



**DEPARTMENT OF THE AIR FORCE
AIR FORCE CIVIL ENGINEER CENTER
JOINT BASE SAN ANTONIO LACKLAND TEXAS**



09 June 2022

MEMORANDUM FOR OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

Ms. Hillary Young, P.E.
P.O. Box 1677
Oklahoma City, OK 73101-1677

FROM: AFCEC/CZO
Tinker Installation Support Section
7701 Arnold Street, Room 221
Tinker AFB, OK 73145-9100

SUBJECT: Request for Class 2 Permit Modification and Temporary Authorization
Tinker AFB, OK1571724391

Ms. Young,

Per 40 CFR 270.42, Appendix I, a Class 2 permit modification is requested to remove both point of compliance (POC) wells and sentinel from the RCRA Permit, specific to Groundwater Management Unit (GWMU) 5, which is located near S.E. 59th Street and S. Post Road; an auxiliary property. Tinker AFB is also requesting a temporary authorization per 40 CFR 270.42 (b)(6)(iv)(A) to not sample these wells for the upcoming Basewide monitoring event. Replacement POC and sentinel wells will be chosen from site existing wells, for the Permit.

Table A3.6 "Sentinel and POC wells for GWMU #5" lists wells on private property. The plume has been remediated to within the Air Force property boundary and the private landowner wishes all 12 wells on her property plugged and abandoned (P&A) within a reasonable timeframe.

Of the 12 monitoring wells on the private property, eight are listed in the RCRA permit:

Sentinel wells: 2-315B (USZ), 2-460A (LSZ), 2-461A (LSZ), 2-503A (LSZ), and 2-504A (LSZ).

POC wells: 2-316A (LSZ), 2-316B (LSZ), and 2-316C (USZ)

Analytical results for both the Upper Saturated Zone (USZ) wells and the Lower Saturated Zone (LSZ) wells are included with this submittal as well as a Site Map.

The following wells are proposed as POC and sentinel wells for GWMU 5:

Retaining wells 2-117B (USZ) POC, 2-118B (USZ) Sentinel, 2-118E (LSZ) Sentinel, 2-312B (USZ) POC, 2-313B (USZ) POC, and GTR-P3 (USZ) POC and adding the following monitoring wells 2-118A (LSZ), 2-118B (USZ), 2-664A (USZ) POC and 2-665A (USZ) POC

Attachment 3 “Groundwater Monitoring Program” of the Tinker AFB RCRA Permit will need changes to two tables: Table A3.1 “Master List of POC and Sentinel Wells” and Table A3.6 Sentinel and POC wells for GWMU #5. The proposed updated pages are enclosed.

If you have any questions, please contact Mark Bowers at (937) 789-8208 or at lewis.bowers.2@us.af.mil

JAMES B. DAWSON, Chief
Tinker Installation Support Section
Air Force Civil Engineer Center

Attachments:

1. Analytical Data
2. Site Map
3. Table A3.1
4. Table A3.6

Data are from 2011 to 2021.

LOCID	LOGDATE	PCE	TCE	DCE12C	DCE12T	VC
2-315B	24-Apr-13	0	0.29	0	0	0
2-315B	05-Mar-14	0	0.3	0	0	0
2-315B	02-Mar-15	0	0.27	0	0	0
2-315B	23-Jun-15	0	0	0	0	0
2-315B	28-Sep-15	0	0.4	0	0	0
2-315B	15-Nov-16	0	0.54	0	0	0
2-315B	02-May-17	0	0.82	0	0	0
2-315B	11-Jul-18	0	0.86	0	0	0
2-315B	18-Oct-18	1.4	0.81	0	0	0
2-315B	15-Oct-19	0	0.98	0	0	0
2-315B	03-Feb-21	0	1.7	0	0	0

These data are from 2011 to 2021.

