



California Regional Water Quality Control Board San Diego Region



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CERTIFIED RETURN RECEIPT REQUESTED
7009 0080 0000 7308 0332

May 21, 2009

Mr. Greg Salo
Environmental Health & Safety Manager
Signet Armorlite, Inc.
1001 Armorlite Drive
San Marcos, California 92069

In reply refer to:
2091500: Iberlad

Dear Mr. Salo:

**SUBJECT: NOTICE OF VIOLATION NO. R9-2009-0083 AND COMMENTS ON
"PHASE 2 WORKPLAN FOR SOIL AND GROUNDWATER
INVESTIGATION, SIGNET ARMORLITE SITE, SAN MARCOS,
CALIFORNIA"**

Enclosed is **Notice of Violation No. R9-2009-0083 (NOV)** for the Signet Armorlite facility located at 1001 Armorlite Drive, San Marcos, California (Site).¹ Directive A of Investigative Order No. R9-2009-0015 (Order) required Signet Armorlite, Inc. (Signet) to submit a Comprehensive Soil and Groundwater Investigation Workplan to the California Regional Water Quality Control Board, San Diego Region (Regional Board) by February 27, 2009.

Pursuant to the Order Signet submitted the following documents.

<i>Document Title</i>	<i>Date Submitted</i>
Letter, "Phased Assessment, Signet Armorlite site"	January 21, 2009
Workplan for Soil and Groundwater Investigation (Phase I Workplan)	February 27, 2009
Phase 2 Workplan for Soil and Groundwater Investigation (Phase 2 Workplan)	April 2, 2009
Transmittal of Laboratory and Field Data Related to Soil and Groundwater Investigation	April 17, 2009

¹ The "Site" includes not only the Signet facility and the environmental media affected by the releases, but the full horizontal and vertical extent of the plume(s) of contamination discharged from the facility, according to California Water Code section 13304, and State Water Resources Control Board Resolution No. 92-49.

The Regional Board identified the violations cited in the NOV upon review of the submitted documents. The identified violations are listed in the enclosed NOV and discussed below.

1. Directive A: Signet failed to submit an adequate Comprehensive Soil and Groundwater Investigation Workplan by February 27, 2009.

Directive A required Signet to submit, no later than February 21, 2009, a Comprehensive Soil and Groundwater Investigation Workplan *"that includes sufficient scope to determine the vertical and lateral extent of contamination and to fulfill the data requirements for a Site Investigation and Characterization Report and Corrective Action Plan"* as described in Directive B of the Order. The documents comprising the Comprehensive Soil and Groundwater Workplan were received by the Regional Board on January 21, 2009, February 27, 2009, April 2, 2009, and April 17, 2009.

Not only did Signet fail to meet the February 27, 2009 deadline for submission of the Workplan, the cumulative documents submitted by Signet failed to adequately describe a scope of work that will meet the requirements of Directives A and C as described below. The fact that Signet failed to submit an acceptable Workplan by the date stated in Directive A is acknowledged in the Phase 1 Workplan which was received on February 27, 2009. The Phase 1 Workplan states (page 36), *"following completion of the Phase 1 Investigation described above, additional assessment designed to fulfill the requirements of the Investigative Order will be described in a Workplan Addendum to be submitted to the RWQCB [bold added for emphasis]."*

2. Directive A.4: Signet failed to adequately describe a scope of work to define the Freon-113 plume.

Directive A.4 required Signet to provide a scope of work to adequately define the horizontal and vertical extent of the Freon-113 plume. Signet failed to meet this requirement for the following reasons.

- a. Directive A.4 specifically requires Signet to sample off-site wells south of the Site. The Phase 1 Workplan and the Phase 2 Workplan failed to include sampling of the off-site wells as part of the investigative work.
- b. The Phase 1 Workplan proposed the use of temporary wells for additional delineation of the Freon-113 plume. The results of groundwater samples collected from these wells were included in the Phase 2 Workplan and served as one of the reasons for not proposing any additional work to

define the southern, off-site, extent of the Freon-113 plume. For the following reasons this is not an adequate approach to define the horizontal and vertical extent of the Freon-113 plume.

