UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

June 7, 2021

MEMORANDUM

TO: Enrique Manzanilla
Director, Superfund and Emergency Management Division

THROUGH: John Lyons JOHN LYONS Digitally signed by JOHN LYONS Date: 2021.06.16 18:02:58 -07'00'
Acting Deputy Director, Superfund and Emergency Management Division

John Chesnutt JOHN CHESNUTT Digitally signed by JOHN CHESNUTT Date: 2021.06.07 09:27:52 -07'00'
Section Manager, Pacific Islands & Federal Facilities Section

Loren Henning LOREN HENNING Digitally signed by LOREN HENNING Date: 2021.06.07 12:55:23 -07'00'
Section Manager, CERCLA Enforcement Section

FROM: Keith Olinger
Enforcement Officer, CERCLA Enforcement Section

SUBJECT: Findings Regarding Montrose Chemical Aerial Photograph Review (1947-1972)

The purpose of this Memorandum is to summarize research findings based on a review of aerial photographs taken during the 1947 – 1972 time period of Montrose Chemical Corporation of California's facility located in Torrance, California, as part of EPA's review of the company's former acid waste disposal practices.

Montrose Chemical Corporation of California, Inc. ("Montrose") operated a DDT manufacturing plant at 20201 Normandie Avenue, Torrance, CA from 1947 until 1982.

Background

EPA's Region 9 Superfund and Emergency Management Division ("SEMD") prepared a memorandum in April 2021 that summarized its initial research findings into evidence of Montrose's ocean disposal of acid waste by Montrose or its contractors. The findings were based primarily on a review of depositions of four former employees at Montrose's Torrance DDT manufacturing plant and the 1998 Remedial Investigation Report. The deponents described a process beginning in the late 1940s until the early 1960s in which Montrose contracted with a waste hauler to pump spent filtrate acid sludge from waste storage tanks at its facility into tanker trucks. The tanker trucks then drove to the Port of Los Angeles and pumped the waste acid into holding tanks on barges. These barges were towed to an "approved" ocean disposal site off the Southern California coast and the contents of the holding tanks on the barges were released directly into the ocean.

SEMD management subsequently requested an assessment of information maintained by EPA Region 9 to determine whether Montrose's Torrance facility may have actually stored acid waste from its DDT production process in 55-gallon drums during the late 1940s – early 1960s time period, rather than in bulk format as described by Montrose's former employees.

EPA reviewed the May 18, 1998 Final Remedial Investigation Report for the Montrose Superfund Site ("1998 RI"), aerial photographs of Montrose's Torrance facility from 1947 to 1972 available from the EPA Regional Records Center, and historical 104(e) information requests to, and responses submitted by, Montrose. This memorandum summarizes our findings.

Methodology

EPA's focus in conducting this research was to review Montrose's past acid waste production volume as described in the 1998 RI, calculate the footprint that the volume of reported waste it generated would have required at Montrose's Torrance facility had this waste been stored in 55-gallon drums, and then compare that estimated footprint to what is visible in the historical aerial photographs of the Torrance facility. EPA used the following assumptions when calculating the potential footprint that storing acid waste in 55-gallon barrels would have required:

- Montrose, on average, produced a volume of acid waste at roughly the same rate during the late 1940s – early 1960s time period as it did from 1968 to 1972, during which time period the 1998 RI documents reported that Montrose disposed of a total of approximately 6.5 million gallons of acid waste at the Stringfellow Acid Pits;
- Barrels would have been picked up for disposal once per week, but EPA also considered scenarios where Montrose's waste was picked up twice each week;
- Barrels containing waste product likely would not have been stacked for safety reasons, but EPA also considered scenarios where barrels containing waste product were stacked two-high;
- Montrose would need to keep a number of empty barrels on hand that were equal to at the least number of barrels that contained accumulated waste each week; and
- Empty barrels would be stacked two high.

EPA's review of the aerial photographs relied on the analysis previously conducted by EPA's Environmental Monitoring Systems Laboratory ("EMSL"), which has expertise in aerial photographic analysis. EMSL's scope of work included identifying features in the aerial photographs such as areas of 55-gallon barrel storage at the Montrose facility. EMSL analysis of aerial photographs for the nearby Del Amo Synthetic Rubber plant, by comparison, did identify areas of drum storage.[1] The aerial photographs reviewed by EMSL had labels identifying key facility features, if observed.

