



**UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration**

NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

MAR 28 2012

Mr. Donald R. Glaser
Regional Director
Mid-Pacific Region
U.S. Bureau of Reclamation
2800 Cottage way, MP-3700
Sacramento, California 95825-1898

Mr. Mark W. Cowin
Director
California Department of Water Resources
P.O. Box 942836, Room 1115-1
Sacramento, California 94236-0001

Dear Mr. Glaser and Mr. Cowin:

On January 12, 2012, Plaintiffs, Plaintiff-Intervenor, and Federal Defendants to the Consolidated Salmonid Cases (Case 1:09-cv-01053-LJO –DLB) signed and filed with the Federal court a joint stipulation (Document 659-2) that included Central Valley Project and State Water Project operations for April and May 2012. On March 16, 2012, NMFS transmitted to the U.S. Bureau of Reclamation and the California Department of Water Resources (DWR) the real-time operations technical memorandum required as part of the joint stipulation (Paragraph 2.a.v).

On Monday, March 26, 2012, DWR provided NOAA's National Marine Fisheries Service (NMFS) with Particle Tracking Model simulation results using the Delta Simulation Model 2. This package was distributed to the Delta Operations for Salmonids and Sturgeon (DOSS) working group for discussion at its Tuesday morning meeting (March 26, 2012). DWR also provided additional information to the DOSS through NMFS. The Delta Conditions Team did not meet, and therefore, did not have additional information for DOSS to consider in the development of the DOSS advice.

The enclosure provides DOSS advice to the Water Operations Management Team and NMFS. DOSS advises that (1) an adjustment be made to the rounding process used to specify OMR levels based on modeling information, and (2) based on the adjusted rounding process, that the projects be managed to an OMR level of -1,800 cfs from April 1-7, 2012. The 5-day running average of OMR flow during this period shall be no more than 25% more negative than -1,800 cfs (*i.e.*, -2,250 cfs).



NMFS accepts the DOSS advice, including the adjustment to the rounding process, and determines that the OMR flow of no more negative than -1,800 cfs from April 1-7, 2012, as measured by a 5-day running average that may not be more negative -2,250 cfs, is consistent with the intent and objective of OMR flow management, as provided in the technical memorandum. This OMR flow is within the range of between -1,250 and -3,500 cfs specified by the joint stipulation as the adaptive range for OMR during April 2012. NMFS determines that since the OMR flow for April 1-7, 2012, is consistent with the joint stipulation and associated technical memorandum, that it will avoid jeopardizing the continued existence of Central Valley steelhead.

NMFS appreciates the continued coordination of the parties towards the implementation of the joint stipulation and the technical memorandum.

Sincerely,



for Rodney R. McInnis
Regional Administrator

Enclosure

DOSS Advice for operations from April 1-April 7, 2012

Old and Middle River Flow Management per the 2012 Joint Stipulation, in lieu of Action IV.2.1 of the NMFS Biological Opinion for the Long-Term Operations of the Central Valley Project and State Water Project (NMFS Opinion)

Summary of Advice from the Delta Operations for Salmonids and Sturgeon (DOSS) group:

Background:

DOSS reviewed Particle Tracking Model (PTM) results provided by DWR (Attachment 1). The data from scenarios (A-D), associated with Vernalis flows of 1,500 cfs, were evaluated using the process described in the OMR technical memorandum issued by NMFS on March 16, 2012¹ (OMR Memorandum) to specify the OMR level to be implemented for April 1-April 7, with one minor adjustment described in the advice below.

Note that while Scenario B modeled combined exports of 1,090 cfs [the export level necessary to attain an approximate Old and Middle River (OMR) flow of -1,250 cfs], the OMR Memorandum (page 16) provides that if the specified OMR level "...would require that exports drop below the health and safety export level of 1,500 cfs, the projects shall operate at a combined export level of 1500 cfs."

DOSS advice for Tuesday 3/27/12:

Adjustment to the rounding process for the specified OMR level:

Advice: The OMR Memorandum (page 17), specified that "...DOSS will...specify OMR rounded to the nearest 250 cfs." DOSS advises that the following rounding process be used instead: "DOSS will specify OMR rounded, in the positive direction, to the nearest 100 cfs."

Rationale: NMFS included a rounding process for OMR specification in the OMR Memorandum in recognition that while the linear interpolation process (as described in Table 2b of the OMR Memorandum) specified a very precise OMR (*e.g.*, the -1,846 cfs on p. 13 of Attachment 1), the PTM approach comparing different operational scenarios to a baseline scenario was not intended to capture hydrodynamic differences at that level of precision. In combination with the flexibility in achieving a target OMR flow (as provided in Table 1 of the OMR Memorandum, that is, no more than 25 percent more negative than the target requirement flow for the 5-day average flow), rounding in the positive direction to the nearest 100 cfs increment provides a reasonable level of precision in capturing modeled differences between operational scenarios. DOSS

¹ OMR Memorandum available at: http://swr.nmfs.noaa.gov/ocap/2012_stipulation.htm

advised rounding in the positive direction since that is the direction NMFS hypothesizes to provide greater protection for Central Valley steelhead migrating through the Delta.

Advice for OMR level: Per the process described in the OMR Memorandum, as adjusted above, and the data for Scenarios A-D provided by DWR in Attachment 1, DOSS advises that, from April 1 to April 7, 2012, the projects be managed to an OMR level of -1,800 cfs. The 5-day running average of OMR flow during this period shall be no more than 25% more negative than -1,800 cfs (*i.e.*, -2,250 cfs).