- i. One-time sampling methods are best used for reconnaissance sampling to help guide the design of a groundwater monitoring network. Because the initial sampling results frequently differ from later sampling results, permanent wells are typically needed to verify the results of the initial sampling.
 - ii. The temporary wells are screened in different intervals than the existing wells, as compared to the water table. Therefore it is not clear if the analytical data from groundwater samples collected from the temporary wells could be comparable to data from the permanent wells.
3. **Directive E.5: Signet failed to include complete laboratory analytical reports in the Phase 2 Workplan which included new analytical data.**

Directive E.5 states, "Any report² presenting new analytical data is required to include the complete laboratory analytical report(s)." The Phase 2 Workplan presented new analytical data but did not include the corresponding laboratory data in violation of Directive E.5. The missing laboratory reports were received by the Regional Board on April 17, 2009.

In addition to the above discussion identifying violations, the Regional Board has the following comments on the Phase 2 Workplan:

1. The Phased Workplan approach has delayed the completion of the site assessment. One Revised Comprehensive Soil and Groundwater Investigation Workplan (Revised Workplan) must be submitted. Due to existing data gaps it may be difficult to design a comprehensive workplan until additional data is obtained. However, rather than continuing the piecemeal approach of submitting phased workplans Signet should design a scope of work that includes contingencies, such as "step-out wells" to address unknown conditions.
2. One-time groundwater sampling methods are primarily reconnaissance tools to guide the design of a groundwater monitoring network. The installation of permanent groundwater monitoring wells are necessary to confirm the data obtained using one-time groundwater sampling methods and to evaluate

² The term report is broadly defined to include all submittals to the Regional Board including, but not limited to, reports, workplans, engineering reports, and letters.

seasonal changes, normal variation, and changes due to the chemical migration.

3. The Updated Site Conceptual Model must include information regarding the chemicals of concern in soil and soil vapor. Soil and soil vapor are part of a source area that could result in impacts to groundwater and site occupants. In order to verify completion of corrective action it will be necessary to demonstrate that the remaining mass of the chemicals of concern will not impact groundwater or pose a potential risk to building occupants.
4. The Updated Site Conceptual Model must include an interpretation and analysis of the increasing concentration trend of Freon-113, 1,1-DCE, 1,1,1-TCA, and 1,4-dioxane. The Phase 2 Workplan states, "*Freon 113 was detected at a maximum concentration of 2,300 ug/L in monitor well MPE-3, representing an increase above the historical high concentration for this well of 1,800 ug/L.*" The data suggest increasing trends not only in Freon-113, but also in 1,1,-DCE, 1,1,1-TCA, and in 1,4-dioxane. The Updated Site Conceptual Model must discuss the increasing concentration trends for Freon-113 and other contaminants in MPE-3 and add deep zone hydrographs showing the upward trend in 1-4-dioxane. Trend analyses must also be included for shallow wells P2, P3, and P4.
5. As required by the Order the delineation of the Freon-113 plume must include sampling of the off-site wells to the south of the Site. To obtain comparable data to evaluate the full extent of the Freon-113 plume samples from both on-site and off-site wells should be collected concurrently, using similar sampling methods, and the samples analyzed by the same laboratory. Additionally, in order to properly interpret groundwater elevation and flow direction the wells should be surveyed to a common base line. The Revised Workplan should include the procedures to be used to sample the off-site wells.
6. The Phase 2 Workplan is incomplete because it did not include necessary support documentation. The Phase 2 Workplan did not include support documentation such as laboratory reports, groundwater monitoring forms, and soil boring logs. This documentation is needed to fully evaluate the data and therefore fully evaluate the scope of work outlined in the Phase 2 Workplan. This information **must** be included in the Revised Workplan.
7. The conclusion that "no further off-property assessment of Freon 113 in groundwater is warranted" is not supported by the existing data. The assessment of Freon-113 in groundwater must continue until the full vertical

and horizontal extent has been adequately assessed. Additional off property assessment is needed for the following reasons:

