TECHNICAL MEMORANDUM

TO: Greg Lovato, P.E., Nevada Division of Environmental Protection

FROM: Ranajit Sahu, Ph.D., CEM, Basic Remediation Company

CC: Stephen J. Cullen, Ph.D., CEM, Daniel B. Stephens & Associates, Inc.

CC: John J. Dodge, P.G., Daniel B. Stephens & Associates, Inc.

DATE: August 18, 2010

SUBJECT: Indicator Parameter Selection, BMI Common Areas (Eastside-Main and Eastside-Hook Area), Clark County, Nevada

INTRODUCTION AND OBJECTIVES

Since 2004 BRC has conducted several investigations at the Site to evaluate geologic and hydrogeologic conditions and groundwater quality. After an initial groundwater sampling event was completed in 2004, groundwater monitoring has since been conducted and reported over six additional events or "rounds" completed between 2006 and 2009 (DBS&A, 2010). Analytes-of-interest (AOIs) were identified from the laboratory data in each of the six groundwater monitoring reports (MWH, 2006b, 2006c, 2007a, 2007b, 2008; DBS&A 2010).

The data collected during the prior monitoring and sampling events up to 2009 were evaluated by number of detections, maximum concentrations, number of detections exceeding USEPA maximum contaminant level (MCLs), U.S. Environmental Protection Agency (USEPA) Region 6 medium-specific screening levels (MSSLs), or Nevada Division of Environmental Protection (NDEP) provisional action level (ALs) to develop the AOI list.

In the 2009 groundwater monitoring report (DBS&A, 2010), the 2009 data were screened by number and frequency of detections, maximum concentrations, and number of detections exceeding USEPA Maximum Contaminant Levels (MCLs) and/or NDEP's November 2009

Basic Comparison Levels (BCLs) to develop a short-list of AOIs. Data earlier than 2009 had not been screened against current BCLs.

In a project meeting on July 27, 2010, NDEP requested BRC to screen the full groundwater monitoring dataset for AOIs or "indicator parameters" (IPs) using guidance developed by USEPA for selecting "indicator chemicals" (USEPA, 1986; 1988). DBS&A reviewed the 1986 and 1988 guidance from USEPA and completed a data screening process with the full historical groundwater monitoring dataset per NDEP request. This technical memorandum presents the methods and results of the data screening and presents the list of IPs for the Shallow, Middle, and Deep zones at the Site.

METHODS

The 1988 guidance from USEPA presents a systematic screening methodology for determining a short list of "indicator chemicals" for a site under investigation using a 4-step scoring process (USEPA, 1988):

1. Identify chemicals present;
2. Determine representative concentrations;
3. Calculate scores based on maximum and/or representative concentrations and toxicity data;
4. Select indicator chemicals based on scores and physical/chemical property data.

The data from BRC's six groundwater monitoring events were compiled to make one master list of detected compound data to satisfy Step 1. Those compounds detected above or equal to a frequency-of-detection (FOD) of 5 percent were retained and all others dropped out of the screening. To be conservative, the maximum detected concentration was selected as the representative concentration for each compound to satisfy Step 2.

For Step 3, the USEPA guidance refers to a table of toxicity constants to be used for scoring. However, the toxicity data for many chemicals have been updated since the USEPA guidance was published in 1988. As a result, current USEPA MCLs and NDEP BCLs were utilized as the toxicity criteria for scoring in Step 3. This is appropriate since the indicator score is a comparison between measured concentrations and a toxicity-based concentration benchmark that is used to rank the Site chemicals (USEPA, 1988).

The maximum detected concentrations of the compounds identified in Step 1 were directly compared to MCLs and BCLs to develop the first draft list of IPs for each hydrogeologic zone at the Site (Shallow, Middle, Deep). Compounds with detected concentrations below MCLs or BCLs, or those without an MCL or BCL, dropped out of the screening. The candidate parameters were then "scored" by determining the percent exceedance of MCLs and BCLs.

IP lists were developed separately for the Eastside-Hook Area and the remaining Eastside-Main area to assist BRC with remedial decision-making (Figure 1).

INDICATOR PARAMETER LISTS

The results of the screening process for each zone at the Site are presented in Table 1, Table 2, and Table 3. The tables list the compounds with MCLs/BCLs in each zone that were detected with an FOD>5% at a concentration greater than an MCL or BCL.

Compounds with only one or a few isolated detections nominally greater than MCLs/BCLs were dropped out of the screening. The full rationale for inclusion or exclusion as an IP is included in the table for each zone.

The IP list for the Eastside-Hook Area Shallow Zone consists of:

- Selenium
- Molybdenum
- Alpha-BHC
- Beta-BHC

- Uranium
- Chloroform
- Arsenic
- Lithium
- Perchlorate
- Total Dissolved Solids (TDS)

The IP list for the Eastside-Main Shallow Zone consists of:

- Molybdenum
- Alpha-BHC
- Beta-BHC
- Uranium
- Magnesium
- Chloroform
- Arsenic
- Nitrate
- Lithium
- Perchlorate
- Total Dissolved Solids (TDS)

Compounds detected in the Middle Zone and the Deep Zone screen out of the IP lists due to low FOD, offsite sources or because the compounds are considered naturally occurring.

DISCUSSION

Plume maps for several of the IP compounds are presented in the 2009 groundwater monitoring report. The plume maps show that higher concentrations are detected offsite in the plants area than in wells located on BRC property (DBS&A, 2010) for several parameters, including:

- Arsenic
- Tetrachloroethylene
- Carbon tetrachloride
- Total and hexavalent chromium
- Magnesium
- Perchlorate

- Chloroform (primary component of total trihalomethanes [TTHM] group)

New regional plume maps were drafted for molybdenum, lithium, and uranium to evaluate the regional distribution of these metals (Figures 2 through 7). As with other parameters noted above, relatively high detected concentrations offsite are evident for each of these metals.

CONCLUSION

BRC will utilize the IP lists going forward during development of the Eastside Conceptual Site Model (CSM) and Remedial Alternatives Study (RAS). The IP compounds will be the focus of future focused groundwater monitoring events and remedial decision-making. In addition, the IP lists will be updated with NDEP concurrence as new data become available.

REFERENCES

Basic Remediation Company (BRC), Environmental Resources Management (ERM), and Daniel B. Stephens & Associates, Inc. (DBS&A). 2007. *Closure Plan, BMI Common Areas, Clark County, Nevada.* Prepared for Basic Remediation Company (BRC), Henderson, Nevada. May.

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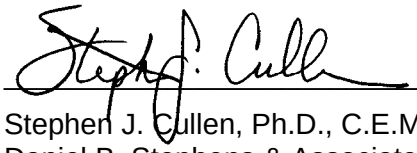
Responsible CEM for this Project

I hereby certify that I am responsible for the services described in this document and for the preparation of this document. The services described in this document have been provided in a manner consistent with the current standards of the profession and, to the best of my knowledge, comply with all applicable federal, state, and local statutes, regulations, and ordinances.