Barbara Byrne <barbara.byrne@noaa.gov>



NMFS PTM Results for April 1-7 OMR Determination

1 message

Yamanaka, Dan <dany@water.ca.gov>

Mon, Mar 26, 2012 at 10:02 AM

To: "barbara.byrne@noaa.gov" <barbara.byrne@noaa.gov>

Cc: "Wang, Xiaochun" <xwang@water.ca.gov>, "Smith, Tara" <tara@water.ca.gov>, "Zhou, Yu" <yzhou@water.ca.gov>, "Leahigh, John"

<leahigh@water.ca.gov>, "Hinojosa, Tracy" <tracyh@water.ca.gov>, "Pettit, Tracy" <pettit@water.ca.gov>, "Chu, Andy" <andychu@water.ca.gov>

Barb et al,

Attached is our report on the results of the PTM runs performed for NMFS as identified in the "Technical Memorandum to Guide Adaptive Management of OMR during April and May 2012...". The results are to support NMFS' determination of the OMR to be imposed for April 1 through 7 per the Tech Memo and the 2012 Stipulation Agreement.

Assumptions/Modeling info:

1. 10,000 particles injected over a 24-hour period at both Nodes 40 and 21.
2. Although not required, forecast periods were extended from 28 days to 84 days.
3. Based on our best estimate of April 1 hydrology, San Joaquin flows were assumed to be 1500 cfs.
4. Hydrology was kept static using the estimated April 1 hydrology for the remainder of the forecast period.
5. Due to our inability to precisely predict San Joaquin flows, DWR also performed additional PTM runs with San Joaquin flow at 2500 cfs keeping the rest of the assumptions the same as the 1500 cfs runs.

In addition, the typical DSM2 assumptions consistent with recent modeling efforts were used as follows:

1. CCFB Gates operate on a Priority 3 schedule for the entire forecast period.
2. The Delta Cross Channel gates were closed December 1, 2011.
3. Suisun Marsh salinity control flashboards and boatlock were installed October 21, 2011. Three Suisun Marsh Salinity Control Gates are tied open as of February 14, 2012

4. Sacramento River flow at Freeport is around 43,000 cfs near the beginning of the forecast period and decreases to 14,100 cfs by the end of the forecast period.

The barriers were not installed for scenarios A and E. For scenarios B, C, D, F, G, and H, the following assumptions were made:

1. The Middle River ag. barrier was installed on March 16, 2012 with all culvert flap-gates tied open. The Old River at Tracy ag barrier will be installed on April 1, 2012.
2. The physical head of Old River barrier (including 8 culverts-all tied open) will be installed by April 1, 2012.

If you would like the dss file, please let me know. If you have any questions regarding the results, please contact me at dany@water.ca.gov or at (916) 574-0456.

Thanks!

Dan

Dan Yamanaka

Chief, Delta Compliance & Modeling Section

Operations Control Office

3310 El Camino Avenue, Suite 300

Sacramento, California 95821

(916) 574-0456 - Office



PTM Simulation Results.pdf

1460K

PRELIMINARY RESULTS, SUBJECT TO REVISIONS

PTM Simulation Results Using DSM2

Prepared by:
Delta Compliance & Modeling Section
Operations Control Office
Division of Operations & Maintenance

Prepared for:
DOSS in regards to the “Technical Memorandum to Guide
Adaptive Management of OMR during April and May 2012 for the
Protection of listed San Joaquin Basin Steelhead”

