

REPORT ON WEED CONTROL SEGMENT TREATMENTS

Operable Unit 1 (OU-1) - Fort Ord Natural Reserve

SPRING 2009

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Introduction

Weed control efforts continued on HydroGeoLogic, Inc. (HGL) work sites within the Operable Unit 1 (OU-1) portion of the Fort Ord Natural Reserve (FONR) in 2009. Efforts were increased in comparison to 2008 work and included control of non-native grasses and pre-treatment surveys of rare plants. Consistent with the 2008 weed control program, comprehensive vegetation surveys (e.g. species composition, cover data) of Weed Control Segments (WCS) were not conducted in 2009. It is our opinion that these comprehensive vegetation surveys are not necessary each year and are not required to conduct WCS treatments. Rather, the vegetation surveys are intended to evaluate success of WCS treatments, which might not be evident within one year. This report summarizes the 2009 weed control efforts, data collection and survey results.

Methods

WCS treatments began 24 March 2009 and continued through 11 August 2009. Each WCS received between 1-2 treatments depending on site-specific phenology, response to treatments, and species composition at each site. Most WCS were treated twice, however, seven WCS (1A, 2A, 3A, 11A, 11B, 12A and 12B) received only one treatment. Prior to the initial treatment, rare plant surveys were conducted within each WCS. In addition, pre-treatment photos were taken from appropriate photo stations within each WCS. After performing a treatment, a WCS treatment record and a WCS treatment diagram were completed. The WCS treatment record includes: treatment date, treatment method(s), species treated, treatment duration, photo stations, and any additional notes. The WCS treatment diagram includes the extent of the treatment and the species treated within the site. These diagrams, although not drawn to scale, also show the spatial extent, well location, well site/road boundaries, and photo stations/points for each WCS. After performing the final treatment of the season, post-treatment photos were taken from appropriate photo stations within each WCS.

Results

The 2009 weed control program had a major impact on reducing weed abundance, distribution, and seed production in areas disturbed by OU-1 cleanup activities. Pre-treatment rare plant surveys (Attachment 2) identified locations of rare plants prior to mechanical treatments. Thus, we were able to avoid areas with protected species and ensure they were not negatively impacted by treatments. The results of the rare plant surveys (Table 3) show that sand gilia (*Gilia tenuiflora ssp. arenaria*) were present in 1 WCS and Monterey spineflower (*Chorizanthe pungens var. pungens*) were present in 12 WCS. WCS were treated 1-2 times utilizing both manual removal (hand pulling, clipping) and mechanical removal (weed eater) to remove target weeds (Tables 1 & 2). Along with this report, we have included the following documentation:

- treatment diagrams (described above; Attachment 1)
- rare plant survey data (Attachment 2)
- rare plant survey diagrams (Attachment 3)
- detailed photo log (Attachment 4)
- pre- & post treatment photos (Attachment 5 – on compact disc)

Discussion

Early spring implementation enabled us to implement control activities of non-native annual grasses and forbs. Unlike the 2008 treatments, both mechanical and hand control methods were utilized making the weed control efforts more effective and broad scale. Multiple treatments were focused on high priority sites, with prioritization based on habitat type, rare plant presence, and weed species composition. Pre-treatment rare plant surveys identified 5 m² of sand gilia habitat occupied and 411 m² of Monterey spineflower occupied habitat. These pre-treatment surveys are essential to ensure mechanical weed treatments do not have a negative impact on protected species. Because

weed control efforts were initiated at the appropriate time, we were able reduce seed production of a significant portion of non-native annual grasses in locations where control was critical (i.e. within or adjacent to chaparral and scrub habitat). The continued removal of invasive forbs resulted in a reduction of thousands of invasive weeds from the well sites that may have otherwise extended their distribution into FONR and increased their seed bank in areas disturbed by OU-1 clean-up activities. It is difficult to determine with measureable certainty if the relatively low weed abundance observed this year is a result of annual variation, climate conditions, or effective weed control. However, we are confident the weed abatement efforts are having a positive impact on reducing weed populations on the OU-1 cleanup sites. As a result, our efforts have reduced the number of invasive plants and, very importantly, removed a large portion of the invasive weed seed source for 2010.

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Table 1. Summary of Weed Control Segment (WCS) treatments, spring 2009.

WCS	Well ID	# of Treatments	Time (hrs)	Treatment Method	Species Treated	Rare Plants Present	WCS of High Concern**
1A	NA – Staging Area	1	1.5	weedeater	brmaru, brdi, vusp	N	
2A	NA – Staging Area	1	0.75	weedeater	brdi, vusp	N	
3A	NA – Staging Area	1	0.25	weedeater	brdi, vusp	N	
4A	IW-OU1-05-A	2	2.35	weedeater	bmaru, brdi, vusp	N	*
5A	IW-OU1-01-A	2	5.6	weedeater	bmaru, brdi, vusp	Y	*
6A	EW-OU1-53-A	2	4.1	weedeater	avsp, brmaru, brdi, hysp, vusp	Y	*
7A	EW-OU1-52-A	2	4.35	weedeater, hand pull	avsp, brdi, coma, hysp, vusp	N	
8A	IW-OU1-10-A, PZ-OU1-10-A2	2	2.85	weedeater	avsp, brdi, coma, oxpe, vusp	N	
9A	MW-OU1-46-AD, PZ-OU1-46-AD2	2	4.2	weedeater	anar, avsp, brca, brdi, brmaru, vusp	Y	
9B	MW-OU1-84-A	2	3.95	weedeater, hand pull	avsp, brmaru, brdi, coma, vusp	Y	
9C	MW-OU1-50-A	2	2.52	weedeater	avsp, brmaru, brdi, vusp	Y	*
9D	MW-OU1-51-A	2	1.77	weedeater	anca, avsp, brdi, coma, oxpe, vusp	Y	*
10A	MW-OU1-50-A	2	3.13	weedeater	survey, avsp, brmaru, brdi, ruac, vusp	Y	
10B	MW-OU1-59-A	2	2.11	weedeater	avsp, brdi, capy, coma, hovu, vusp	Y	
11A	IW-OU1-73-A	1	1.51	weedeater	brmaru, brdi, vusp	N	
11B	EW-OU1-71-A	1	1.51	weedeater	brmaru, brdi, vusp	N	
12A	EW-OU1-72-A	1	1.01	weedeater	brmaru, brdi, vusp	N	
12B	MW-OU1-85-A	1	1.26	weedeater	brmaru, brdi, vusp	N	
13A	IW-OU1-73-A	2	3.02	weedeater, hand pull	avsp, brmaru, brdi, coma, vusp	Y	*
14A	MW-OU1-83-A	2	2.76	weedeater	aica, avsp, brmaru, brdi, ceme, hysp, vusp	Y	*

WCS	Well ID	# of Treatments	Time (hrs)	Treatment Method	Species Treated	Rare Plants Present	WCS of High Concern**
15A	MW-OU1-82-A	2	3.1	weedeater, hand pull	aica, anar, brmaru, brdi, vusp	Y	*
16A	SB-OU1-2004-K	2	3.1	weedeater, hand pull	avsp, brdi, capy, coma, vusp	Y	*
17A	PZ-OU1-02-A IW-OU1-02-A	2	2.01	weedeater	brmaru, brdi, hysp, vusp	N	

** **WCS of High Concern**– this classification represents a subjective judgment based on a number of factors, including (among others) the number and frequency of treatments, observed response to treatments, and the species composition of the site.

Table 2. Invasive species treated within the 23 Weed Control Segments (WCS), spring 2009.

Genus	species	Code	Common Name
<i>Aira</i>	<i>caryophylla</i>	aica	slivery hair-grass
<i>Anaglis</i>	<i>arvensis</i>	anar	scarlet pimpernel
<i>Anthriscus</i>	<i>caucalis</i>	anca	bur-chervil
<i>Avena</i>	species	avsp	wild oat species (Note: species not identified – avsp includes both <i>Avena barbata</i> and <i>A. fatua</i>)
<i>Bromus</i>	<i>catharticus</i>	brca	prairie grass
<i>Bromus</i>	<i>diandrus</i>	brdi	ripgut grass
<i>Bromus</i>	<i>hordeaceus</i>	brho	soft chess
<i>Bromus</i>	<i>madritensis ssp. rubens</i>	brmaru	red brome
<i>Carduus</i>	<i>pycnocephalis</i>	capy	Italian thistle
<i>Centaurea</i>	<i>melitensis</i>	ceme	tocalote
<i>Conium</i>	<i>maculatum</i>	coma	poison hemlock
<i>Hordeum</i>	<i>vulgare</i>	hovu	common barley
<i>Hypochaeris</i>	species	hysp	cats ear species (Note: species not identified – hysp includes both <i>Hypochaeris glabra</i> and <i>H. radicata</i>)
<i>Oxalis</i>	<i>pes-caprae</i>	oxpe	Bermuda buttercup
<i>Rumex</i>	<i>acetosella</i>	ruac	sheep sorrel
<i>Vulpia</i>	species	vusp	fescue species (Note: species not identified – vusp includes <i>Vulpia bromoides</i> , <i>V. myuros var. hirsute</i> , and <i>V. myuros var. myuros</i>)

Table 3. Summary Weed Control Segment (WCS) rare plant surveys, spring 2009.

WCS	Well ID	Rare Plant Species Present	# Patches within WCS	Total Occupied Area (m ²)	Patch Density/Coverage & Patch Area Sub-total
5A	IW-OU1-05-A	<i>Chorizanthe pungens</i> var. <i>pungens</i>	12	16	1 patch Sparse / 4 m ² 11 patches Very Sparse / 12 m ²
6A	EW-OU1-53-A	<i>Chorizanthe pungens</i> var. <i>pungens</i> <i>Gilia tenuiflora</i> ssp. <i>arenaria</i>	10 5	10 5	1 patch - Sparse / 1 m ² 9 patches - Very Sparse / 9 m ² 1 patch - Low / 1 m ² 4 patches Very Low / 1 m ²
9A	MW-OU1-46-AD PZ-OU1-46-AD2	<i>Chorizanthe pungens</i> var. <i>pungens</i>	43	95	8 patches - High / 48 m ² 7 patches - Medium / 15 m ² 12 patches - Sparse / 16 m ² 16 patches - Very Sparse / 16 m ²
9B	MW-OU1-84-A	<i>Chorizanthe pungens</i> var. <i>pungens</i>	20	28	1 patch - High / 6 m ² 3 patches - Medium / 4 m ² 3 patches - Sparse / 5 m ² 13 patches - Very Sparse / 13 m ²
9C	MW-OU1-50-A	<i>Chorizanthe pungens</i> var. <i>pungens</i>	42	49	7 patches - Medium / 11 m ² 10 patches - Sparse / 13 m ² 25 patches - Very Sparse / 25 m ²
9D	MW-OU1-51-A	<i>Chorizanthe pungens</i> var. <i>pungens</i>	11	22	4 patches - Medium / 12 m ² 3 patches - Sparse / 6 m ² 4 patches - Very Sparse / 4 m ²
10A	MW-OU1-50-A	<i>Chorizanthe pungens</i> var. <i>pungens</i>	42	93	2 patch - High / 20 m ² 2 patches - Medium / 16 m ² 14 patches - Sparse / 30 m ² 24 patches - Very Sparse / 27 m ²

WCS	Well ID	Rare Plant Species Present	# Patches within WCS	Total Occupied Area (m²)	Patch Density/Coverage & Patch Area Sub-total
10B	MW-OU1-59-A	<i>Chorizanthe pungens</i> var. <i>pungens</i>	17	22	2 patches – Medium / 5 m ² 4 patches - Sparse / 6 m ² 11 patches - Very Sparse / 11 m ²
13A	IW-OU1-73-A	<i>Chorizanthe pungens</i> var. <i>pungens</i>	3	3	3 patches - Very Sparse / 3 m ²
14A	MW-OU1-83-A	<i>Chorizanthe pungens</i> var. <i>pungens</i>	37	67	3 patch - High / 28 m ² 3 patches – Medium / 5 m ² 6 patches - Sparse / 9 m ² 25 patches - Very Sparse / 25 m ²
15A	MW-OU1-82-A	<i>Chorizanthe pungens</i> var. <i>pungens</i>	2	2	1 patch – Sparse / 2 m ² 1 patches – Very Sparse / 2 m ²
16A	SB-OU1-2004-K	<i>Chorizanthe pungens</i> var. <i>pungens</i>	2	4	1 patches – Medium / 2 m ² 1 patches - Sparse / 2 m ²

Attachment 1

‘TREATMENT DIAGRAMS 2009’

The attached diagrams show the extent of the treatment and the species treated within each Weed Control Segment (WCS) for the 2009 weed control program within the Operable Unit 1 portion of the FONR. These diagrams (not drawn to scale) also show the spatial extent, well location, well site/road boundaries, and photo stations/points for each Weed Control Segment.