- a) Review of historic data from the Site and the North County Factory Outlet (NCFO) facility, located south of the Site, suggests that the Freon-113 plume originates at the Site and extends to the south onto the adjacent property. Until a comprehensive groundwater sampling program is conducted it is premature to conclude that the Signet plume does not extend off-site to the south.
- b) A comprehensive sampling of on-site and off-site wells for Freon-113, as required by the Order, was not done. Keep in mind that the "Site" as defined by the Porter-Cologne Act includes not only the Signet facility and environmental media affected by the releases, but also the entire footprint of the plume(s) of contamination discharged from the facility that have migrated across property boundaries in any direction.
- c) Documentation provided by U.S. Environmental Protection Agency (RCRA Preliminary Assessment for Signet Armorlite, Inc, 1991), the Tech Memo (Hargis + Associates, 2007) and previous semi-annual and quarterly groundwater monitoring reports for Signet provide evidence that Freon-113 was used and stored at the Site and that discharges of Freon-113 occurred at the Site. There is no compelling documentation to support Signet's contention that there were releases of Freon-113 at the NCFO facility. Although the Phase 2 Workplan includes statements suggesting that Freon-113 was used at the NCFO facility, evidence provided by Signet does not support this conclusion for the following reasons:
 - i. The Phase 2 Workplan states that the report prepared in 1990 noted that "hazardous waste drums" were previously stored on the NCFO site. The presence of "hazardous waste drums", however, is not specific enough to suggest that Freon-113 was stored in those drums.
 - ii. The Phase 2 Workplan states that "there is a lack of unambiguous historical documentation to support statements that Freon 113 was never used or stored on the NCFO property." The "lack of unambiguous" documentation that Freon-113 was not used or stored at the NCFO facility is not compelling evidence that Freon-113 was used or stored at the NCFO facility.
- d) The Phase 2 Workplan includes an opinion made by EnviroApplications, Inc. (2008) that the "*the relatively low toxicity of Freon 113 (based on the*

relatively high MCL value) and the concentrations detected in groundwater samples do not support the expense for further assessment at this time."

The Regional Board does not always require delineation to background concentrations³ if there is sufficient data to allow a scientifically-defensible interpretation of the extent of the plume. The toxicity of the chemical of concern and the MCL should be considered in the development of cleanup alternatives but cannot be used as a factor to determine whether delineation is complete.

It is unclear whether or not this opinion is shared by Hargis + Associates, Inc. (H + A) the consultant that prepared the Phase 2 Workplan. The statement regarding the adequacy of the assessment is qualified by "Signet concurs with the relevant conclusion of the NCFO SCM..." This suggests that Signet, and not H + A, agrees with the opinion first presented by EnviroApplications, Inc. regarding the need for additional investigation. Please confirm whether or not the registered professionals signing the Phase 2 Workplan and transmittal letter are in agreement with all opinions cited within.

8. The evidence does not point to NCFO as an off-site source of Freon-113. The continued speculation by Signet that Freon-113 was used at NCFO has never been substantiated. The Phase 2 Workplan states that "*Freon 113 was detected in a soil sample collected from boring LI-13 at the NCFO site at a depth of 3 to 4 feet bls in 1999, at a concentration of 21 ug/kg. Because this sample was collected from above the water table, it indicates the possibility that there may have been a local source of Freon 113 to soil, i.e., south of the property line on the former Spanjian facility.*" The reported detections of Freon-113 in soil at the NCFO facility does not support the contention of a Freon-113 source at the NCFO facility for the following reasons:
 - a) Soil sample LI-13 was not collected above the water table and therefore could be representative of offsite impacts. As shown on Table 1 of the "Site Conceptual Model for the North County Factory Outlet (SCM)," dated October 10, 2008, soil sample LI-13 was collected at a depth of 3 to 4 feet below grade. Soil sample LI-13 was collected down gradient of well MW-12 and upgradient of well MW-16. As indicated on Table 4 of the SCM in 1999 the depth to groundwater in wells MW-12 and MW-16 were 3.70 and 3.23 feet, respectively. This suggests that sample LI-13 was collected near

³ The background concentration for volatile organic compounds is zero.

the top of the groundwater table and the Freon-113 detected in this sample may be indicative of transport via groundwater from an upgradient source.