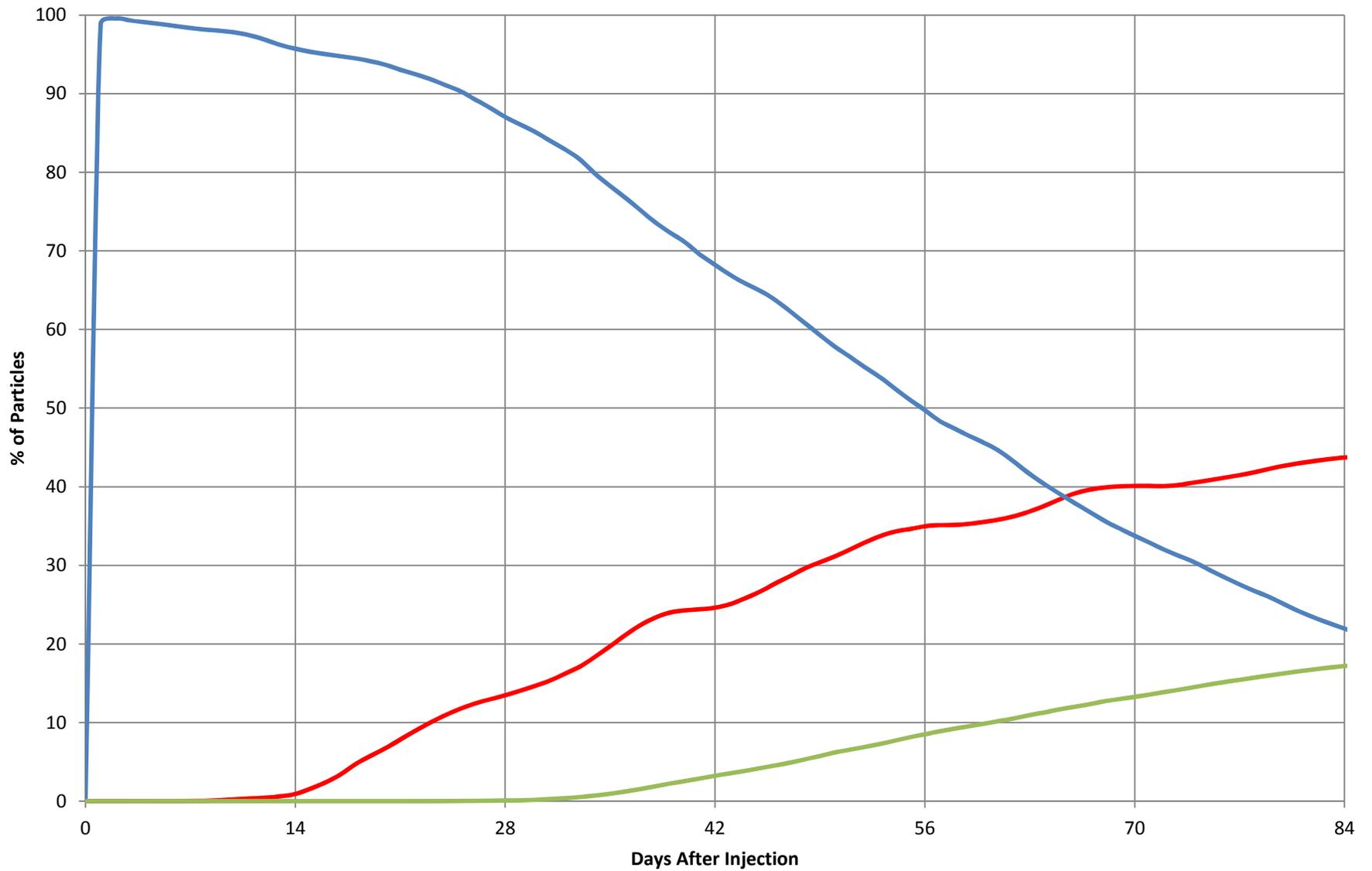
March 26, 2012

Scenario Summary Table

Scenario ID	Control (I:E or OMR)	SJR at Vernalis	Combined Exports	OMR (Index)	OMR (DSM2)	HOR Barrier
A	1 to 1	1500	1500	-976	-1050	Out
B	-1250	1500	1090	-1248	-1147	In
C	-2000	1500	1850	-1963	-1837	In
D	-3500	1500	3450	-3467	-3294	In
E	1 to 1	2500	2500	-1416	-1475	Out
F	-1250	2500	1175	-1249	-1091	In
G	-2000	2500	1950	-1978	-1804	In
H	-3500	2500	3550	-3482	-3263	In