Well ID: EW-001-53-A

Date 4-28-09

WCS Sub Group 6A

Surveyor AFR

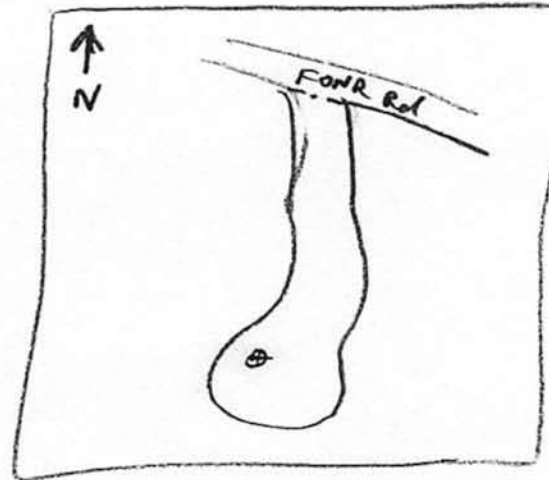
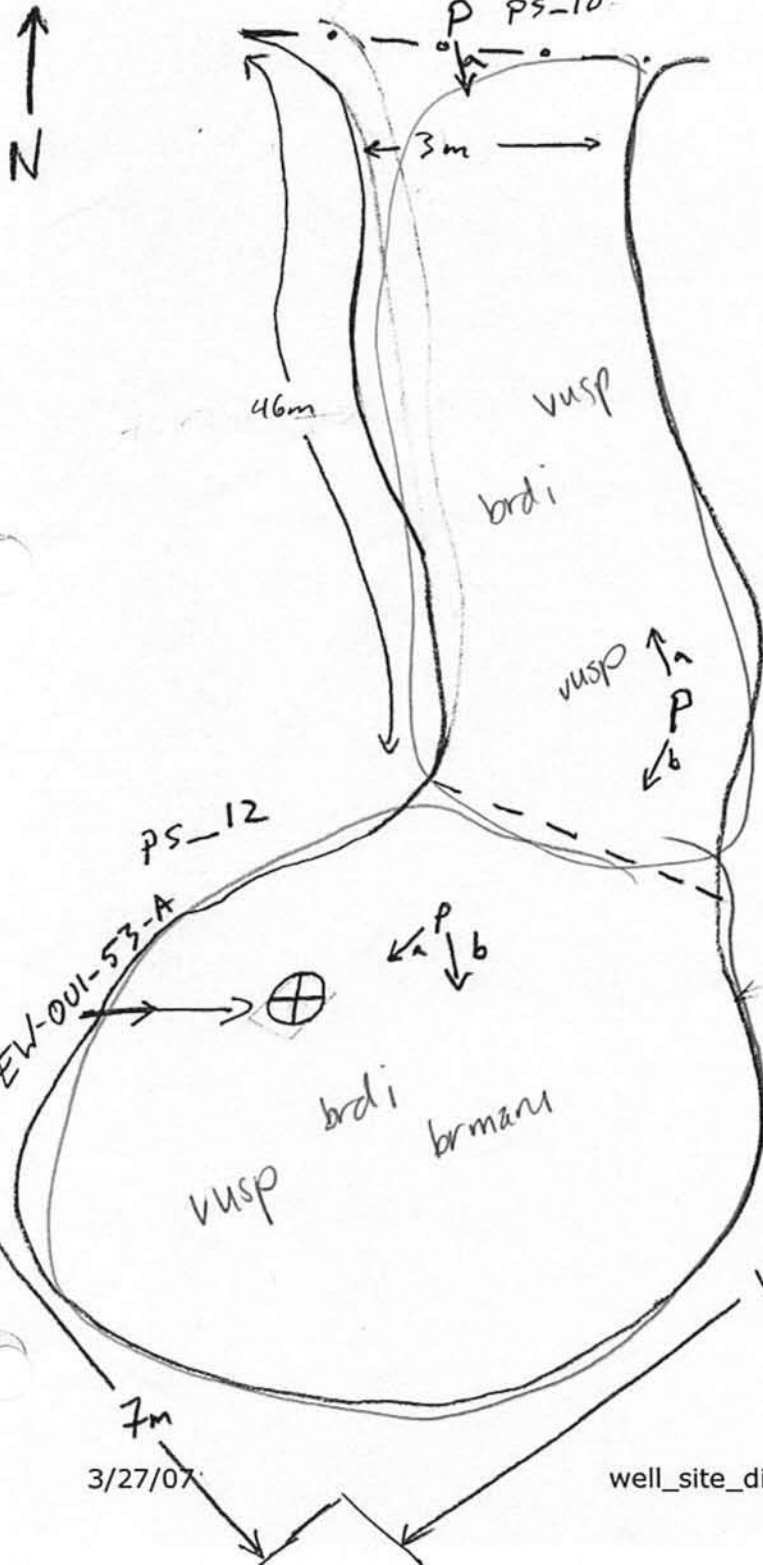
Total Aprox. Area 220 (m²)

Well Rd. Area 138 (m²)

Well Site Area 82 (m²)

Legend

- 1A # = WCS Sub Group
- P Photo Station
- Photo Point
- ⊕ Well
- - - Well Road/Site boundary
- . . . WCS boundary



2nd treatment

Treatment Key

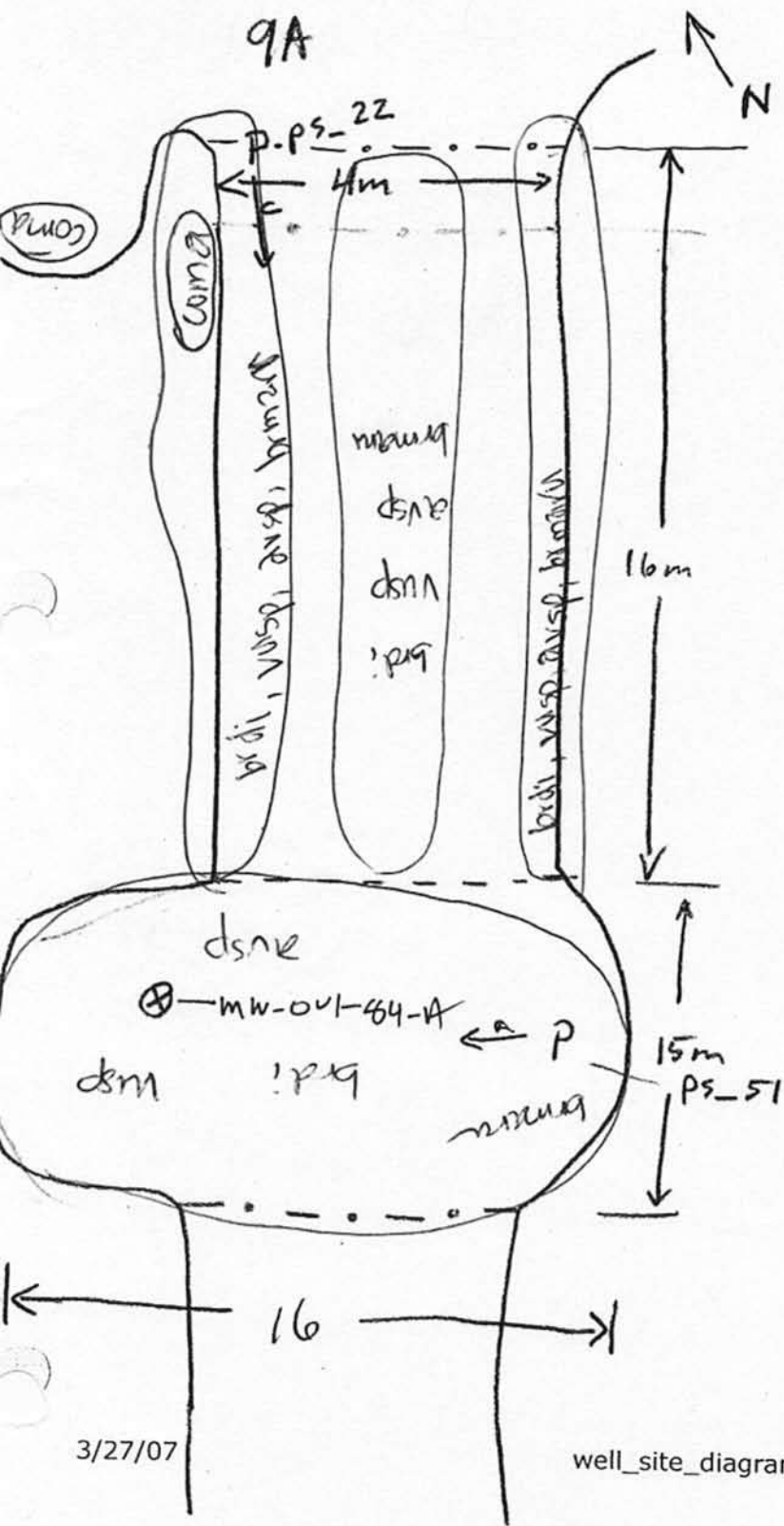
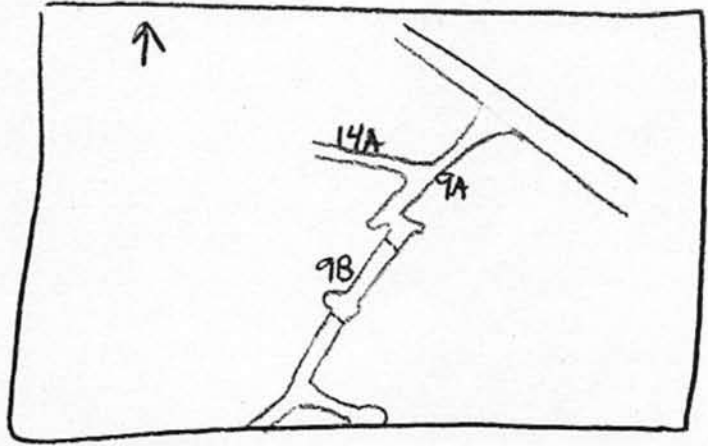
NOTE: Photo station ID labels (e.g. ps_01) are placed near photo station locations (P). Direction of photo (i.e. photo point) is labeled with arrow and letter (e.g. P_a -->)

Well ID: MW-001-84A
 WCS Sub Group 9B
 Total Aprox. Area 304 (m²)
 All Rd. Area 64 (m²)
 Well Site Area 240 (m²)

Date 5-18-09
 Surveyor ARM

Legend

- 1A # = WCS Sub Group
- P Photo Station
- Photo Point
- ⊕ Well
- - - Well Road/Site boundary
- . . . WCS boundary



★ 2nd Treatment

Treatment Key

Boundary of Treated Area

ceme

Weed Type

NOTE: Photo station ID labels (e.g. ps_01) are placed near photo station locations (P). Direction of photo (i.e. photo point) is labeled with arrow and letter (e.g. P_a -->)

