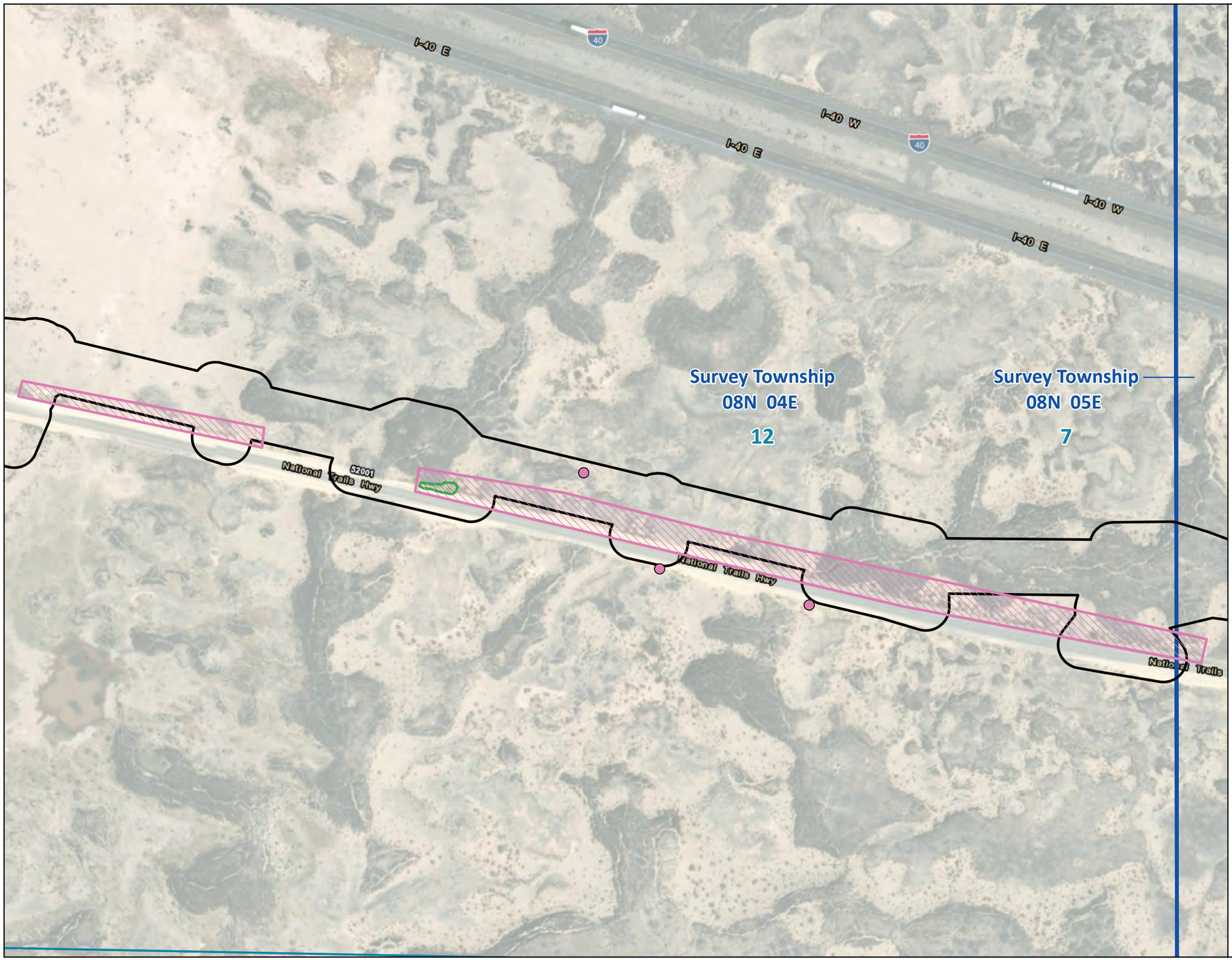
Artemis Environmental Services, Inc.



Survey Area
PLSS Survey Township
PLSS Section

Survey Results

London Rocket (*Sisymbrium irio*)
London Rocket (*Sisymbrium irio*)
Sahara Mustard (*Brassica tournefortii*)