August 18, 2010

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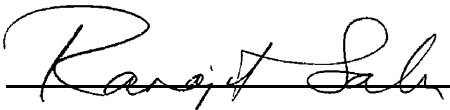

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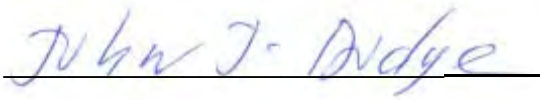

August 18, 2010

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Tables

Table 1. BRC Groundwater Monitoring Data 2004-2009
Statistics and Indicator Parameter Selection
Shallow Zone

Compounds > BCL with FOD>=5%	Units	MCL	BCL	Total No. Analyses	Freq.of Detection	Total No. Detects	Max	#Detects >MCL	#Detects >BCL	% of Detects > BCL/MCL	# Wells >MCL or >BCL	Eastside-Hook Area Indicator Parameter?	Eastside-Main Indicator Parameter?	Comments/Rationale
Tungsten	ug/L	--	270	318	10.1%	32	557	--	1	3%	1	No	No	Only 1 detect > BCL in PC-67 (impacted with multiple contaminants)
Vanadium	ug/L	--	180	315	44.8%	141	181	--	1	1%	1	No	No	Over BCL by 1 ug/L only in BEC-6 at 181 ug/L in 2006.
Iron	ug/L	--	25600	247	53.8%	133	30800	--	1	1%	1	No	No	One detect > BCL only
Cadmium	ug/L	5	5	318	13.2%	42	255	2	2	5%	2	No	No	Only two detections >BCL in 2007
Boron	ug/L	--	7300	318	97.5%	310	19900	--	3	1%	1	No	No	Detects > BCLs only in wash wells
Strontium	ug/L	--	21900	318	99.7%	317	30100	--	3	1%	1	No	No	Same well 3 times in Pittman area co-located with other impacts
Lead	ug/L	15	15	318	5.7%	18	274	3	3	17%	3	No	No	Only 3 isolated detects > BCL (2 nominally > BCL, other one well in Pittman area co-located with other impacts)
Fluoride	mg/L	4	4	312	85.3%	266	38	4	4	2%	3	No	No	All four detects >BCL from 2006, ND or <BCL thereafter
Bromodichloromethane	ug/L	--	1.1	318	10.7%	34	32	--	8	24%	2	No	No	Only two wells >BCL; part of TTHM group
Cobalt	ug/L	--	11	318	27.0%	86	273	--	16	19%	5	No	No	Mostly near TRX pumping system
Selenium	ug/L	50	50	318	39.6%	126	169	23	23	18%	13	**Yes**	No	Values >BCL isolated along N. Pabco Rd and WH (Layer 1); one flux line well > BCL in Layer 2
Carbon tetrachloride	ug/L	5	5	318	26.4%	84	25	24	24	29%	10	No	No	Onsite only 2x BCL near and downgradient of first 8 rows (BEC-6/flux line area); offsite source near SE Eastside area
Nitrite	mg/L	1	1	267	12.7%	34	818	27	27	79%	26	No	No	Detects >BCL in 2007 only, thereafter ND
Ammonia	ug/L	--	200	317	29.0%	92	14200	--	28	30%	11	No	No	Mostly in WH area near TRX pumping system
Chromium (Total)	ug/L	100	100	315	41.3%	130	1420	32	32	25%	13	No	No	Mostly offsite.Onsite detections isolated and nominally > BCL.One WH well>BCL(110ug/L PC-58); SE area near offsite source
Tetrachloroethene	ug/L	5	5	318	50.6%	161	84	37	37	23%	8	No	No	Only onsite detections > BCL near offsite source in SE Eastside area
Chromium (VI)	ug/L	100	100	318	63.5%	202	1400	39	39	19%	15	No	No	Onsite impacts > BCLs in SE Eastside Area near offsite source; isolated Eastside impact>BCL in BEC-6 only 180 ug/L
Manganese	ug/L	--	510	318	55.3%	176	2200	--	43	24%	11	No	No	Values>BCL in WH Area due to offsite source or nearby tmt system with low DO
Molybdenum	ug/L	--	180	318	94.7%	301	2600	--	45	15%	15	**Yes**	**Yes**	Historically stable or increasing concentrations; some isolated impacts in flux line and WH area wells
beta-BHC	ug/L	--	0.037	294	24.8%	73	1.2	--	73	100%	17	**Yes**	**Yes**	Widespread detections > BCL; offsite source suspected; most values <1 ug/L; need plume map to evaluate.
alpha-BHC	ug/L	--	0.011	294	27.9%	82	0.35	--	82	100%	24	**Yes**	**Yes**	Widespread detections > BCL; offsite source
Uranium	ug/L	30	30	318	89.3%	284	177	117	117	41%	35	**Yes**	**Yes**	Widespread detections > BCL, some only nominally
Magnesium	ug/L	--	207000	312	100%	312	11800000	--	182	58%	44	No	**Yes**	Many WH detections<BCL; offsite source; onsite source downgradient of first 8 rows
Chloroform	ug/L	--	1.6	318	86.5%	275	1400	--	201	73%	56	**Yes**	**Yes**	Major component of TTHM group; offsite source; onsite source near first 8 rows/flux line area; flux line impacts
Arsenic	ug/L	10	10	318	67.3%	214	653	211	211	99%	74	**Yes**	**Yes**	Widespread detections > BCL; offsite source
Nitrate	mg/L	10	10	309	90.6%	280	5670	227	227	81%	50	No	**Yes**	Widespread Eastside detections
Lithium	ug/L	--	73	318	74.2%	236	24500	--	235	100%	70	**Yes**	**Yes**	Widespread detections > BCL, mostly >100 ug/L, up to 5,980 ug/L (MCF-6B)
Perchlorate	ug/L	--	18	309	93.9%	290	523000	--	353	122%	71	**Yes**	**Yes**	Widespread detections-offsite source
Chlorine	mg/L	4	4	293	99.0%	290	65200	372	372	128%	75	No	No	Reported by laboratory as 2 x [Cl-; not reactive chlorine
Total Trihalomethanes	ug/L	80	--	318	100%	318	1456	81	--	25%	22	No	No	Chloroform; offsite source; onsite source near first 8 rows/flux line area
Radium-226/228	pCi/L	5	--	82	100%	82	19.4	12	--	15%	9	No	No	Isolated detections nominally > BCL, east of Pabco Rd; Layer 2 detections in flux line area approx. 2-3x BCL; few detects>MCL
Total Dissolved Solids	mg/L	500	--	312	99.4%	310	195000	310	--	100%	75	**Yes**	**Yes**	Widespread detections > MCL; offsite source

Table 2. BRC Groundwater Monitoring Data 2004-2009
Statistics and Indicator Parameter Selection
Middle Zone