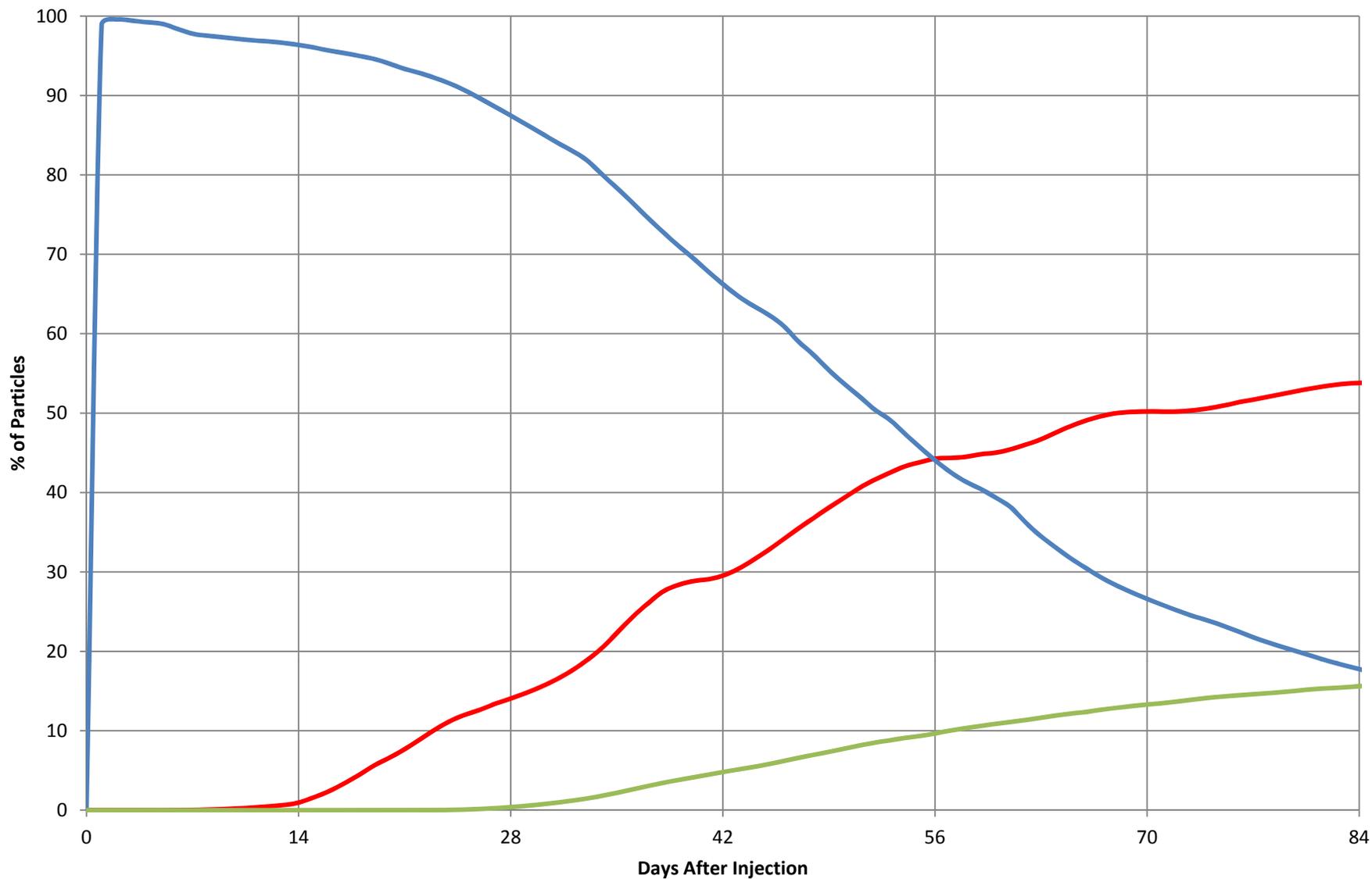
Time Series Graphs

Scenario A



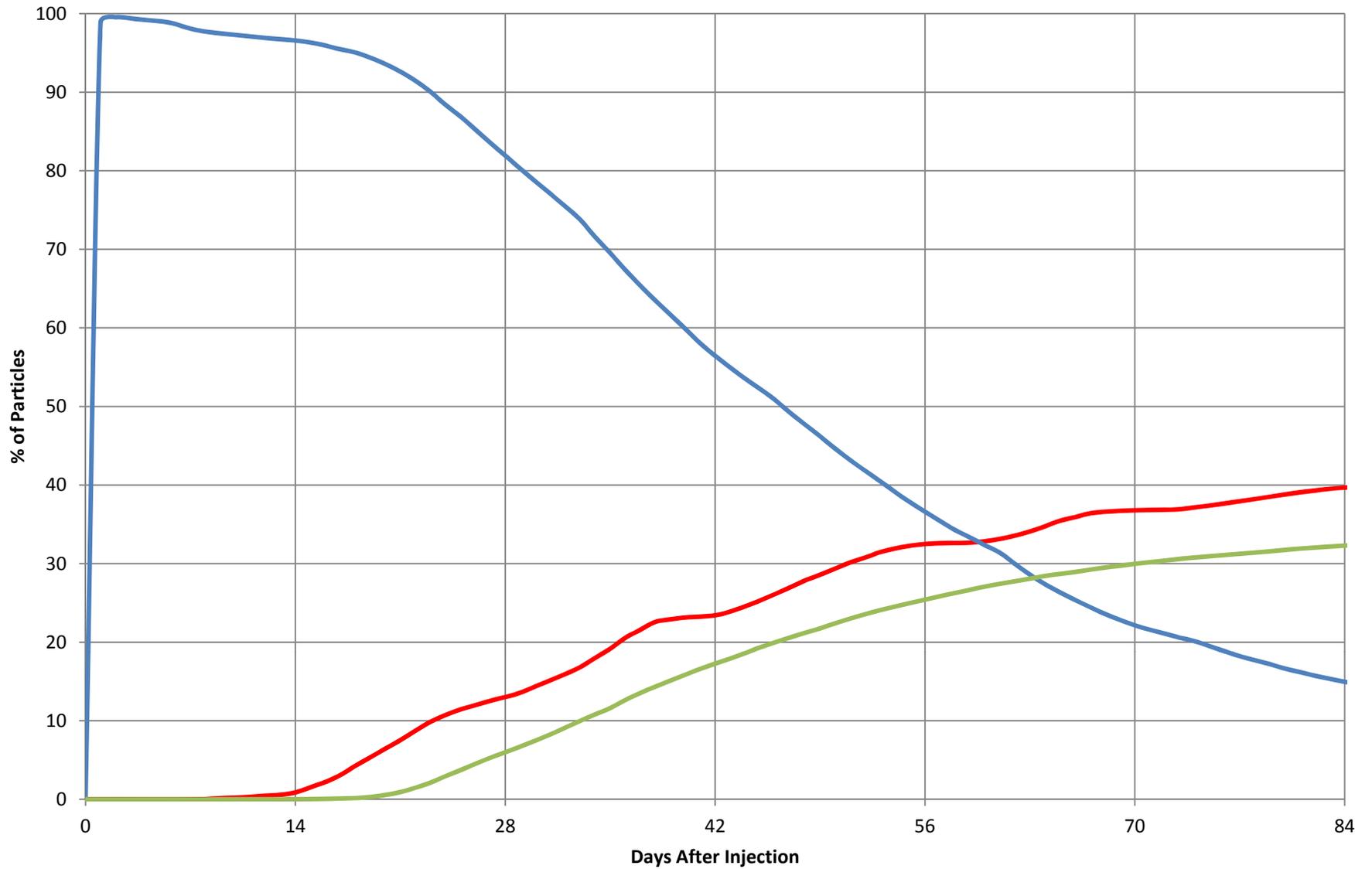
— Past Chipps — In Delta — At Projects

Scenario B



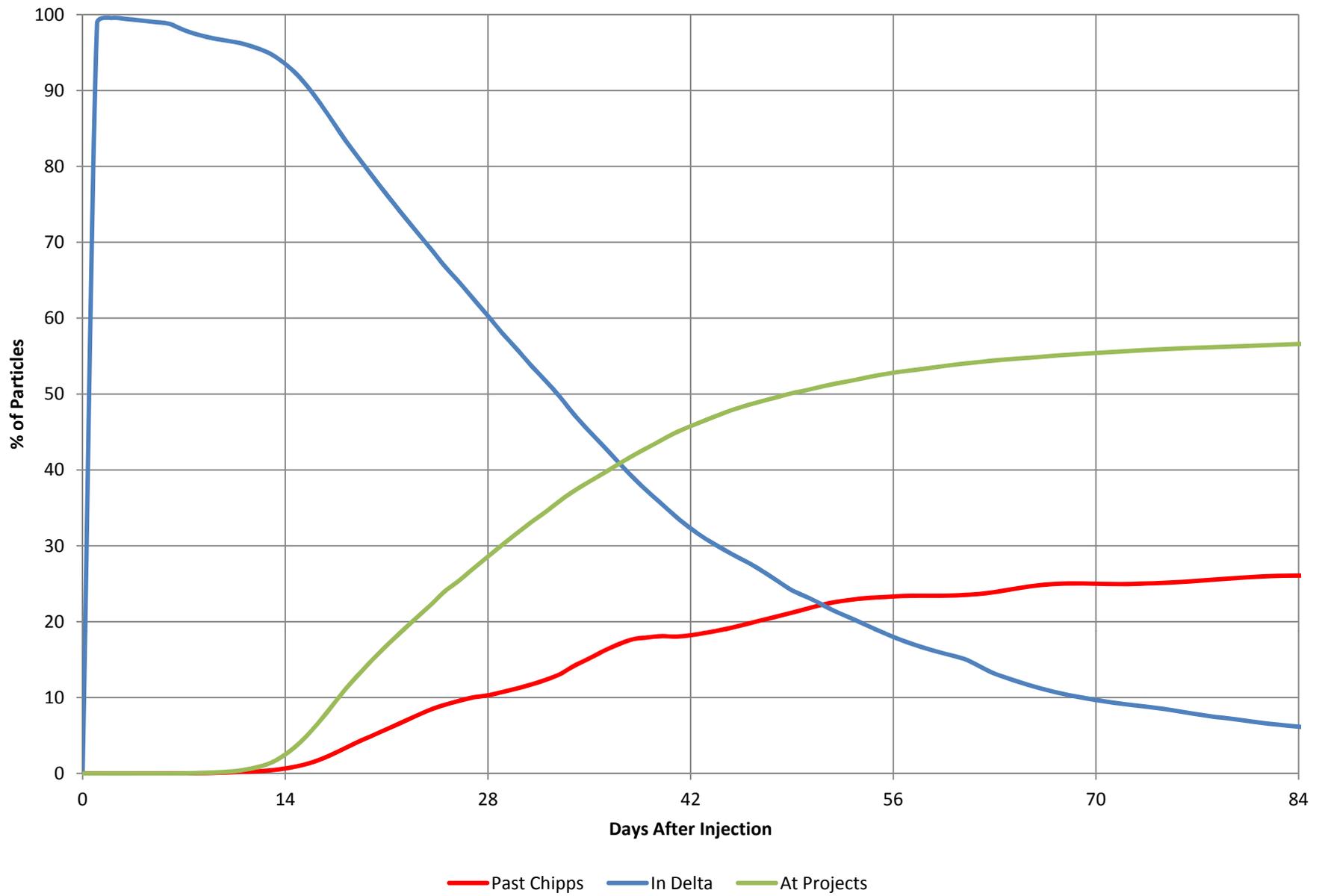