- b) H+A acknowledges that there is insufficient data to identify the NCFO facility as a source of Freon-113. The Phase 2 Workplan also states that "very few of the soil samples historically collected from the NCFO site were analyzed for Freon 113, rendering it difficult to evaluate the potential for Freon 113 sources at that site."⁴
 - c) There is no available documentation to demonstrate that Freon-113 was used, stored, or disposed at the NCFO facility. File reviews from both the Regional Board and San Diego County Hazardous Materials Management Division records yielded no evidence that Freon-113 was ever part of the Spanjian and/or tenant silk screening operation or waste storage at 1050 Los Vallecitos Blvd, San Marcos. Additionally, the Regional Board provided copies of Spanjian hazardous waste manifests from 1985 and 1987 to Signet Armorlite upon request, which were later added to your Tech Memo (Hargis + Associates, 2007). The Spanjian manifests show multiple contaminants and drums but Freon-113 is absent from the record.
9. The statement that "Freon 113 was detected in 4 of the 15 shallow wells at the Facility sampled in February 2009" understates the extent of the dissolved Freon-113 plume. Wells MW-8, MW-9, MW-10, and MW-12 had historic detections of Freon 113 but were not monitored during the most recent investigation.
10. Significant errors and inconsistencies were noted in the Phase 2 Workplan and must be corrected. Errors and inconsistencies must be corrected, and care must be taken to ensure that errors and inconsistencies will not be present in future submittals to the Regional Board. **Be advised that significant numbers of errors and inconsistencies may render Signet's submittals incomplete and such submittals will not be accepted until the errors are corrected. If a document is rejected because of significant errors and inconsistencies, Signet risks violating the Order by missing a due date.** A list of the noted errors and inconsistencies follows:
- a) Table 3 reports a Freon-113 concentration for the groundwater sample collected from well MPE-03 as 2,300 ug/L, while the result presented in Appendix A is 4,000 ug/L and the laboratory analytical report is 2,300 ug/L.

⁴ This statement misrepresents the information presented on Table 1 of the SCM. Table 1 indicates that 55 soil samples were collected and 43 samples were analyzed for Freon-113. Only three soil samples analyzed for Freon-113 had detectable concentrations of Freon-113.

- b) Appendix A reports the 1,4-dioxane concentration for the groundwater sample collected from MPE-16 as <10 ug/l, while the result presented on the laboratory analytical report is 7.0 ug/L.
 - c) The text states that only 5 of the 15 shallow zone wells had detections of 1,4-dioxane but the laboratory analytical report lists six wells with detections.
 - d) Although discussed in the text the 1,4-dioxane results were not presented in Table 3.
 - e) Figures 10 through 14 are labeled "hydrographs" although these figures are concentration versus time plots for the shallow zone, with no groundwater elevation data. These figures must be redrawn, using appropriate scales as semi-log plots, including groundwater elevation data.
 - f) Benzene concentration contours on Figure 6 are incorrect. The errors are as follows:
 - i. MPE-9, with a concentration of 750 ug/l, is located outside of the 10 ug/l contour line.
 - ii. MPE-1, with a concentration of 190 ug/l, is located between the 10 and 100 ug/l contour lines.
 - iii. MPE-6, with a concentration of 47 ug/l, is located outside of the 10 ug/l contour line.
11. Provide explanations for the laboratory protocols that were not followed in the collection of the Phase I data. To fully justify the use of laboratory test data the following items must be addressed.
- a) Explain why there was no trip blank included in the Boneyard groundwater samples sent from the Site in San Marcos, California to the Nashville, Tennessee office of TestAmerica for analyses of ethylene glycol.
 - b) Explain how HP-B-1, HP-B-2, and HP-B-3 results may have been affected by having a low sample volume analyzed with a higher reporting limit (the laboratory field notes stated, "*Reporting limit raised due to insufficient sample volume*") and if screening samples for the Boneyard may need to be repeated for verification.