Compounds > MCL/BCL with FOD>=5%	Units	MCL	BCL	Total No. Analyses	Freq. of Detection	Total No. Detects	Max	Detects >MCL	Detects >BCL	% of Detects >BCL/MCL	# Wells Detects >MCL or >BCL	# Wells Non Detects SQL>BCL/MCL	Eastside-Hook Area Indicator Parameter?	Eastside-Main Indicator Parameter?	Comments/Rationale
Beryllium	ug/L	4	4	64	6.3%	4	6.8	1	1	25%	1	6	No	No	Only 1 detect > BCL in MCF-09B @ 6.8 ug/L
Chromium (Total)	ug/L	100	100	60	23.3%	14	237	1	1	7%	1	4	No	No	Only 1 detect > BCL in MCF-16B @ 237 ug/L; some older data DLs>BCL
Chromium (VI)	ug/L	100	100	62	33.9%	21	280	1	1	5%	1	0	No	No	Only 1 detect > BCL in MCF-16B @ 280 ug/L
Copper	ug/L	1300	1360	64	43.8%	28	1550	1	1	4%	1	0	No	No	Only 1 detect > nominally BCL in MCF-05 @ 1,550 ug/L
Nitrate	mg/L	10	10	58	50.0%	29	141	1	1	3%	1	0	No	No	Only 1 detect > BCL in MCF-05 @ 141 J- ug/L (2007)
Strontium	ug/L	--	21900	64	98.4%	63	29200	--	1	2%	1	0	No	No	Only 1 detect > BCL in MCF-31B @ 29,200 ug/L
Tungsten	ug/L	--	270	64	6.3%	4	358	--	1	25%	1	4	No	No	Only 1 detect > BCL in CoH-1 @ 358 J ug/L
Chloroform	ug/L	--	1.6	64	20.3%	13	50	--	3	23%	3	0	No	No	Only one detect in MCF-16B significantly > BCL @ 50 ug/L; other detects 1.9 and 7.2 ug/L
Selenium	ug/L	50	50	64	18.8%	12	167	3	3	25%	3	4	No	No	Only one detect in MCF-05 significantly > BCL @ 167 J+ ug/L (2009); other detects 65.6 and 58.1 ug/L
Nitrite	mg/L	1	1	47	12.8%	6	885	4	4	67%	4	12	No	No	Two Main Area detections in 2007 only (other 2 near LVW); ND thereafter, but DLs>BCL; wells MCF-05 and MCF-16B impacted
Radium-226/228	pCi/L	5	--	62	100%	62	12.9	11	--	18%	5	0	No	No	Detects only nominally > MCL (5.5 - 12.9 piC/L)
Perchlorate	ug/L	--	18	62	35.5%	22	10800	--	16	73%	7	4	No	No	Detects > BCL up to 10,800 ug/L in MCF-16B; only 1 detect > BCL in Hook Area well in 2004 (MCF-10B @ 167 ug/L; ND or < BCL thereafter). Regional offsite source.
Boron	ug/L	--	7300	64	89.1%	57	19200	--	15	26%	8	2	No	No	Main Area wells MCF-16B (7,740 ug/L) and MCF-05 (8,130 ug/L) only nominally > BCL (2009); other detects in wells near LVW
Manganese	ug/L	--	510	64	71.9%	46	4530	--	23	50%	9	0	No	No	Only one Main Area well MCF-05 consistently > BCL (3,230 - 4,530 ug/L from 2006-2009); other wells near CoH ponds and LVW or only nominally > BCL
Molybdenum	ug/L	--	180	64	85.9%	55	1580	--	23	42%	9	1	No	No	Main Area wells MCF-05 and MCF-16B range from 413 ug/L to 1,580 ug/L; other wells > BCL near LVW or CoH ponds; offsite source indicated by regional plume maps
Magnesium	ug/L	--	207000	64	95.3%	61	2E+07	--	36	59%	10	0	No	No	Concentrations range from 1,720 to 15,300 mg/L (MCF-05, 2009), but considered naturally occurring (isotope report)
Ammonia	ug/L	--	200	64	64.1%	41	15400	--	28	68%	11	0	No	No	Consistently high concentrations (up to 15,400 ug/L in MCF-30B) in northern portion of Site and MCF-16B; considered naturally occurring via organic degradation
Arsenic	ug/L	10	10	64	51.6%	33	100	30	30	91%	13	7	No	No	Detections consistently > BCL; offsite source indicated by regional plume maps
Chlorine	mg/L	4	4	57	96.5%	55	117000	73	73	133%	16	2	No	No	Reported by lab as 2 x [Cl-]; not reactive chlorine
Lithium	ug/L	--	73	64	89.1%	57	52500	--	55	96%	16	3	No	No	Detections consistently > BCL with [ ]s >10,000 ug/L; considered naturally occurring (USGS)
Total Dissolved Solids	mg/L	500	--	64	100%	64	180000	64	--	100%	16	0	No	No	Concentrations consistently > BCL, but considered naturally occurring (isotope report)

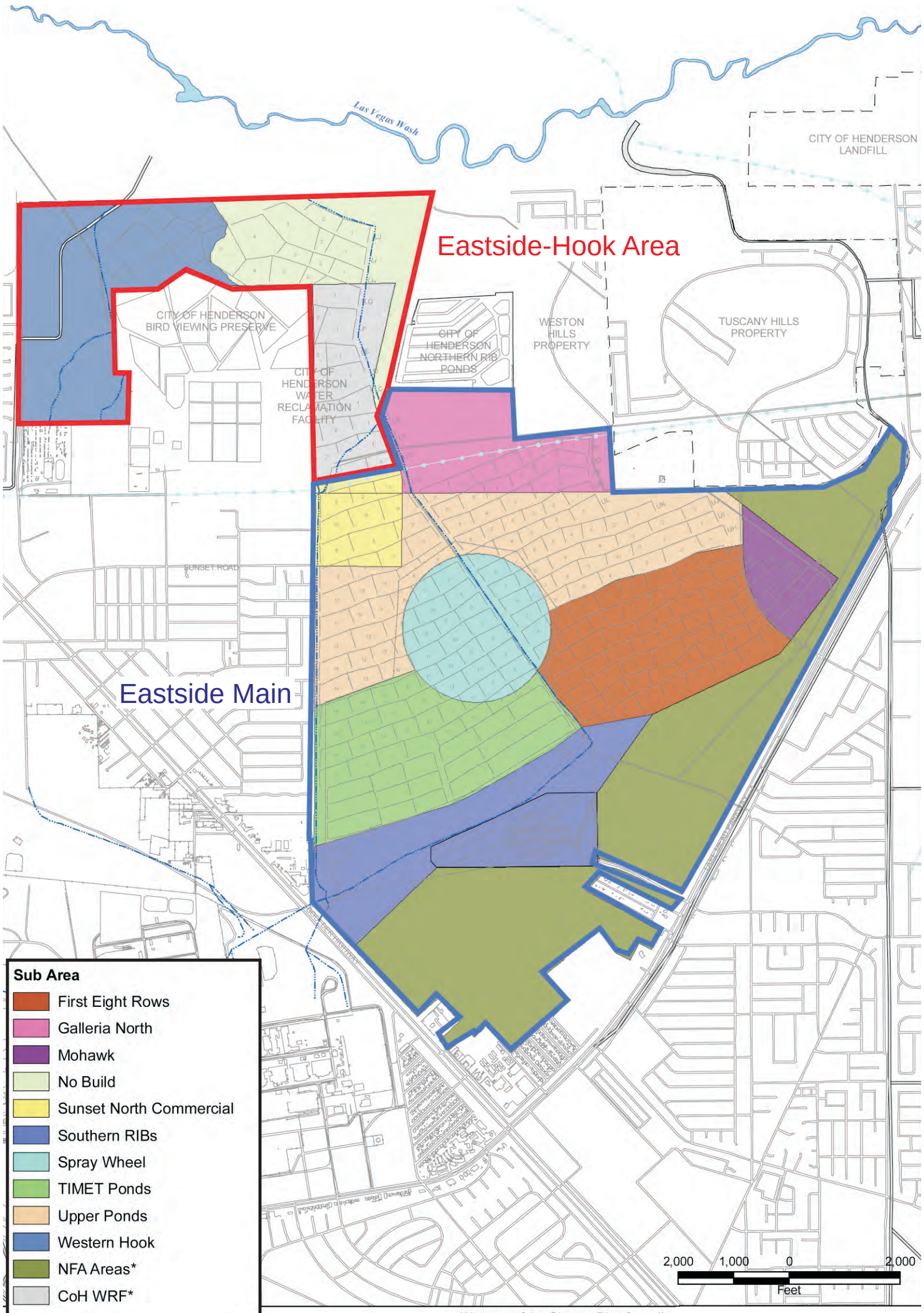
Note: MCF-16B (near 1st 8 rows) impacted with multiple analytes > BCL
Note: MCF-05 (south of CoH n.RIBs) impacted with multiple analytes > BCL