— Past Chipps — In Delta — At Projects

Scenario C

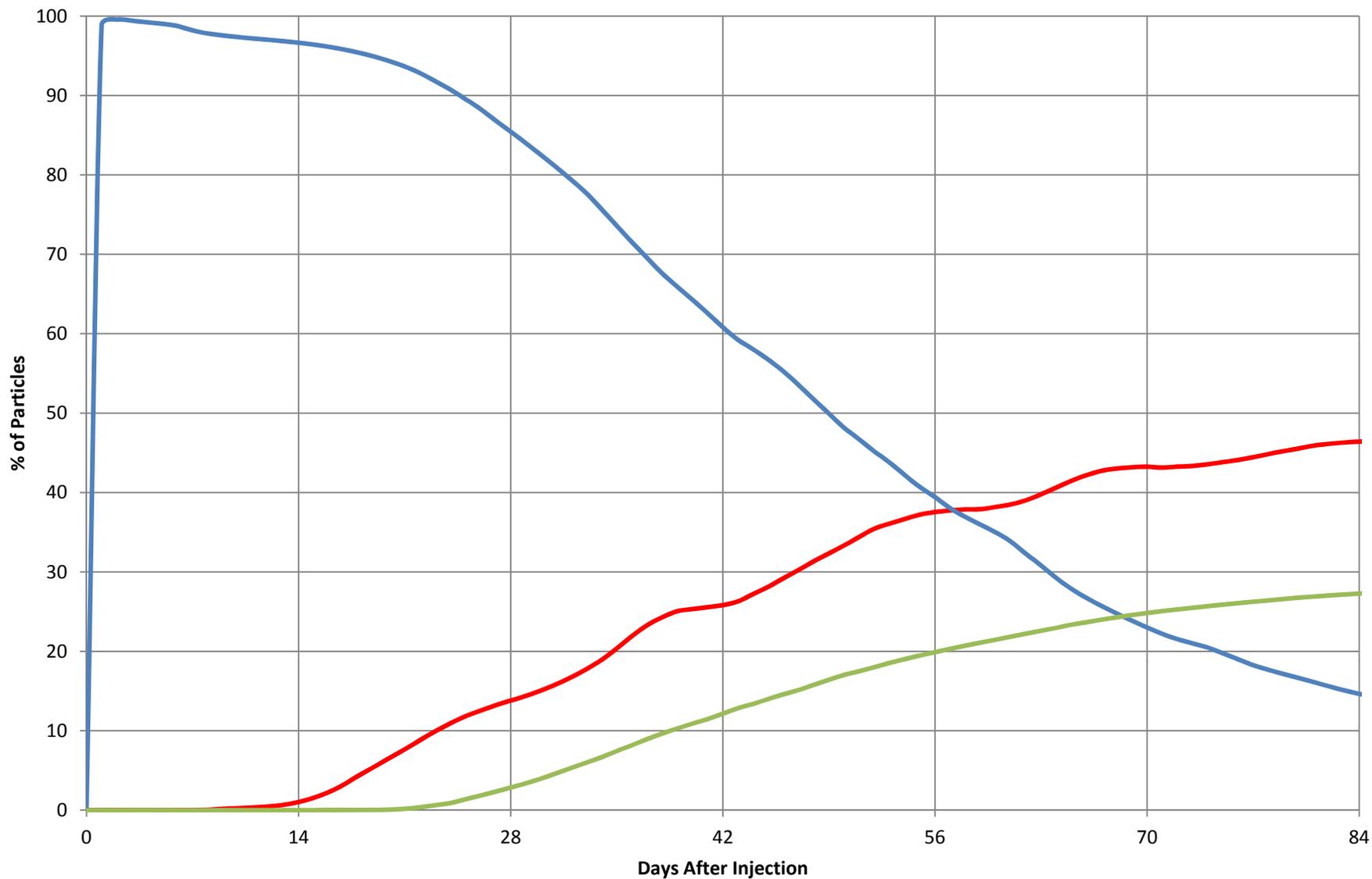


— Past Chipps — In Delta — At Projects

Scenario D

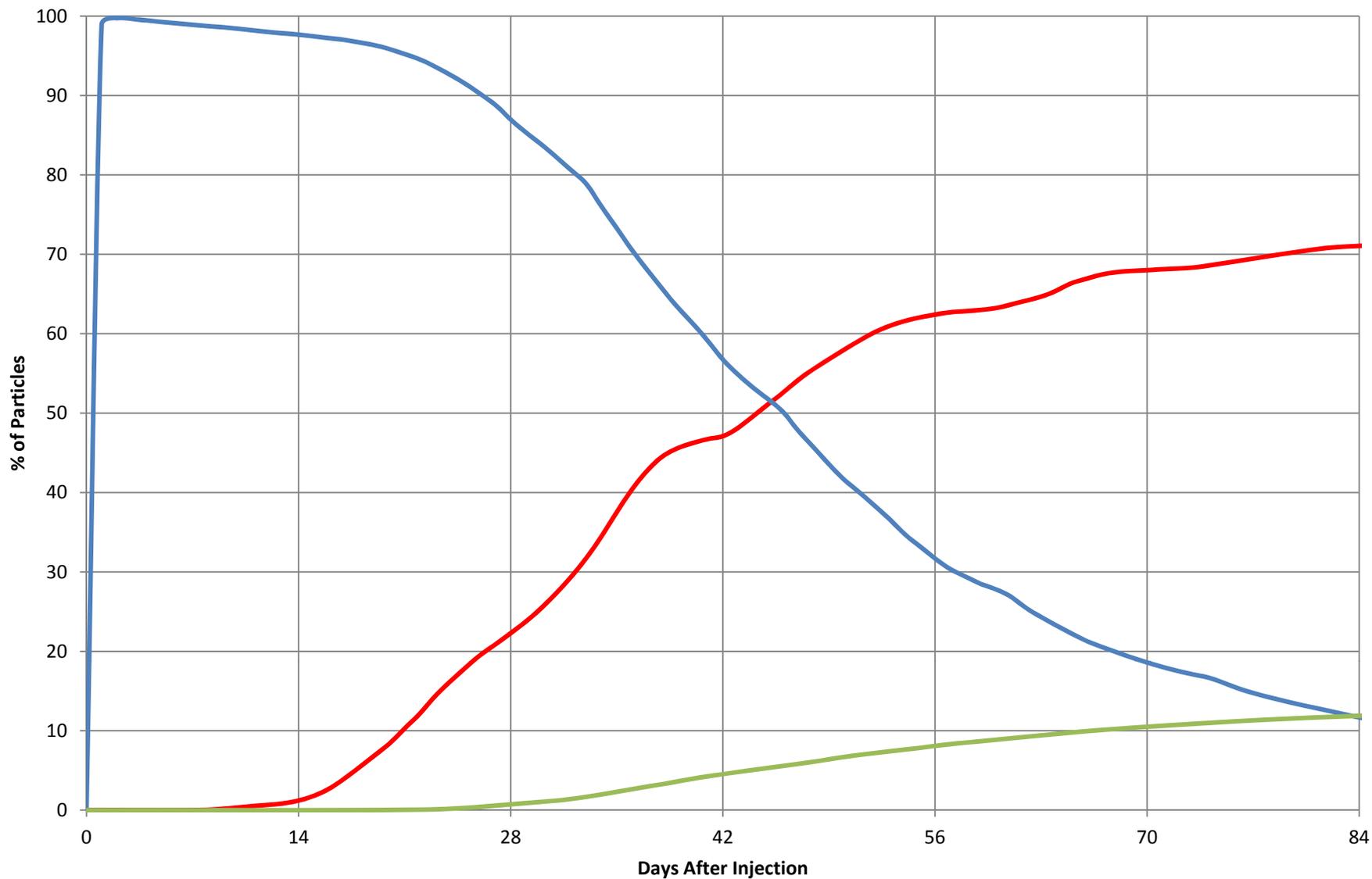


Scenario E