- c) Provide an opinion and rationale whether the exceeding the holding time for sample HP-F-1 would yield viable groundwater data. Table 3 notes that *"sample analysis performed past the method-specified holding time per client's approval. Re-analysis performed out of holding time to attempt to reach lower reporting levels for non-detected analytes."* In the first HP-F-1 run, an unexpected value of 190,000 ug/L was found for MEK.
 - d) Provide an opinion and rationale why soil samples that were analyzed past the method-specific holding time should be used. Table 6 includes the statement that *"sample analysis performed past the method-specific holding time per client's approval. Soil sample not originally scheduled for analysis per Workplan; additional analysis performed after review of results from temporary (piezometers, word cut off in original)."*
 - e) Provide an explanation for the ethylene glycol data collected from HP-L-1 (1.0 foot) and HP-L-2 (1.0 foot) which were analyzed past the specified holding time, should be used. TestAmerica reports that method-specific holding times were not met due to a laboratory error. Explain in the Revised Workplan how ethylene glycol results may have been affected by not adhering to laboratory protocol, whether additional samples are needed, what measures will be taken to correct the problem in future sampling rounds.
12. Additional information is needed regarding the proposed use of low flow sampling of slow recharging wells. The Phase 2 Workplan does not discuss the proposed groundwater sampling procedures. The Phase 2 Workplan states that *"monitor wells will be drilled and constructed using methods and procedures described in the Workplan for Additional Monitor Well Installation (H+A, 2006) and, where applicable, in the Workplan for this Investigation (H+A, 2009c)."*⁵ Although not specifically stated in the Phase 2 Workplan it is assumed that the well sampling procedures to be used are those described in the Phase 1 Workplan. The Phase 1 Workplan stated that *"groundwater samples will be collected from existing monitor wells using techniques promulgated in the County of San Diego SA/M Manual (DEH, 2004)"* and that *"fast wells will be purged using a submersible pump or bailer" and "slower recharging wells will be sampled using low-flow techniques."*

The Regional Board has the following comments on the proposed groundwater sampling procedures.

⁵ The workplan referenced as H+A, 2009c is referred to as the Phase 1 Workplan.

- a) Are slower recharging wells the same as slow recharging wells as defined in the County of San Diego Site Assessment and Mitigation Manual (SAM Manual)?
 - b) Please identify which wells are considered slow recharging wells and the documentation that supports the classification as slow recharging.⁶
 - c) The SAM Manual provides two options for sampling low flow wells. One method is purging one borehole volume and sampling after 2 hours and the other is using low flow purging and sampling method (low flow). Please provide the rationale why low flow purging and sampling was selected for the slow recharging wells.
13. Provide an explanation for why the existing wells are properly screened to detect volatile organic compounds (VOCs) in shallow groundwater. The Phase 2 Workplan states that additional wells to be installed in the vicinity of the methylene chloride tanks will be "*screened across the bottom of a thin coarser layer encountered in HP-F-1.*" This suggests that the migration pathway for VOCs is through this layer. Can representative samples be collected from the existing wells that are not screened across this layer?
14. The Updated Site Conceptual Model and Site Investigation Report must interpret the data that show increasing trends and comment on the link between increased levels of 1,1,1-TCA and any impact on fate or transport of 1,4-dioxane. Groundwater results for 1, 4-dioxane in MPE-3 were reported at 530 ug/L. In this same well, 1,1-DCE values have increased over 300 percent (to 4000 ug/L in February 11, 2009) and 1,1,1-TCA values have risen over 500 percent (to 950 ug/L in February 11, 2009). These increasing trends need to be addressed.
15. Provide an explanation of whether or not Freon-113, benzene, and 1,1-DCE is present in the groundwater sample collected from HP-F-1. The detection level for Freon-113, benzene, and 1,1-DCE was raised to 500, 1,000, and 2,500 ug/l, respectively, due to the methylene chloride concentration of 190,000 ug/l. Is it still possible to detect Freon-113, benzene, and 1,1-DCE at these detection levels?
16. Figures should be re-drawn to show the extent of the plumes, not just the isoconcentration contour lines. For example, Figure 7 only includes one

⁶ For the purposes of this comment it is assumed that "slower recharging" wells can be classified as slow recharging wells as defined in the SAM Manual.

isoconcentration contour line (1,200 ug/l) which visually understates the extent of the dissolved Freon-113 plume. There are several other wells with detectable Freon-113 concentrations ranging between 15 and 680 ug/l which are located outside of the single isoconcentration contour line. This data should also be contoured to give a more representative indication of the extent of the Freon-113 plume.