Table 3. BRC Groundwater Monitoring Data 2004-2009
Statistics and Indicator Parameter Selection
Deep Zone

Compounds > MCL/BCL with FOD>=5%	Units	MCL	BCL	Total No. Analyses	Freq. of Detection	Total No. Detects	Max	Detects >MCL	Detects >BCL	% of Detects >BCL/MCL	# Wells Detects >MCL or >BCL	Eastside-Hook Area Indicator Parameter?	Eastside-Main Indicator Parameter?	Comments/Rationale
Aluminum	ug/L	--	36500	103	17.5%	18	89100	--	1	6%	1	No	No	Only 1 detect > BCL (MCF-03A)
Iron	ug/L	--	25600	93	45.2%	42	77600	--	1	2%	1	No	No	Only 1 detect > BCL (MCF-03A)
Nitrate	mg/L	10	10	94	28.7%	27	2410	1	1	4%	1	No	No	Only 1 detect > BCL (MCF-03A)
Perchlorate	ug/L	--	18	99	18.2%	18	29.9	--	1	6%	1	No	No	Only 1 detect > BCL (MCF-01A 29.9 ug/L 2004; ND thereafter); few other detects
Uranium	ug/L	30	30	103	40.8%	42	139	1	1	2%	1	No	No	Only 1 detect > BCL (MCF-08A 139 J ug/L 2006); some high DLs but ND thereafter
Tungsten	ug/L	--	270	103	15.5%	16	3090	--	2	13%	1	No	No	Only 1 well > BCL in 2006 (MCF-08A 568-3,090 ug/L); some high DLs but ND thereafter
Antimony	ug/L	6	6	103	5.8%	6	60.3	4	4	67%	4	No	No	Only 1 well signficantly > BCL in 2007 (MCF-10A 60.3 J ug/L); others nominally > BCL; some high DLs
Fluoride	mg/L	4	4	100	51.0%	51	148	4	4	8%	2	No	No	Only 2 wells > BCL (MCF-07, MCF-08A) in 2007; ND thereafter
Chromium (Total)	ug/L	100	100	102	30.4%	31	944	5	5	16%	1	No	No	Only 1 well > BCL (MCF-03A 138-944 J+ ug/L 2006-09); some high DLs but ND thereafter
Cobalt	ug/L	--	11	103	27.2%	28	61.5	--	5	18%	4	No	No	Few detects nominally > BCL; 2009 data < BCL
Lead	ug/L	15	15	102	11.8%	12	113	5	5	42%	5	No	No	Few detects > BCL; 2009 data < BCL
Nitrite	mg/L	1	1	84	8.3%	7	679	5	5	71%	5	No	No	Few detects > BCL; 2009 data < BCL; some high DLs; unstable compound=> NO3
Strontium	ug/L	--	21900	103	100%	103	69400	--	5	5%	3	No	No	Only 3 wells nominally > BCL
Cadmium	ug/L	5	5	98	24.5%	24	78.9	6	6	25%	5	No	No	Few detects in 2006-07 > BCL; 2009 data < BCL
Selenium	ug/L	50	50	103	12.6%	13	636	6	6	46%	6	No	No	Few detects nominally > BCL
Thallium	ug/L	2	2	103	8.7%	9	1980	7	7	78%	7	No	No	Few detects > BCL 2004-07; 2009 data < BCL
Arsenic	ug/L	10	10	103	42.7%	44	88.3	39	39	89%	21	No	No	Sitewide detects consistently > BCL but only nominally; potentially naturally occurring
Boron	ug/L	--	7300	103	90.3%	93	110000	--	41	44%	17	No	No	Some high values 2004-2007 but 2009 detects nominally > BCL
Manganese	ug/L	--	510	103	89.3%	92	7900	--	41	45%	17	No	No	Four wells > 4,000 ug/L in 2009 (4,440-5,720 ug/L); others nominally > BCL; potentially naturally occurring
Molybdenum	ug/L	--	180	103	97.1%	100	4280	--	46	46%	16	No	No	Nine wells > 1,000 ug/L in 2009 (1,020-3,040 ug/L); others nominally > BCL; 5 detects> 2,000 ug/L); potentially naturally occurring
Ammonia	ug/L	--	200	103	83.5%	86	51300	--	70	81%	23	No	No	Consistently detected > BCL; up to 26,500 ug/L (MCF-07); considered naturally occurring through organic degradation
Magnesium	ug/L	--	207000	99	99.0%	98	17000000	--	74	76%	18	No	No	Naturally occurring - Isotope Report
Lithium	ug/L	--	73	103	90.3%	93	77600	--	84	90%	25	No	No	Detects consistently > BCL, up to 62,000 ug/L (MCF-30A in 2009); naturally occurring (USGS)
Chlorine	mg/L	4	4	89	95.5%	85	247000	114	114	134%	26	No	No	Reported by lab as 2 x [Cl-], not reactive chlorine
Chlorite	ug/L	1000	--	87	6.9%	6	1900	4	--	67%	2	No	No	Only 2 wells nominally > BCL (MCF-16A 2,000 J ug/L, MCF-30A 1,400 ug/L in 2009); some high DLs
Radium-226/228	pCi/L	5	--	97	100%	97	42.1	34	--	35%	12	No	No	Detects only nominally > BCL (5.1-42.1 ug/L)
Total Dissolved Solids	mg/L	500	--	98	99.0%	97	197000	95	--	98%	26	No	No	Naturally occurring - Isotope Report

Note: MCF-03A impacted with multiple contaminants > BCL

Figures



*Not part of the Closure Plan for soils.

BMI Common Areas (Eastside)
Henderson, Nevada

FIGURE 1
Conceptual
Site Model Sub Area

Daniel B. Stephens & Associates, Inc.

Basic Remediation COMPANY

Prepared by:	Date	
DBS&A CRS	08-17-10	S:/PROJECTS/BRC/ES09.0281_BRC_WH_AND_PRE-CSM_TASKS/GIS/MXDS/CHEMISTRY/LAYER_MODEL/Fig01.cdr