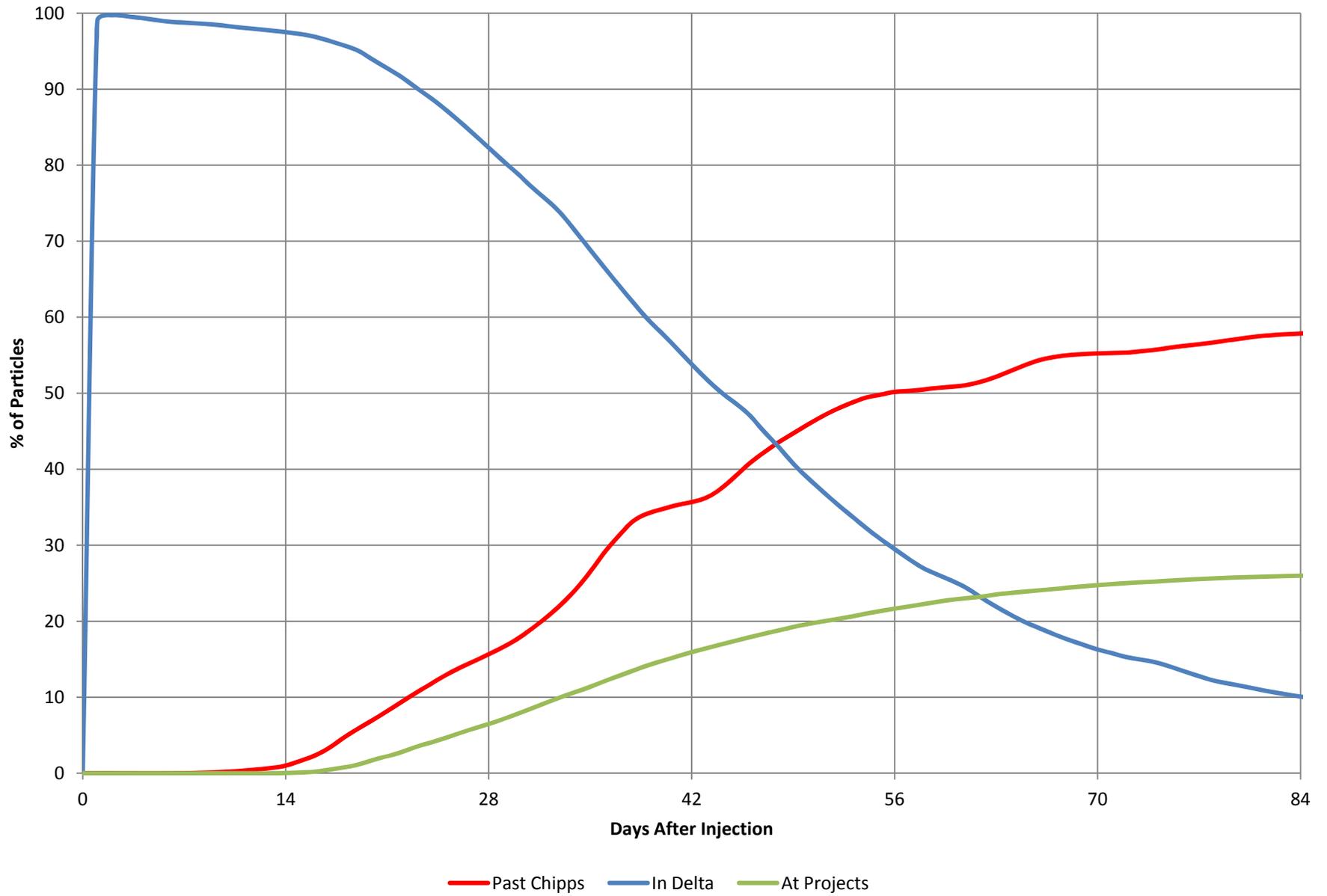
— Past Chipps — In Delta — At Projects

Scenario F

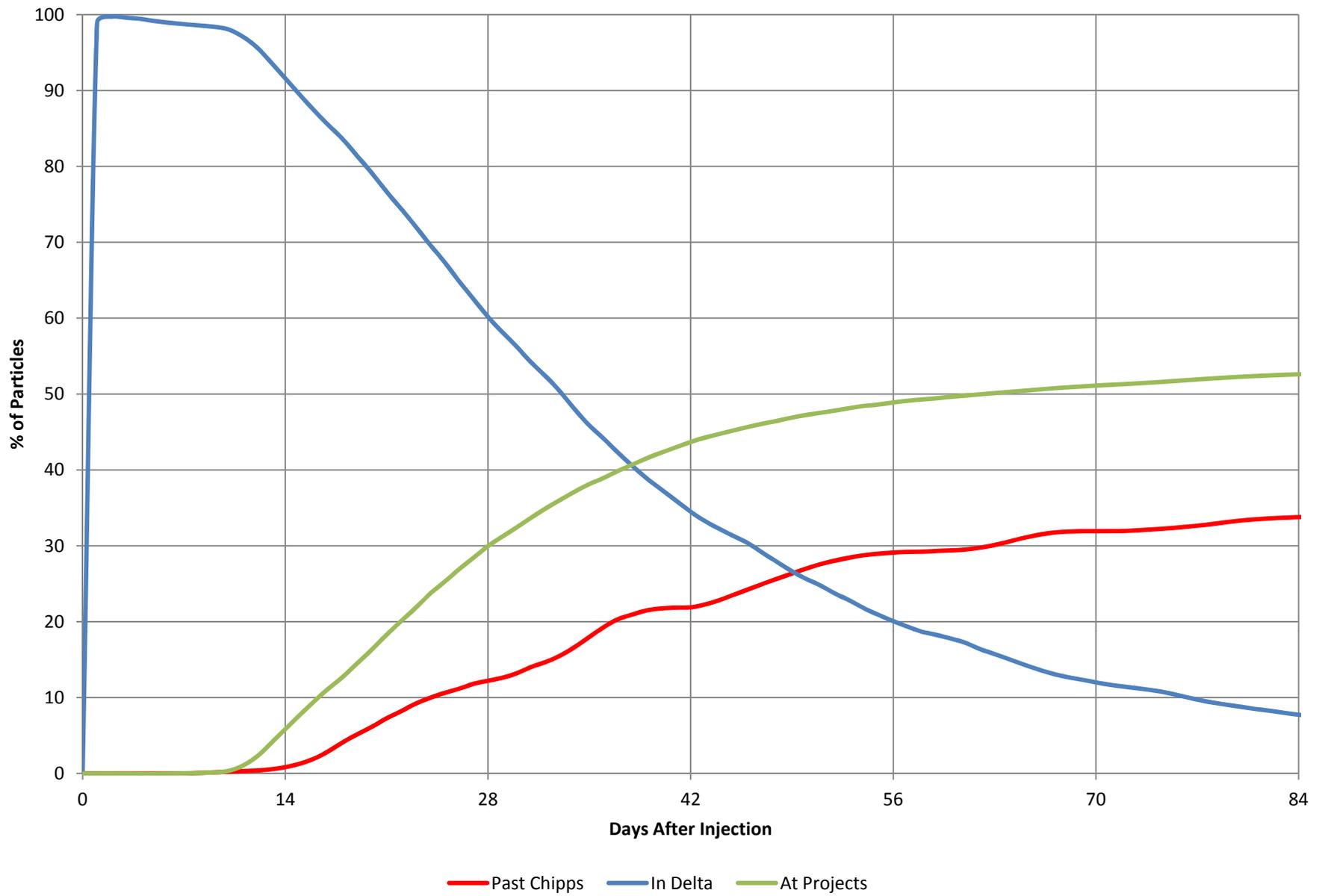


— Past Chipps — In Delta — At Projects

Scenario G



Scenario H

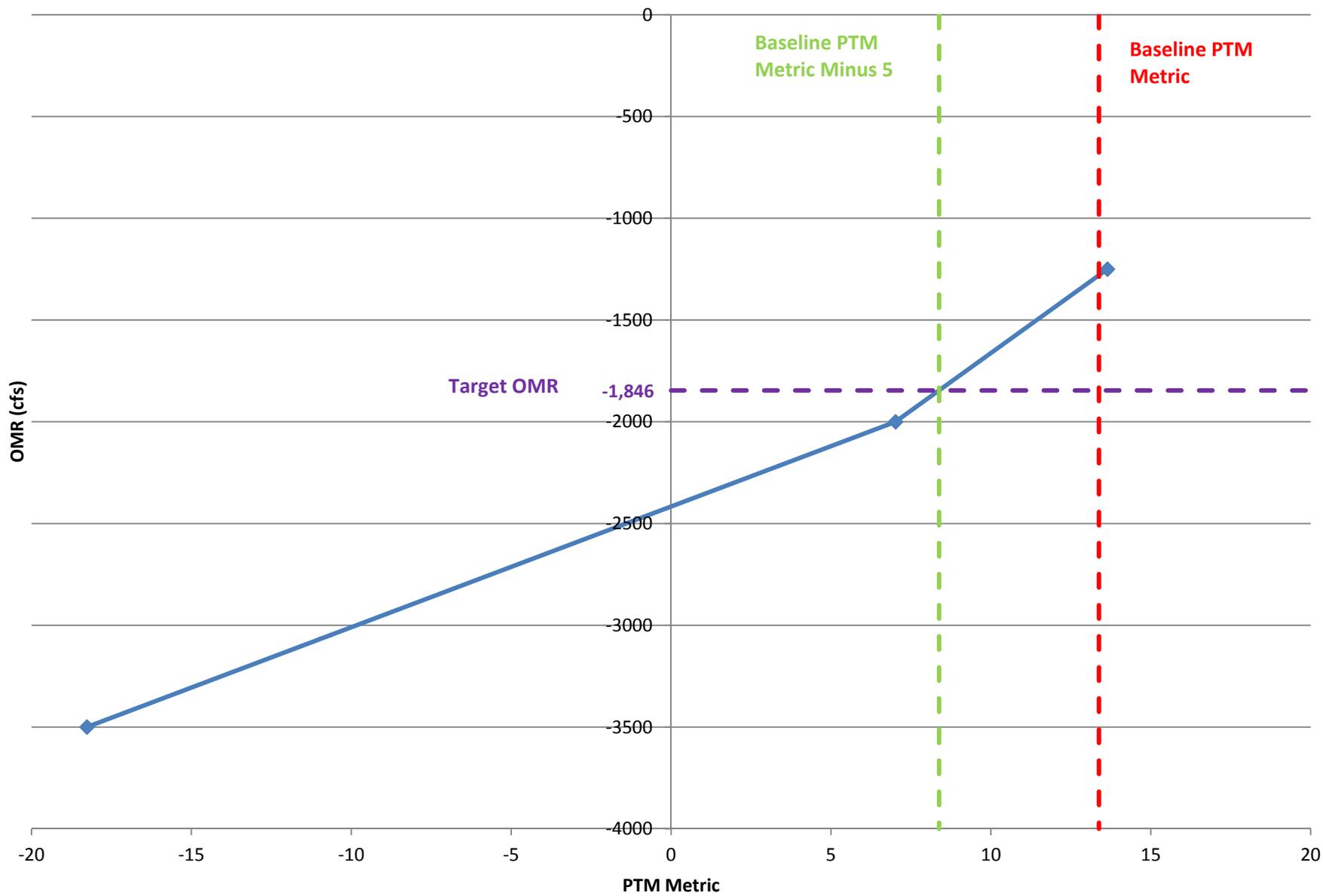


Result Summary

Scenario ID	% past Chipps at 28 days	% to CVP at 28 days	% to SWP at 28 days	PTM metric at 28 days
A	13	0	0	13
B	14	0	0	14
C	13	3	3	7
D	10	13	16	-18
E	14	1	2	11
F	22	1	0	22
G	16	4	3	9
H	12	15	15	-18

PTM metric = % past Chipps at 28 days - % to CVP at 28 days - % to SWP at 28 days

OMR Flows and PTM Metric with San Joaquin River at 1500 cfs



OMR Flows and PTM Metric with San Joaquin River at 2500 cfs