For the aerials collected that were not analyzed by EMSL, we conducted a visual analysis of the aerial photographs to determine if any of these aerial photographs showed possible drum storage areas at the Montrose's Torrance facility.

Finally, EPA reviewed historical 104(e) information requests and responses issued to and submitted by Montrose for any information about potential barrel storage at Montrose's Torrance facility.

[1] The Del Amo facility produced synthetic rubber during the 1943-1972 time period. While it is adjacent to Montrose's Torrance facility, it was operated separately by other companies, including Shell Oil Company and Dow Chemical Company. See https://cumulis.epa.gov/supercpad/SiteProfiles/index.cfm?fuseaction=second.Cleanup&id=0901293 for more information.

Summary of Findings

EMSL's Analysis

EPA's EMSL in Las Vegas, Nevada is one of EPA's 12 national research laboratories within the Office of Research and Development. Its mission is to develop, evaluate, and apply methods and systems for monitoring the environment. One of EMSL's main areas of expertise is in remote sensing through analyzing aerial photography (*see* EPA publication 600/M-91/011).

EPA reviewed 49 aerial photographs taken of Montrose's Torrance facility between 1947 and 1972 that had been previously analyzed by EMSL. Thirty of these aerial photographs were taken during the 1947-1961 time period. In 11 of these aerials, EMSL identified various specific features at Montrose's Torrance facility, including piles of gray to white-toned material, excavated areas, walled storage areas, solid waste areas, and an impoundment area with standing liquid. The smallest features EMSL identified in these aerials were approximately 15 feet wide.

EMSL did not identify any areas at the Torrance facility in any of the 49 aerial photographs that it analyzed that may have had drums or barrels present, as it did at the adjacent Del Amo facility (*see, e.g.,* SEMS DOC IDs 88041991 – 88041993).

Review of Montrose's Past Acid Waste Production Volume

The 1998 RI states that Montrose shipped a total of 6,485,200 gallons of recovered acid to the Stringfellow disposal site over a 5-year time period from January 1968 to November 1972 (pdf p. 50). At 55 gallons/barrel, that volume would fill a total of 117,913 barrels. Over a period of 256 weeks, that would result in 460 barrels worth of acid waste that Montrose would have produced each week, if it had stored its acid waste in 55-gallon barrels. A standard 55-gallon barrel is approximately 24" in diameter, so the footprint of a single barrel is essentially 2 ft. x 2 ft., or 4 ft^2.

Each week, Montrose's waste that would have accumulated in 460 barrels would have taken up a footprint of about 1,840 ft^2 if stored in a single layer. Empty barrels stacked two-high would, therefore, have had an additional footprint of 920 ft^2, for a total footprint of approximately 2,760 ft^2, or an area that is roughly 52 ft. x 52 ft.

As noted above, EPA considered a variety of scenarios for the purposes of calculating the potential footprint that storing acid waste in 55-gallon barrels would have required at the Torrance facility. For all of the scenarios, EPA assumed that Montrose would need to keep a number of empty barrels on hand that were equal to at least the number of barrels that contained accumulated waste, and empty barrels would be stacked two high. The following matrix contains the results of EPA's calculations:

	Waste picked up 1x/week	**Waste picked up 2x/week**
Full barrels not stacked	2,760 ft^2 (approx. 52 ft. x 52 ft.)	1,380 ft^2 (approx. 37 ft. x 37 ft.)
Full barrels stacked two high	1,840 ft^2 (approx. 43 ft. x 43 ft.)	920 ft^2 (approx. 30 ft. x 30 ft.)

Review of Other Aerial Photographs

EPA reviewed 40 additional aerial photographs of Montrose's Torrance facility, most of which were oblique aerials collected from the University of California, Santa Barbara, that do not include a scale for reference nor any labels of significant features. Twenty-seven of these aerial photographs were taken during the 1947-1961 time period. Most of the aerials were taken at too high of an elevation, or the image quality was too low to discern many specific facility features. In addition, due to the oblique nature of these aerial photographs, we were unable to view parts of Montrose's Torrance facility that were blocked by other features. For the parts of the Torrance facility that were visible, EPA did not identify any areas that appeared to have had drums or barrels present in the 40 additional aerial photographs that were not analyzed by EMSL. See Appendix A for an index of all aerial photographs reviewed, including the subset previously reviewed and labeled by EMSL.