LOCID	LOGDATE	PCE	TCE	DCE12C	DCE12T	VC
2-316A	26-Jun-12	0	1.4	0	0	0
2-316A	12-Dec-12	0	1.4	0.16	0	0
2-316A	22-Apr-13	0	1.1	0	0	0
2-316A	18-Feb-14	0	3	0	0	0
2-316A	11-Jun-14	0	2.5	0	0	0
2-316A	10-Nov-14	0	2.1	0	0	0
2-316A	27-Feb-15	0	2	0	0	0
2-316A	23-Jun-15	0	2.2	0	0	0
2-316A	25-Feb-16	0	1.5	0	0	0
2-316A	16-Nov-16	0	1.4	0	0	0
2-316A	02-May-17	0	1.1	0	0	0
2-316A	12-Jul-18	0	1.1	0	0	0
2-316A	15-Oct-19	0	0	0	0	0
2-316A	01-Feb-21	0	0	0	0	0

Data are from 2006 to 2011. Samples are from the sump. Well has been recorded dry for this period. See below.

LOCID	LOGDATE	PCE	TCE	DCE12C	DCE12T	VC
2-316B	09-Jul-07	0	2.25	0	0	0
2-316B	16-Dec-09	0	7.7	0	0	0
2-316B	20-Jul-10	0	4.4	0	0	0
2-316B	05-Mar-14	0	2.9	0	0	0

Groundwater data from ERPIMS. Well has been dry consistently (i.e. below bottom of screen) or insufficient to collect a sample.

LOCID	LOGDATE	STATDEP	Scrn Bot	Recording	REMARKS
2-316B	31-May-06	25.71	24.62	D	Water below bottom screen, depth to water = 25.71 ft.
2-316B	07-Nov-06	25.68	24.62	D	Water level below bottom screen. DTW = 25.68 ft.
2-316B	04-May-07	23.29	24.62	W	
2-316B	09-Jul-07	22.8	24.62	W	PORTABLE PUMP HAD TO BE SET ON BOTTOM OF WELL TO PURGE AND GET SAMPLES. MUDDY WATER.
2-316B	30-Oct-07	24.61	24.62	W	
2-316B	30-Apr-08	23.2	24.62	W	
2-316B	08-Oct-08	24.51	24.62	W	
2-316B	23-Jun-09	24.73	24.62	W	Water level below bottom screen. DTW=24.73 ft.
2-316B	16-Nov-09	24.55	24.62	W	
2-316B	14-Dec-09	24.62	24.62	W	
2-316B	20-Jul-10	24.58	24.62	W	
2-316B	25-Apr-11		24.62	D	Water level below bottom screen. DTW = 25.67
2-316B	06-Apr-13	25.04	24.62	W	27.50=td
2-316B	05-Mar-14	25.16	24.62	W	MP top of casing
2-316B	24-Apr-14	26.87	24.62	W	Measuring Point TOC?.
2-316B	31-May-15		24.62	D	well dry, no samples collected
2-316B	18-Feb-16	26.78	24.62	W	SOUNDING WAS NOT MEASURED
2-316B	18-Feb-16	27.51	24.62	W	SOUNDING WAS NOT MEASURED
2-316B	03-Oct-16	26.76	24.62	W	BWGW Event 5 WL Measurement Event, 2016.
2-316B	05-Jun-17	26.74	24.62	W	SOUNDING WAS NOT MEASURED
2-316B	05-Mar-18		24.62	D	BWGW Event 6 WL Measurement Event, 2018. Measurement below the end of screen; considered dry. WL at 26.82 ft bTOC. No Sounding
2-316B	12-Jul-18		24.62	D	Measurement below the end of screen; considered dry. WL at 26.80 ft bTOC. No Sounding
2-316B	03-Jun-19		24.62	D	DRY

These data are from 2006 to 2021. Well had been recorded dry at times.

LOCID	LOGDATE	PCE	TCE	DCE12C	DCE12T	VC
2-316C	22-Apr-13	0	0	0	0	0
2-316C	05-Mar-14	0	0	0	0	0
2-316C	31-May-15	0	0	0	0	0
2-316C	01-Feb-21	0	0	0	0	0

These data are from 2011 to 2021.