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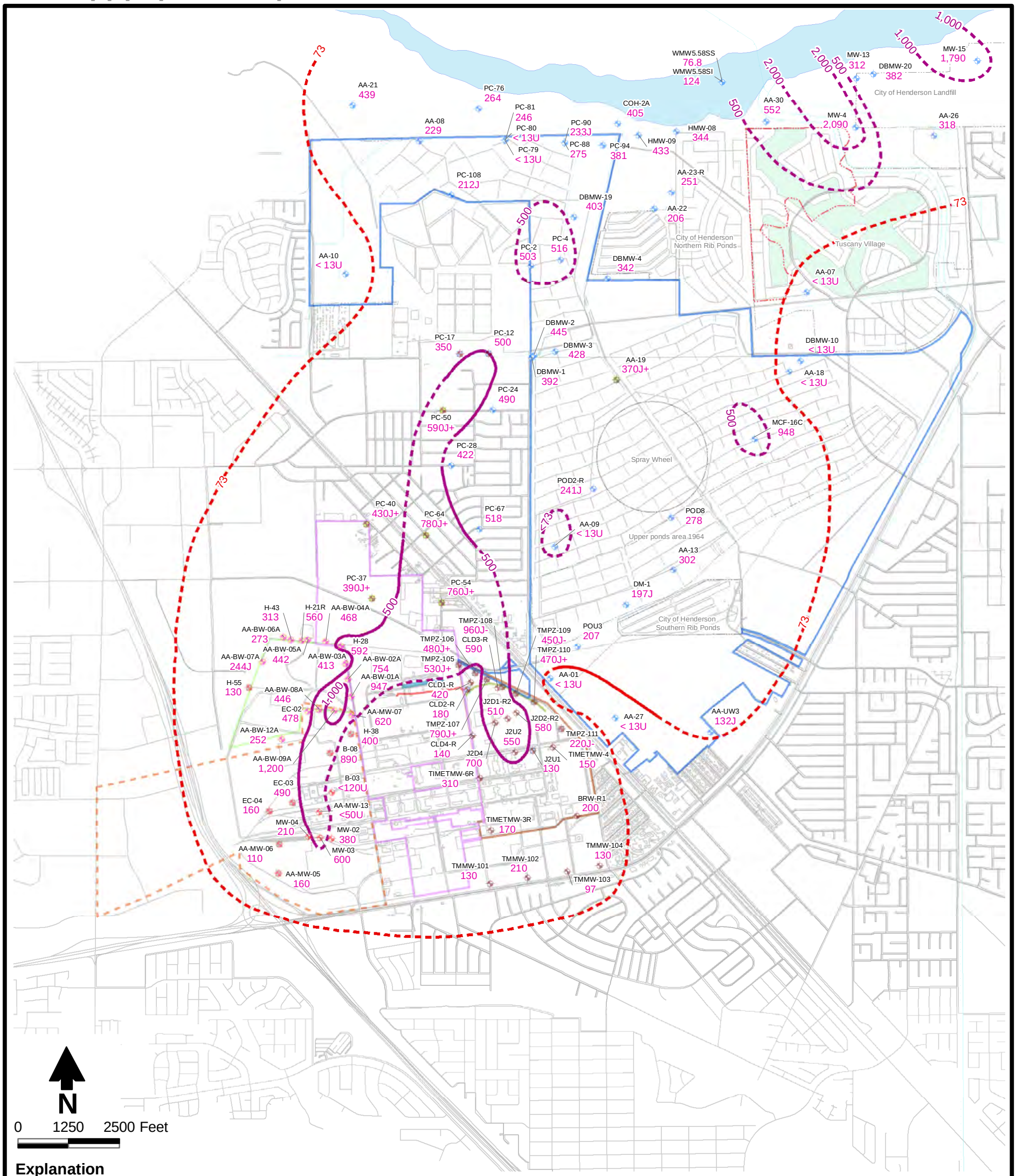


Explanation

Well Site - Date of Data

- BRC - 2009
- CAMU - 2009
- POSSOM - 2006
- POSSOM - 2007
- TIMET - 2006
- TIMET - 2007
- TIMET - 2008
- TIMET - 2009

MW-03 600 — Monitoring well designation, Result (ug/L)

- Site boundary
- Gravel pit circa 1976 Source: Aerial photograph dated 1976
- TIMET boundary
- Tronox boundary
- POSSM (The Companies)
- Site AOC3 boundary
- Las Vegas Wash
- TIMET proposed slurry wall September 2008
- Tronox groundwater recharge trench
- Tronox slurry wall
- Street
- Concentration contour (dashed where inferred)
- BCL = 73 ug/L

Notes:
1. POSSM Groundwater Extraction/Air Stripping/Re-injection System
2. BCL = Basic Comparison Level

BMI Common Areas (Eastside)
Henderson, Nevada

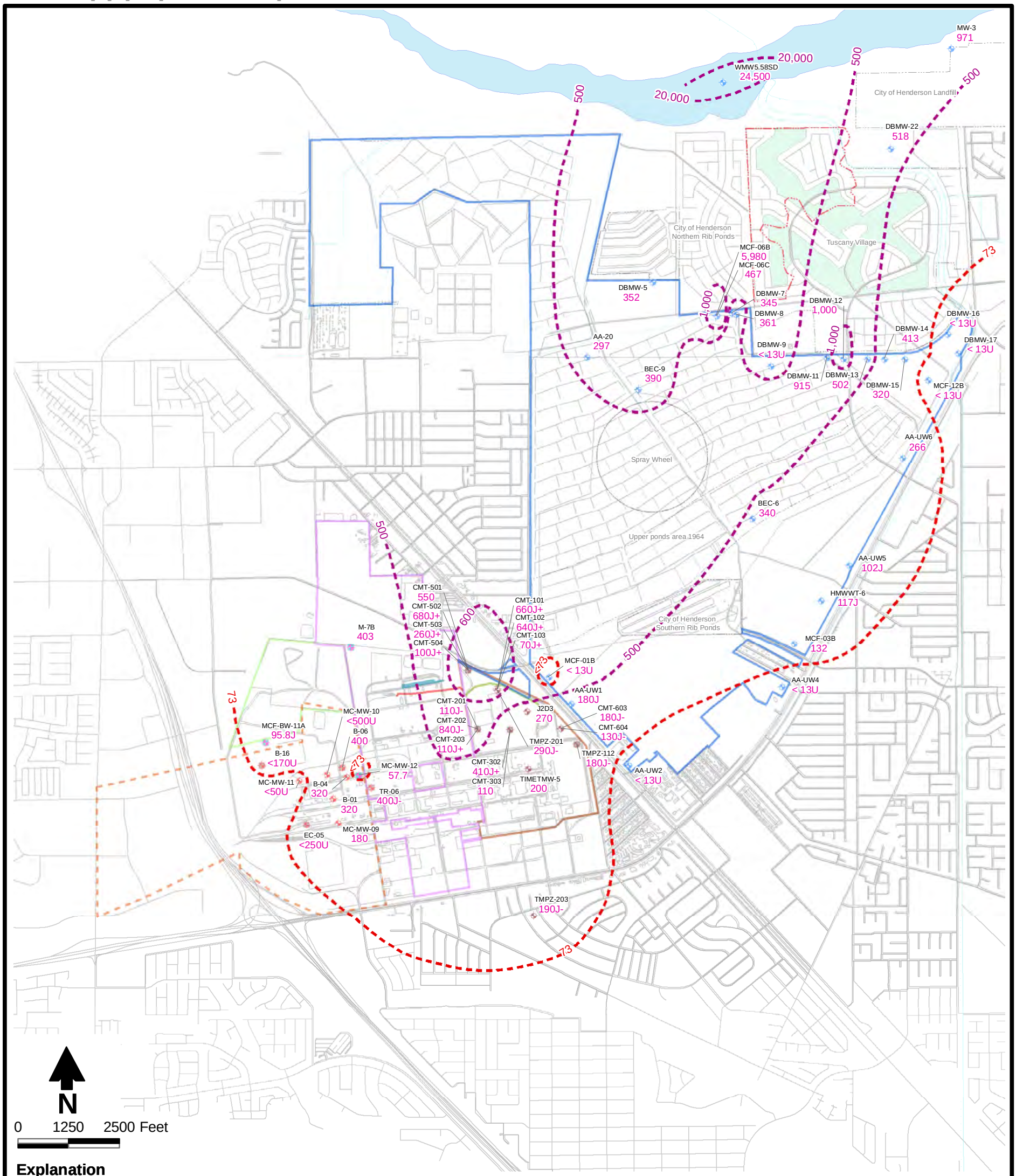
FIGURE 2
Lithium
Shallow Zone Layer 1

Daniel B. Stephens & Associates, Inc.
Basic Remediation COMPANY

Prepared by: DBS&A CRS
Date 08-18-10

S:/PROJECTS/BRC/ES09.0281_BRC_WH_AND_PRE-CSM_TASKS/GIS/MXDS/CHEMISTRY/LAYER_MODEL/lithium_LAYER1.MXD 019040

S:/PROJECTS/BRC/ES10.0136_BRC_MISC_EASTSIDE_TASKS/GIS/MXDS/CHEMISTRY/LITHIUM_LAYER2.MXD 017180



Explanation

Well Site - Date of Data

- BRC - 2009
- CAMU - 2009
- POSSOM - 2006
- POSSOM - 2007
- TIMET - 2008
- TIMET - 2009

B-06
400
Monitoring well designation
Result (ug/L)