Review of 104(e) Requests and Responses

EPA also reviewed all historical 104(e) requests issued to, and responses submitted by, Montrose to determine if EPA ever explicitly asked Montrose about the use of barrels for waste storage, or if Montrose provided any information to EPA indicating that it stored its acid waste in barrels. EPA did not find any 104(e) requests that specifically asked about barrel storage, nor that Montrose provided any such information in its responses to EPA.

Conclusion

EPA's April Memorandum assessed and summarized information indicating that Montrose waste acid was managed in bulk, and that Montrose stored acid waste at its Torrance facility in large storage tanks that were periodically transferred to tanker trucks for ocean disposal from holding tanks in barges. In this Memorandum, EPA also assessed additional information, particularly aerial photographs, to add to its understanding of whether barrels or drums were present at the Montrose plant. We found no evidence of such barrel storage in the aerial photographs or 104(e) responses.

EPA estimates that Montrose would have needed a space of anywhere from 920 ft^2 to 2,760 ft^2 at its Torrance facility for the storage of acid waste in 55-gallon barrels, a footprint that would have been clearly visible to EMSL staff that analyzed historical aerial photographs taken of Montrose's Torrance facility during the 1947-1972 time period. EMLS, however, did not identify any areas of barrel storage at the Torrance facility. EPA also was unable to identify any potential areas of barrel storage at Montrose's Torrance facility as part of a review of 40 additional aerial photographs of Montrose's Torrance facility that EMSL had not previously analyzed. Finally, EPA did not find any historical 104(e) requests sent to Montrose that specifically asked about barrel storage, nor that Montrose provided any such information in its responses to EPA.

References

Date	Title	SEMS Doc ID
12/23/1982	EPA 104(e) Information Request to Montrose Chemical Corporation of California	88046808
3/15/1990	Response to NOAA 104(e) Information Request from Montrose Chemical Corporation of California	88039013
April 1991	The Environmental Monitoring Systems Laboratory – Las Vegas Fact Sheet	EPA publication 600/M-91/011
2/4/1993	Response to EPA 104(e) Information Request from Montrose Chemical Corporation of California	88039018
5/18/1998	Final Remedial Investigation Report for the Montrose Superfund Site, Volume 1	88043311
11/4/1998	EPA 104(e) Information Request to Montrose Chemical Corporation of California	88043702
12/10/1998	Response to EPA 104(e) Information Request from Montrose Chemical Corporation of California	88051897
See Appendix A for an index of aerial photographs reviewed		

Attachment A:
Index of Aerial Photographs Reviewed of Montrose's Torrance Facility