LOCID	LOGDATE	PCE	TCE	DCE12C	DCE12T	VC
2-460A	26-Jun-12	0	0	0	0	0
2-460A	24-Apr-13	0	0	0	0	0
2-460A	06-Mar-14	0	0	0	0	0
2-460A	11-Jun-14	0	0	0	0	0
2-460A	16-Mar-15	0	0	0	0	0
2-460A	31-May-15	0	0	0	0	0
2-460A	29-Sep-15	0	0	0	0	0
2-460A	15-Nov-16	0	0	0	0	0
2-460A	02-May-17	0	0	0	0	0
2-460A	12-Jul-18	0	0	0	0	0
2-460A	16-Oct-19	0	0	0	0	0
2-460A	01-Feb-21	0	0	0	0	0

These data are from 2011 to 2021.

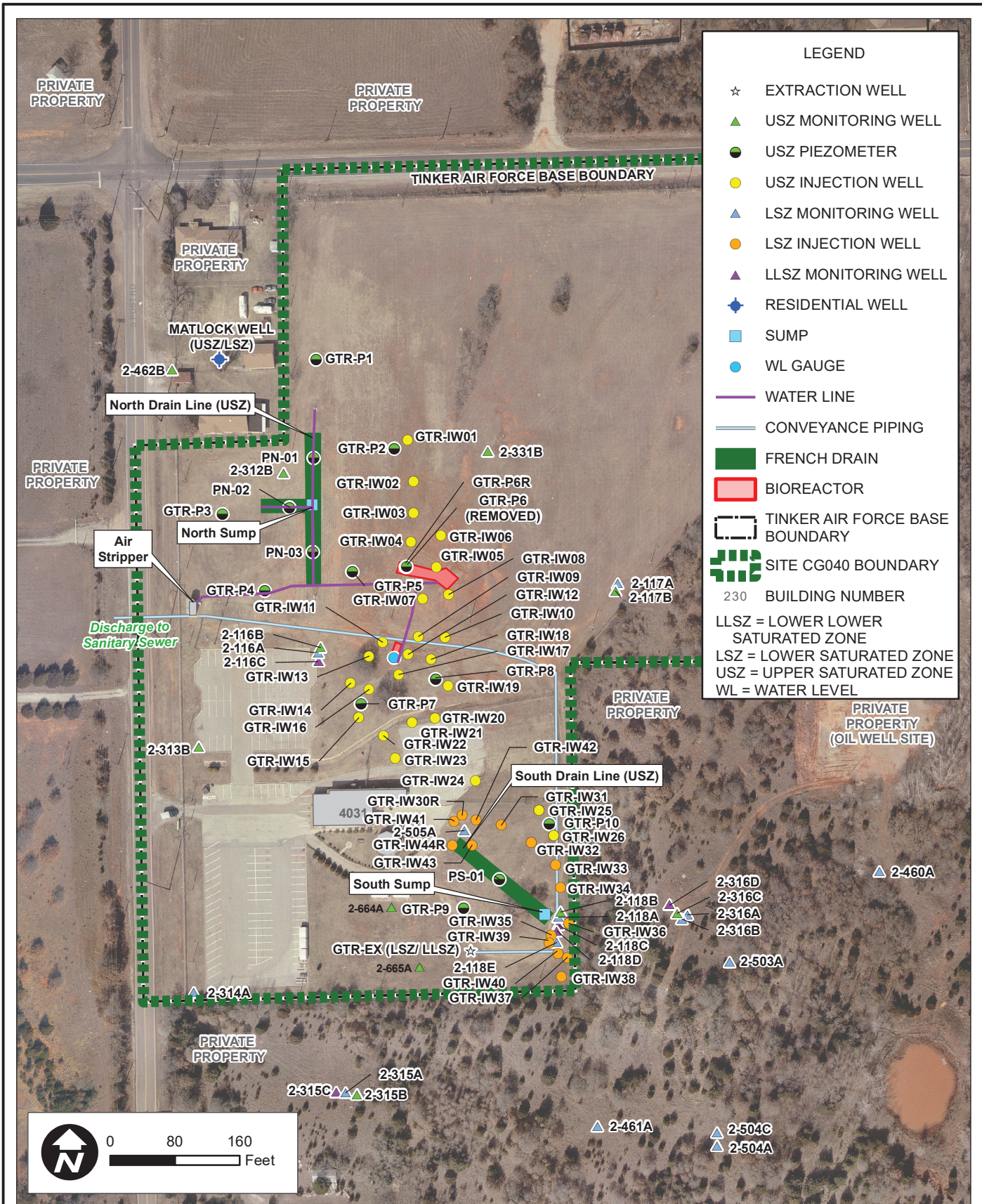
LOCID	LOGDATE	PCE	TCE	DCE12C	DCE12T	VC
2-460A	26-Jun-12	0	0	0	0	0
2-460A	22-Apr-13	0	0	0	0	0
2-460A	07-Mar-14	0	0	0	0	0
2-460A	11-Jun-14	0	0	0	0	0
2-460A	16-Mar-15	0	0	0	0	0
2-460A	31-May-15	0	0	0	0	0
2-460A	29-Sep-15	0	0	0	0	0
2-460A	15-Nov-16	0	0	0	0	0
2-460A	03-May-17	0	0	0	0	0
2-460A	12-Jul-18	0	0	0	0	0
2-460A	16-Oct-19	0	0	0	0	0
2-460A	01-Feb-21	0	0	0	0	0