- Site boundary
- Gravel pit circa 1976
  Source: Aerial photograph dated 1976
- TIMET boundary
- Tronox boundary
- POSSM (The Companies)
- Site AOC3 boundary
- Las Vegas Wash
- TIMET proposed slurry wall September 2008
- Tronox groundwater recharge trench
- Tronox slurry wall
- Street
- Concentration contour (dashed where inferred)
- BCL = 73 ug/L

Notes:
1. BCL = Basic Comparison Level

BMI Common Areas (Eastside)
Henderson, Nevada

FIGURE 3
Lithium
Shallow Zone Layer 2

Daniel B. Stephens & Associates, Inc.
Basic Remediation COMPANY

Prepared by: DBS&A CRS
Date 08-17-10

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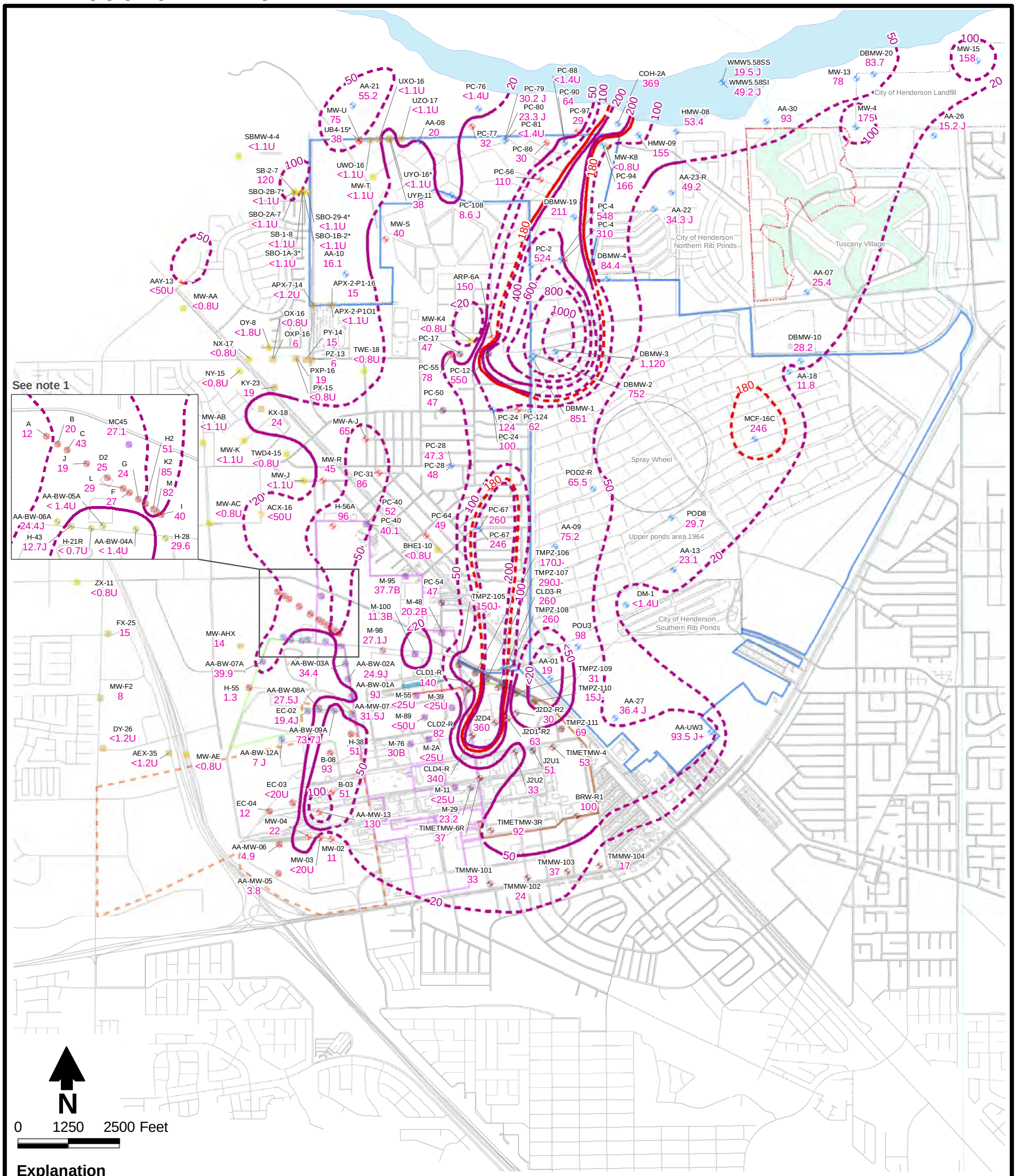
S:/PROJECTS/BRC/ES10.0136_BRC_MISC_EASTSIDE_TASKS/GIS/MXDS/CHEMISTRY/MO_LAYER1.MXD 018180



Explanation

Well Site - Date of Data

- AMPAC - 2004
- AMPAC - 2005
- AMPAC - 2006
- BRC - 2009
- CAMU - 2009
- POSSOM - 2006
- POSSOM - 2007
- TIMET - 2006
- TIMET - 2008
- TIMET - 2009
- TRONOX - 2006
- TRONOX - 2007

MW-02 / 11 — Monitoring well designation / Result (ug/L)

- Site boundary
- Gravel pit circa 1976 Source: Aerial photograph dated 1976
- TIMET boundary
- Tronox boundary
- POSSM (The Companies)
- Site AOC3 boundary
- Las Vegas Wash
- TIMET proposed slurry wall September 2008
- Tronox groundwater recharge trench
- Tronox slurry wall
- Street
- Concentration contour (dashed where inferred)
- BCL = 180 ug/L

Notes:
1. POSSM Groundwater Extraction/Air Stripping/Re-injection System
2. * = layer 1 and layer 2
3. BCL = Basic Comparison Level

BMI Common Areas (Eastside)
Henderson, Nevada

FIGURE 4
Molybdenum
Shallow Zone Layer 1

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Prepared by: DBS&A CRS
Date 08-18-10