Figure 3, Page 26 of 65

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

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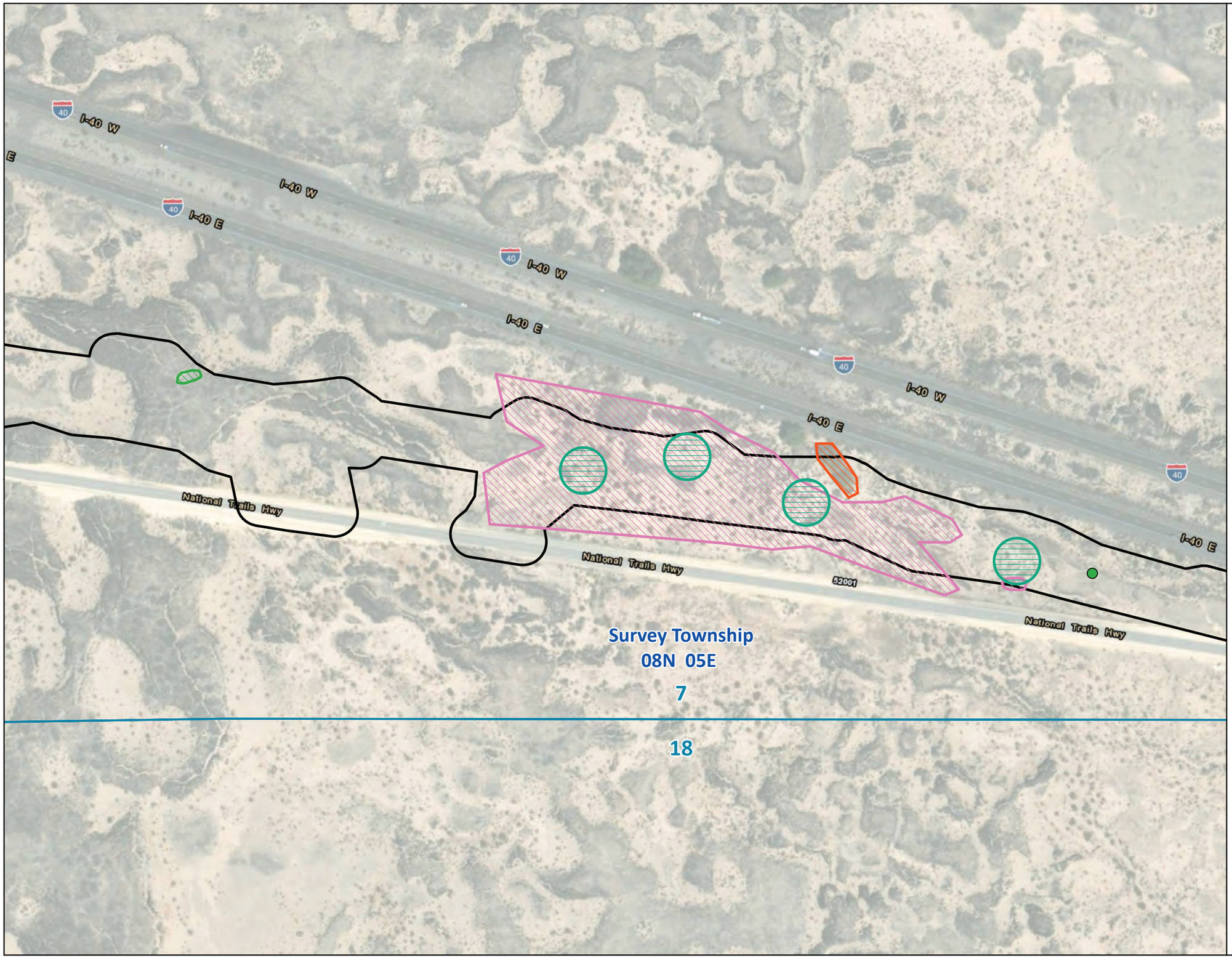
0 200 Feet

Artemis Environmental Services, Inc.



Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Sahara Mustard (*Brassica tournefortii*)
Athel Tamarisk (*Tamarix aphylla*)
Common Purselane (*Portulaca oleracea*)
London Rocket (*Sisymbrium irio*)
Sahara Mustard (*Brassica tournefortii*)

Figure 3, Page 27 of 65

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.

Survey Area
PLSS Survey Township
PLSS Section

Survey Results

London Rocket (*Sisymbrium irio*)
Sahara Mustard (*Brassica tournefortii*)
London Rocket (*Sisymbrium irio*)
Red Brome (*Bromus rubens*)
Sahara Mustard (*Brassica tournefortii*)

Survey Township
08N 05E

7 8

18 17

I-40 W
I-40 E
National Trails Hwy

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.

8

17

Survey Township
08N 05E

I-40 W

I-40 E

National Trails Hwy

- Survey Area
- PLSS Survey Township
- PLSS Section

Survey Results

- Russian Thistle (*Salsola* sp.)
- Sahara Mustard (*Brassica tournefortii*)
- London Rocket (*Sisymbrium irio*)
- Russian Thistle (*Salsola* sp.)