These data are from 2011 to 2021.

LOCID	LOGDATE	PCE	TCE	DCE12C	DCE12T	VC
2-503A	26-Jun-12	0	9.2	0.21	0	0
2-503A	12-Dec-12	0	4.1	0	0	0
2-503A	24-Apr-13	0	3	0	0	0
2-503A	18-Feb-14	0	4.7	0	0	0
2-503A	11-Jun-14	0	4.1	0	0	0
2-503A	10-Nov-14	0	7	0	0	0
2-503A	08-Jan-15	0	8.5	0.2	0	0
2-503A	11-Mar-15	0	4.5	0	0	0
2-503A	31-May-15	0	2.4	0	0	0
2-503A	29-Sep-15	0	2.9	0	0	0
2-503A	25-Feb-16	0	2.7	0	0	0
2-503A	16-Nov-16	0	4.5	0	0	0
2-503A	02-May-17	0	3.9	0	0	0
2-503A	12-Jul-18	0	4.5	0	0	0
2-503A	16-Oct-19	0	0	0	0	0
2-503A	01-Feb-21	0	2.52	0	0	0

These data are from 2011 to 2021.

LOCID	LOGDATE	PCE	TCE	DCE12C	DCE12T	VC
2-504A	26-Jun-12	0	0	0	0	0
2-504A	22-Apr-13	0	0	0	0	0
2-504A	07-Mar-14	0	0	0	0	0
2-504A	11-Jun-14	0	0	0	0	0
2-504A	16-Mar-15	0	0	0	0	0
2-504A	31-May-15	0	0	0	0	0
2-504A	29-Sep-15	0	0	0	0	0
2-504A	16-Nov-16	0	0	0	0	0
2-504A	02-May-17	0	0	0	0	0
2-504A	12-Jul-18	0	0	0	0	0
2-504A	16-Oct-19	0	0	0	0	0
2-504A	01-Feb-21	0	0	0	0	0