Well ID: SB-001-2004-K

Date 5-19-09

WCS Sub Group 16A

Surveyor AFM

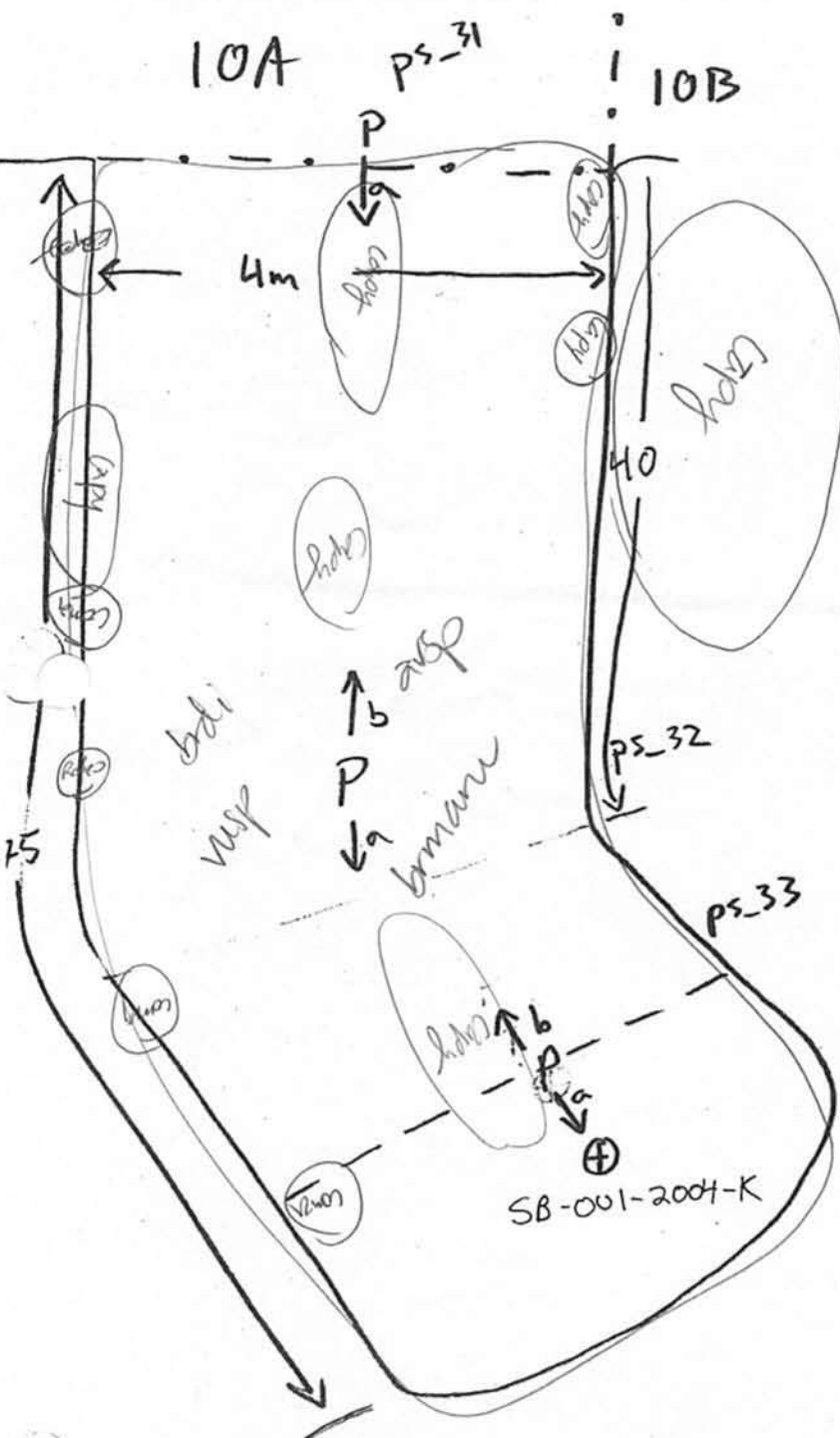
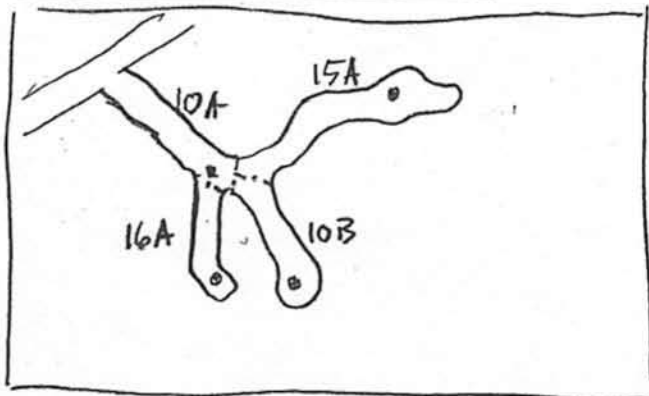
Total Aprox. Area 300 (m²)

Rd. Area 160 (m²)

Well Site Area 140 (m²)

Legend

- 1A # = WCS Sub Group
- P Photo Station
- Photo Point
- ⊕ Well
- - - Well Road/Site boundary
- . - . - WCS boundary



2nd treatment

Treatment Key

Boundary of Treated Area

Weed Type

NOTE: Photo station ID labels (e.g. ps_01) are placed near photo station locations (P). Direction of photo (i.e. photo point) is labeled with arrow and letter (e.g. P_a -->)

Attachment 2

‘RARE PLANT SURVEY DATA 2009’

The attached spreadsheet (HGL_WCS_RarePlant_2009.xls) contains rare plant survey data from pre-treatment rare plant surveys within each Weed Control Segment (WCS) during the 2009 weed control program within the Operable Unit 1 portion of the FONR.

Date	WCS	Well ID	Surveyor	Patch ID	Coverage	Area (m ²)	Notes
14-Apr-09	05A	IW-OU1-01-A	AFM	AM01	S	4	AM = Adrienne Mages SM = Sean McStay Chorizantho Coverage: Very Sparse (VS): 1-2 % coverage Sparse (S) 3-25 % coverage Medium (M): 26-75 % coverage High (H): 76-97 % coverage Very High (VH): > 98 % coverage
14-Apr-09	05A	IW-OU1-01-A	AFM	AM02	VS	1	
14-Apr-09	05A	IW-OU1-01-A	AFM	AM03	VS	2	
14-Apr-09	05A	IW-OU1-01-A	AFM	AM04	VS	1	
14-Apr-09	05A	IW-OU1-01-A	AFM	AM05	VS	1	
14-Apr-09	05A	IW-OU1-01-A	AFM	AM06	VS	1	
14-Apr-09	05A	IW-OU1-01-A	AFM	AM07	VS	1	
14-Apr-09	05A	IW-OU1-01-A	AFM	AM08	VS	1	
14-Apr-09	05A	IW-OU1-01-A	AFM	AM09	VS	1	
14-Apr-09	05A	IW-OU1-01-A	AFM	AM10	VS	1	
14-Apr-09	05A	IW-OU1-01-A	AFM	AM11	VS	1	
14-Apr-09	05A	IW-OU1-01-A	AFM	AM12	VS	1	
28-Apr-09	06A	EW-OU1-53-A	AFM	AM13	VS	1	
28-Apr-09	06A	EW-OU1-53-A	AFM	AM14	VS	1	
28-Apr-09	06A	EW-OU1-53-A	AFM	AM15	VS	1	
28-Apr-09	06A	EW-OU1-53-A	AFM	AM16	VS	1	
28-Apr-09	06A	EW-OU1-53-A	AFM	AM17	VS	1	
28-Apr-09	06A	EW-OU1-53-A	AFM	AM18	S	1	
28-Apr-09	06A	EW-OU1-53-A	AFM	AM19	VS	1	
28-Apr-09	06A	EW-OU1-53-A	AFM	AM20	VS	1	
28-Apr-09	06A	EW-OU1-53-A	AFM	AM21	VS	1	
28-Apr-09	06A	EW-OU1-53-A	AFM	AM22	VS	1	
		MW-OU1-46-AD/PZ-OU1-46-					
12-May-09	09A	AD2/MW-OU1-46A	AFM	AM100	S	1	
		MW-OU1-46-AD/PZ-OU1-46-					
12-May-09	09A	AD2/MW-OU1-46A	AFM	AM101	VS	1	
		MW-OU1-46-AD/PZ-OU1-46-					
12-May-09	09A	AD2/MW-OU1-46A	AFM	AM102	M	1	
		MW-OU1-46-AD/PZ-OU1-46-					
12-May-09	09A	AD2/MW-OU1-46A	AFM	AM103	VS	1	
		MW-OU1-46-AD/PZ-OU1-46-					
12-May-09	09A	AD2/MW-OU1-46A	AFM	AM104	S	1	
		MW-OU1-46-AD/PZ-OU1-46-					
12-May-09	09A	AD2/MW-OU1-46A	AFM	AM105	S	2	
		MW-OU1-46-AD/PZ-OU1-46-					
12-May-09	09A	AD2/MW-OU1-46A	AFM	AM106	S	1	
		MW-OU1-46-AD/PZ-OU1-46-					
12-May-09	09A	AD2/MW-OU1-46A	AFM	AM107	M	3	
		MW-OU1-46-AD/PZ-OU1-46-					
12-May-09	09A	AD2/MW-OU1-46A	AFM	AM108	S	1	
		MW-OU1-46-AD/PZ-OU1-46-					
12-May-09	09A	AD2/MW-OU1-46A	AFM	AM66A	VS	1	
		MW-OU1-46-AD/PZ-OU1-46-					
12-May-09	09A	AD2/MW-OU1-46A	AFM	AM67A	S	1	
		MW-OU1-46-AD/PZ-OU1-46-					
12-May-09	09A	AD2/MW-OU1-46A	AFM	AM68	VS	1	
		MW-OU1-46-AD/PZ-OU1-46-					
12-May-09	09A	AD2/MW-OU1-46A	AFM	AM69	VS	1	

12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM70	VS	1
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM71	VS	1
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM72	VS	1
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM73	VS	1
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM74	VS	1
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM75	M	2
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM76	H	6
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM77	VS	1
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM78	M	2
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM79	VS	1
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM80	S	2
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM81	M	2
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM82	M	3
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM83	H	3
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM84	VS	1
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM85	VS	1
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM86	S	1
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM87	VS	1
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM88	H	3
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM89	S	1
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM90	S	2
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM91	H	4
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM92	H	10
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM93	H	8

12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46- AD2/MW-OU1-46A	AFM	AM94	H	6
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46- AD2/MW-OU1-46A	AFM	AM95	S	1
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46- AD2/MW-OU1-46A	AFM	AM96	S	2
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46- AD2/MW-OU1-46A	AFM	AM97	M	2
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46- AD2/MW-OU1-46A	AFM	AM98	H	8
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46- AD2/MW-OU1-46A	AFM	AM99	VS	1
12-May-09	09B	MW-OU1-84-A	AFM	AM109	S	1
12-May-09	09B	MW-OU1-84-A	AFM	AM110	VS	1
12-May-09	09B	MW-OU1-84-A	AFM	AM111	VS	1
12-May-09	09B	MW-OU1-84-A	AFM	AM112	VS	1
12-May-09	09B	MW-OU1-84-A	AFM	AM113	VS	1
12-May-09	09B	MW-OU1-84-A	AFM	AM114	VS	1
12-May-09	09B	MW-OU1-84-A	AFM	AM115	VS	1
12-May-09	09B	MW-OU1-84-A	AFM	AM116	VS	1
12-May-09	09B	MW-OU1-84-A	AFM	AM117	VS	1
12-May-09	09B	MW-OU1-84-A	AFM	AM118	VS	1
12-May-09	09B	MW-OU1-84-A	AFM	AM119	M	1
12-May-09	09B	MW-OU1-84-A	AFM	AM120	S	2
12-May-09	09B	MW-OU1-84-A	AFM	AM121	VS	1
12-May-09	09B	MW-OU1-84-A	AFM	AM121A	VS	1
12-May-09	09B	MW-OU1-84-A	AFM	AM122A	VS	1
12-May-09	09B	MW-OU1-84-A	AFM	AM123A	S	2
12-May-09	09B	MW-OU1-84-A	AFM	AM124A	M	2
12-May-09	09B	MW-OU1-84-A	AFM	AM125A	VS	1
12-May-09	09B	MW-OU1-84-A	AFM	AM126A	H	6
12-May-09	09B	MW-OU1-84-A	AFM	AM128A	M	1
18-May-09	09C	IW-OU1-74-A	AFM	AM128	M	1
18-May-09	09C	IW-OU1-74-A	AFM	AM129	S	1
18-May-09	09C	IW-OU1-74-A	AFM	AM130	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM131	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM132	S	1
18-May-09	09C	IW-OU1-74-A	AFM	AM133	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM134	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM135	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM136	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM137	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM138	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM139	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM140	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM141	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM142	S	1
18-May-09	09C	IW-OU1-74-A	AFM	AM143	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM144	VS	1