Appendix A: Index of Aerials Reviewed

SEMS ID	PDF Page No.	Date	Desciption	Author
1114695	2	1/1/1961	Aerial Photos (4): Trico property, b&w, w/marginalia	Unknown
1114695	4	1/1/1961	Aerial Photos (4): Trico property, b&w, w/marginalia	Unknown
2080292	1	6/17/1947	Oversize Aerial Photo: Residential fill definition, frame #85, 20 x 24 in, b&w, 1 in = 394 ft	Unknown
2080293	1	8/30/1947	Oversize Aerial Photo: Residential fill definition, frame #28, 20 x 24 in, b&w, 1 in = 400 ft	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
2080294	1	12/4/1952	Oversize Aerial Photo: Residential fill definition, frame #157, 20 x 24 in, b&w, 1 in = 371 ft, w/marginalia	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
2080295	1	5/8/1953	Oversize Aerial Photo: Residential fill definition, frame #6-28, 20 in x 24 in, b&w, scale 1 in = 397 ft	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
2080296	1	12/18/1954	Oversize Aerial Photo: Residential fill definition, frame #20, 20 x 24 in, b&w, 1 in = 388 ft	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
2080297	1	4/5/1956	Oversize Aerial Photo: Residential fill definition, frame #35, 20 x 24 in, b&w, 1 in = 385 ft	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
2080298	1	8/13/1956	Oversize Aerial Photo: Residential fill definition, frame #26, 20 x 24 in, b&w, 1 in = 371 ft	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
2080299	1	3/23/1957	Oversize Aerial Photo: Residential fill definition, frame #283, 20 x 24 in, b&w, 1 in = 372 ft	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
2080300	1	1/17/1958	Oversize Aerial Photo: Residential fill definition, frame #63, 20 x 24 in, b&w, 1 in = 408 ft	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
2080301	1	5/8/1960	Oversize Aerial Photo: Residential fill definition, frame #592, 20 x 24 in, b&w, 1 in = 349 ft	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
2080302	1	8/10/1962	Oversize Aerial Photo: Residential fill definition, frame #17, 20 x 24 in, b&w, 1 in = 337 ft	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
2080303	1	2/28/1963	Oversize Aerial Photo: Residential fill definition, frame #86, 20 x 24 in, b&w, 1 in = 402 ft	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
2080304	1	9/25/1965	Oversize Aerial Photo: Residential fill definition, frame #360, 20 x 24 in, b&w, 1 in = 378 ft	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
2246044	2	2/28/1963	Aerial Photos (14): Photocopies of historical photos dated 3/6/41-2/28/63, b&w, various scales (approx 1 in = 350 ft)	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
2246044	3	2/28/1963	Aerial Photos (14): Photocopies of historical photos dated 3/6/41-2/28/63, b&w, various scales (approx 1 in = 350 ft)	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
2246044	4	2/28/1963	Aerial Photos (14): Photocopies of historical photos dated 3/6/41-2/28/63, b&w, various scales (approx 1 in = 350 ft)	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
2246044	5	2/28/1963	Aerial Photos (14): Photocopies of historical photos dated 3/6/41-2/28/63, b&w, various scales (approx 1 in = 350 ft)	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
2246044	7	2/28/1963	Aerial Photos (14): Photocopies of historical photos dated 3/6/41-2/28/63, b&w, various scales (approx 1 in = 350 ft)	Environmental Protection Agency - Environmental Monitoring Systems Laboratory

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SEMS ID	PDF Page No.	Date	Desciption	Author
2246044	11	2/28/1963	Aerial Photos (14): Photocopies of historical photos dated 3/6/41-2/28/63, b&w, various scales (approx 1 in = 350 ft)	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
2246044	12	2/28/1963	Aerial Photos (14): Photocopies of historical photos dated 3/6/41-2/28/63, b&w, various scales (approx 1 in = 350 ft)	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88038830	1	7/15/1956	Aerial Photo: Negative of site conditions, structures & materials (Fig 20), 10 x 10 in, b&w, scale 1 in = 325 ft, w/overlay	Unknown
88038831	1	9/22/1965	Aerial Photo: Negative of site conditions, structures & materials (Fig 21), 10 x 10 in, b&w, scale 1 in = 410 ft, w/overlay	Unknown
88038874	16	6/22/1961	Aerial Photos (70): 8 x 10 in, b&w, oblique photographs fr Pacific Air Industries Collection at Univ of CA, Santa Barbara, 9/10/49-6/22/61, w/index	R09: (Univ of California, Santa Barbara)
88038874	24	6/22/1961	Aerial Photos (70): 8 x 10 in, b&w, oblique photographs fr Pacific Air Industries Collection at Univ of CA, Santa Barbara, 9/10/49-6/22/61, w/index	R09: (Univ of California, Santa Barbara)
88038874	26	6/22/1961	Aerial Photos (70): 8 x 10 in, b&w, oblique photographs fr Pacific Air Industries Collection at Univ of CA, Santa Barbara, 9/10/49-6/22/61, w/index	R09: (Univ of California, Santa Barbara)
88038874	30	6/22/1961	Aerial Photos (70): 8 x 10 in, b&w, oblique photographs fr Pacific Air Industries Collection at Univ of CA, Santa Barbara, 9/10/49-6/22/61, w/index	R09: (Univ of California, Santa Barbara)
88038874	32	6/22/1961	Aerial Photos (70): 8 x 10 in, b&w, oblique photographs fr Pacific Air Industries Collection at Univ of CA, Santa Barbara, 9/10/49-6/22/61, w/index	R09: (Univ of California, Santa Barbara)
88038874	36	6/22/1961	Aerial Photos (70): 8 x 10 in, b&w, oblique photographs fr Pacific Air Industries Collection at Univ of CA, Santa Barbara, 9/10/49-6/22/61, w/index	R09: (Univ of California, Santa Barbara)
88038874	38	6/22/1961	Aerial Photos (70): 8 x 10 in, b&w, oblique photographs fr Pacific Air Industries Collection at Univ of CA, Santa Barbara, 9/10/49-6/22/61, w/index	R09: (Univ of California, Santa Barbara)
88038874	44	6/22/1961	Aerial Photos (70): 8 x 10 in, b&w, oblique photographs fr Pacific Air Industries Collection at Univ of CA, Santa Barbara, 9/10/49-6/22/61, w/index	R09: (Univ of California, Santa Barbara)
88038874	48	6/22/1961	Aerial Photos (70): 8 x 10 in, b&w, oblique photographs fr Pacific Air Industries Collection at Univ of CA, Santa Barbara, 9/10/49-6/22/61, w/index	R09: (Univ of California, Santa Barbara)