17. Prior to preparing a revised Key Well sampling program all on-site and off-site wells should be sampled. In order to develop an appropriate Key Well sampling program data should be collected from all wells using similar sampling protocol and laboratory testing to be representative of current conditions.
18. Provide the rationale for selecting the soil samples collected from the Boneyard Area for analysis. Table 6 of the Phase 2 Workplan shows that of the three locations selected for sampling the Boneyard, not all 31 chemicals of concern were sampled at all three depths (0.5, 1.0, and 1.5 feet).
19. The data does not support the conclusion to not assess ammonia in the Boneyard area. The Phase I Workplan concludes that "*no additional assessment of ammonia is warranted at the Boneyard*" since "*ammonia is a naturally-occurring by-product of biological activity*". Ammonia was used in the Signet Armorlite Inc. manufacturing process as indicated in the Tech Memo prepared by Hargis + Associates, therefore, the Site is a potential source of contamination to the environment based on its history of use and storage of this compound.
20. The data does not support the conclusion to not assess acetone in the Boneyard area. The Phase I Workplan concludes that "*no additional assessment of acetone is warranted at the Boneyard*" since "*acetone is a naturally-occurring by-product of biological activity*". Acetone was used in the Signet Armorlite Inc. manufacturing process as indicated in the Tech Memo prepared by Hargis + Associates, therefore, the Site is a potential source of contamination to the environment based on its history of use and storage of this compound.
21. The data does not support the conclusion that no additional assessment for ammonia is warranted at the former hazardous waste storage locker area. Ammonia was detected in the 1.0 foot soil samples from HP-L-1, HP-L-2, and HP-L-3 at concentrations of 33 mg/kg, 23 mg/kg, and 5.1 mg/kg, respectively. The Phase 2 Workplan concludes that "*no additional assessment of ammonia is warranted at the former hazardous waste storage locker area.*" The Phase 2 Workplan reiterates, "*ammonia is a naturally-occurring byproduct of biological*

activity." Because a 2,000 gallon Ammonia Tank was located south of Building 1A there is a potential on-site source of ammonia and additional assessment is warranted.

22. The data does not support the conclusion that no further assessment of acetone is warranted in the former hazardous waste storage locker area. Acetone was detected in soil samples collected from HP-L-1 at depths of 0.5 and 1.0 feet below grade at concentrations of 44 ug/kg and 34 ug/kg, respectively. The Phase 2 Workplan states that, "acetone is produced in small quantities by biological activity" and concludes that "*no additional assessment of acetone is warranted at the Safety Storage Locker Area.*" Because there was an acetone tank on-site in Building 1B, and waste acetone wipes were stored south of Building 1A, in proximity to HP-L-1 there is a potential on-site source for acetone and additional evaluation is warranted.
23. The potential presence of CR-39 monomer in the former hazardous waste storage locker area needs to be addressed. The Regional Board requested that the CR-39 monomer be added to the analysis (Regional Board comment letter to G. Salo, Signet Armorlite, March 20, 2009, p.4) but the analysis was not done. CR-39 was stored and used in mixing and holding tanks throughout the facility. There were 14 known above-ground storage tanks that historically had no containment (Warzyn, 1992). CR-39 must be added into the expanded analysis in the Former Hazardous Waste Storage area in your Revised Workplan.
24. The data does not support limiting further assessment of methylene chloride to groundwater. Methylene chloride was detected in a groundwater sample collected from temporary well HP-F-1 at a concentration 190,000 ug/l. The Phase 2 Workplan states that the source "*is likely associated with the former methylene chloride storage tank and reclaimed methylene chloride tank*" and "*further assessment for this compound in groundwater in this portion of the facility is warranted.*" Further assessment is needed, but it should include soil and groundwater. This will require more analysis of soil and groundwater, and an Updated Site Conceptual Model describing methylene chloride's fate and transport properties and a discussion of how that may be affected by site-specific hydrogeology. It is critical to know if there is contaminated soil that needs to be addressed as a potential source area contributing to groundwater impacts.
25. Additional assessment of the chemicals of concern within the deep zone is needed. There are only two deep wells in what appears to be the on site