Figure 3, Page 29 of 65

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

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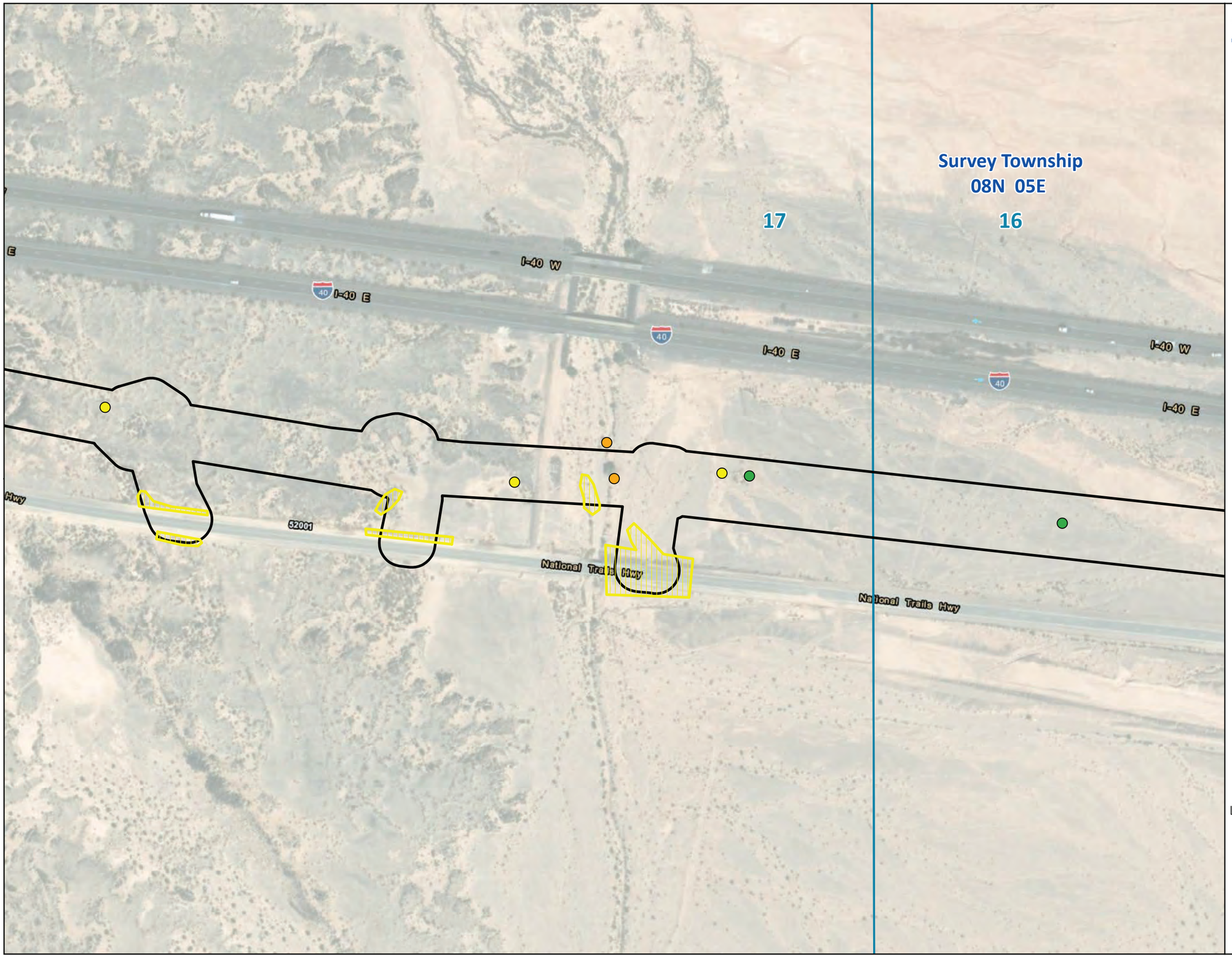
Artemis Environmental Services, Inc.



Survey Area
PLSS Survey Township
PLSS Section

Survey Results

- Branched Saltcedar (*Tamarix ramosissima*)
- Russian Thistle (*Salsola* sp.)
- Sahara Mustard (*Brassica tournefortii*)
- Russian Thistle (*Salsola* sp.)

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

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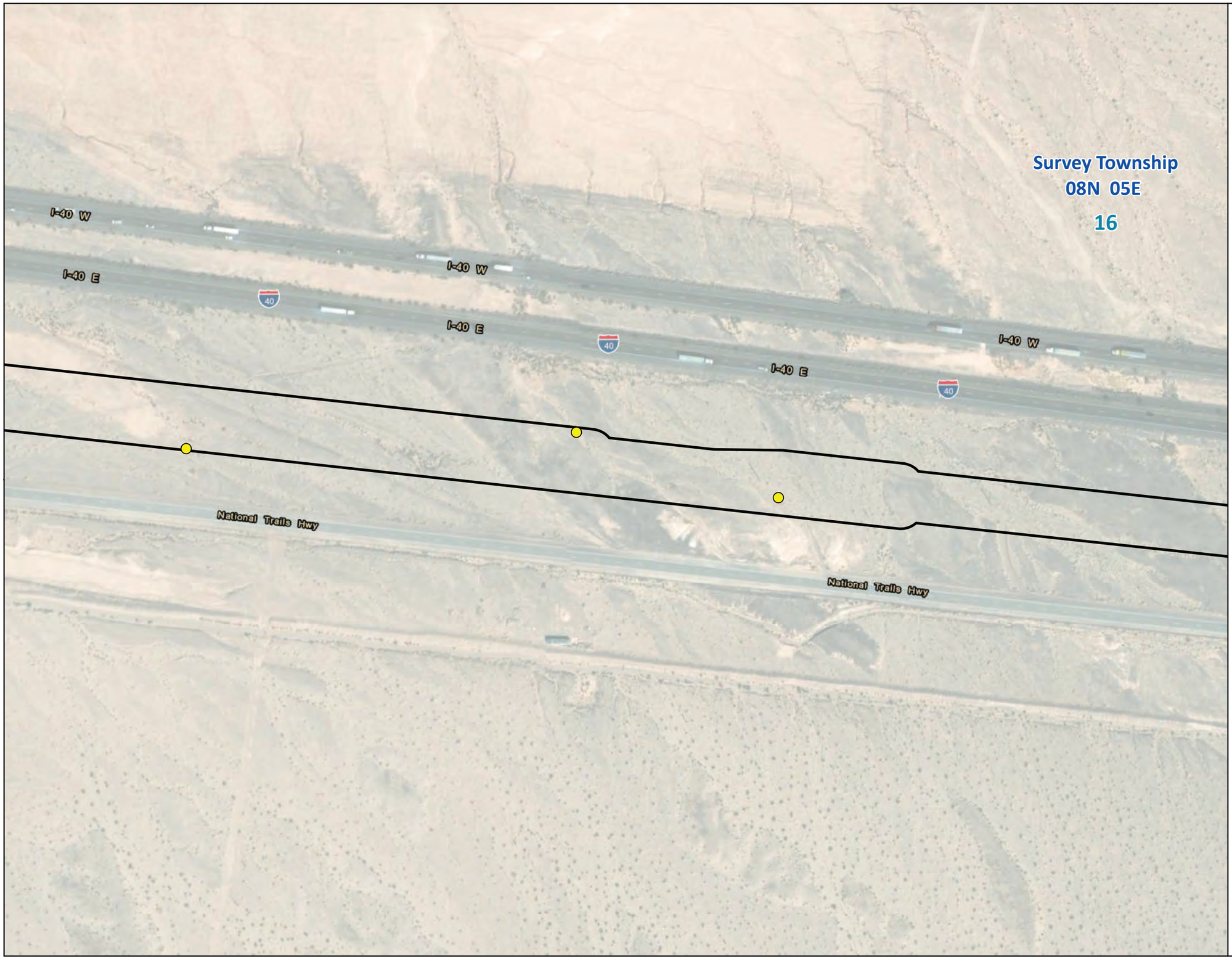
Artemis Environmental Services, Inc.



Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Russian Thistle (*Salsola* sp.)

Figure 3, Page 31 of 65

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.

Survey Area
PLSS Survey Township
PLSS Section

Survey Results

- London Rocket (*Sisymbrium irio*)
- Russian Thistle (*Salsola* sp.)
- Sahara Mustard (*Brassica tournefortii*)
- Sahara Mustard (*Brassica tournefortii*)

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

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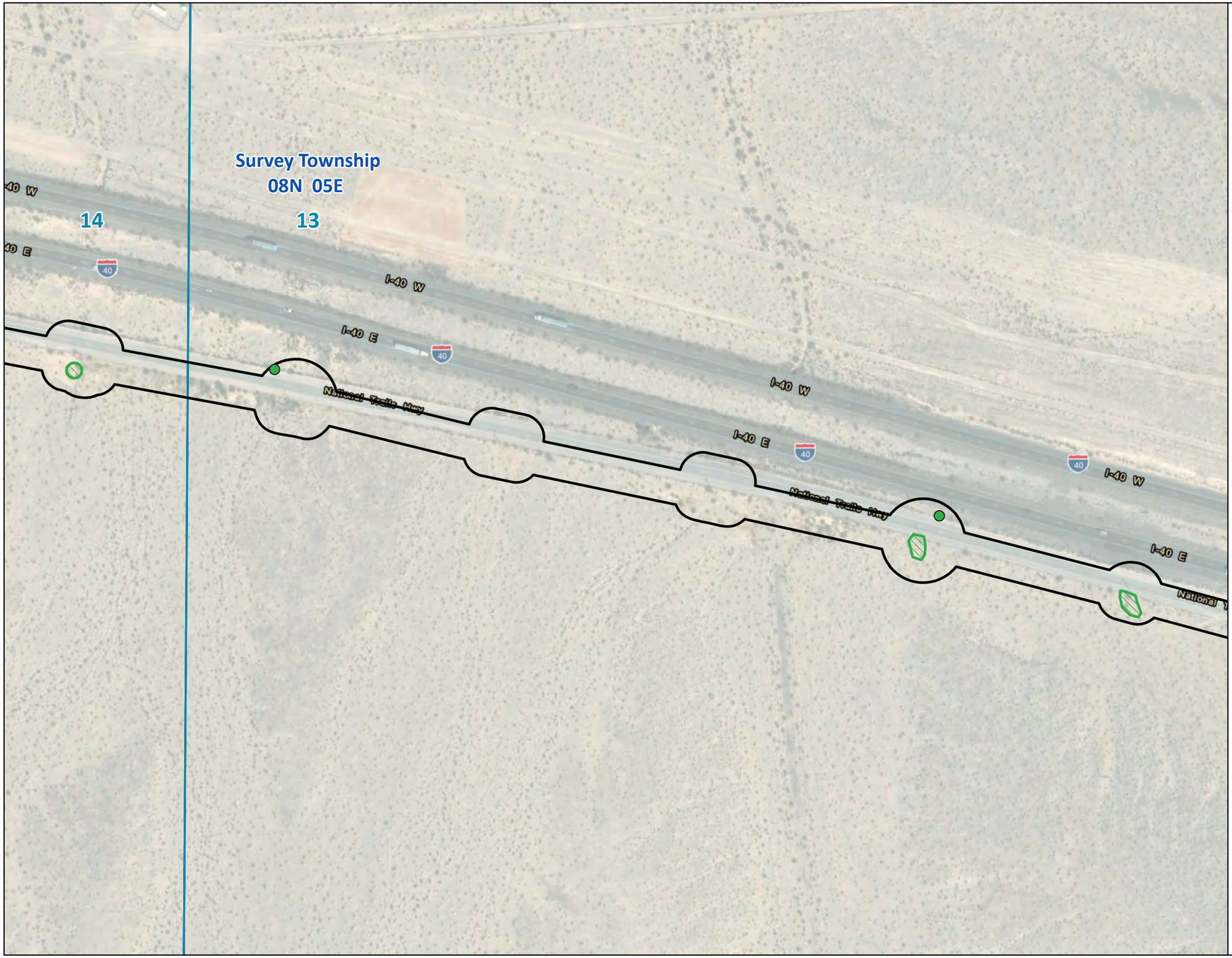
Artemis Environmental Services, Inc.



Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Sahara Mustard (*Brassica tournefortii*)
Sahara Mustard (*Brassica tournefortii*)

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.

Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Sahara Mustard (*Brassica tournefortii*)
Sahara Mustard (*Brassica tournefortii*)

Figure 3, Page 34 of 65

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.

Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Russian Thistle (*Salsola* sp.)
Athel Tamarisk (*Tamarix aphylla*)
Sahara Mustard (*Brassica tournefortii*)

Figure 3, Page 35 of 65

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.

Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Sahara Mustard (*Brassica tournefortii*)

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

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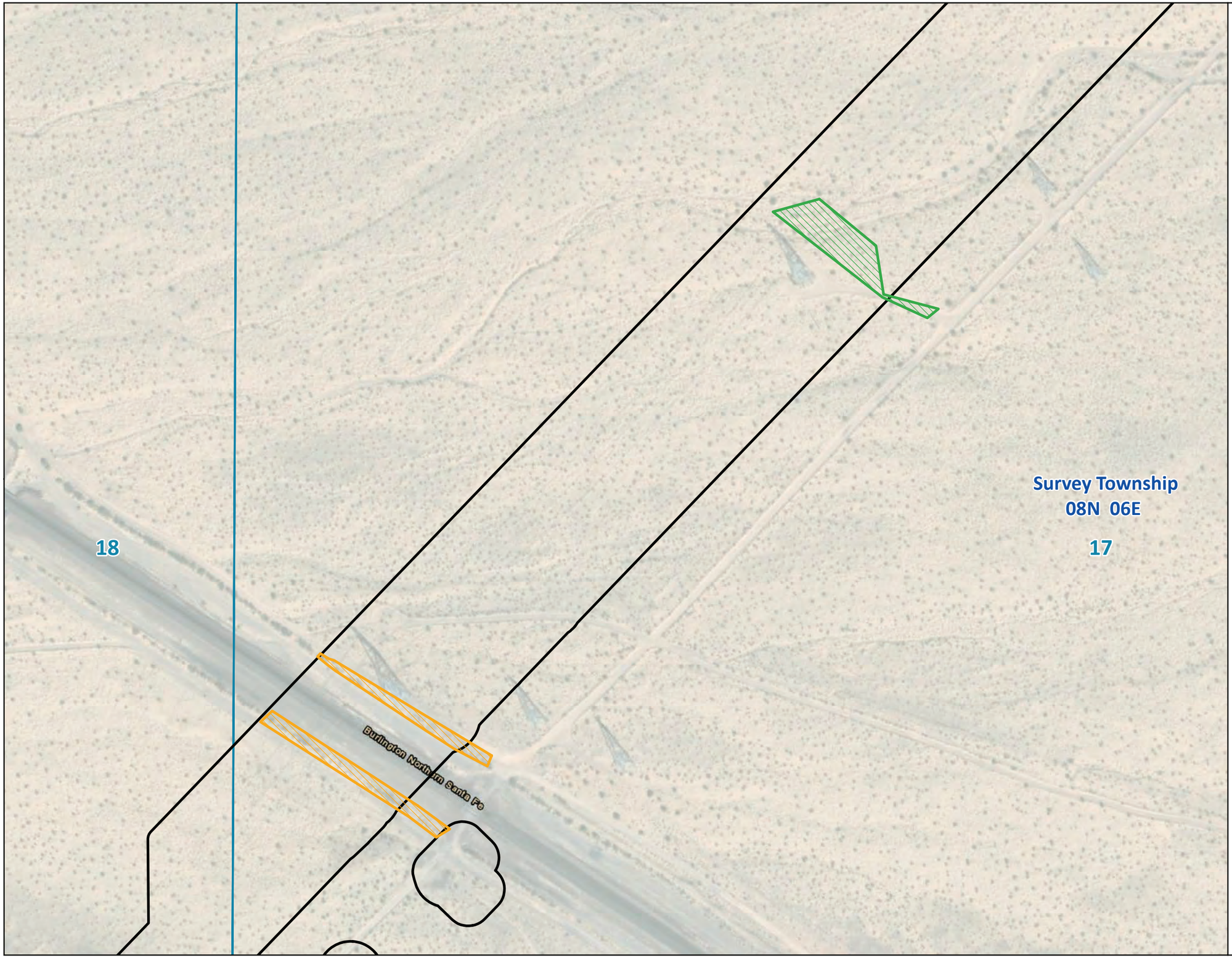
0 200 Feet

Artemis Environmental Services, Inc.



Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Branched Saltcedar (*Tamarix ramosissima*)
Sahara Mustard (*Brassica tournefortii*)

Figure 3, Page 37 of 65

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.

Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Sahara Mustard (*Brassica tournefortii*)