18-May-09	09C	IW-OU1-74-A	AFM	AM145	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM146	M	2
18-May-09	09C	IW-OU1-74-A	AFM	AM147	S	2
18-May-09	09C	IW-OU1-74-A	AFM	AM148	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM149	S	1
18-May-09	09C	IW-OU1-74-A	AFM	AM150	M	2
18-May-09	09C	IW-OU1-74-A	AFM	AM151	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM152	M	1
18-May-09	09C	IW-OU1-74-A	AFM	AM153	S	1
18-May-09	09C	IW-OU1-74-A	AFM	AM154	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM155	S	1
18-May-09	09C	IW-OU1-74-A	AFM	AM156	M	1
18-May-09	09C	IW-OU1-74-A	AFM	AM157	S	1
18-May-09	09C	IW-OU1-74-A	AFM	AM158	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM159	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM160	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM161	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM162	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM163	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM164	M	3
18-May-09	09C	IW-OU1-74-A	AFM	AM165	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM166	S	2
18-May-09	09C	IW-OU1-74-A	AFM	AM167	S	2
18-May-09	09C	IW-OU1-74-A	AFM	AM168	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM169	M	1
18-May-09	09D	MW-OU1-51A	AFM	AM176	S	1
18-May-09	09D	MW-OU1-51A	AFM	AM177	VS	1
18-May-09	09D	MW-OU1-51A	AFM	AM178	S	3
18-May-09	09D	MW-OU1-51A	AFM	AM179	M	2
18-May-09	09D	MW-OU1-51A	AFM	AM180	M	3
18-May-09	09D	MW-OU1-51A	AFM	AM181	S	2
18-May-09	09D	MW-OU1-51A	AFM	AM182	VS	1
18-May-09	09D	MW-OU1-51A	AFM	AM183	M	2
18-May-09	09D	MW-OU1-51A	AFM	AM184	M	5
18-May-09	09D	MW-OU1-51A	AFM	AM186	VS	1
18-May-09	09D	MW-OU1-51A	AFM	AM187	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM191	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM192	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM193	S	3
19-May-09	10A	MW-OU1-50A	AFM	AM194	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM195	M	2
19-May-09	10A	MW-OU1-50A	AFM	AM196	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM197	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM198	S	2
19-May-09	10A	MW-OU1-50A	AFM	AM199	H	15
19-May-09	10A	MW-OU1-50A	AFM	AM200	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM201	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM202	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM203	S	2

19-May-09	10A	MW-OU1-50A	AFM	AM204	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM205	S	1
19-May-09	10A	MW-OU1-50A	AFM	AM206	S	1
19-May-09	10A	MW-OU1-50A	AFM	AM207	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM208	S	3
19-May-09	10A	MW-OU1-50A	AFM	AM209	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM210	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM211	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM212	S	3
19-May-09	10A	MW-OU1-50A	AFM	AM213	S	2
19-May-09	10A	MW-OU1-50A	AFM	AM214	S	3
19-May-09	10A	MW-OU1-50A	AFM	AM215	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM216	VS	2
19-May-09	10A	MW-OU1-50A	AFM	AM217	S	1
19-May-09	10A	MW-OU1-50A	AFM	AM218	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM219	VS	2
19-May-09	10A	MW-OU1-50A	AFM	AM220	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM221	VS	2
19-May-09	10A	MW-OU1-50A	AFM	AM223	H	5
19-May-09	10A	MW-OU1-50A	AFM	AM224	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM225	S	2 * Extends into 16A
19-May-09	10A	MW-OU1-50A	AFM	AM226	S	2
19-May-09	10A	MW-OU1-50A	AFM	AM227	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM228	VS	1
06-May-09	10A	MW-OU1-50A	STM	SM01	VS	1 *Pre-treatment. Possibly more Chorizanthe w/in WCS but too early to ID & map.
06-May-09	10A	MW-OU1-50A	STM	SM02	VS	1 *Pre-treatment. Possibly more Chorizanthe w/in WCS but too early to ID & map.
06-May-09	10A	MW-OU1-50A	STM	SM03	S	1 *Pre-treatment. Possibly more Chorizanthe w/in WCS but too early to ID & map.

*Pre-treatment, **Entire patch extends beyond WCS boundary.** Very early in growth/flowering period. Most indiv. still growing vegetatively. Approximately half of individuals w/in WCS flowering.

06-May-09	10A	MW-OU1-50A	STM	SM04	M	14 Possibly more Chorizanthe w/in WCS but too early to ID & map.
06-May-09	10A	MW-OU1-50A	STM	SM05	S	4 *Pre-treatment. Possibly more Chorizanthe w/in WCS but too early to ID & map.
19-May-09	10B	MW-OU159A	AFM	AM231	VS	1
19-May-09	10B	IW-OU1-59A	AFM	AM232	S	1
19-May-09	10B	IW-OU1-59A	AFM	AM233	VS	1
19-May-09	10B	IW-OU1-59A	AFM	AM234	VS	1
19-May-09	10B	IW-OU1-59A	AFM	AM235	VS	1
19-May-09	10B	IW-OU1-59A	AFM	AM236	VS	1
19-May-09	10B	IW-OU1-59A	AFM	AM237	M	3
19-May-09	10B	IW-OU1-59A	AFM	AM238	S	2
19-May-09	10B	IW-OU1-59A	AFM	AM239	M	2
19-May-09	10B	IW-OU1-59A	AFM	AM240	VS	1
19-May-09	10B	IW-OU1-59A	AFM	AM241	S	2
19-May-09	10B	IW-OU1-59A	AFM	AM242	VS	1
19-May-09	10B	IW-OU1-59A	AFM	AM243	VS	1
19-May-09	10B	IW-OU1-59A	AFM	AM244	VS	1
19-May-09	10B	IW-OU1-59A	AFM	AM245	VS	1
19-May-09	10B	IW-OU1-59A	AFM	AM246	S	1
19-May-09	10B	IW-OU1-59A	AFM	AM247	VS	1

18-May-09	13A	IW-OU1-73A	AFM	AM188	VS	1
18-May-09	13A	IW-OU1-73A	AFM	AM189	VS	1
18-May-09	13A	IW-OU1-73A	AFM	AM190	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM31	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM32	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM33	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM34	M	2
12-May-09	14A	MW-OU1-83-A	AFM	AM35	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM36	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM37	S	2
12-May-09	14A	MW-OU1-83-A	AFM	AM38	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM39	M	2
12-May-09	14A	MW-OU1-83-A	AFM	AM40	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM41	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM42	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM43	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM44	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM45	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM46	H	14
12-May-09	14A	MW-OU1-83-A	AFM	AM47	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM48	H	2
12-May-09	14A	MW-OU1-83-A	AFM	AM49	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM50	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM51	S	2
12-May-09	14A	MW-OU1-83-A	AFM	AM52	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM53	S	1
12-May-09	14A	MW-OU1-83-A	AFM	AM54	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM55	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM56	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM57	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM58	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM59	S	1
12-May-09	14A	MW-OU1-83-A	AFM	AM60	M	1
12-May-09	14A	MW-OU1-83-A	AFM	AM61	S	2
12-May-09	14A	MW-OU1-83-A	AFM	AM62	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM63	S	1
12-May-09	14A	MW-OU1-83-A	AFM	AM64	H	12
12-May-09	14A	MW-OU1-83-A	AFM	AM65	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM66	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM67	VS	1
19-May-09	15A	IW-OU182A	AFM	AM248	S	1
19-May-09	15A	IW-OU182A	AFM	AM249	VS	1
19-May-09	16A	SB-OU1-2004K	AFM	AM229	S	2
19-May-09	16A	SB-OU1-2004K	AFM	AM230	M	2

Date	WCS	Well ID	Surveyor	Patch ID	Coverage	Area (m ²)
28-Apr-09	06A	EW-OU1-53-A	AFM	AM23	VL	1
28-Apr-09	06A	EW-OU1-53-A	AFM	AM24	L	1
28-Apr-09	06A	EW-OU1-53-A	AFM	AM25	VL	1
28-Apr-09	06A	EW-OU1-53-A	AFM	AM26	VL	1
28-Apr-09	06A	EW-OU1-53-A	AFM	AM27	VL	1

Notes

AM = Adrienne Mages
SM = Sean McStay

Gilia Density
Very Low (VL): 1-2 / m2
Low (L) 3-10 / m2
Medium (M): 11-20 / m2
High (H): 21-50 / m2
Very High (VH): > 51 / m2

Chorizanthe patch count & coverage summary

Count of Patch ID	WCS												
Coverage	05A	06A	09A	09B	09C	09D	10A	10B	13A	14A	15A	16A	Grand Total
H				8	1			2			3		14
M				7	3	7	4	2			3		29
S		1	1	12	3	10	3	14	4		6	1	56
VS		11	9	16	13	25	4	24	11	3	25	1	142
Grand Total		12	10	43	20	42	11	42	17	3	37	2	241

Chorizanthe patch area summary

Sum of Area (m2)	WCS												
Coverage	05A	06A	09A	09B	09C	09D	10A	10B	13A	14A	15A	16A	Grand Total
H				48	6			20			28		102
M				15	4	11	12	16	5		5		70
S		4	1	16	5	13	6	30	6		9	1	93
VS		12	9	16	13	25	4	27	11	3	25	1	146
Grand Total		16	10	95	28	49	22	93	22	3	67	2	411

Gilia survey summary

Patches 5
 Sum Patch Area 5 m²
 Patch Coverage 4 patches - VL (4 m²)
 1 patche - L (4 m2)

Attachment 3

‘RARE PLANT SURVEY DIAGRAMS 2009’

The attached diagrams show the distribution of rare plant species found during pre-treatment surveys within each Weed Control Segment (WCS) during the 2009 weed control program within the Operable Unit 1 portion of the FONR. These diagrams (not drawn to scale) also show the spatial extent, well location, well site/road boundaries, and photo stations/points for each WCS.

Date	WCS	Well ID	Surveyor	Patch ID	Coverage	Area (m ²)	Notes
14-Apr-09	05A	IW-OU1-01-A	AFM	AM01	S	4	AM = Adrienne Mages SM = Sean McStay Chorizantho Coverage: Very Sparse (VS): 1-2 % coverage Sparse (S) 3-25 % coverage Medium (M): 26-75 % coverage High (H): 76-97 % coverage Very High (VH): > 98 % coverage
14-Apr-09	05A	IW-OU1-01-A	AFM	AM02	VS	1	
14-Apr-09	05A	IW-OU1-01-A	AFM	AM03	VS	2	
14-Apr-09	05A	IW-OU1-01-A	AFM	AM04	VS	1	
14-Apr-09	05A	IW-OU1-01-A	AFM	AM05	VS	1	
14-Apr-09	05A	IW-OU1-01-A	AFM	AM06	VS	1	
14-Apr-09	05A	IW-OU1-01-A	AFM	AM07	VS	1	
14-Apr-09	05A	IW-OU1-01-A	AFM	AM08	VS	1	
14-Apr-09	05A	IW-OU1-01-A	AFM	AM09	VS	1	
14-Apr-09	05A	IW-OU1-01-A	AFM	AM10	VS	1	
14-Apr-09	05A	IW-OU1-01-A	AFM	AM11	VS	1	
14-Apr-09	05A	IW-OU1-01-A	AFM	AM12	VS	1	
28-Apr-09	06A	EW-OU1-53-A	AFM	AM13	VS	1	
28-Apr-09	06A	EW-OU1-53-A	AFM	AM14	VS	1	
28-Apr-09	06A	EW-OU1-53-A	AFM	AM15	VS	1	
28-Apr-09	06A	EW-OU1-53-A	AFM	AM16	VS	1	
28-Apr-09	06A	EW-OU1-53-A	AFM	AM17	VS	1	
28-Apr-09	06A	EW-OU1-53-A	AFM	AM18	S	1	
28-Apr-09	06A	EW-OU1-53-A	AFM	AM19	VS	1	
28-Apr-09	06A	EW-OU1-53-A	AFM	AM20	VS	1	
28-Apr-09	06A	EW-OU1-53-A	AFM	AM21	VS	1	
28-Apr-09	06A	EW-OU1-53-A	AFM	AM22	VS	1	
		MW-OU1-46-AD/PZ-OU1-46-					
12-May-09	09A	AD2/MW-OU1-46A	AFM	AM100	S	1	
		MW-OU1-46-AD/PZ-OU1-46-					
12-May-09	09A	AD2/MW-OU1-46A	AFM	AM101	VS	1	
		MW-OU1-46-AD/PZ-OU1-46-					
12-May-09	09A	AD2/MW-OU1-46A	AFM	AM102	M	1	
		MW-OU1-46-AD/PZ-OU1-46-					
12-May-09	09A	AD2/MW-OU1-46A	AFM	AM103	VS	1	
		MW-OU1-46-AD/PZ-OU1-46-					
12-May-09	09A	AD2/MW-OU1-46A	AFM	AM104	S	1	
		MW-OU1-46-AD/PZ-OU1-46-					
12-May-09	09A	AD2/MW-OU1-46A	AFM	AM105	S	2	
		MW-OU1-46-AD/PZ-OU1-46-					
12-May-09	09A	AD2/MW-OU1-46A	AFM	AM106	S	1	
		MW-OU1-46-AD/PZ-OU1-46-					
12-May-09	09A	AD2/MW-OU1-46A	AFM	AM107	M	3	
		MW-OU1-46-AD/PZ-OU1-46-					
12-May-09	09A	AD2/MW-OU1-46A	AFM	AM108	S	1	
		MW-OU1-46-AD/PZ-OU1-46-					
12-May-09	09A	AD2/MW-OU1-46A	AFM	AM66A	VS	1	
		MW-OU1-46-AD/PZ-OU1-46-					
12-May-09	09A	AD2/MW-OU1-46A	AFM	AM67A	S	1	
		MW-OU1-46-AD/PZ-OU1-46-					
12-May-09	09A	AD2/MW-OU1-46A	AFM	AM68	VS	1	
		MW-OU1-46-AD/PZ-OU1-46-					
12-May-09	09A	AD2/MW-OU1-46A	AFM	AM69	VS	1	