SITE CG040 WELLS AND PIEZOMETERS
TINKER AIR FORCE BASE, OKLAHOMA

Table A3.1 Master List of POC and Sentinel Wells

GWMU	Site ID	Well ID	Easting Grid	Northing Grid	Well Depth	Aquifer	Type of Well
GWMU 5A	LF-16	MW-12	2157585.00	147658.19	45.70	USZ	POC
GWMU 5A	LF-16	MW2-102B	2151326.51	147997.33	48.00	USZ	POC
GWMU 4A	CG-39	MW02-107A	2155852.20	152151.24	102.00	LSZ	POC
GWMU 4A	CG-39	MW02-107B	2155852.59	152161.91	51.00	USZ	Sentinel
GWMU 4A	CG-39	MW02-108A	2155851.75	151390.91	108.00	LSZ	Sentinel
GWMU 4A	CG-39	MW02-108BT	2155847.89	151414.87	46.00	USZ	Sentinel
GWMU 4A	CG-39	MW02-109A	2155859.52	150411.09	114.00	LSZ	POC
GWMU 4A	CG-39	MW02-109B	2155859.26	150421.15	48.00	USZ	Sentinel
GWMU 4 (4B)	CG-39	MW02-110B	2155794.97	148733.20	49.00	USZ	POC
GWMU 5B	CG-40	MW02-117B	2161857.97	147968.61	22.00	USZ	POC
GWMU 5B	CG-40	MW02-118B	2161786.06	147572.69	10.00	USZ	Sentinel
GWMU 5B	CG-40	MW02-118E	2161783.21	147532.49	79.00	LSZ	Sentinel
W. of GWMU 3C	OF-59	MW02-147A	2149518.87	147160.92	73.00	USZ	Sentinel
GWMU 1 (1A)	OF-59	MW02-148A	2149910.80	158710.64	78.00	LSZ	Sentinel
GWMU 1 (1A)	OF-59	MW02-148B	2149910.89	158722.57	28.00	USZ	POC
OFFBASE (1A)	OF-59	MW02-149A	2148128.29	158560.72	72.00	USZ	POC
OFFBASE (1A)	OF-59	MW02-149B	2148139.81	158561.58	29.00	USZ	POC
GWMU 1 (1A)	ST-33	MW02-165B	2148306.14	158789.56	21.00	USZ	POC
GWMU 1 (1A)	ST-33	MW02-166B	2148609.70	158667.52	26.00	USZ	Sentinel
OFFBASE (2D)	CG-38	MW02-256B	2144017.63	149886.12	88.00	USZ	Sentinel
GWMU 1F	CG-37	MW02-261B	2145340.17	158368.43	26.00	USZ	POC
GWMU 2F	CG-37	MW02-262B	2145765.53	158396.30	28.00	USZ	Sentinel
GWMU 1F	CG-37	MW02-270B	2146251.46	158522.87	33.00	USZ	Sentinel
GWMU 2D	LF-14	MW02-292B	2144234.72	150239.87	88.00	USZ	POC
GWMU 2 (2F)	LF-12	MW02-293B	2145149.41	149791.27	79.00	USZ	POC
GWMU 2E	LF-12	MW02-294B	2145593.18	149469.05	90.00	USZ	Sentinel
GWMU 2E	LF-12	MW02-295B	2145596.04	149152.01	89.00	USZ	Sentinel
GWMU 2E	LF-12	MW02-296B	2145806.99	148565.18	88.00	USZ	Sentinel
GWMU 2 (2E)	LF-12	MW02-297B	2146414.85	147917.09	88.00	USZ	POC
GWMU 5B	CG-40	MW02-312B	2161449.54	148118.37	35.00	USZ	POC
GWMU 5B	CG-40	MW02-313B	2161341.13	147781.16	37.00	USZ	POC
QFFBASE (4A)	OF-60	MW02-321B	2156103.07	150261.34	47.00	USZ	POC
QFFBASE (4A)	OF-60	MW02-322B	2156080.25	151013.85	48.00	USZ	POC
QFFBASE (4A)	OF-60	MW02-323B	2156109.90	152106.26	55.00	USZ	POC
OFFBASE (2E)	LF-12	MW02-333B	2145389.20	149241.00	78.00	USZ	POC
OFFBASE (2E)	LF-12	MW02-334B	2145384.85	148732.39	83.00	USZ	POC
OFFBASE (2E)	LF-12	MW02-335B	2145619.36	148384.45	83.00	USZ	POC
GWMU 4B	214	MW02-376B	2155503.68	149009.43	45.50	USZ	Sentinel
GWMU 1F	CG-37	MW02-422B	2144783.39	158492.72	33.00	USZ	POC
OFFBASE (2E)	CG-38	MW02-445B	2144208.77	150219.31	88.33	USZ	POC
OFFBASE (2E)	CG-38	MW02-447BR	2145300.14	149058.29	86.00	USZ	POC
OFFBASE (2E)	CG-38	MW02-448BR	2145345.32	148835.44	87.00	USZ	POC
GWMU 2D	CG-38	MW02-492B	2144237.02	150584.82	91.30	USZ	POC
GWMU 2D	CG-38	MW02-499B	2144245.73	150485.22	95.00	USZ	POC
GWMU 2D	CG-38	MW02-507B	2144235.32	150337.19	92.00	USZ	POC
GWMU 2D	CG-38	MW02-508B	2144223.30	150446.56	96.00	USZ	POC
GWMU 2E	CG-38	MW02-531B	2145290.92	149583.47	69.50	USZ	POC
GWMU 3 (3C)	CG-39	MW02-547B	2150761.98	147160.65	71.00	USZ	Sentinel