Survey Township
08N 06E

8

17

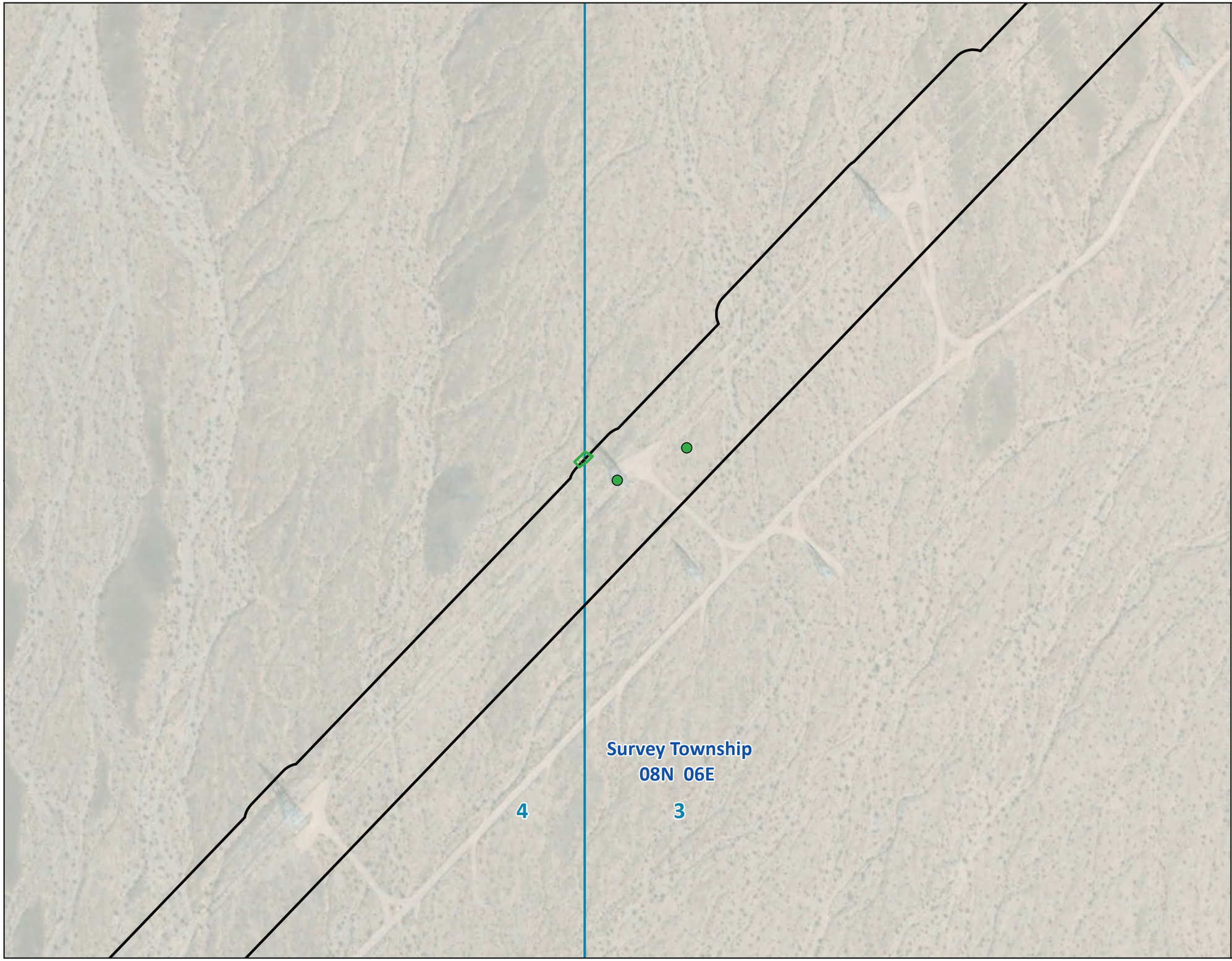
Figure 3, Page 38 of 65

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.



Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Sahara Mustard (*Brassica tournefortii*)
Sahara Mustard (*Brassica tournefortii*)

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.

Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Sahara Mustard (*Brassica tournefortii*)

Survey Township
09N 07E

19

20

Figure 3, Page 40 of 65

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.

Survey Township
10N 08E

17

16

Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Sahara Mustard (*Brassica tournefortii*)

Figure 3, Page 41 of 65

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.

Survey Township
10N 08E

16

Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Sahara Mustard (*Brassica tournefortii*)

Figure 3, Page 42 of 65

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N

0 200 Feet

Artemis Environmental Services, Inc.

Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Sahara Mustard (*Brassica tournefortii*)