12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM70	VS	1
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM71	VS	1
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM72	VS	1
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM73	VS	1
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM74	VS	1
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM75	M	2
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM76	H	6
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM77	VS	1
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM78	M	2
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM79	VS	1
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM80	S	2
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM81	M	2
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM82	M	3
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM83	H	3
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM84	VS	1
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM85	VS	1
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM86	S	1
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM87	VS	1
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM88	H	3
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM89	S	1
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM90	S	2
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM91	H	4
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM92	H	10
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM93	H	8

12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM94	H	6
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM95	S	1
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM96	S	2
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM97	M	2
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM98	H	8
12-May-09	09A	MW-OU1-46-AD/PZ-OU1-46-AD2/MW-OU1-46A	AFM	AM99	VS	1
12-May-09	09B	MW-OU1-84-A	AFM	AM109	S	1
12-May-09	09B	MW-OU1-84-A	AFM	AM110	VS	1
12-May-09	09B	MW-OU1-84-A	AFM	AM111	VS	1
12-May-09	09B	MW-OU1-84-A	AFM	AM112	VS	1
12-May-09	09B	MW-OU1-84-A	AFM	AM113	VS	1
12-May-09	09B	MW-OU1-84-A	AFM	AM114	VS	1
12-May-09	09B	MW-OU1-84-A	AFM	AM115	VS	1
12-May-09	09B	MW-OU1-84-A	AFM	AM116	VS	1
12-May-09	09B	MW-OU1-84-A	AFM	AM117	VS	1
12-May-09	09B	MW-OU1-84-A	AFM	AM118	VS	1
12-May-09	09B	MW-OU1-84-A	AFM	AM119	M	1
12-May-09	09B	MW-OU1-84-A	AFM	AM120	S	2
12-May-09	09B	MW-OU1-84-A	AFM	AM121	VS	1
12-May-09	09B	MW-OU1-84-A	AFM	AM121A	VS	1
12-May-09	09B	MW-OU1-84-A	AFM	AM122A	VS	1
12-May-09	09B	MW-OU1-84-A	AFM	AM123A	S	2
12-May-09	09B	MW-OU1-84-A	AFM	AM124A	M	2
12-May-09	09B	MW-OU1-84-A	AFM	AM125A	VS	1
12-May-09	09B	MW-OU1-84-A	AFM	AM126A	H	6
12-May-09	09B	MW-OU1-84-A	AFM	AM128A	M	1
18-May-09	09C	IW-OU1-74-A	AFM	AM128	M	1
18-May-09	09C	IW-OU1-74-A	AFM	AM129	S	1
18-May-09	09C	IW-OU1-74-A	AFM	AM130	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM131	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM132	S	1
18-May-09	09C	IW-OU1-74-A	AFM	AM133	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM134	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM135	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM136	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM137	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM138	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM139	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM140	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM141	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM142	S	1
18-May-09	09C	IW-OU1-74-A	AFM	AM143	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM144	VS	1

18-May-09	09C	IW-OU1-74-A	AFM	AM145	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM146	M	2
18-May-09	09C	IW-OU1-74-A	AFM	AM147	S	2
18-May-09	09C	IW-OU1-74-A	AFM	AM148	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM149	S	1
18-May-09	09C	IW-OU1-74-A	AFM	AM150	M	2
18-May-09	09C	IW-OU1-74-A	AFM	AM151	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM152	M	1
18-May-09	09C	IW-OU1-74-A	AFM	AM153	S	1
18-May-09	09C	IW-OU1-74-A	AFM	AM154	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM155	S	1
18-May-09	09C	IW-OU1-74-A	AFM	AM156	M	1
18-May-09	09C	IW-OU1-74-A	AFM	AM157	S	1
18-May-09	09C	IW-OU1-74-A	AFM	AM158	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM159	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM160	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM161	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM162	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM163	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM164	M	3
18-May-09	09C	IW-OU1-74-A	AFM	AM165	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM166	S	2
18-May-09	09C	IW-OU1-74-A	AFM	AM167	S	2
18-May-09	09C	IW-OU1-74-A	AFM	AM168	VS	1
18-May-09	09C	IW-OU1-74-A	AFM	AM169	M	1
18-May-09	09D	MW-OU1-51A	AFM	AM176	S	1
18-May-09	09D	MW-OU1-51A	AFM	AM177	VS	1
18-May-09	09D	MW-OU1-51A	AFM	AM178	S	3
18-May-09	09D	MW-OU1-51A	AFM	AM179	M	2
18-May-09	09D	MW-OU1-51A	AFM	AM180	M	3
18-May-09	09D	MW-OU1-51A	AFM	AM181	S	2
18-May-09	09D	MW-OU1-51A	AFM	AM182	VS	1
18-May-09	09D	MW-OU1-51A	AFM	AM183	M	2
18-May-09	09D	MW-OU1-51A	AFM	AM184	M	5
18-May-09	09D	MW-OU1-51A	AFM	AM186	VS	1
18-May-09	09D	MW-OU1-51A	AFM	AM187	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM191	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM192	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM193	S	3
19-May-09	10A	MW-OU1-50A	AFM	AM194	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM195	M	2
19-May-09	10A	MW-OU1-50A	AFM	AM196	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM197	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM198	S	2
19-May-09	10A	MW-OU1-50A	AFM	AM199	H	15
19-May-09	10A	MW-OU1-50A	AFM	AM200	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM201	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM202	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM203	S	2

19-May-09	10A	MW-OU1-50A	AFM	AM204	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM205	S	1
19-May-09	10A	MW-OU1-50A	AFM	AM206	S	1
19-May-09	10A	MW-OU1-50A	AFM	AM207	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM208	S	3
19-May-09	10A	MW-OU1-50A	AFM	AM209	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM210	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM211	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM212	S	3
19-May-09	10A	MW-OU1-50A	AFM	AM213	S	2
19-May-09	10A	MW-OU1-50A	AFM	AM214	S	3
19-May-09	10A	MW-OU1-50A	AFM	AM215	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM216	VS	2
19-May-09	10A	MW-OU1-50A	AFM	AM217	S	1
19-May-09	10A	MW-OU1-50A	AFM	AM218	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM219	VS	2
19-May-09	10A	MW-OU1-50A	AFM	AM220	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM221	VS	2
19-May-09	10A	MW-OU1-50A	AFM	AM223	H	5
19-May-09	10A	MW-OU1-50A	AFM	AM224	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM225	S	2 * Extends into 16A
19-May-09	10A	MW-OU1-50A	AFM	AM226	S	2
19-May-09	10A	MW-OU1-50A	AFM	AM227	VS	1
19-May-09	10A	MW-OU1-50A	AFM	AM228	VS	1
06-May-09	10A	MW-OU1-50A	STM	SM01	VS	1 *Pre-treatment. Possibly more Chorizanthe w/in WCS but too early to ID & map.
06-May-09	10A	MW-OU1-50A	STM	SM02	VS	1 *Pre-treatment. Possibly more Chorizanthe w/in WCS but too early to ID & map.
06-May-09	10A	MW-OU1-50A	STM	SM03	S	1 *Pre-treatment. Possibly more Chorizanthe w/in WCS but too early to ID & map.

*Pre-treatment, **Entire patch extends beyond WCS boundary.** Very early in growth/flowering period. Most indiv. still growing vegetatively. Approximately half of individuals w/in WCS flowering.

06-May-09	10A	MW-OU1-50A	STM	SM04	M	14 Possibly more Chorizanthe w/in WCS but too early to ID & map.
06-May-09	10A	MW-OU1-50A	STM	SM05	S	4 *Pre-treatment. Possibly more Chorizanthe w/in WCS but too early to ID & map.
19-May-09	10B	MW-OU159A	AFM	AM231	VS	1
19-May-09	10B	IW-OU1-59A	AFM	AM232	S	1
19-May-09	10B	IW-OU1-59A	AFM	AM233	VS	1
19-May-09	10B	IW-OU1-59A	AFM	AM234	VS	1
19-May-09	10B	IW-OU1-59A	AFM	AM235	VS	1
19-May-09	10B	IW-OU1-59A	AFM	AM236	VS	1
19-May-09	10B	IW-OU1-59A	AFM	AM237	M	3
19-May-09	10B	IW-OU1-59A	AFM	AM238	S	2
19-May-09	10B	IW-OU1-59A	AFM	AM239	M	2
19-May-09	10B	IW-OU1-59A	AFM	AM240	VS	1
19-May-09	10B	IW-OU1-59A	AFM	AM241	S	2
19-May-09	10B	IW-OU1-59A	AFM	AM242	VS	1
19-May-09	10B	IW-OU1-59A	AFM	AM243	VS	1
19-May-09	10B	IW-OU1-59A	AFM	AM244	VS	1
19-May-09	10B	IW-OU1-59A	AFM	AM245	VS	1
19-May-09	10B	IW-OU1-59A	AFM	AM246	S	1
19-May-09	10B	IW-OU1-59A	AFM	AM247	VS	1

18-May-09	13A	IW-OU1-73A	AFM	AM188	VS	1
18-May-09	13A	IW-OU1-73A	AFM	AM189	VS	1
18-May-09	13A	IW-OU1-73A	AFM	AM190	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM31	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM32	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM33	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM34	M	2
12-May-09	14A	MW-OU1-83-A	AFM	AM35	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM36	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM37	S	2
12-May-09	14A	MW-OU1-83-A	AFM	AM38	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM39	M	2
12-May-09	14A	MW-OU1-83-A	AFM	AM40	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM41	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM42	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM43	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM44	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM45	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM46	H	14
12-May-09	14A	MW-OU1-83-A	AFM	AM47	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM48	H	2
12-May-09	14A	MW-OU1-83-A	AFM	AM49	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM50	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM51	S	2
12-May-09	14A	MW-OU1-83-A	AFM	AM52	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM53	S	1
12-May-09	14A	MW-OU1-83-A	AFM	AM54	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM55	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM56	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM57	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM58	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM59	S	1
12-May-09	14A	MW-OU1-83-A	AFM	AM60	M	1
12-May-09	14A	MW-OU1-83-A	AFM	AM61	S	2
12-May-09	14A	MW-OU1-83-A	AFM	AM62	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM63	S	1
12-May-09	14A	MW-OU1-83-A	AFM	AM64	H	12
12-May-09	14A	MW-OU1-83-A	AFM	AM65	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM66	VS	1
12-May-09	14A	MW-OU1-83-A	AFM	AM67	VS	1
19-May-09	15A	IW-OU182A	AFM	AM248	S	1
19-May-09	15A	IW-OU182A	AFM	AM249	VS	1
19-May-09	16A	SB-OU1-2004K	AFM	AM229	S	2
19-May-09	16A	SB-OU1-2004K	AFM	AM230	M	2

