

Final Determination Air Resources Board Compliance Offset Investigation Destruction of Ozone Depleting Substances

I. Introduction

The California Air Resources Board (ARB) has investigated if compliance offset credits issued for ozone depleting substances destruction events that took place at the Clean Harbors Incineration Facility in El Dorado, Arkansas (Facility) may have been generated while the facility was not in compliance with provisions of its operating permit issued under the federal Resource Conservation and Recovery Act (RCRA). Under section 95985(c)(2) of the Cap-and-Trade Regulation (Regulation), ARB can investigate and invalidate issued compliance offset credits if the offset project activity and implementation of the offset project was not in accordance with all local, state, or national, environmental and health and safety regulations during the Reporting Period for which the compliance offset credit was issued.

Section 95985 of the Regulation establishes a process for ARB to investigate and invalidate issued compliance offset credits. Although ARB has concluded that all of the greenhouse gas (GHG) emission reductions represented by the offsets at issue here are real, quantified, and verified reductions, ARB made an initial determination that these compliance offset credits may be subject to invalidation pursuant to section 95985.¹ In accordance with section 95985(d), on May 29, 2014, ARB blocked transfers of the potentially invalid compliance offset credits until its investigation could be completed and a final determination on whether to invalidate any of the compliance offset credits is made by ARB's Executive Officer.

Since May 29, 2014 and pursuant to section 95985(d), ARB has reviewed information submitted to it by notified stakeholders, issued investigatory subpoenas for documents, made staff available to stakeholders and their counsel who wished to provide information or discuss the investigation, and conferred with US EPA Region 6 and the Arkansas Department of Environmental Quality (ADEQ). ARB also issued a preliminary determination on October 8, 2014, with a 10-day comment period. ARB has reviewed all materials submitted during that 10-day comment period.

The preliminary determination was informed by information received through subpoenas and voluntarily provided during the initial 25-day comment period from various stakeholders. Many of the same parties voluntarily submitted additional information during the informal 10-day comment period. Many of those parties who were subject to subpoenas submitted responsive information or requested additional time. The

¹ For the offsets at issue, see the projects labeled as "under review" at:
http://www.arb.ca.gov/cc/capandtrade/offsets/issuance/arb_offset_credit_issuance_table.pdf

additional information submitted during the informal 10-day comment period has been reviewed and evaluated by the Executive Officer.²

II. General Statement of Legal Principles and Statutory Framework

A. *The California Regulatory Requirements for Compliance with Local, State, and National Regulatory Requirements*

The regulatory requirements that govern the eligibility, implementation, and issuance of compliance offset credits for the destruction of ozone depleting substances are contained within the Regulation and the Ozone Depleting Substances Projects Compliance Offset Protocol (ODS Protocol).

Section 95985(c)(2) of the Regulation states that ARB may determine that an ARB offset credit is invalid for several different reasons, including that:

The offset project activity and implementation of the offset project was not in accordance with all local, state, or national environmental and health and safety regulations during the Reporting Period for which the ARB offset credit was issued.³

Section 3.5 *Regulatory Compliance* of the ODS Protocol (ODS Protocol) states, in part:

As stated in the Regulation, an Offset Project Operator(s) or Authorized Project Designee(s) must fulfill all applicable local, regional and national requirements on environment impact assessments that apply based on the offset project location. Offset projects must also meet any other local, regional, and national requirements that might apply. Offset projects are not eligible to receive ARB or registry offset credits for GHG reductions that occur as the result of collection or destruction activities that are not in compliance with regulatory requirements.

The regulatory compliance requirement extends to the operation of destruction facilities where the ODS is destroyed. Destruction facilities have the potential to contribute to environmental impacts beyond ozone depletion and climate change. *Accordingly, all destruction facilities must meet the full burden of applicable regulatory requirements during the time the ODS destruction occurs.* Any upsets or exceedances of permitted emission limits must be managed in keeping with an authorized startup, shutdown, and malfunction plan required by EPA (40 CFR 63.1206).⁴ (Emphasis added.)

² Please see following link for information received during the 10-day comment period: <http://www.arb.ca.gov/lispub/comm2/bccommlog.php?listname=odsinvestigation-ws>

³ Title 17, California Code of Regulations section 95985(c)(2).