Survey Township
10N 08E

10

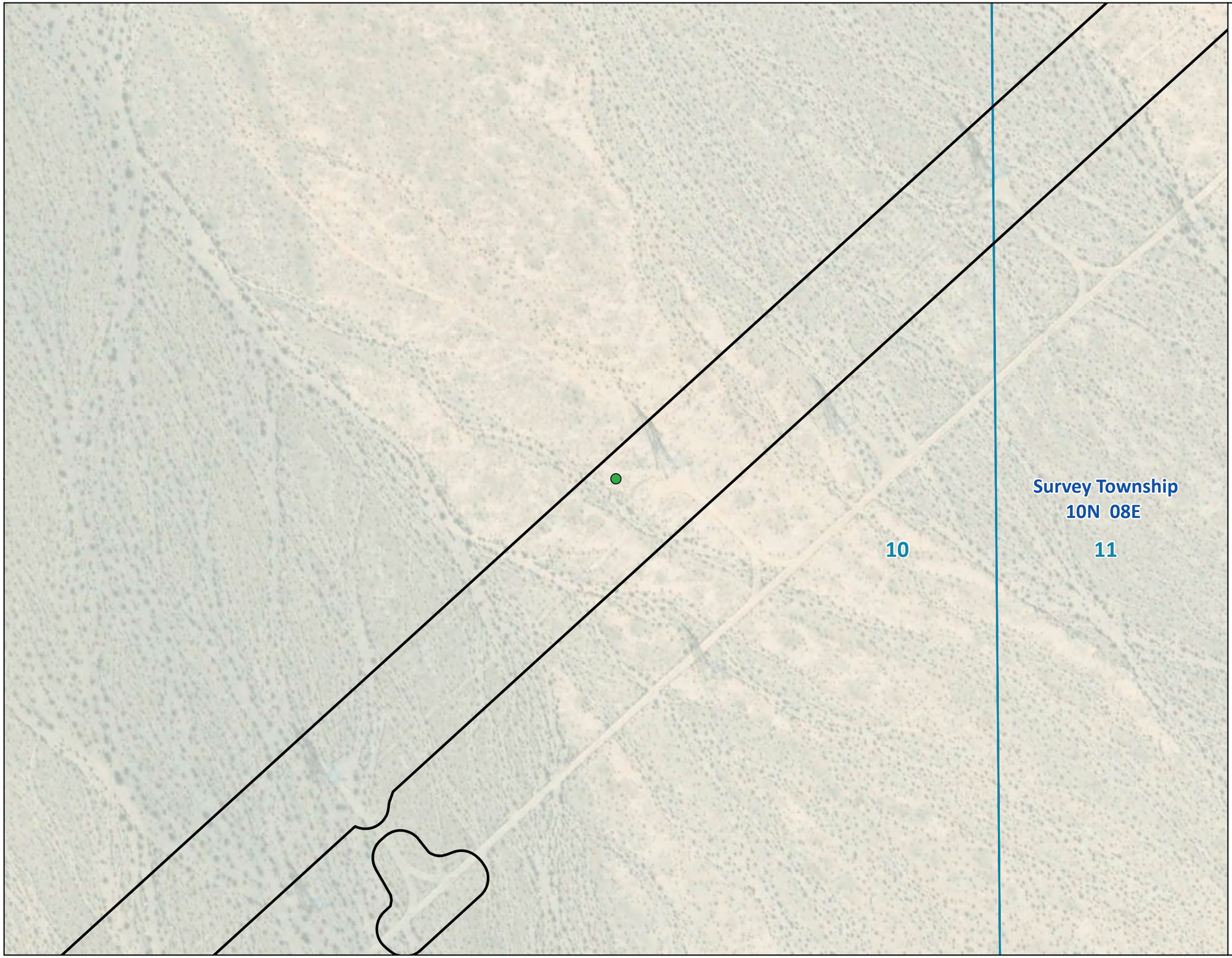
Figure 3, Page 43 of 65

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.



Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Sahara Mustard (*Brassica tournefortii*)

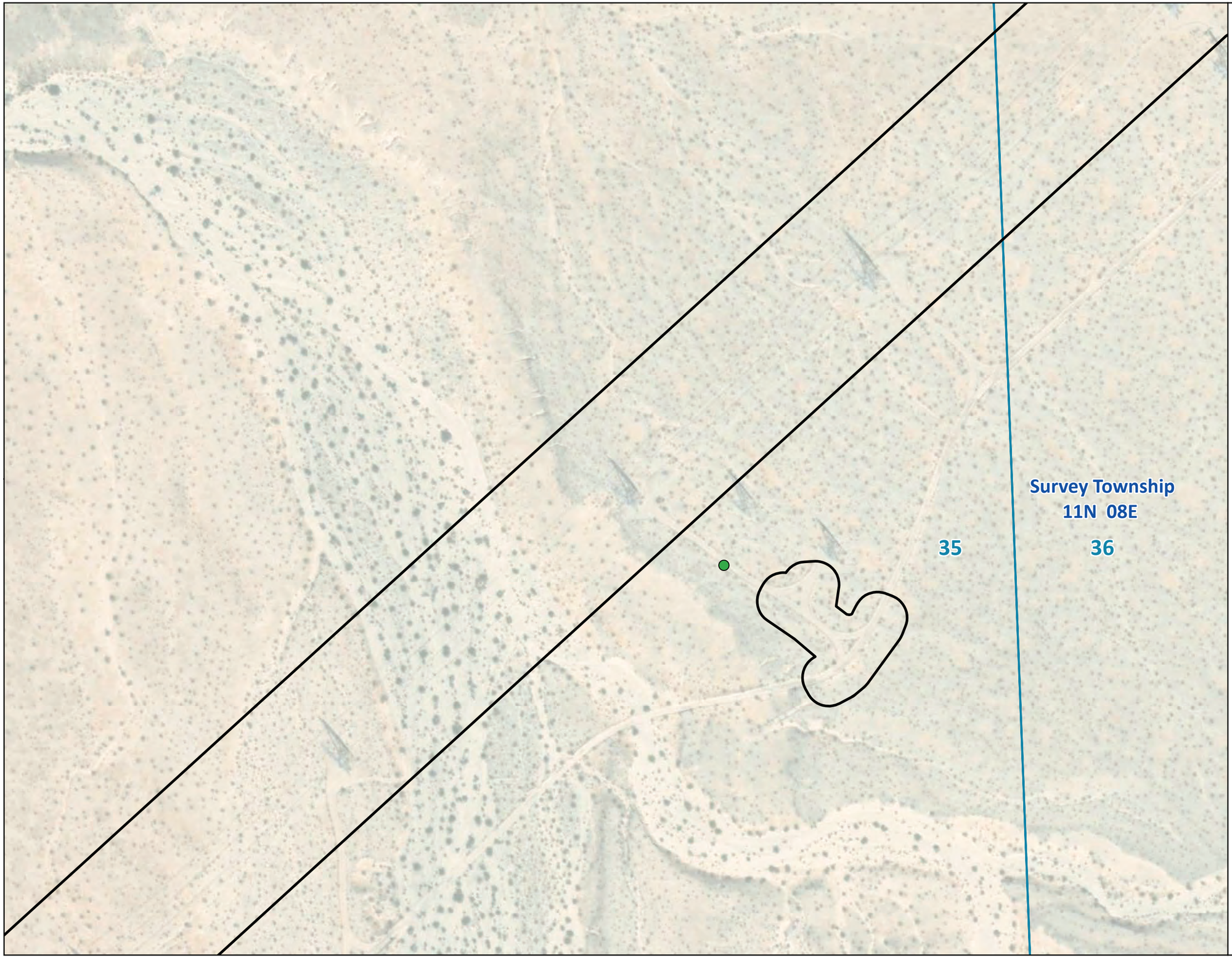
Figure 3, Page 44 of 65

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.



Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Sahara Mustard (*Brassica tournefortii*)

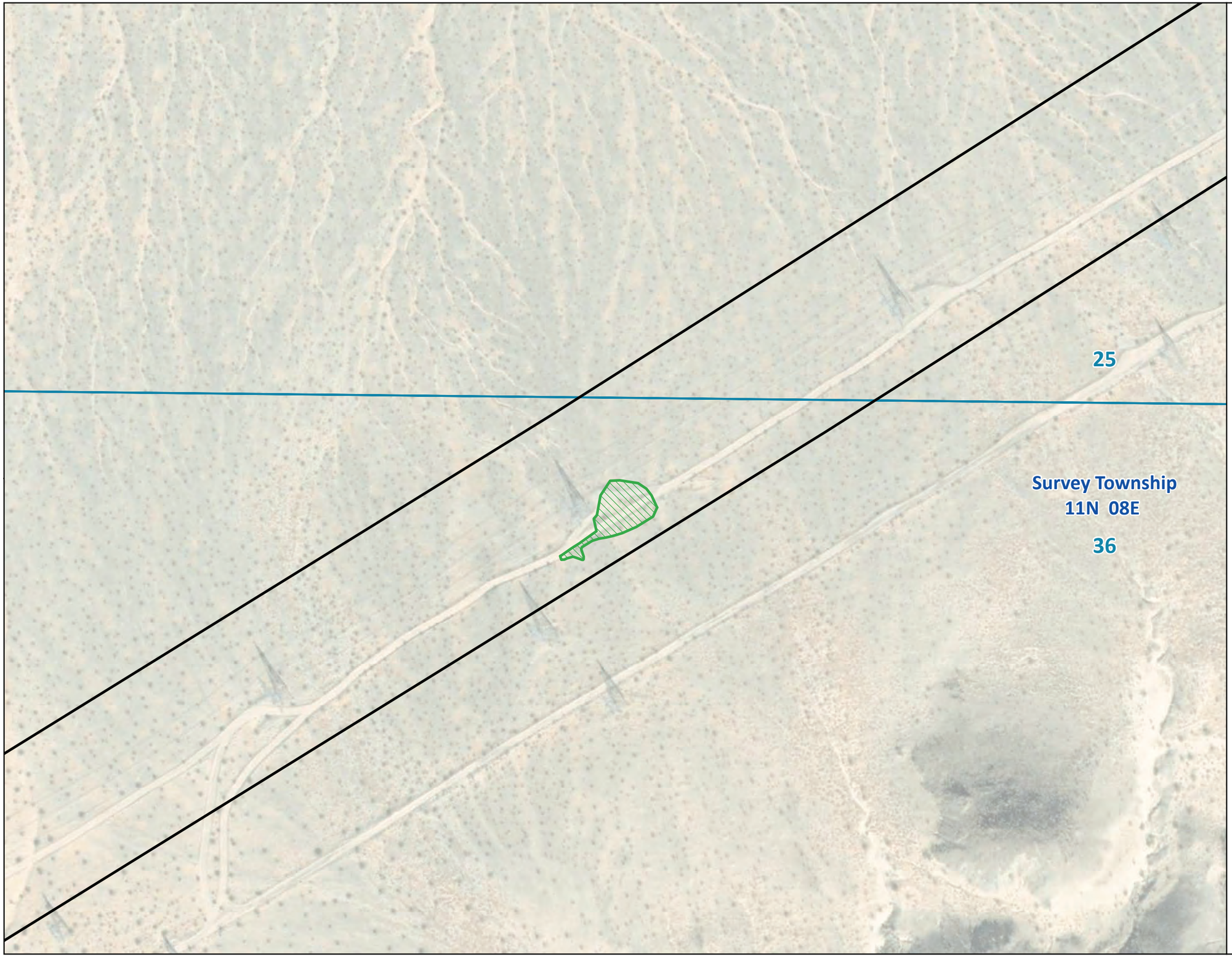
Figure 3, Page 45 of 65

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.



Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Sahara Mustard (*Brassica tournefortii*)

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.

Survey Township
11N 08E

25

Survey Township
11N 09E

30

Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Sahara Mustard (*Brassica tournefortii*)

Figure 3, Page 47 of 65

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N

0 200 Feet

Artemis Environmental Services, Inc.

Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Sahara Mustard (*Brassica tournefortii*)

Survey Township
11N 09E

30

29

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.

Survey Area
PLSS Survey Township
PLSS Section

Survey Results

Sahara Mustard (*Brassica tournefortii*)
Sahara Mustard (*Brassica tournefortii*)

Survey Township
11N 09E

20

29

Figure 3, Page 49 of 65

Invasive Plant and Noxious Weed Inventory Results

LUGO-VICTORVILLE 500 KV TRANSMISSION LINE
REMEDIAL ACTION SCHEME PROJECT
2022 NOXIOUS WEED SURVEY REPORT

N
0 200 Feet

Artemis Environmental Services, Inc.