Date	WCS	Well ID	Surveyor	Patch ID	Coverage	Area (m ²)
28-Apr-09	06A	EW-OU1-53-A	AFM	AM23	VL	1
28-Apr-09	06A	EW-OU1-53-A	AFM	AM24	L	1
28-Apr-09	06A	EW-OU1-53-A	AFM	AM25	VL	1
28-Apr-09	06A	EW-OU1-53-A	AFM	AM26	VL	1
28-Apr-09	06A	EW-OU1-53-A	AFM	AM27	VL	1

Notes

AM = Adrienne Mages
SM = Sean McStay

Gilia Density
Very Low (VL): 1-2 / m2
Low (L) 3-10 / m2
Medium (M): 11-20 / m2
High (H): 21-50 / m2
Very High (VH): > 51 / m2

Chorizanthe patch count & coverage summary

Count of Patch ID	WCS												Grand Total
Coverage	05A	06A	09A	09B	09C	09D	10A	10B	13A	14A	15A	16A	Grand Total
H				8	1			2			3		14
M				7	3	7	4	2			3	1	29
S		1	1	12	3	10	3	14	4		6	1	56
VS		11	9	16	13	25	4	24	11	3	25	1	142
Grand Total		12	10	43	20	42	11	42	17	3	37	2	241

Chorizanthe patch area summary

Sum of Area (m2)	WCS												Grand Total
Coverage	05A	06A	09A	09B	09C	09D	10A	10B	13A	14A	15A	16A	Grand Total
H				48	6			20			28		102
M				15	4	11	12	16	5		5	2	70
S		4	1	16	5	13	6	30	6		9	1	93
VS		12	9	16	13	25	4	27	11	3	25	1	146
Grand Total		16	10	95	28	49	22	93	22	3	67	2	411

Gilia survey summary

Patches 5
 Sum Patch Area 5 m²
 Patch Coverage 4 patches - VL (4 m²)
 1 patche - L (4 m2)

Well ID:

IW-001-01-A

Date

4-14-09



WCS Sub Group

5-A

Surveyor

ATM

Total Aprox. Area

240 (m²)

Well Rd. Area

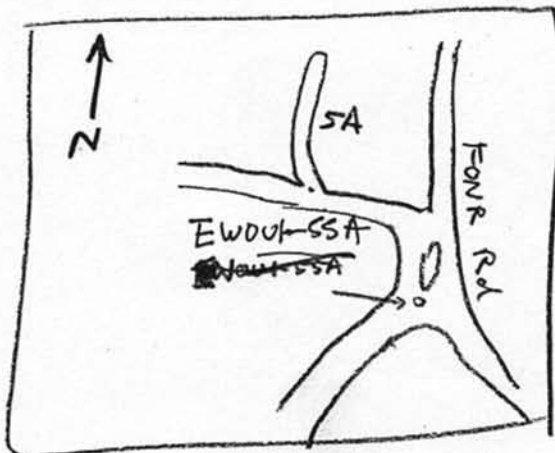
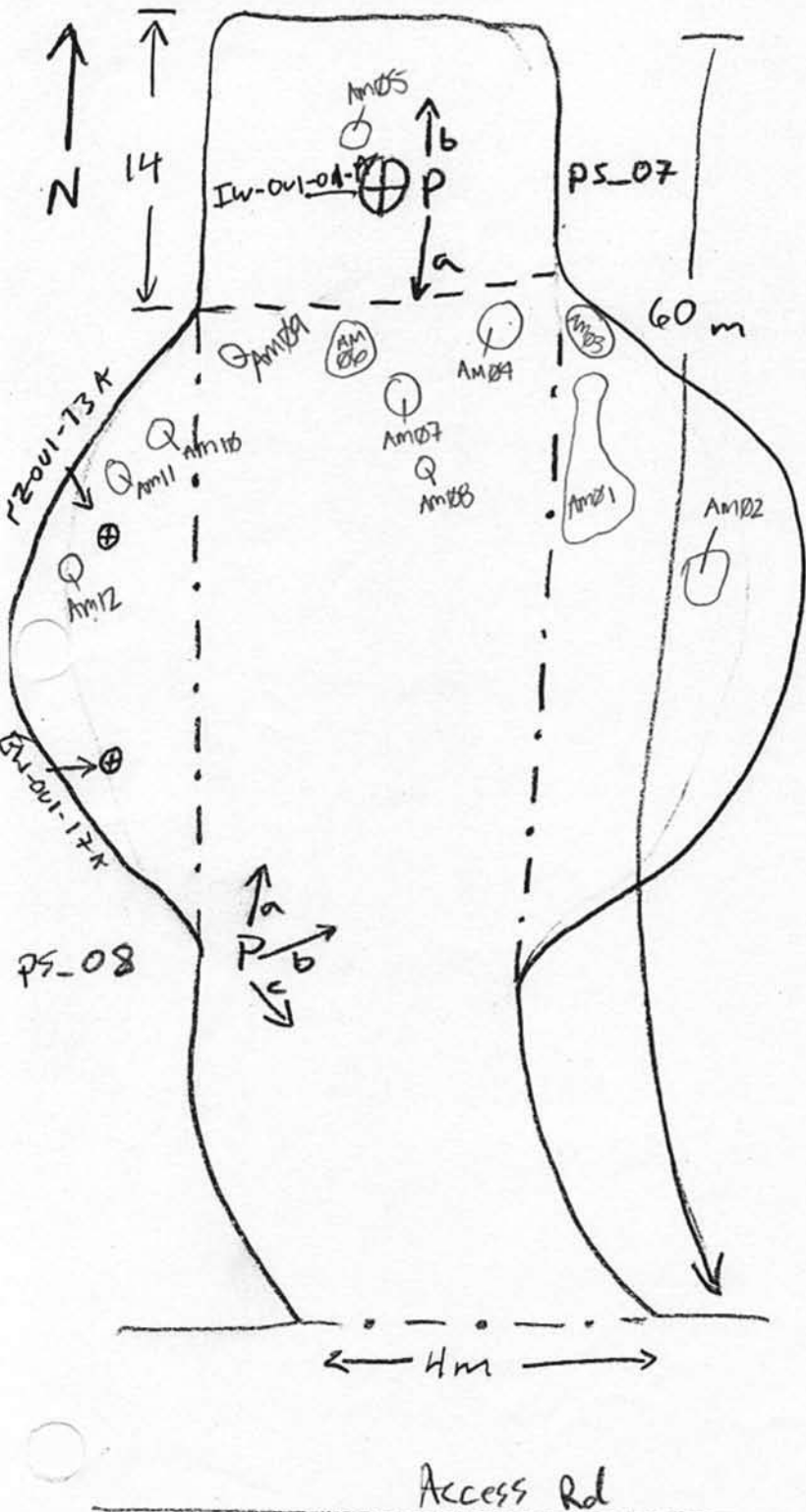
174 (m²)

Well Site Area

56 (m²)

Legend

- IA # = WCS Sub Group
- P Photo Station
- Photo Point
- ⊕ Well
- - - Well Road/Site boundary
- ⋯ WCS boundary



* Rare Plant
Survey
Chorizanthe

Well ID: EW-001-53-A

Date: 4-23-09

WCS Sub Group: 6A

Surveyor: AFM

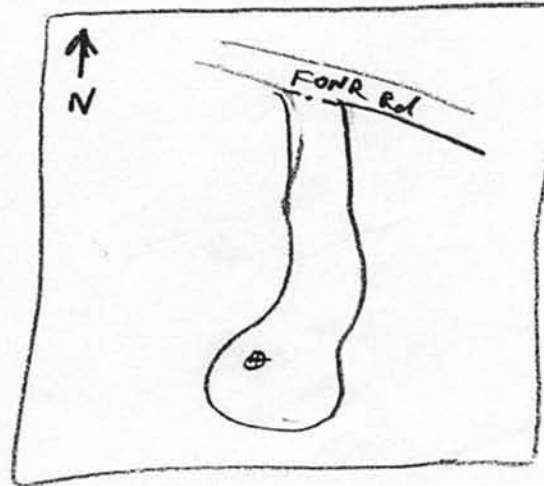
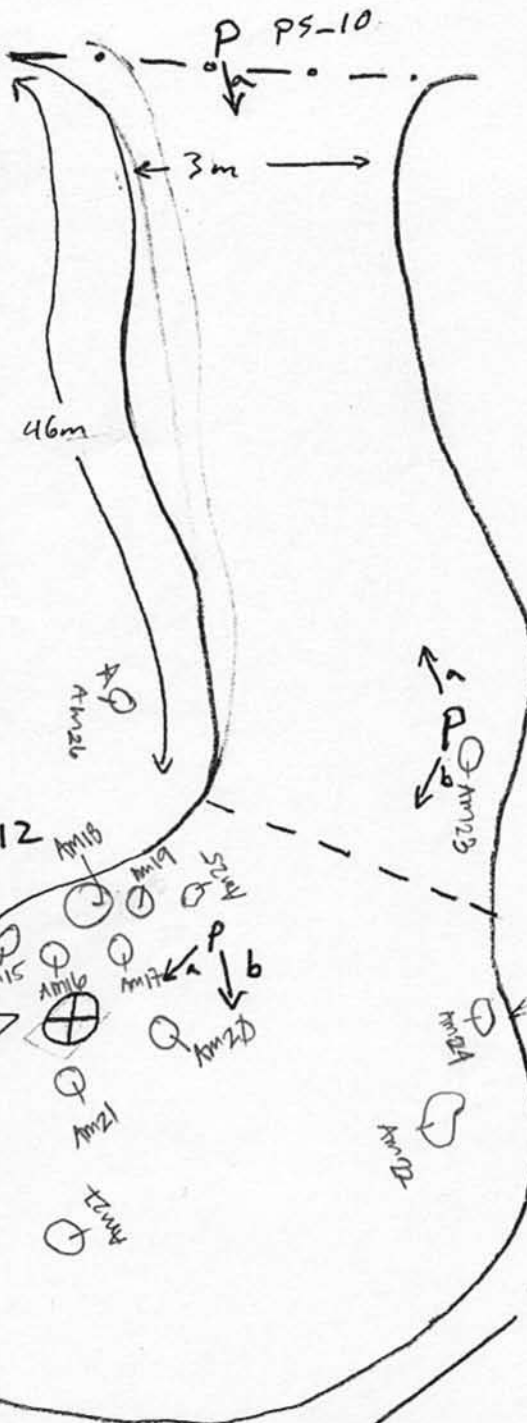
Total Aprox. Area: 220 (m²)

Well Rd. Area: 138 (m²)

Well Site Area: 82 (m²)

Legend

- 1A # = WCS Sub Group
- P Photo Station
- Photo Point
- ⊕ Well
- Well Road/Site boundary
- WCS boundary



* Rare Plant
Survey
Gilia + Chonzanthe

EW-001-53-A

3/27/07

MW-001-46AD

MW ~~001-46AD~~ 001-46-A#

Well ID:

PZ-001-46-AD2

Date

5-12-09



WCS Sub Group

9A

Surveyor

AFM

Total Aprox. Area

369 (m²)