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SEMS ID	PDF Page No.	Date	Desciption	Author
88038874	54	6/22/1961	Aerial Photos (70): 8 x 10 in, b&w, oblique photographs fr Pacific Air Industries Collection at Univ of CA, Santa Barbara, 9/10/49-6/22/61, w/index	R09: (Univ of California, Santa Barbara)
88038874	62	6/22/1961	Aerial Photos (70): 8 x 10 in, b&w, oblique photographs fr Pacific Air Industries Collection at Univ of CA, Santa Barbara, 9/10/49-6/22/61, w/index	R09: (Univ of California, Santa Barbara)
88038874	64	6/22/1961	Aerial Photos (70): 8 x 10 in, b&w, oblique photographs fr Pacific Air Industries Collection at Univ of CA, Santa Barbara, 9/10/49-6/22/61, w/index	R09: (Univ of California, Santa Barbara)
88038874	70	6/22/1961	Aerial Photos (70): 8 x 10 in, b&w, oblique photographs fr Pacific Air Industries Collection at Univ of CA, Santa Barbara, 9/10/49-6/22/61, w/index	R09: (Univ of California, Santa Barbara)
88038874	96	6/22/1961	Aerial Photos (70): 8 x 10 in, b&w, oblique photographs fr Pacific Air Industries Collection at Univ of CA, Santa Barbara, 9/10/49-6/22/61, w/index	R09: (Univ of California, Santa Barbara)
88038874	102	6/22/1961	Aerial Photos (70): 8 x 10 in, b&w, oblique photographs fr Pacific Air Industries Collection at Univ of CA, Santa Barbara, 9/10/49-6/22/61, w/index	R09: (Univ of California, Santa Barbara)
88038874	104	6/22/1961	Aerial Photos (70): 8 x 10 in, b&w, oblique photographs fr Pacific Air Industries Collection at Univ of CA, Santa Barbara, 9/10/49-6/22/61, w/index	R09: (Univ of California, Santa Barbara)
88038874	106	6/22/1961	Aerial Photos (70): 8 x 10 in, b&w, oblique photographs fr Pacific Air Industries Collection at Univ of CA, Santa Barbara, 9/10/49-6/22/61, w/index	R09: (Univ of California, Santa Barbara)
88038874	108	6/22/1961	Aerial Photos (70): 8 x 10 in, b&w, oblique photographs fr Pacific Air Industries Collection at Univ of CA, Santa Barbara, 9/10/49-6/22/61, w/index	R09: (Univ of California, Santa Barbara)
88038874	122	6/22/1961	Aerial Photos (70): 8 x 10 in, b&w, oblique photographs fr Pacific Air Industries Collection at Univ of CA, Santa Barbara, 9/10/49-6/22/61, w/index	R09: (Univ of California, Santa Barbara)
88038874	124	6/22/1961	Aerial Photos (70): 8 x 10 in, b&w, oblique photographs fr Pacific Air Industries Collection at Univ of CA, Santa Barbara, 9/10/49-6/22/61, w/index	R09: (Univ of California, Santa Barbara)
88038874	126	6/22/1961	Aerial Photos (70): 8 x 10 in, b&w, oblique photographs fr Pacific Air Industries Collection at Univ of CA, Santa Barbara, 9/10/49-6/22/61, w/index	R09: (Univ of California, Santa Barbara)