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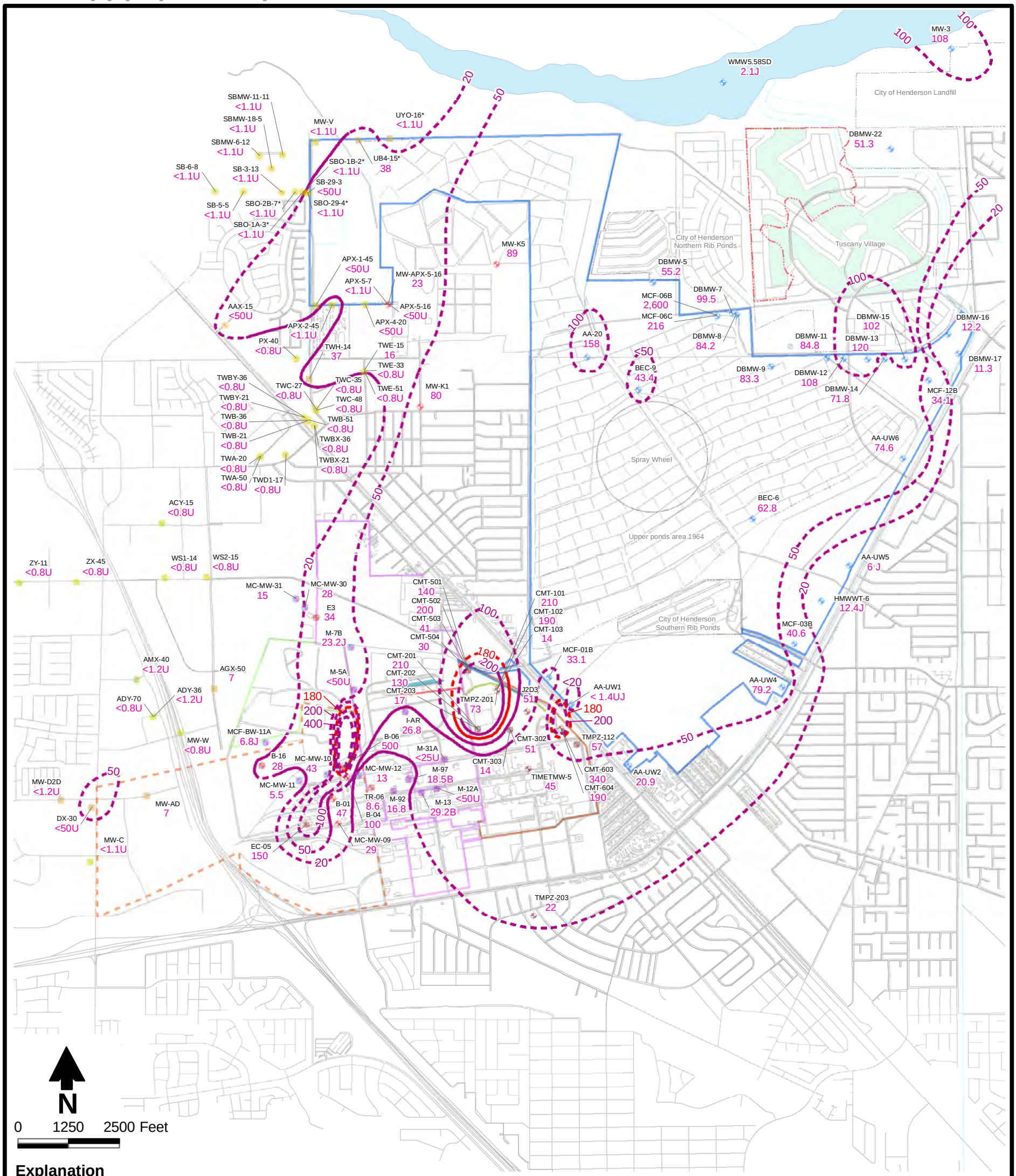

Explanation

Well Site - Date of Data

- AMPAC - 2004
- AMPAC - 2005
- AMPAC - 2006
- BRC - 2009
- CAMU - 2009
- POSSOM - 2006
- POSSOM - 2007
- TIMET - 2008
- TIMET - 2009
- TRONOX - 2007

M-92 16.8 Monitoring well designation Result (ug/L)

- Site boundary
- Gravel pit circa 1976 Source: Aerial photograph dated 1976
- TIMET boundary
- Tronox boundary
- POSSM (The Companies)
- Site AOC3 boundary
- Las Vegas Wash
- TIMET proposed slurry wall September 2008
- Tronox groundwater recharge trench
- Tronox slurry wall
- Street
- Concentration contour (dashed where inferred)
- BCL = 180 ug/L

Notes:
1. * = layer 1 and layer 2
2. BCL = Basic Comparison Level

BMI Common Areas (Eastside)
Henderson, Nevada

FIGURE 5
Molybdenum
Shallow Zone Layer 2

Daniel B. Stephens & Associates, Inc.
Basic Remediation COMPANY

Prepared by: DBS&A CRS
Date 08-18-10

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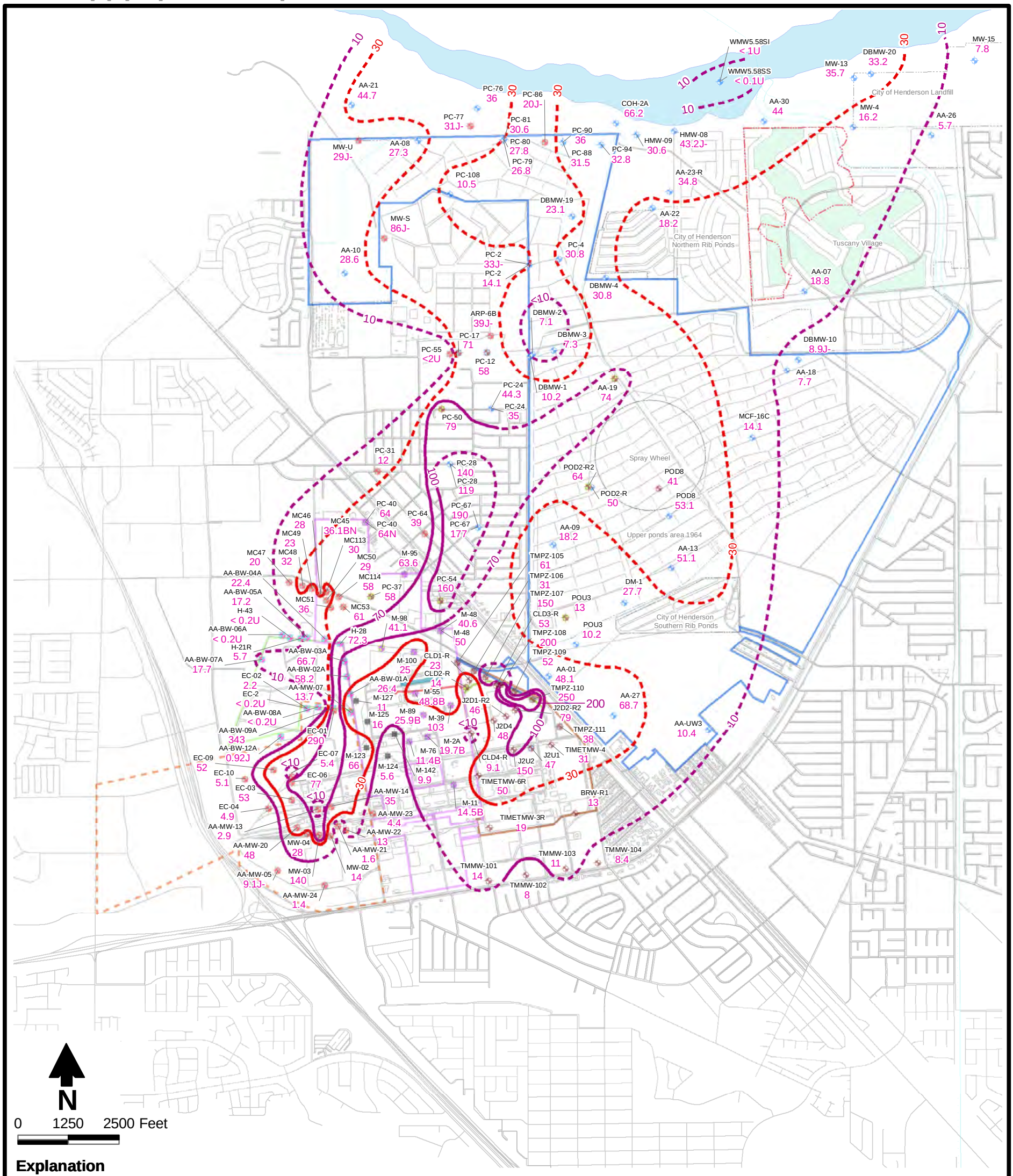