GWMU 5B	CG-40	MW02-664A	2161550.66	147577.88	36.00	USZ	POC
GWMU 5B	CG-40	MW02-665A	2161573.64	147508.74	36.00	USZ	POC
GWMU 5A	LF-16	MW-39R	2158004.83	147662.42	41.00	USZ	Sentinel
GWMU 2E	CG-38	MW-45AR	2145616.85	148864.81	83.00	USZ	Sentinel
GWMU 2E	CG-38	MW-47AR	2147217.70	148529.81	66.00	USZ	Sentinel
GWMU 5A	LF-16	MW-55B	2158432.02	147667.34	35.30	USZ	POC
OFFBASE (5A)	LF-16	MW-64B	2156856.17	147714.94	42.00	USZ	Sentinel
OFFBASE (5A)	LF-16	MW-65B	2156980.10	147316.38	47.20	USZ	Sentinel
OFFBASE (5A)	LF-16	MW-66B	2157384.13	147174.28	46.50	USZ	Sentinel
GWMU 2F	CG-38	CG038-PO603	2145492.81	149809.67	88.28	USZ	POC
GWMU 2D	CG-38	EX-A02	2144232.15	150191.90	98.00	USZ	EX POC
GWMU 2F	CG-38	EX-A06	2145486.19	149785.50	78.00	USZ	EX POC
GWMU 2E	CG-38	EX-A07	2145667.10	149604.81	88.00	USZ	Sentinel
GWMU 5B	CG-40	GTR-P3	2161373.24	148068.67	31.50	USZ	POC
GWMU 1F	CG-37	MW02-559B	2145261.02	158032.70	29.00	USZ	POC

Table A3.6: Sentinel and POC Wells for GWMU #5

GWMU	Site ID	Well ID	Easting Grid	Northing Grid	Well Depth	Aquifer	Type of Well
GWMU 5A	LF-16	MW-12	2157585.00	147658.19	45.70	USZ	POC
GWMU 5A	LF-16	MW2-102B	2151326.51	147997.33	48.00	USZ	POC
GWMU 5B	CG-40	MW02-117B	2161857.97	147968.61	22.00	USZ	POC
GWMU 5B	CG-40	MW02-118B	2161786.06	147572.69	10.00	USZ	Sentinel
GWMU 5B	CG-40	MW02-118E	2161783.21	147532.49	79.00	LSZ	Sentinel
GWMU 5B	CG-40	MW02-312B	2161449.54	148118.37	35.00	USZ	POC
GWMU 5B	CG-40	MW02-313B	2161341.13	147781.16	37.00	USZ	POC
GWMU 5B	CG-40	MW02-664A	2161550.66	147577.88	36.00	USZ	POC
GWMU 5B	CG-40	MW02-665A	2161573.64	147508.74	36.00	USZ	POC
GWMU 5A	LF-16	MW-39R	2158004.83	147662.42	41.00	USZ	Sentinel
GWMU 5A	LF-16	MW-55B	2158432.02	147667.34	35.30	USZ	POC
OFFBASE (5A)	LF-16	MW-64B	2156856.17	147714.94	42.00	USZ	Sentinel
OFFBASE (5A)	LF-16	MW-65B	2156980.10	147316.38	47.20	USZ	Sentinel
OFFBASE (5A)	LF-16	MW-66B	2157384.13	147174.28	46.50	USZ	Sentinel
GWMU 5B	CG-40	GTR-P3	2161373.24	148068.67	31.50	USZ	POC