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SEMS ID	PDF Page No.	Date	Desciption	Author
88038874	142	6/22/1961	Aerial Photos (70): 8 x 10 in, b&w, oblique photographs fr Pacific Air Industries Collection at Univ of CA, Santa Barbara, 9/10/49-6/22/61, w/index	R09: (Univ of California, Santa Barbara)
88040971	1	6/17/1947	Oversize Aerial Photo: Site excavation & material piles, 20 x 24 in, b&w, 1 in = 202 ft, w/overlay	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88040972	1	6/17/1947	Oversize Aerial Photo: Site drainage, rail line, excavation, & mounded material, 20 in x 24 in, b&w, 1 in = 394 ft, w/overlay	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88040973	1	8/30/1947	Oversize Aerial Photo: Site drainage, rail line, excavation & mounded material, 20 x 24 in, b&w, 1 in = 400 ft, w/overlay	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88040974	1	12/4/1952	Oversize Aerial Photo: Residential fill definition, 20 x 24 in, b&w, 1 in = 371 ft, w/overlay	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88040975	1	5/8/1953	Oversize Aerial Photo: Site excavation & piles of material, 20 x 24 in, b&w, 1 in = 251 ft, w/overlay	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88040976	1	5/8/1953	Oversize Aerial Photo: Residential fill definition, 20 x 24 in, b&w, 1 in = 397 ft, w/overlay	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88040977	1	12/18/1954	Oversize Aerial Photo: Site excavation & piles of material, 20 x 24 in, b&w, 1 in = 199 ft, w/overlay	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88040978	1	12/18/1954	Oversize Aerial Photo: Residential fill definition, 20 x 24 in, b&w, 1 in = 388 ft, w/overlay	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88040979	1	8/13/1956	Oversize Aerial Photo: Site excavation & piles of materials, 20 x 24 in, b&w, 1 in = 122 ft, w/overlay	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88040980	1	8/13/1956	Oversize Aerial Photo: Residential fill definition, 20 x 24 in, b&w, 1 in = 371 ft, w/overlay	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88040981	1	1/17/1958	Oversize Aerial Photo: Residential fill definition, 20 x 24 in, b&w, 1 in = 408 ft, w/overlay	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88040982	1	1/17/1958	Oversize Aerial Photo: Site excavation & piles of material, 20 x 24 in, b&w, 1 in = 319 ft, w/overlay	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88040983	1	5/8/1960	Oversize Aerial Photo: Site excavation & piles of material, 20 x 24 in, b&w, 1 in = 117 ft, w/overlay	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88040984	1	5/8/1960	Oversize Aerial Photo: Residential fill definition, 20 x 24 in, b&w, 1 in = 349 ft, w/overlay	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88040985	1	8/10/1962	Oversize Aerial Photo: Site excavation & piles of material, 20 x 24 in, b&w, 1 in = 147 ft, w/overlay	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88040986	1	8/10/1962	Oversize Aerial Photo: Residential fill definition, 20 x 24 in, b&w, 1 in = 337 ft, w/overlay	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88040987	1	2/28/1963	Oversize Aerial Photo: Residential fill definition, 20 x 24 in, b&w, 1 in = 402 ft, w/overlay	Environmental Protection Agency - Environmental Monitoring Systems Laboratory