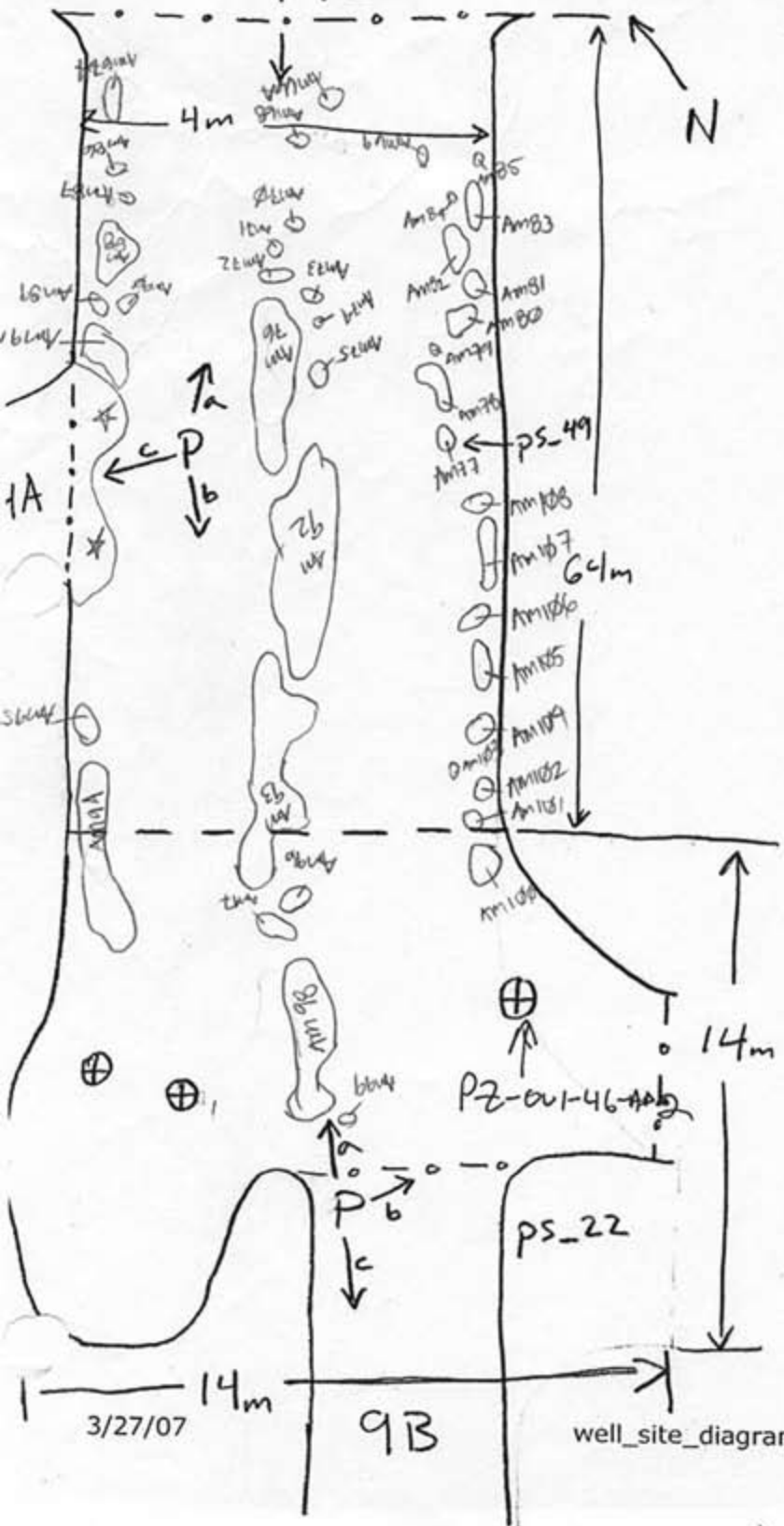
well Rd. Area

256 (m²)

Well Site Area

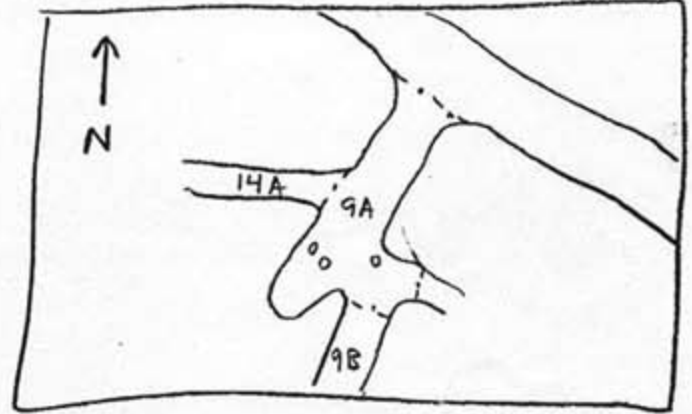
113 (m²)

P ps_25a



Legend

- IA # = WCS Sub Group
- P Photo Station
- Photo Point
- ⊕ Well
- - - Well Road/Site boundary
- · · WCS boundary



- Rare Plant Survey
Chorizanthe
- * see 14A patch
Am64

Attachment 4

‘WCS Photo Log 2009’

The attached spreadsheet (HGL_WCS_PhotoLog_2009.xls) contains a detailed log of all photographs (pre- and post-treatment) taken during the 2009 weed control program within the Operable Unit 1 portion of the FONR.

FONR-OU1-Groundwater Clean-up - HGL- Well Installation Photo Monitoring

Date	Photo Station	Photo Point	WCS #	Well/Road #	Notes
8/11/2009	2	a	04A	IW-OU1-05A	Post-Treatment Photos
8/11/2009	3	a	04A	IW-OU1-05A	Post-Treatment Photos
8/11/2009	3	b	04A	IW-OU1-05A	Post-Treatment Photos
4/14/2009	7	a	05A	IW-OU1-01-A	Pre-Treatment Photos
8/11/2009	7	a	05A	IW-OU1-01-A	Post-Treatment Photos
4/14/2009	7	b	05A	IW-OU1-01-A	Pre-Treatment Photos
8/11/2009	7	b	05A	IW-OU1-01-A	Post-Treatment Photos
4/14/2009	8	a	05A	IW-OU1-01-A	Pre-Treatment Photos
8/11/2009	8	a	05A	IW-OU1-01-A	Post-Treatment Photos
4/14/2009	8	b	05A	IW-OU1-01-A	Pre-Treatment Photos
8/11/2009	8	b	05A	IW-OU1-01-A	Post-Treatment Photos
4/14/2009	8	c	05A	IW-OU1-01-A	Pre-Treatment Photos
8/11/2009	8	c	05A	IW-OU1-01-A	Post-Treatment Photos
3/24/2009	10	a	06A	EW-OU1-53-A	Pre-Treatment Photos
3/24/2009	10	a	06A	EW-OU1-53-A	Pre-Treatment Photos
8/11/2009	10	a	06A	EW-OU1-53-A	Post-Treatment Photos
3/24/2009	11	a	06A	EW-OU1-53-A	Pre-Treatment Photos
3/24/2009	11	a	06A	EW-OU1-53-A	Pre-Treatment Photos
8/11/2009	11	a	06A	EW-OU1-53-A	Post-Treatment Photos
3/24/2009	11	b	06A	EW-OU1-53-A	Pre-Treatment Photos
3/24/2009	11	b	06A	EW-OU1-53-A	Pre-Treatment Photos
8/11/2009	11	b	06A	EW-OU1-53-A	Post-Treatment Photos
3/24/2009	12	a	06A	EW-OU1-53-A	Pre-Treatment Photos
3/24/2009	12	a	06A	EW-OU1-53-A	Pre-Treatment Photos
8/11/2009	12	a	06A	EW-OU1-53-A	Post-Treatment Photos
3/24/2009	12	b	06A	EW-OU1-53-A	Pre-Treatment Photos
3/24/2009	12	b	06A	EW-OU1-53-A	Pre-Treatment Photos
8/11/2009	12	b	06A	EW-OU1-53-A	Post-Treatment Photos
3/24/2009	13	a	07A	EW-OU1-52-A	Pre-Treatment Photos
3/24/2009	13	a	07A	EW-OU1-52-A	Pre-Treatment Photos
8/11/2009	13	a	07A	EW-OU1-52-A	Post-Treatment Photos
3/24/2009	14	a	07A	EW-OU1-52-A	Pre-Treatment Photos
3/24/2009	14	a	07A	EW-OU1-52-A	Pre-Treatment Photos
8/11/2009	14	a	07A	EW-OU1-52-A	Post-Treatment Photos
3/24/2009	17	a	08A	IW-OU1-10-A	Pre-Treatment Photos

FONR-OU1-Groundwater Clean-up - HGL- Well Installation Photo Monitoring

8/11/2009	17	a	08A	IW-OU1-10-A	Post-Treatment Photos
3/24/2009	17	b	08A	IW-OU1-10-A	Pre-Treatment Photos
8/11/2009	17	b	08A	IW-OU1-10-A	Post-Treatment Photos
3/24/2009	18	a	08A	IW-OU1-10-A	Pre-Treatment Photos
3/24/2009	18	a	08A	IW-OU1-10-A	Pre-Treatment Photos
8/11/2009	18	a	08A	IW-OU1-10-A	Post-Treatment Photos
3/24/2009	22	a	09A	MW-OU1-46-AD	Pre-Treatment Photos
8/11/2009	22	a	09A	MW-OU1-46-AD	Post-Treatment Photos
3/24/2009	22	b	09A	MW-OU1-46-AD	Pre-Treatment Photos
8/11/2009	22	b	09A	MW-OU1-46-AD	Post-Treatment Photos
3/24/2009	25	a	09A	MW-OU1-46-AD	Pre-Treatment Photos
8/11/2009	25	a	09A	MW-OU1-46-AD	Post-Treatment Photos
3/24/2009	49	a	09A	MW-OU1-46-AD	Pre-Treatment Photos
8/11/2009	49	a	09A	MW-OU1-46-AD	Post-Treatment Photos
3/24/2009	49	b	09A	MW-OU1-46-AD	Pre-Treatment Photos
8/11/2009	49	b	09A	MW-OU1-46-AD	Post-Treatment Photos
3/24/2009	22	c	09B	MW-OU1-84-A	Pre-Treatment Photos
8/11/2009	22	c	09B	MW-OU1-84-A	Post-Treatment Photos
3/24/2009	51	a	09B	MW-OU1-84-A	Pre-Treatment Photos
8/11/2009	51	a	09B	MW-OU1-84-A	Post-Treatment Photos
3/24/2009	52	a	09C	IW-OU1-74-A	Pre-Treatment Photos
8/11/2009	52	a	09C	IW-OU1-74-A	Post-Treatment Photos
3/24/2009	24	a	09D	MW-OU1-51-A	Pre-Treatment Photos
8/11/2009	24	a	09D	MW-OU1-51-A	Post-Treatment Photos
3/24/2009	52	c	09D	MW-OU1-51-A	Pre-Treatment Photos
8/11/2009	52	c	09D	MW-OU1-51-A	Post-Treatment Photos
4/1/2009	28	a	10A	MW-OU1-50-A	Pre-Treatment Photos
8/11/2009	28	a	10A	MW-OU1-50-A	Post-Treatment Photos
4/1/2009	29	a	10A	MW-OU1-50-A	Pre-Treatment Photos
8/11/2009	29	a	10A	MW-OU1-50-A	Post-Treatment Photos
4/1/2009	29	b	10A	MW-OU1-50-A	Pre-Treatment Photos
8/11/2009	29	b	10A	MW-OU1-50-A	Post-Treatment Photos
4/1/2009	30	a	10B	MW-OU1-59-A	Pre-Treatment Photos
8/11/2009	30	a	10B	MW-OU1-59-A	Post-Treatment Photos
4/1/2009	30	b	10B	MW-OU1-59-A	Pre-Treatment Photos
8/11/2009	30	b	10B	MW-OU1-59-A	Post-Treatment Photos
8/11/2009	43	a	11A	EW-OU1-71A	Post-Treatment Photos

FONR-OU1-Groundwater Clean-up - HGL- Well Installation Photo Monitoring

8/11/2009	44	a	11A	EW-OU1-71A	Post-Treatment Photos
8/11/2009	44	b	11A	EW-OU1-71A	Post-Treatment Photos
8/11/2009	44	c	11A	EW-OU1-71A	Post-Treatment Photos
8/11/2009	45	a	11B	MW-OU1-86A	Post-Treatment Photos
8/11/2009	46	a	12A	EW-OU1-72A	Post-Treatment Photos
8/11/2009	47	a	12A	EW-OU1-72A	Post-Treatment Photos
8/11/2009	47	b	12A	EW-OU1-72A	Post-Treatment Photos
8/11/2009	47	c	12A	EW-OU1-72A	Post-Treatment Photos
8/11/2009	48	a	12B	MW-OU1-85A	Post-Treatment Photos
3/24/2009	52	b	13A	IW-OU1-73-A	Pre-Treatment Photos
8/11/2009	52	b	13A	IW-OU1-73-A	Post-Treatment Photos
3/24/2009	53	a	13A	IW-OU1-73-A	Pre-Treatment Photos
8/11/2009	53	a	13A	IW-OU1-73-A	Post-Treatment Photos
3/24/2009	49	c	14A	MW-OU1-83-A	Pre-Treatment Photos
8/11/2009	49	c	14A	MW-OU1-83-A	Post-Treatment Photos
3/24/2009	50	a	14A	MW-OU1-83-A	Pre-Treatment Photos
8/11/2009	50	a	14A	MW-OU1-83-A	Post-Treatment Photos
4/6/2009	54	a	15A	MW-OU1-82-A	Pre-Treatment Photos
8/11/2009	54	a	15A	MW-OU1-82-A	Post-Treatment Photos
4/6/2009	54	b	15A	MW-OU1-82-A	Pre-Treatment Photos
8/11/2009	54	b	15A	MW-OU1-82-A	Post-Treatment Photos
4/6/2009	55	a	15A	MW-OU1-82-A	Pre-Treatment Photos
8/11/2009	55	a	15A	MW-OU1-82-A	Post-Treatment Photos
4/6/2009	55	b	15A	MW-OU1-82-A	Pre-Treatment Photos
8/11/2009	55	b	15A	MW-OU1-82-A	Post-Treatment Photos
4/1/2009	31	a	16A	SB-OU1-2004-K	Pre-Treatment Photos
8/11/2009	31	a	16A	SB-OU1-2004-K	Post-Treatment Photos
4/1/2009	32	a	16A	SB-OU1-2004-K	Pre-Treatment Photos
8/11/2009	32	a	16A	SB-OU1-2004-K	Post-Treatment Photos
4/1/2009	32	b	16A	SB-OU1-2004-K	Pre-Treatment Photos
8/11/2009	32	b	16A	SB-OU1-2004-K	Post-Treatment Photos
4/1/2009	33	a	16A	SB-OU1-2004-K	Pre-Treatment Photos
8/11/2009	33	a	16A	SB-OU1-2004-K	Post-Treatment Photos
4/1/2009	33	b	16A	SB-OU1-2004-K	Pre-Treatment Photos
8/11/2009	33	b	16A	SB-OU1-2004-K	Post-Treatment Photos
3/24/2009	15	a	17A	PZ-OU1-025-A/IW-OU1-02A	Pre-Treatment Photos