⁴ <http://www.arb.ca.gov/regact/2010/capandtrade10/copodsfin.pdf>

The Cap-and-Trade Regulation and ODS Projects Protocol are complementary regulatory documents that must be read in harmony with each other. ARB interprets these provisions to require that both the project activities associated with the destruction of ODS as well as other activities (described in (2) below) at the facility in question must be in “accordance with all local, state, or national environmental and health and safety regulations.” ARB interprets this provision to be applicable to: (1) all requirements that have a bearing on the integrity of the generated offsets; and (2) environmental and health and safety requirements associated with the collection, recovery, storage, transportation, mixing, and destruction, including the disposal of the associated post-destruction waste products.

The ODS Protocol allows for the collection and destruction of the following types of refrigerants and foam blowing agents:

- CFC-11 Trichlorofluoromethane
- CFC-12 Dichlorodifluoromethane
- CFC-13 Chlorotrifluoromethane
- CFC-113 Trichlorotrifluoroethane
- CFC-114 1,2-Dichlorotetrafluoroethane
- CFC-115 Chloropentafluoroethane
- HCFC-22 Chlorodifluoromethane
- HCFC-141b 1,1-Dichloro-1-fluoroethane

B. Federal Legal Requirements

1. Resource Conservation and Recovery Act

As stated by the United States Environmental Protection Agency (US EPA):

The objectives of the Resource Conservation and Recovery Act (RCRA) are to protect human health and the environment from the potential hazards of waste disposal, to conserve energy and natural resources, to reduce the amount of waste generated, and to ensure that wastes are managed in an environmentally sound manner. RCRA regulates the management of solid waste (e.g., garbage), hazardous waste, and underground storage tanks holding petroleum products or certain chemicals.⁵

The US EPA can grant states the authority to draft and issue RCRA permits. However, any state-level permit must be in accordance with and at least as stringent as the federal RCRA requirements. This includes both the scope and scale of the RCRA permit (42 U.S.C. § 6926)

⁵ <http://www.epa.gov/agriculture/lrca.html>

2. RCRA Treatment of Ozone Depleting Substances

Under RCRA, if either of R-11 or R-12 is discarded prior to use, as a result of being off-specification, spilled, or otherwise released, or residue from the product container is discarded, the material would be treated as a solid and hazardous waste carrying the hazardous waste listing of U121 for the R-11, and U075 for the R-12. Wastes derived from the treatment of listed hazardous wastes continue to carry the listing, are considered hazardous wastes, and are required to be handled appropriately as such. Wastes are listed as hazardous (as opposed to characteristic hazardous wastes) because they are known to be harmful to human health and the environment when not managed properly, regardless of their concentrations.

If either R-11 or R-12 material is generated as a result of evacuating a system (e.g., as when it is removed from a refrigerator) and discarded, or if reclaimed R-11 or R-12 is discarded either as a result of evacuating a system or for another reason, the materials are solid waste, and it must be determined if they are hazardous waste prior to disposal.

ARB confirmed the hazardous waste listing status of R-11 and R-12 through discussions with US EPA and the California Department of Toxic Substances Control.

III. Findings of Fact

A. *How Ozone Depleting Substances are Destroyed at the Clean Harbors Facility and Resulting Products*

Based on ARB's discussions with Clean Harbors, ARB has determined that ODS materials eligible for compliance offset credit arrive at the Clean Harbors Facility by truck and are directly injected into the facility's rotary kiln incinerator. The destruction of these materials results in the production of several acid gases. These gases pass through a saturator (an air pollution control device), which cools and condenses the incinerator exhaust and generates waste sludge comprised of a mixture of liquids and solids (Saturator Sludge). The Saturator Sludge is then sent to the facility's brine processing unit. Treatment of the Saturator Sludge includes removal of solids by filtration, precipitation and removal of metals, and volume reduction by heating and evaporation. After the Saturator Sludge is treated, what remains is concentrated calcium chloride brine. During the period of time at issue in this investigation Clean Harbors was reclaiming and selling the liquid brine as recycled product for use as a drilling fluid and make up water in oil and gas well drilling, completion, and remediation applications.

B. *Historical Context of Clean Harbors' RCRA Permit*

For over 20 years, the Facility now known as Clean Harbors in El Dorado, Arkansas, has generated a calcium chloride brine material that was used as a commercial chemical product and sold for end use in oil and gas exploration and development. The

Arkansas Department of Pollution Control & Ecology, the predecessor agency to the Arkansas Department of Environmental Quality (ADEQ), approved the use of the brine material as an effective substitute for commercial products. The material was considered by Clean Harbors and ADEQ to be exempt from hazardous waste regulations. ADEQ also did not require the brine processing unit to obtain a RCRA permit. According to Clean Harbors, this stance was last affirmed in 2006 when Clean Harbors acquired the facility.