Explanation

Well Site - Date of Data

- BRC - 2009
- CAMU - 2009
- POSSOM - 2008
- TIMET - 2005
- TIMET - 2006
- TIMET - 2007
- TIMET - 2008
- TIMET - 2009
- TRONOX - 2006
- TRONOX - 2007
- Unknown layer

MW-04 / 28 — Monitoring well designation / Result (ug/L)

- Site boundary
- Gravel pit circa 1976 Source: Aerial photograph dated 1976
- TIMET boundary
- Tronox boundary
- POSSM (The Companies)
- Site AOC3 boundary
- Las Vegas Wash
- TIMET proposed slurry wall September 2008
- Tronox groundwater recharge trench
- Tronox slurry wall
- Street
- Concentration contour (dashed where inferred)
- MCL = 30 ug/L
- BCL = 30 ug/L

Notes:
1. MCL = USEPA Maximum Contaminant Level
2. BCL = Basic Comparison Level

BMI Common Areas (Eastside)
Henderson, Nevada

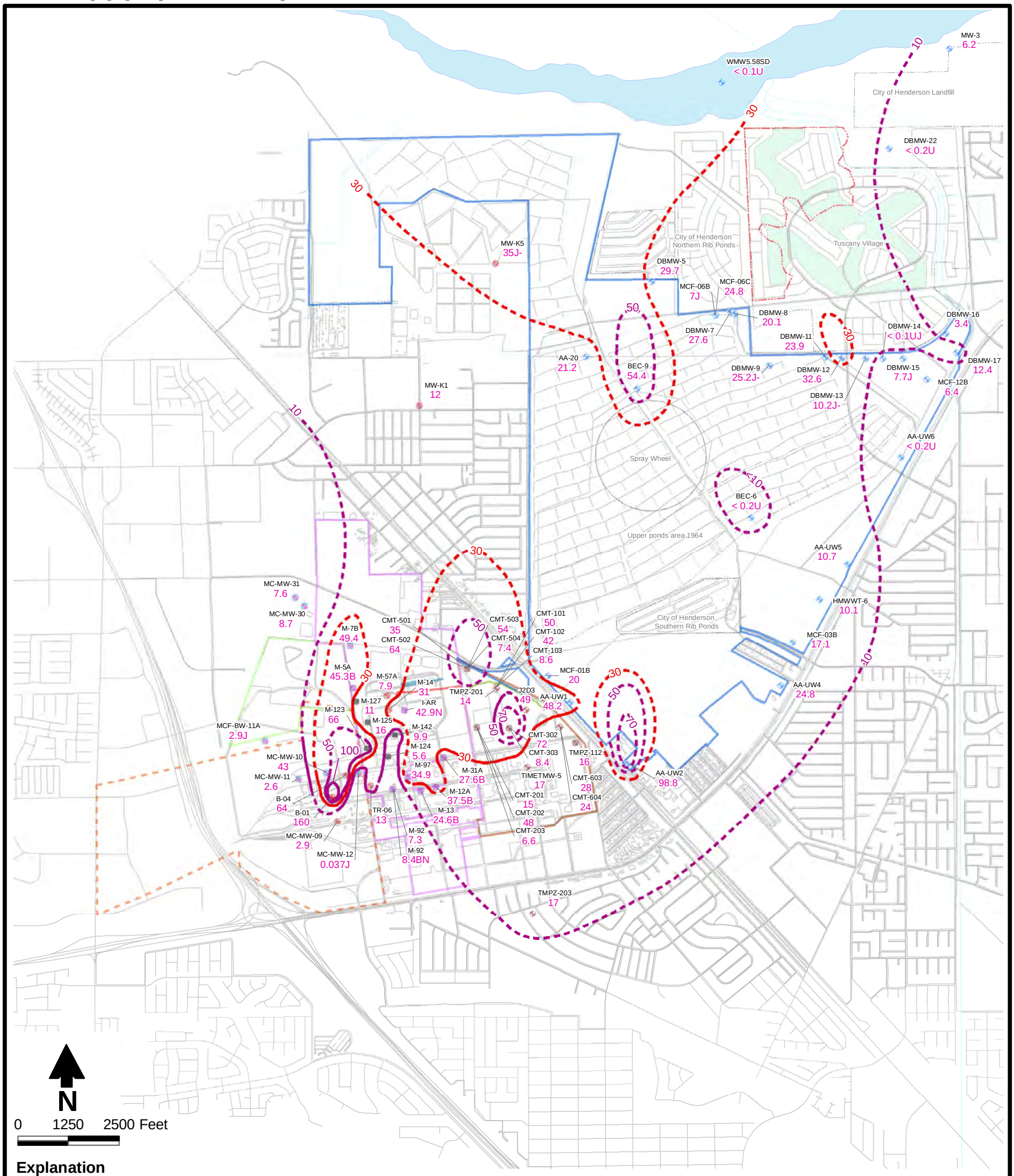
FIGURE 6
Uranium
Shallow Zone Layer 1

Daniel B. Stephens & Associates, Inc.
Basic Remediation COMPANY

Prepared by: DBS&A AFM
Date 08-17-10

S:/PROJECTS/BRC/ES09.0281_BRC_WH_AND_PRE-CSM_TASKS/GIS/MXDS/CHEMISTRY/LAYER_MODEL/uranium_LAYER1.MXD 019040

S:/PROJECTS/BRC/ES10.0136_BRC_MISC_EASTSIDE_TASKS/GIS/MXDS/CHEMISTRY/URANIUM_LAYER2.MXD 018180



Explanation

Well Site - Date of Data

- BRC - 2009
- CAMU - 2009
- POSSOM - 2008
- TIMET - 2008
- TIMET - 2009
- TRONOX - 2007
- Unknown layer

M-92
7.3 Monitoring well designation
Result (ug/L)

- Site boundary
- Gravel pit circa 1976
  Source: Aerial photograph dated 1976
- TIMET boundary
- Tronox boundary
- POSSM (The Companies)
- Site AOC3 boundary
- Las Vegas Wash
- TIMET proposed slurry wall September 2008
- Tronox groundwater recharge trench
- Tronox slurry wall
- Street
- Concentration contour (dashed where inferred)
- MCL = 30 ug/L
- BCL = 30 ug/L

Notes:
1. MCL = USEPA Maximum Contaminant Level
2. BCL = Basic Comparison Level

BMI Common Areas (Eastside)
Henderson, Nevada

FIGURE 7
Uranium
Shallow Zone Layer 2

Daniel B. Stephens & Associates, Inc.
Basic Remediation COMPANY

Prepared by: DBS&A CRS
Date 08-18-10

S:/PROJECTS/BRC/ES09.0281_BRC_WH_AND_PRE-CSM_TASKS/GIS/MXDS/CHEMISTRY/LAYER_MODEL/ALPHA_BHC_LAYER1.MXD 019040