source area of the chemicals of concern and other than the interpretation presented in the Phase 2 Workplan there are no data points to support the isoconcentration contour lines shown on the figures. Additional information is needed to support the interpretations of the distribution of the chemicals of concern in the deep zone.

26. The data does not support the conclusion that no additional assessment of the methylene chloride in the deep groundwater zone is required. The Phase 2 Workplan states that "deep monitor well D-1 is sufficient to constrain the vertical extent of methylene chloride downgradient of HP-F-1." Signet must install a deep groundwater monitoring well in the location of proposed well P-6 to obtain better data regarding the migration pathway of methylene chloride in the deep groundwater zone. The full horizontal and vertical extent of methylene chloride in groundwater must be delineated and included in an Updated Site Conceptual Model. Off-property well installation may also be necessary to fully delineate the extent.
27. The data does not support the inference that detectable VOCs at D-4 attenuate before reaching off-site well D-5. Well D-5 has only been sampled three times and was last sampled in 2007. Groundwater samples from D-5 have never been analyzed for 1,4-dioxane. In addition, well P-4 had detectable levels of Freon-113 in 2006. Both off-site wells must be sampled in the next round of field work.
28. The data does not support the conclusion that the 1,4-dioxane concentrations in the deep aquifer are "localized and low". Samples from wells D-1 and D-4 had 1,4-dioxane concentrations of 31 ug/l and 21 ug/l, respectively. The California drinking water notification level for 1,4-dioxane is 3 ug/l. Furthermore the Basin Plan requires a full investigation of the extent of contamination to background. The Phase 2 Workplan indicates that 1,4-dioxane is present in two deep zone wells, but the full extent is not defined. Additional information is needed to fully characterize the 1,4-dioxane plume.

Directive A of the Order requires the submission of a Comprehensive Soil and Groundwater Investigation Workplan to the Regional Board no later than **February 27, 2009**. For the reasons listed above Signet failed to meet this requirement and is in Violation of the Order. Signet will continue to be in Violation of the Order until an adequate Comprehensive Soil and Groundwater Investigation Workplan is received by the Regional Board. Furthermore, Signet's failure to submit an adequate Comprehensive Soil and Groundwater Investigation Workplan is not justification to extend the date of submittal of the Site Investigation Report and Corrective Action Plan as required by Directive C of the Order.

Mr. Greg Salo
Notice of Violation and Comments on Workplan
Signet Armorlite, Inc.

- 14 -

May 21, 2009

The heading portion of this letter includes a Regional Board code number noted after "In reply refer to." In order to assist us in the processing of your correspondence please include this code number in the heading or subject line portion of all correspondence and reports to the Regional Board pertaining to this matter.

If you have any questions regarding the above, please contact Ms. Lynn Berlad at (858) 268-5363 or lberlad@waterboards.ca.gov.

Sincerely,



Craig L. Carlisle, P.G.
Senior Engineering Geologist
Central Groundwater Unit

CLC:lgb:bsp

Enclosure: Notice of Violation No. R9-2009-0083

cc: Michael Palmer
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California Environmental Protection Agency



California Regional Water Quality Control Board San Diego Region



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Secretary for
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IN THE MATTER OF)

May 21, 2009

Mr. Greg Salo)
Environmental Health and Safety)
Signet Armorlite, Inc.)
1001 Armorlite Drive)
San Marcos, CA 92069)

**NOTICE OF VIOLATION
NO. R9-2009-0083**

Mr. Michael A. Palmer)
de maximis, inc.)
1322 Scott Street, Suite 104)
San Diego, CA 92106)