FONR-OU1-Groundwater Clean-up - HGL- Well Installation Photo Monitoring

8/11/2009	15	a	17A	PZ-OU1-025-A/IW- OU1-02A	Post-Treatment Photos
3/24/2009	16	a	17A	PZ-OU1-025-A/IW- OU1-02A	Pre-Treatment Photos
3/24/2009	16	a	17A	PZ-OU1-025-A/IW- OU1-02A	Pre-Treatment Photos
8/11/2009	16	a	17A	PZ-OU1-025-A/IW- OU1-02A	Post-Treatment Photos

Key to Columns

Date= photo treatment date

WCS= Weed Control Segment; HGL defined weed management area with corresponding wells.

Photo filename format: <four_ps_##x_year-mo-date> where ps= photo station ##= number; x= photo point; yearr= year four digit format (2009); mo= month (april=04); date= date (09 instead of 9);

Photo dates are not always the same as treatment dates

Note: some treatments do not have photos

Attachment 5

‘HGL_WCS_Photos_2009’

The attached compact disc contains photographs taken during the 2009 weed control program performed by UCSC staff. Photographs on the compact disc are organized in folders.

Each folder contains photos of the HGL Weed Control Segments (well sites and associated access roads) from the spring 2009 field season. Each folder name refers to an identifying name for each well site (e.g. EW-OU1-52-A).

Each folder contains photos (.jpg files) with names designating the reserve (fonr), the photo station number (‘_ps#’), and the date the photo was taken (_year-month-day).

e.g. ‘fonr_ps13a_2009-03-31’
‘fonr_ps13a_2009-08-11’

Each photo station has at least two photos, one pre-treatment and one post-treatment, designated by date of photo.

Also, refer to photo log (HGL_WCS_Photo_Log_2008.xls) for more detailed information.



WCS# 04A ps02a IW-OU1-05A Post-Treatment 11 August 2009



WCS# 04A ps03a IW-OU1-05A Post-Treatment 11 August 2009



WCS# 04A ps03b IW-OU1-05A Post-Treatment 11 August 2009



WCS# 05A ps07a IW-OU1-01A Pre-Treatment 14 April 2009



WCS# 05A ps07a IW-OU1-01A Post-Treatment 11 August 2009



WCS# 05A ps07b IW-OU1-01A Pre-Treatment 14 April 2009



WCS# 05A ps07b IW-OU1-01A Post-Treatment 11 August 2009



WCS# 05A ps08a IW-OU1-01A Pre-Treatment 14 April 2009



WCS# 05A ps08a IW-OU1-01A Post-Treatment 11 August 2009



WCS# 05A ps08b IW-OU1-01A Pre-Treatment 14 April 2009



WCS# 05A ps08b IW-OU1-01A Post-Treatment 11 August 2009



WCS# 05A ps08c IW-OU1-01A Pre-Treatment 14 April 2009



WCS# 05A ps08c IW-OU1-01A Post-Treatment 11 August 2009



WCS# 06A ps10a EW-OU1-53A Pre-Treatment 24 March 2009



WCS# 06A ps10a EW-OU1-53A Post-Treatment 11 August 2009



WCS# 06A ps11a EW-OU1-53A Pre-Treatment 24 March 2009



WCS# 06A ps11a EW-OU1-53A Post-Treatment 11 August 2009



WCS# 06A ps11b EW-OU1-53A Pre-Treatment 24 March 2009



WCS# 06A ps11b EW-OU1-53A Post-Treatment 11 August 2009



WCS# 06A ps12a EW-OU1-53A Pre-Treatment 24 March 2009



WCS# 06A ps12a EW-OU1-53A Post-Treatment 11 August 2009



WCS# 06A ps12b EW-OU1-53A Pre-Treatment 24 March 2009



WCS# 06A ps12b EW-OU1-53A Post-Treatment 11 August 2009



WCS# 07A ps13a EW-OU1-52A Pre-Treatment 24 March 2009



WCS# 07A ps13a EW-OU1-52A Post-Treatment 11 August 2009



WCS# 07A ps14a EW-OU1-52A Pre-Treatment 24 March 2009



WCS# 07A ps14a EW-OU1-52A Post-Treatment 11 August 2009



WCS# 08A ps17a IW-OU1-10A Pre-Treatment 24 March 2009



WCS# 08A ps17a IW-OU1-10A Post-Treatment 11 August 2009



WCS# 08A ps17b IW-OU1-10A Pre-Treatment 24 March 2009



WCS# 08A ps17b IW-OU1-10A Post-Treatment 11 August 2009



WCS# 08A ps18a IW-OU1-10A Pre-Treatment 24 March 2009



WCS# 08A ps18a IW-OU1-10A Post-Treatment 11 August 2009



WCS# 09A ps22a MW-OU1-46AD Pre-Treatment 24 March 2009



WCS# 09A ps22a MW-OU1-46AD Post-Treatment 11 August 2009



WCS# 09A ps22b MW-OU1-46AD Pre-Treatment 24 March 2009



WCS# 09A ps22b MW-OU1-46AD Post-Treatment 11 August 2009



WCS# 09A ps25a MW-OU1-46AD Pre-Treatment 24 March 2009



WCS# 09A ps25a MW-OU1-46AD Post-Treatment 11 August 2009



WCS# 09A ps49a MW-OU1-46AD Pre-Treatment 24 March 2009



WCS# 09A ps49a MW-OU1-46AD Post-Treatment 11 August 2009



WCS# 09A ps49b MW-OU1-46AD Pre-Treatment 24 March 2009



WCS# 09A ps49b MW-OU1-46AD Post-Treatment 11 August 2009



WCS# 09B ps22c MW-OU1-84A Pre-Treatment 24 March 2009



WCS# 09B ps22c MW-OU1-84A Post-Treatment 11 August 2009



WCS# 09B ps51a MW-OU1-84A Pre-Treatment 24 March 2009



WCS# 09B ps51a MW-OU1-84A Post-Treatment 11 August 2009



WCS# 09C ps52a IW-OU1-74A Pre-Treatment 24 March 2009



WCS# 09C ps52a IW-OU1-74A Post-Treatment 11 August 2009



WCS# 09D ps24a MW-OU1-51A Pre-Treatment 24 March 2009



WCS# 09D ps24a MW-OU1-51A Post-Treatment 11 August 2009



WCS# 09D 52c MW-OU1-51A Pre-Treatment 24 March 2009



WCS# 09D 52c MW-OU1-51A Post-Treatment 11 August 2009



WCS# 10A 28a MW-OU1-50A Pre-Treatment 1 April 2009



WCS# 10A 28a MW-OU1-50A Post-Treatment 11 August 2009



WCS# 10A 29a MW-OU1-50A Pre-Treatment 1 April 2009



WCS# 10A 29a MW-OU1-50A Post-Treatment 11 August 2009



WCS# 10A 29b MW-OU1-50A Pre-Treatment 1 April 2009



WCS# 10A 29b MW-OU1-50A Post-Treatment 11 August 2009



WCS# 10B 30a MW-OU1-59A Pre-Treatment 1 April 2009



WCS# 10B 30a MW-OU1-59A Post-Treatment 11 August 2009



WCS# 10B 30b MW-OU1-59A Pre-Treatment 1 April 2009



WCS# 10B 30b MW-OU1-59A Post-Treatment 11 August 2009



WCS# 11A 43a EW-OU1-71A Post-Treatment 11 August 2009



WCS# 11A ps44a EW-OU1-71A Post-Treatment 11 August 2009



WCS# 11A ps44b EW-OU1-71A Post-Treatment 11 August 2009



WCS# 11A ps44c EW-OU1-71A Post-Treatment 11 August 2009



WCS# 11B ps45a MW-OU1-86A Post-Treatment 11 August 2009



WCS# 12A ps46a EW-OU1-72A Post-Treatment 11 August 2009



WCS# 12A ps47a EW-OU1-72A Post-Treatment 11 August 2009



WCS# 12A ps47b EW-OU1-72A Post-Treatment 11 August 2009



WCS# 12A ps47c EW-OU1-72A Post-Treatment 11 August 2009



WCS# 12B ps48a MW-OU1-85A Post-Treatment 11 August 2009



WCS# 13A ps52b IW-OU1-73A Pre-Treatment 24 March 2009



WCS# 13A ps52b IW-OU1-73A Post-Treatment 11 August 2009



WCS# 13A ps53a IW-OU1-73A Pre-Treatment 24 March 2009



WCS# 13A ps53a IW-OU1-73A Post-Treatment 11 August 2009



WCS# 14A ps49c MW-OU1-83A Pre-Treatment 24 March 2009



WCS# 14A ps49c MW-OU1-83A Post-Treatment 11 August 2009



WCS# 14A ps50a MW-OU1-83A Pre-Treatment 24 March 2009



WCS# 14A ps50a MW-OU1-83A Post-Treatment 11 August 2009



WCS# 15A ps54a MW-OU1-82A Pre-Treatment 6 April 2009



WCS# 15A ps54a MW-OU1-82A Post-Treatment 11 August 2009



WCS# 15A ps54b MW-OU1-82A Pre-Treatment 6 April 2009



WCS# 15A ps54b MW-OU1-82A Post-Treatment 11 August 2009



WCS# 15A ps55a MW-OU1-82A Pre-Treatment 6 April 2009



WCS# 15A ps55a MW-OU1-82A Post-Treatment 11 August 2009



WCS# 15A ps55b MW-OU1-82A Pre-Treatment 6 April 2009



WCS# 15A ps55b MW-OU1-82A Post-Treatment 11 August 2009



WCS# 16A ps31a SB-OU1-2004-K Pre-Treatment 1 April 2009



WCS# 16A ps31a SB-OU1-2004-K Post-Treatment 11 August 2009



WCS# 16A ps32a SB-OU1-2004-K Pre-Treatment 1 April 2009



WCS# 16A ps32a SB-OU1-2004-K Post-Treatment 11 August 2009



WCS# 16A ps32b SB-OU1-2004-K Pre-Treatment 1 April 2009



WCS# 16A ps32b SB-OU1-2004-K Post-Treatment 11 August 2009



WCS# 16A ps33a SB-OU1-2004-K Pre-Treatment 1 April 2009



WCS# 16A ps33a SB-OU1-2004-K Post-Treatment 11 August 2009



WCS# 16A ps33b SB-OU1-2004-K Pre-Treatment 1 April 2009



WCS# 16A ps33b SB-OU1-2004-K Post-Treatment 11 August 2009



WCS# 17A ps15a IW-OU1-02-A Pre-Treatment 24 March 2009



WCS# 17A ps15a IW-OU1-02-A Post-Treatment 11 August 2009



WCS# 17A ps16a IW-OU1-02-A Pre-Treatment 24 March 2009



WCS# 17A ps16a IW-OU1-02-A Post-Treatment 11 August 2009