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SEMS ID	PDF Page No.	Date	Desciption	Author
88040988	1	9/25/1965	Oversize Aerial Photo: Site excavation & piles of material, 20 x 24 in, b&w, 1 in = 194 ft, w/overlay	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88040989	1	9/25/1965	Oversize Aerial Photo: Residential fill definition, 20 x 24 in, b&w, 1 in = 378 ft, w/overlay	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88040990	1	10/30/1972	Oversize Aerial Photo: Site berm/dike & piles of material, 20 x 24 in, b&w, 1 in = 247 ft, w/overlay	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88040992	1	2/28/1963	Oversize Aerial Photo: Site excavation & piles of materials, 20 x 24 in, b&w, 1 in = 248 ft, w/overlay	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88041991	1	4/5/1956	Oversize Aerial Photo: Del Amo, 20 x 24 in, b&w, 1 in = 310 ft, frame #1-36, w/overlay	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88041992	1	10/11/1971	Oversize Aerial Photo: Del Amo, 20 x 24 in, b&w, 1 in = 320 ft, frame #3, w/overlay	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88041993	1	10/3/1972	Oversize Aerial Photo: Del Amo, 20 x 24 in, b&w, 1 in = 325 ft, frame #3-103, w/overlay	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88042287	1	1/1/1956	Oversize Aerial Photo: Montrose Chemical Corp, 20 x 24 in, b&w	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88042438	2	9/9/1963	Aerial photos: 12 b&w photocopies, Spence Collection showing Torrance area, Kenwood drain, 1/6/46-9/9/63, w/TL to J Dhont fr R Weaver, 1/23/96	R09: (Hart Crowser, Inc)
88042438	3	9/9/1963	Aerial photos: 12 b&w photocopies, Spence Collection showing Torrance area, Kenwood drain, 1/6/46-9/9/63, w/TL to J Dhont fr R Weaver, 1/23/96	R09: (Hart Crowser, Inc)
88042438	4	9/9/1963	Aerial photos: 12 b&w photocopies, Spence Collection showing Torrance area, Kenwood drain, 1/6/46-9/9/63, w/TL to J Dhont fr R Weaver, 1/23/96	R09: (Hart Crowser, Inc)
88042438	5	9/9/1963	Aerial photos: 12 b&w photocopies, Spence Collection showing Torrance area, Kenwood drain, 1/6/46-9/9/63, w/TL to J Dhont fr R Weaver, 1/23/96	R09: (Hart Crowser, Inc)
88042438	6	9/9/1963	Aerial photos: 12 b&w photocopies, Spence Collection showing Torrance area, Kenwood drain, 1/6/46-9/9/63, w/TL to J Dhont fr R Weaver, 1/23/96	R09: (Hart Crowser, Inc)
88042438	7	9/9/1963	Aerial photos: 12 b&w photocopies, Spence Collection showing Torrance area, Kenwood drain, 1/6/46-9/9/63, w/TL to J Dhont fr R Weaver, 1/23/96	R09: (Hart Crowser, Inc)
88042438	8	9/9/1963	Aerial photos: 12 b&w photocopies, Spence Collection showing Torrance area, Kenwood drain, 1/6/46-9/9/63, w/TL to J Dhont fr R Weaver, 1/23/96	R09: (Hart Crowser, Inc)

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88042438	9	9/9/1963	Aerial photos: 12 b&w photocopies, Spence Collection showing Torrance area, Kenwood drain, 1/6/46-9/9/63, w/TL to J Dhont fr R Weaver, 1/23/96	R09: (Hart Crowser, Inc)
88042438	10	9/9/1963	Aerial photos: 12 b&w photocopies, Spence Collection showing Torrance area, Kenwood drain, 1/6/46-9/9/63, w/TL to J Dhont fr R Weaver, 1/23/96	R09: (Hart Crowser, Inc)
88042438	11	9/9/1963	Aerial photos: 12 b&w photocopies, Spence Collection showing Torrance area, Kenwood drain, 1/6/46-9/9/63, w/TL to J Dhont fr R Weaver, 1/23/96	R09: (Hart Crowser, Inc)
88042438	12	9/9/1963	Aerial photos: 12 b&w photocopies, Spence Collection showing Torrance area, Kenwood drain, 1/6/46-9/9/63, w/TL to J Dhont fr R Weaver, 1/23/96	R09: (Hart Crowser, Inc)
88042438	13	9/9/1963	Aerial photos: 12 b&w photocopies, Spence Collection showing Torrance area, Kenwood drain, 1/6/46-9/9/63, w/TL to J Dhont fr R Weaver, 1/23/96	R09: (Hart Crowser, Inc)
88043511	1	12/4/1952	Oversize Aerial Photo: Site excavation & piles of material, 20 x 24 in, b&w, scale 1 in = 164 ft, w/overlay	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88046539	1	6/17/1947	Oversize Aerial Photo: Del Amo, 20 x 24 in, b&w, 1 in = 290 ft, frame #7-85, w/overlay	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88046540	1	8/30/1947	Oversize Aerial Photo: Del Amo, 20 x 24 in, b&w, 1 in = 400 ft, frame #5-29, w/overlay	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88046541	1	5/8/1953	Oversize Aerial Photo: Del Amo, 20 x 24 in, b&w, 1 in = 290 ft, frame #6-28, w/overlay	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88046542	1	12/18/1954	Oversize Aerial Photo: Del Amo, 20 x 24 in, b&w, 1 in = 280 ft, frame #20, w/overlay	Environmental Protection Agency - Environmental Monitoring Systems Laboratory
88049845	1 and 2	11/16/1954	Aerial Photos: McDonnell Douglas B-6 plant area, w/receipt & marginalia	R09: (Univ of California, Santa Barbara - Map & Imagery Laboratory-Library)