C. US EPA Inspections

A US EPA Inspector conducted an onsite inspection of the Clean Harbors facility in May and June, 2009. The Inspector noted concerns regarding Clean Harbors' reclamation and sale of brine to a third-party for placement into or onto the land. The brine was not tested for all potential characteristics that would be considered hazardous under RCRA. Regardless, the inspector noted that because the brine is the result of hazardous waste destruction for listed materials, the brine is considered a hazardous waste under the "derived from" rule (40 C.F.R. 261.3 (c)).⁶ During the exit interview, the Inspector discussed potential violations with facility staff, which is standard procedure. The findings of the resulting report (Report 1) were sent to Clean Harbors on January 5, 2012. Some of the items identified in Report 1 by the inspector included:

- "The brine is a listed hazardous waste because it is derived from the treatment of listed hazardous waste; i.e. the derived from rule. The material is applied to the land and not eligible for the 261.2 exemption. The final disposition of the brine is disposal. The brine is either left downhole or it is returned to the surface and disposed with other unwanted well fluids (often by deep well injection)."
- "Areas of Concern noted during the inspection
1 Permit Module I (A) and Regulation No. 23 270.1 – Permit Required

During the inspection, I noted that the facility disposes of spent brine by reclamation followed by sale to end users who place the brine onto or into the land. Spent materials that are reclaimed are solid wastes. Commercial chemical products are solid waste when applied to the land."

A US EPA Inspector conducted another onsite inspection of the Clean Harbors Incineration Facility between November 1 and November 4, 2011. The Inspector held an exit interview with facility staff on November 4, 2011. During the exit interview, the Inspector discussed potential violations with facility staff, which is standard procedure. The official inspection report for the November 2011 onsite inspection was completed on January 23, 2012. The report (Report 2) was received by Clean Harbors on February 2, 2012.⁷ Some of the items identified in Report 2 by the inspector included:

⁶ US EPA Region 6 Surveillance Section RCRA Inspection Report, January 2, 2010

⁷ Both Clean Harbors and US EPA agree the report was received by Clean Harbors on February 2, 2012.

- “The ...operation of the Brine Unit under a recycling exemption. This unit does not conduct a recycling activity in accordance with RCRA defined recycling or re-use activities that qualify for exemptions. CHEL scrubber water is sludge by definition and therefore a solid waste because the commercial use of the liquid is considered ‘use constituting disposal.’ Further, the waste has to be manipulated through a series of processes, meeting the definition of reclamation, prior to storage of the final liquid for sale.”
- “The second major concern is the sale of reclaimed sludge liquids as Brine to the oil and gas (O&G) industry for use in exploration activities. The liquid component produced from the incineration scrubber activities is defined as hazardous waste sludge in addition to classification based on the ‘contained in policy’ and ‘derived from rules’. Use or re-use as a commercial substitute applies in situations without reclamation activities and brine (Calcium Chloride) is not a chemical listed in 261.33. Therefore ‘ordinary manner of use’ placement on the land, does not apply (§261.2(c)(1)(ii)). Further, review of scientific data shows that this waste stream commonly contains hazardous waste constituents from the incineration process.”
- “An auxiliary concern is the sale of this waste specifically for use in O&G exploration. While the Brine unit could potentially be upgraded to a RCRA unit, it does not address the final disposition of the liquid wastes. RCRA regulations are clear in relation to land disposal restrictions: wastes shall not be placed in or on the land or used to produce products placed in or on the land as part of any disposal, recycling or re-use activity. The sale of this waste for exploration activities is clearly ‘use constituting disposal’ in accordance with RCRA regulations.”⁸

D. Clean Harbors Brine Recycling Program and US EPA Alleged RCRA Violations

After the November 2011 RCRA inspection by US EPA, Clean Harbors entered into a contract for the delivery of 16 tanker trucks of brine whose end use would be land application in the oil and gas sector. According to ARB’s discussions with Clean Harbors, this contract was signed on December 27, 2011, prior to receipt of the EPA Report 1, but after the second visit by an EPA inspector.

One day after receipt of EPA Report 2, on February 3, 2012, Clean Harbors sent one final tanker truck of brine to a third-party as agreed upon under the December 2011 contract. Clean Harbors indicates this last tanker truck fell short of completing the agreed upon 16 tanker truckloads in the December 2011 contract. As of February 3, 2012, Clean Harbors ceased delivering brine to third parties for purposes of land application and since that date Clean Harbors has been disposing of the brine as a hazardous waste under RCRA requirements.