**In Reply refer to:
2091500: Iberlad**

Ms. Rebecca Cardoso)
Mr. Greg Cranham)
Hargis and Associates, Inc.)
2365 Northside Drive, Suite C-100)
San Diego, CA 92108)

**Investigative Order No. R9-2009-0015 for Signet Armorlite, Inc. 130 North
Bingham Drive, San Marcos, CA 92069**

Site: Signet Armorlite, Inc, 130 N. Bingham Dr., San Marcos, Ca 92069

YOU ARE HEREBY NOTIFIED THAT:

Signet Armorlite, Inc. (hereinafter "Discharger") is in violation of Investigative Order No. R9-2009-0015, issued by the California Regional Water Quality Control Board, San Diego Region (hereinafter, "Regional Board") to address chemical releases to soil and groundwater from optical lens manufacturing operations in San Diego County. These violations are misdemeanors and subject the discharger to possible further enforcement action by the Regional Board, including but not limited to administrative enforcement orders requiring you to cease and desist from violations, or to clean up waste and abate existing or threatened conditions of pollution or nuisance; administrative assessment of civil liability of \$1,000 per day or \$5,000 per day¹, if hazardous waste is being discharged; referral to the State Attorney General for injunctive relief; and referral to the District Attorney for criminal prosecution.

¹ California Water Code Section 13268.

The Regional Board reviewed four submissions from the discharger that comprise the Comprehensive Soil and Groundwater Investigation Workplan required by Order No. R9-2009-0015:

SUBMISSION	REPORT DATE	DATE RECEIVED
Letter, "Phased Assessment, Signet Armorlite site"	January 16, 2009	January 21, 2009
Workplan for Soil and Groundwater Investigation	February 27, 2009	February 27, 2009
Phase 2 Workplan for Soil and Groundwater Investigation	March 31, 2009	April 2, 2009
Transmittal of Laboratory and Field Data Related to Soil and Groundwater Investigation (data sheets only)	April 17, 2009	April 17, 2009

Three violations of Investigative Order No. R9-2009-015 were identified in these submissions.

Summary of Violations:

I. VIOLATION OF DIRECTIVE A: COMPREHENSIVE SOIL AND GROUNDWATER INVESTIGATION WORKPLAN

The documents comprising the Comprehensive Soil and Groundwater Investigation Workplan were received by the Regional Board on January 21, 2009, February 27, 2009, April 2, 2009, and April 17, 2009. These documents failed to include sufficient scope to determine the vertical and lateral extent of contamination as required by Directive A. The Workplan was due on February 27, 2009. Until an adequate Workplan is received you will continue to be in violation of the Order.

II. VIOLATION OF DIRECTIVE A.4: DELINEATION OF FREON-113 PLUME

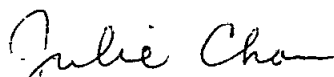
Directive A.4 states that the Workplan "must include sampling of both Signet monitoring wells and off-site wells south of the property boundary." The Workplan did not include sampling of off-site wells for Freon-113 in violation of Directive A.4.

III. VIOLATION OF PROVISION E.5: LAB QUALIFICATIONS

Provision E.5 states, "Any report presenting new analytical data is required to include the complete laboratory analytical report(s)." The Phase 2 Workplan for Soil and Groundwater Investigation, received April 2, 2009, presented new analytical data but did not include the corresponding laboratory data in violation of Provision E.5. The missing laboratory data was received by the Regional Board on April 17, 2009.

Questions pertaining to the issuance of this Notice of Violation are to be directed to Ms. Lynn Berlad at (858) 268-5363 or via e-mail at lberlad@waterboards.ca.gov. If you feel you have received this Notice in error, or need clarification on any of the above violations, please contact our office immediately. Written correspondence should be directed to the following address:

Ms. Julie Chan
Supervising Engineering Geologist
California Regional Water Quality Control Board
San Diego Region
9174 Sky Park Court, Suite 100
San Diego, CA 92123-4340
Attn: Ms. Lynn Berlad



Julie Chan, Supervising Engineering Geologist
Groundwater Basins Branch

5/21/2009

Date

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