⁸ Report 2, p. 3.

E. Consent Agreement and Final Order between US EPA and Clean Harbors

In a Consent Agreement and Final Order (CAFO) filed on April 25, 2014, US EPA alleged multiple counts of RCRA violations against the Clean Harbors facility in El Dorado, Arkansas. Clean Harbors neither admitted nor denied the allegations contained in the CAFO, but consented to the assessment and payment of civil penalties pursuant to the allegations.⁹

F. Arkansas Department of Environmental Quality

Once US EPA issued Report 2, all enforcement activity was undertaken by US EPA Region 6. While ADEQ is authorized by US EPA to administer and enforce all provisions of the RCRA permits, because US EPA was the inspecting agency in this instance, US EPA also directed the enforcement action. ADEQ did not disagree with the findings in Report 2. As the Facility works to revise its RCRA permit to include the brine unit, ADEQ will be involved in the amendment of the RCRA permit in consultation with US EPA Region 6.

IV. Proposed Determination of Invalidation

A. The Clean Harbors Facility did not meet the requirements of the California Regulatory provisions and the ODS Protocol.

Section II-A of this report clearly states, the ODS protocol approved by ARB requires that “*all destruction facilities must meet the full burden of applicable regulatory requirements during the time the ODS destruction occurs.*” Based on ARB staff’s review of US EPA inspection reports, the Cap-and-Trade Regulation and ODS Protocol regulatory requirements and discussions with US EPA Region 6 and the Arkansas Department of Environmental Quality, pursuant to section 95985(c)(2) of the Regulation, the ARB Executive Officer has determined the Clean Harbors Facility was not operating “in accordance with all local, state or national environmental and health and safety regulations” from the time the Facility received US EPA’s Report 2 on February 2, 2012 and the time the final tanker filled with brine left the Clean Harbors Facility on February 3, 2012. Both US EPA and Clean Harbors agree Report 2 was received on February 2, 2012. Clean Harbors disclosed that its last tanker of liquid brine left the Clean Harbors Facility on February 3, 2012, at approximately 1600 hours.¹⁰ As a result, any destruction events that occurred at the Facility that include the dates of February 2, 2012 and prior to 1600 hours on February 3, 2012 are subject to invalidation by ARB as

⁹ Consent Agreement and Final Order in the Matter of Clean Harbors El Dorado, L.L.C. El Dorado, Arkansas, April 25, 2014

¹⁰ During the 10-day informal comment period, ARB received several letters detailing the last tanker filled of liquid brine left the Facility at approximately 1600 hours on February 3, 2012. The submitted materials also detailed the next ODS destruction event for project CAOD0006-C did not begin until approximately 4 hours after the departure of the last tanker.

that is the period the facility was not operating in accordance with its RCRA permit. As such, in making the final determination, the Facility is considered to be operating in accordance with its RCRA permit as of approximately 1600 hours on February 3, 2012.

The determination of this period is informed by several factors. Because no documentation of the delivery or receipt of Report 1 has been identified, there is ambiguity regarding whether the Facility received Report 1 in January 2012. Therefore, the Executive Officer has chosen to use February 2, 2012, a date which both Clean Harbors and US EPA agree was the date of receipt of Report 2, as the first official notice of potential violation. Previous to the receipt of Report 2, Clean Harbors had been selling the liquid brine as was allowed under their existing RCRA permit issued by ADEQ in 2006. Clean Harbors ceased off-site transport of the liquid brine within approximately a day and a half of their receipt of Report 2 and is working to have the brine unit included in their updated RCRA permit and is disposing of the waste in the required manner.

B. Invalid Compliance Offset Credits

Based on the assessment documented in this report as well as reviewed offset issuance documents, the Executive Officer has made a final determination that the following offset project(s) are designated for invalidation, because the Facility was not operating “in accordance with all local, state or national environmental and health and safety regulations” during the time of ODS destruction:

ARB Project ID	Reporting Period	Types of ODS	Quantity
CAOD0018-A	01/31/2012- 02/03/2012	R-11 & R-12	88,955

Of the total approximate 4.3 million compliance offset credits subject to investigation, 88,955 are subject to invalidation.

Upon issuance of this final determination, the offsets associated with the project listed above will be identified for permanent invalidation and thus noted on the relevant project issuance table as invalidated. All holders of the invalidated offsets will be officially notified by ARB. In addition, upon the issuance of this final determination, the ODS offset credits not subject to invalidation will be returned to the CITSS accounts from which they were removed on May 29, 2014.